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**Hydrologic Data
for
Experimental Agricultural
Watersheds
in the United States
1967**

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Miscellaneous Publication No. 1262

Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
In Cooperation With
State Agricultural Experiment Stations

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**Hydrologic Data
for
Experimental Agricultural
Watersheds
in the United States
1967**

Compiled by
JAMES B. BURFORD
and
JOHN M. CLARK
Hydrologic Data Laboratory, Northeastern Region

Miscellaneous Publication No. 1262

Agricultural Research Service
U.S. DEPARTMENT OF AGRICULTURE
In Cooperation With
State Agricultural Experiment Stations

Washington, D.C.

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PREFACE

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 was in progress during 1967. It is a continuation of processing and releasing hydrologic data of general interest collected cooperatively with other agencies.

Throughout the watershed studies the State agricultural experiment stations have collaborated in selecting, planning, and conducting these studies. In several studies, the U.S. Geological Survey and State and local agencies, such as State water boards and highway departments of local drainage and conservation districts, have assisted in the work. The classification and correlation of soils and evaluation of other watershed charac-

teristics in the descriptions have been based mostly on field surveys by the U.S. Soil Conservation Service.

These data were collected originally for specific research objectives, which are still in progress or have been attained. In addition, they can serve many other purposes. This publication provides information for other government agencies, university staff members, graduate students, private engineers, and others who need detailed, factual information concerning agricultural watersheds. High-quality hydrologic data such as these have historic value in addition to providing a basis for research and design and evaluation of projects and programs for conservation and development of the Nation's water resources.

Although the data on which this publication is based were collected in 1967, the findings are still valid and are used for further research on agricultural watersheds.

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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, pages 8.2-2 is location 8 (Vero Beach, Fla.), watershed 2 (W-2 at Vero Beach), and page 2 of the data for that watershed.

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

Table 1 is a list of continuing or new watersheds by State, locality, land resource area, assigned location number, watershed units, and number of selected runoff events reported for 1967 in this publication. Table 2 includes similar data on discontinued watersheds. Table 3 contains additions or revisions regarding watershed data.

Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1967

This publication contains selected hydrologic data for 1967, including monthly precipitation and runoff summaries for 216 watersheds; annual maximum discharges and annual maximum volumes of runoff for 204 watersheds for intervals of 1, 2, 6, and 12 hours and 1, 2, and 8 days; daily precipitation and discharge or daily air temperature or both for 164 watersheds; and detailed information for one or more selected typical storm events for 174 watersheds. The decimal paging system used (see explanation on p. iv) is consistent with that at the bottom of pages in the nine previous publications (see next section), so that previously published records and general descriptions can be readily found and consulted.

Information on selected storm events includes (1) tabular data for the 30-day antecedent rainfall and runoff before the events; (2) data on rainfall intensities and runoff for the event and on accumulated depth of rainfall and runoff; (3) description of watershed conditions at the time of the selected events; (4) plottings of runoff 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. Original descriptions of characteristics have been revised or updated for several watersheds and additions are listed in table 3, with details given on the respective data sheets for each watershed.

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 (reprints in bound volumes) by the Agricultural Research Service of the U.S. Department of Agriculture, Beltsville,

Md. 20705. These reports, listed as references 1, 2, and 3, are described in the following summary. Beginning with the hydrologic data for 1956 through 1966, the types of data previously published separately in these three references were combined in U.S. Department of Agriculture Miscellaneous Publications 945, 994, 1070, 1164, 1194, 1216, and 1226. These are listed below as references 4, 5, 6, 7, 8, 9, and 10. All 10 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 pages, 1957. (Includes physical descriptions and land use of 334 experimental agricultural watersheds at 60 locations in 27 States from 1923 through 1957. Many of these watersheds were discontinued before 1955.)

Reference 2.—ANNUAL MAXIMUM FLOWS FROM SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 330 pages, 1958. (Includes records from 322 watersheds at 59 locations in 27 States from 1923 through 1957. Many of these watersheds were discontinued before 1957.)

Reference 3.—SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES. Soil and Water Conservation Research Division, 374 pages, 1960. (Includes a sampling of one to six typical runoff events from 68 watersheds at 40 locations in 25 States from 1933 through 1959. The publication has maps of each watershed, watershed conditions for each event—including the 30-day antecedent rainfall and runoff—and tabular as well as graphic 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, U.S. Department of Agriculture Miscellaneous Publication 945, 672 pages, 1963. (Contains 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 has watershed maps, when new or revised, and graphs of each selected event, together with tabular data. Locations of experimental studies are shown on a 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, U.S. Department of Agriculture Miscellaneous Publication 994, 496 pages, 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 has watershed maps, either new or revised, and graphs of each selected event, together with corresponding tabular data. Selected runoff events published through 1961 for each watershed are listed in table 4.)

Reference 6.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962. Harold W. Hobbs, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1070, 447 pages, 1968. (Contains monthly precipitation and runoff from 164 watersheds, including 13 watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 155 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 136 watersheds. Selected runoff events published through 1962 for each watershed are listed in table 4. Several watershed maps, either new or revised, are included.)

Reference 7.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963. Harold W. Hobbs and J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1164,

465 pages, 1970. (Contains monthly precipitation and runoff from 168 watersheds, including nine watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 156 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 142 watersheds. Selected runoff events published through 1963 for each watershed are summarized in table 4. Several watershed maps, either new or revised, are included.)

Reference 8.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964. J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1194, 460 pages, 1971. (Contains monthly precipitation and runoff from 163 watersheds, including eight watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 163 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 143 watersheds. Several watershed maps, either new or revised, are included.)

Reference 9.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965. J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1216, 568 pages, 1972. (Contains monthly precipitation and runoff from 189 watersheds, including 22 watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 178 watersheds; and one or more typical selected runoff events presented in both tabular and graphic form for 122 watersheds. Several watershed maps, either new or revised, are included.)

Reference 10.—HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966. J. B. Burford, Soil and Water Conservation Research Division, Agricultural Research Service, U.S. Department of Agriculture Miscellaneous Publication 1226, 399 pages, 1972. (Contains monthly precipitation and runoff from 198 watersheds, including 11 watersheds for which data had not been previously published; annual maximum discharges and annual maximum volumes for 1 hour to 8 days for 185 watersheds; and

one or more typical selected runoff events presented in both tabular and graphic form for 106 watersheds. Several watershed maps, either new or revised, are included.)

Copies of these 10 publications have been furnished to the Soil Conservation Service and to other government 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 publication 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 precipitation (previously called normal P in publications through 1961 (ref. 5)); (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 (if included) of storm rainfall distribution for selected runoff events.

Continuing Watersheds

For current watersheds, for which the descriptive information has been published in references 1, 4, 5, 6, 7, 8, 9, or 10, the tabular data begin at the top of the first page. Above the border at the center the page is numbered, and the decimal paging system 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, are given the (P) and (Q) station average amounts (STA AVG) by months, with aver-

age annual total for the period of record. On the bottom line of the table are 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 (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (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 that the instantaneous peak in inches per hour occurred. In computing this rate, corrections were made, where needed, 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 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 entire 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 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 general statement as to watershed conditions and other physical changes for the period covered; (2) corrections or revisions for previously reported data; (3) source of long-term precipitation means or averages and years covered; and (4) other pertinent material or explanations of the hydrologic data in the two tables.

Before the 1963 volume, statements of the estimated quality of P and Q records were given in these notes. Beginning with the 1963 volume through this volume, with a few exceptions, no attempt has been made to evaluate the records; therefore, the statements under "Continuing Watersheds," on page 3 of the 1963 through 1966 volumes that indicate that quality statements are given only when records are considered to be less than excellent (less than 95 percent accurate) are in error and should be deleted. Reevaluations of previously published records are also included in these footnotes.

For some watersheds, tables of DAILY AIR TEMPERATURE (maximum and minimum in degrees Fahrenheit), DAILY PRECIPITATION (inches), and MEAN DAILY DISCHARGE (c.f.s) are 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 the first note to the mean daily discharge table. The conversion factor for daily inches to acre-feet is sometimes included.

If no daily tables are given, the tabular data for SELECTED RUNOFF EVENTS begin in the remaining space on the first page and are carried forward on continuation sheets (or pages) until completed. 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 included; (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 rainfall and runoff rates are shown for all events on pages following the tabular data.¹ Maps follow the graphs unless previously published in references 3 through 10 or unless shown herein on the map of another watershed. Isohyetal maps, if any, generally follow the regular maps.

In the "Notes" 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 26 watersheds installed in recent years and not reported previously, the presentation begins with the watershed description in the upper

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

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

The first line, centered at the top of the sheet, indicates the *project location*, which is the nearest city or town, and the number or name of the watershed 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 summarized in the first two tables and notes are included 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 mentioned first, followed by the major basin.

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

SLOPES are given in terms of the ranges commonly used in 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 are given for the 26 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, and sand less than 2 mm. in diameter. The various classes of texture in order of increasing percentages of the smaller 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*. For some soils the structureless grade is described as *massive*, if coherent, or *single grain*, if non-coherent. The *size* of the aggregates is reported as *very fine*, *fine*, *medium*, *coarse*, or *very coarse*. Structure *shape* is given 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 indicated 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 percentages of the watershed in the following erosion classes are 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 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 with 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 plowed 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 plowed layer consists entirely of the original A horizon, and others in which it consists entirely 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 the original surface soil, or A horizon, has been removed. The plowed layer consists essentially of materials from the B or other underlying horizons. Patches in which the plowed 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 the B horizon, or other underlying horizons, have 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 through IV are suitable for cultivation and other uses, whereas classes V through 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, or stony or shallow soil; eroded, droughty, 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 the 26 new watersheds is reported herein. The parts of the watershed occupied by various geological formations or series are briefly described, together with strike and dip of the strata, thickness, and relative position, when known. Faults, perched water tables, outcrops, if present, and other details relating to the movement of water within the drainage area or affecting the hydrology of the watershed are described.

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.

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

A *perennial stream*, or stretch of a stream, flows continuously. Perennial streams are generally fed in part by springs, and their upper surfaces usually stand lower than the water table in the localities through which they flow.

Intermittent streams may be divided, with respect to their water source, 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, 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 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, 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 at least 1 month.

An *ephemeral stream*, or stretch of a stream, 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 for as long as 1 month.

With respect to continuity in space, streams may be divided into interrupted and continuous streams. An *interrupted stream* 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* 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 before 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 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 of application for which the data of the specific watershed are recommended. The land resource areas named are those delineated on the map titled "Location of Experimental Agricultural Watersheds of the Agricultural Research Service," on pages 12 and 13. Solid circles show the approximate locations of the "continuing" or "new" watersheds; open circles show approximate locations of the discontinued studies. For a few studies the circles indicate the locations of the project headquarters instead of the watershed locations. A larger index map with more detail is included in reference 4.

For some studies, there is an apparent contradiction between the watershed location on the maps and the descriptive information under "Generally Represents." This is caused by 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, instead of 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:

<i>Symbol</i>	<i>Meaning</i>
A—	precipitation of unknown time of occurrence, amount generally carried forward.

<i>Symbol</i>	<i>Meaning</i>
E—	value is estimated or partially estimated.
H—	precipitation in form of hail.
L—	precipitation in form of sleet or freezing rain.
M—	mixed precipitation in form of rain, snow, and sleet.
N—	precipitation in form of rain and snow.
NR—	when used in place of value, "no record."
P—	monthly or annual precipitation in inches.
Q—	monthly or annual runoff in inches.
R—	followed by hyphen and number, recording rain gage.
RG—	rain gage, generally followed by gage number.
S—	followed by hyphen and number, standard rain gage.
S—	precipitation in form of snow.
STA AV (or AVG)—	station average for period of record.
T—	trace, generally less than 0.005 inch of precipitation and 0.01 inch of runoff (or 0.0001 inch of runoff, if four decimal places are used).

Time-of-day symbols or designations *a*, *p*, *m*, and *n* used in previous publications through 1961 have been discontinued and military time (0001 to 2400) has been substituted in publications since then. Unless stated otherwise, time used in tables is eastern, central, mountain, or Pacific standard, 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, runoff, annual maximum discharges, or maximum volumes for various durations, entire 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 in watershed descriptions, they are placed after the above-mentioned tables. In some cases a statement on geology has been added to the original descriptions. The geology for the 26 new watersheds is also described. The foregoing changes are listed by States in table 3, page 15.

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—

<i>Location</i>	<i>Name or names</i>
8.....	William H. Speir, John C. Stephens.
13, 66.....	James B. Burford, Jan C. Carr, Vernon O. Shanholtz.
21, 25, 61, 71..	Larry A. Kramer, Keith E. Saxton.
26.....	Lloyd L. Harrold.
29, 31, 32.....	Gordon Waddell.
34, 37.....	Wendell R. Gwinn, William O. Ree, Francis L. Wimberly.
42.....	Walter G. Knisel, Jimmy R. Williams.
44.....	Clayton Hanson, David A. Woolhiser.
45, 47, 63, 64, 73.	Orfelio Garcia, Leonard J. Lane.
62.....	William A. Champion, Farris E. Dendy, Mary A. Marshall, Robert B. Wilson.
65.....	Clayton Hanson, Armine R. Kuhlman.
67.....	Rodger DeAngelis, Bruce Filgate, Doug- las Grant.
68.....	John M. Clark, Clifton W. Johnson.
69.....	Donn G. DeCoursey, Monroe A. Hart- man, Arlin D. Nicks, Edd D. Rhoades, Russel R. Schoff, Oscar D. Workman.
70.....	Walter G. Knisel, Clarence W. Richard- son.
75.....	Loris E. Asmussen, William C. Mills, John C. Stephens.

ADDITIONAL PUBLICATIONS BY LOCATION

In references 1, 4, 5, 6, 7, 8, 9, and 10 (see pp. 1 and 2), citations to other publications that present watershed data and interpretations of results in various journals, bulletins, and periodicals are given at the end of the introductions for many of the locations. Following is a listing, by location number, of additional references to results reported through 1967. Several items of general application to the overall program of hydrology that could not be tied to a specific location are included at the end of the listing under "General References."

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UNITED STATES INDEX MAP AND RELATED DATA

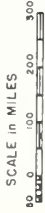
[Pages 12 through 15]

LOCATION OF EXPERIMENTAL AGRICULTURAL WATERSHEDS OF THE AGRICULTURAL RESEARCH SERVICE (1967)

LAND RESOURCE REGIONS
AND
MAJOR LAND RESOURCE AREAS
OF THE
UNITED STATES
(48 continental States)

KEY TO RESEARCH LOCATIONS
● Current (continuing) studies
○ Discontinued locations

NOTE: Location 16 was not used



LEGEND
— Boundaries
T - Land resource region
--- Major land resource area
- - - Boundaries
— State lines

LEGEND FOR LAND RESOURCE REGIONS AND MAJOR LAND RESOURCE AREAS
(of the 48 conterminous 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 Fort Stevens 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 California Coast Range
- 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 Klamath and Shasta Valleys and Basins
- 23 Humboldt Area
- 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 Bonneville Basin and Range
- 31 Central Valley
- 32 Northern Intermountain Desertic Basins
- 33 Semiarid Rocky Mountains
- 34 Central Desertic Basins, Mountains and Plateaus (See E below)
- 35 Colorado and Green River Plateaus
- 36 New Mexico and Arizona Plateaus and Mesas
- 37 Colorado Plateau, Colorado Plateau
- 38 Black Hills, Badlands, and Great Mountains
- 39 Arizona and New Mexico Mountains
- 40 Central Arizona Basin and Range
- 41 Southwestern 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 Wasatch and Uinta Mountains
- 48 Southern Rocky Mountains
- 49 Southern Rocky Mountain Foothills
- 50 Southern Rocky Mountain Foothills
- 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 Black Glaciated Plains
- 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
- 62 Black Hills
- 63 Rolling Pierre Shale Plains
- 64 Mixed Sandy and Silty Tableland
- 65 Nebraska Sand Hills
- 66 Dakota-Nebraska Eroded Tableland
- 67 Central High Plains
- 68 Irrigated Upper Platte River Valley
- 69 Upper Arkansas Valley Rolling Plains
- 70 Pecos-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 Loess Sandstone Hills
- 75 Bluegrass Hills
- 76 Bluegrass Hills
- 77 Southern High Plains
- 78 Central 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 Texas Blackland Prairie
- 86 Texas Claypan Area

K NORTHERN LAKE STATES FOREST AND FORAGE REGION

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

L LAKE STATES FRUIT, TRUCK, AND DAIRY REGION

- 95 Southeastern Wisconsin Drift Plain
- 96 Eastern Michigan Fruit Belt
- 97 Eastern Michigan Fruit Belt and Truck Belt
- 98 Southern Michigan Drift Plain
- 99 Erie-Huron Lake Plain
- 100 Erie Fruit and Truck Area
- 101 Ontario-Mohawk 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 Kansas Loess-Drift Hills
- 107 Iowa and Missouri Deep Loess Hills
- 108 Illinois and Iowa Deep Loess and Drift
- 109 Iowa and Missouri Heavy Till Plain
- 110 Indiana and Ohio Heavy Till Plain
- 111 Indiana and Ohio Tull Plain
- 112 Cherokee Prairies
- 113 Central Claypan Area
- 114 Southern Illinois and Indiana Thin Loess and Till Plain
- 115 Central Mississippi Valley Wooded Slopes

N EAST AND CENTRAL GENERAL FARMING AND FOREST REGION

- 116 (See M Above)
- 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 Pennroyal
- 123 Nashville Basin
- 124 Western Allegheny Plateau
- 125 Cumberland Plateau and Mountains
- 126 Central Allegheny Plateau
- 127 Eastern Allegheny Plateau and Mountains
- 128 Appalachian Ridges and Valleys
- 129 Sand Mountain
- 130 Blue Ridge

O MISSISSIPPI DELTA COTTON AND FEED GRAINS REGION

- 131 Southern Mississippi Valley Alluvium
- 132 Eastern Arkansas Prairies

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

- 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

R 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 Connecticut Valley
- 145 Connecticut Valley
- 146 Aroostook Area

S NORTHERN ATLANTIC SLOPE TRUCK, FRUIT, AND POULTRY REGION

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

T 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

U FLORIDA SUBTROPICAL FRUIT, TRUCK CROP, AND RANGE REGION

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

Compiled by Morris E. Austin
Information from SCS, State, and other Offices

TABLE 1.—Experimental agricultural watersheds, by States, localities, and locations, under study during 1967 and included in this publication

State	Locality	Major land resource area ^{1/}	Assigned location No.	Watershed units Number	Events reported Number	Pages (inclusive)
Arizona.....	{ Safford.....	D-41, D-42	45	4	4	205-212
			63	<u>2/</u> 6	7	265-279
Florida.....	Vero Beach.....	U-55	8	4	4	18-29
Georgia.....	Watkinsville ^{3/} ..	P-136	10	1	-	---
Idaho.....	Reynolds Creek..	D-23, D-25	68	<u>4/</u> 8	8	353-388
Illinois.....	Monticello ^{3/}	M-108	61	2	-	---
Iowa.....	{ Iowa City.....	M-108	21	1	1	81,82
			71	5	10	601-618
Mississippi.....	Oxford.....	P-133, P-134	62	15	15	222-264
Missouri.....	McCredie.....	M-113	25	1	0	83
Nebraska.....	Hastings.....	H-71, H-73, H-75	44	15	11	178-204
New Mexico.....	{ Albuquerque.....	D-42	47	3	3	213-221
			64	<u>5/</u> 1	-	---
			73	<u>6/</u> 1	-	---
New York.....	Cohocton ^{3/}	R-140	2	1	-	---
North Carolina...	Ahoskie.....	P-133	75	4	4	623-634
Ohio.....	Coshocton.....	N-124	26	35	0	84-101
Oklahoma.....	{ Cherokee.....	H-80	34	6	18	111-128
			69	<u>7/</u> 40	46	389-523
			37	3	6	129-137
South Dakota.....	{ Newell.....	G-58, G-60	65	7	0	280-293
			72	3	0	619-622
Texas.....	{ Riesel (Waco)...	J-86	42	20	20	138-177
			70	<u>8/</u> 13	35	524-600
Vermont.....	North Danville..	R-144	67	<u>9/</u> 5	15	302-352
Virginia.....	Blacksburg.....	N-128, S-147, N-130, P-136 S-148	13	14	14	30-80
West Virginia....	Moorefield.....	N-128, S-147	66	4	4	294-301
Wisconsin.....	Fennimore.....	M-105	31	4	4	102-110

^{1/} See location map and legend, pp. 12 and 13.
^{2/} Watersheds 63.001, 63.002, 63.006, 63.008, and 63.011 New Mex., will be reported later.
^{3/} Report deferred on watersheds.
^{4/} Includes data on 4 new watersheds, W-4, W-11, W-12, and W-14, for location 68, Reynolds Creek, Idaho.
^{5/} P and Q data for watershed 64.001, Santa Rosa, New Mex. are being reevaluated and when complete, revised data will be reported.
^{6/} P and Q data for 1967 for watershed 73.002, Fort Stanton, New Mex., will be reported later.
^{7/} Includes data on 8 new watersheds, 514, 5141, 5142, 5143, 5144, 5145, 5146, and 311.
^{8/} Includes data on 13 new watersheds, W-14, S-9 through S-13, and W-1 through W-7 for Sonora, Tex. (70).
^{9/} Includes data on 1 new watershed, W-4, for North Danville, Vt. (67).

TABLE 2.—Watersheds, by States, where observations were discontinued during 1966 (For studies discontinued before 1966, see table 1 in previous publication)

State	Locality	Major land resource area ^{1/}	Discontinued watershed unit		
			Number	Record period	Assigned location and watershed No.
Oklahoma.....	Chickasha.....	D-23, D-25	1	1961-66.....	69.4
Wisconsin.....	Colby.....	K-90	1	1949-66.....	29.1

^{1/} See location map and legend, pp. 12 and 13.

TABLE 3.— Additions or revisions, by States, regarding data published before 1967

State	Locality	Location Page	Addition or revision
Arizona.....	Tombstone....	63.3-1; 63.4-1,-2	Monthly precipitation and runoff, annual maximum peak discharges and annual maximum volumes of runoff for selected time intervals previously reported (1954 through 1966) have been reevaluated and are included with the values for 1967.
		63.7-1	Monthly runoff amounts and maximum runoff volumes for selected time intervals previously reported for 1966 have been reevaluated and are included with those values for 1967.
Idaho.....	Reynolds.....	68.4;-11;12, -14	Data <u>added</u> for 4 new watersheds, W-4, W-11, W-12, and W-14, beginning in 1967.
New Mexico.....	Albuquerque..	47.1-1,-2; 47.2-1,-2; 47.3-1,-2	Monthly precipitation and runoff, annual maximum peak discharges, and maximum volumes of runoff for selected time intervals previously reported (1939 through 1966) have been reevaluated and are included with the values for 1967.
Oklahoma.....	Chickasha....	69.9-3,4	Data sheet for Watershed 612, which were not reproduced clearly in Ref. 10 (1966) are <u>reprinted</u> .
		69.20;-21; -22;-23; -24;-25; -26;-27	Data added for 8 new watersheds, 514, 5141, 5142, 5143, 5144, 5145, 5146, and 311, beginning in 1967.
South Dakota....	Newell.....	65.2-2;-5-2; -7-2;-12-2; -13-2;-14-2; -15-2	Heading for tables listing discharge, "Mean Daily Discharge (Inches)," in ref. 9 (1965) and ref. 10 (1966) <u>should be</u> "Daily Discharge (Inches)."
Texas.....	Sonora.....	70.1 through 70.13	Data <u>added</u> for 13 new watersheds, W-14, 8-9 through S-13, and W-1 through W-7.
Vermont.....	North..... Danville	67.4	Data <u>added</u> for one new watershed, W-4, beginning in 1965.



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

[8.1-1 TO 75.4-3, A TOTAL OF 617 DATA SHEETS]

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

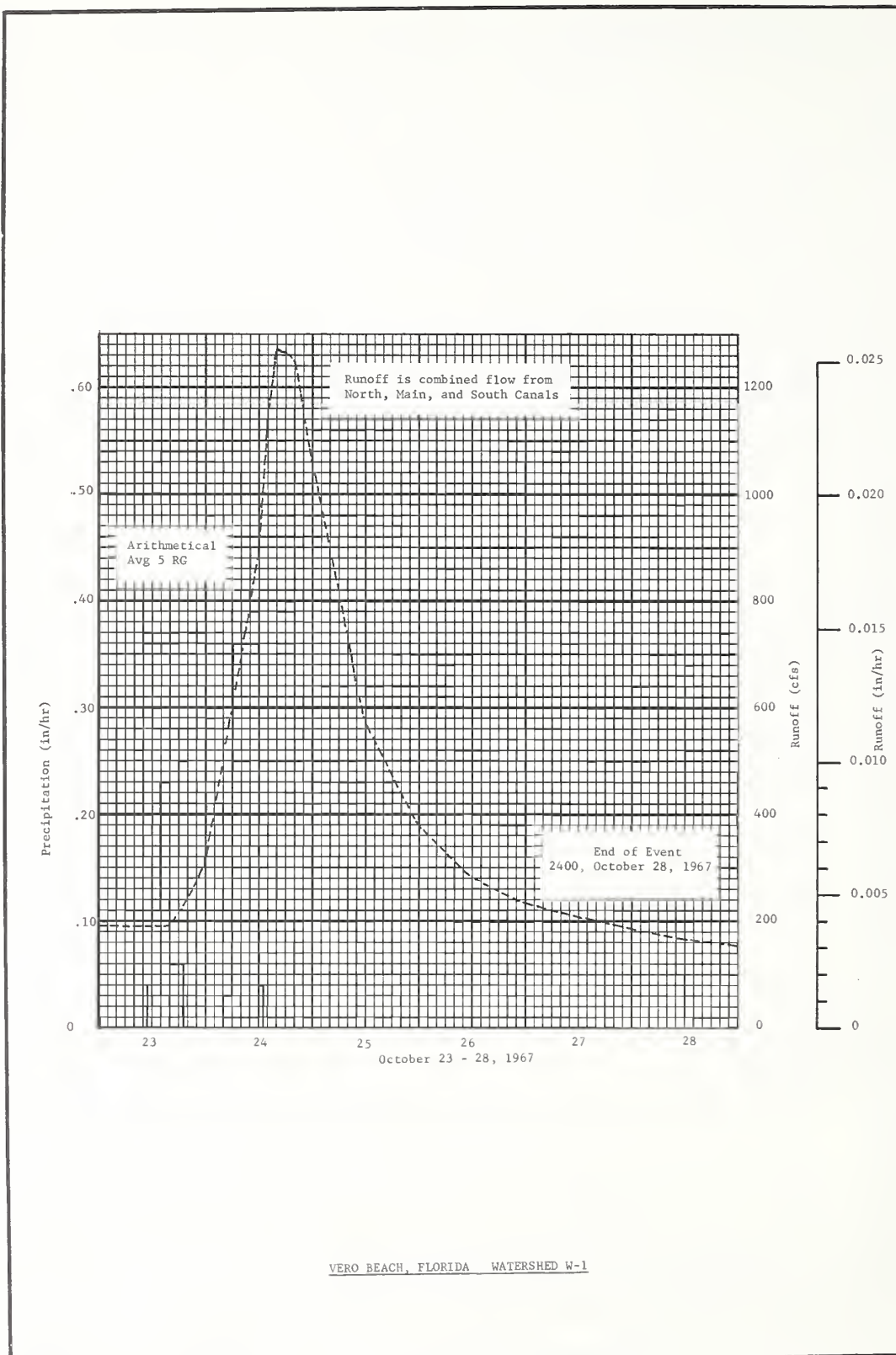
MONTHLY PRECIPITATION ^{1/} AND RUNOFF ^{2/} (inches)													VERO BEACH, FLORIDA (NORTH, MAIN & SOUTH CANALS) WATERSHED W-1 8.1 AREA - 49,915 ACRES (78.0 SQ. MILES)			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P	1.53	2.91	1.34	.42	.30	7.00	5.48	5.99	3.62	6.55	.45	1.73	37.32		
	Q	1.15	1.28	1.17	1.02	.71	1.77	2.53	2.75	1.54	2.47	1.23	1.41	19.03		
STA AV ^{3/}		2.19	3.09	3.49	3.26	3.32	6.16	5.71	5.90	7.94	6.54	2.16	1.51	51.27		
(51-67) Q		1.47	1.51	1.79	1.43	1.27	2.35	2.09	2.26	3.96	4.11	1.71	1.31	25.26		
MEAN P ^{4/} 67 YR		2.30	2.58	2.97	3.30	4.16	5.93	5.53	5.57	7.90	7.33	2.65	2.08	52.30		
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
1967	10-24	.025	10-24	.025	10-24	.050	10-24	.150	10-24	.276	10-24	.456	10-24	.650	10-23	1.13
MAXIMUMS FOR PERIOD OF RECORD																
19 51 TO	9-24	.106	9-24	.106	9-24	.211	9-24	.623	9-24	1.23	9-23	2.37	9-23	4.51	9-22	13.31
19 67	1963		1963		1963		1963		1963		1963		1960		1960	
NOTES: Watershed conditions: citrus groves, 48%; improved pasture, 30%; unimproved range and forest, 5%; urban development, 17%. 1/ Precipitation Thiessen weighted using 5 gages. 2/ Runoff data furnished by U. S. Geological Survey. Artesian irrigation inflow included in runoff. 3/ Precipitation and runoff records began April 1951. 4/ Mean P based on 67-yr (1901-1967) U.S. Weather Bureau record period at Fort Pierce No. 1, Fla. Missing records for July 1933 and for Feb. 1950 estimated from nearby station.																
1967 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA WATERSHED W-I 8.1										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.00	.00	.32	.59	.00	.89	.00	.00				
2	.00	.00	.00	.00	.00	.65	.21	.29	.21	.00	.00	.00				
3	.12	.00	.51	.00	.00	.35	.53	.56	.71	.00	.00	.00				
4	.39	.00	.00	.00	.00	.00	.18	.04	.26	.00	.00	.00				
5	.00	.00	.00	.00	.00	.01	.12	1.91	.00	.65	.00	.00				
6	.00	.00	.00	.00	.00	.00	.19	.00	.07	.74	.00	.00				
7	.00	.21	.00	.00	.00	.02	.26	.49	.09	.12	.00	.00				
8	.00	.02	.41	.00	.00	.15	.01	.02	.29	.00	.00	.00				
9	.00	.44	.00	.00	.06	.29	.01	.18	.96	.19	.00	.00				
10	.00	.00	.00	.00	.00	.35	.00	.40	.00	.00	.00	.00				
11	.01	.35	.00	.00	.00	.02	.00	.13	.00	.00	.00	.94				
12	.00	.19	.00	.00	.00	.00	.00	.19	.00	.00	.02	.05				
13	.00	.06	.00	.00	.00	.32	.05	.18	.22	.00	.02	.04				
14	.00	.00	.00	.00	.00	.05	.31	.49	.00	.29	.00	.00				
15	.11	.00	.00	.00	.00	.17	.11	.00	.00	.00	.00	.00				
16	.01	.00	.00	.00	.00	.49	.42	.00	.00	.00	.09	.00				
17	.00	.00	.00	.00	.00	.24	.00	.00	.16	.47	.00	.00				
18	.26	.00	.04	.00	.00	.36	.28	.00	.00	.00	.00	.00				
19	.00	.00	.09	.36	.00	.26	.00	.00	.00	.00	.00	.00				
20	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00				
21	.00	1.36	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00				
22	.00	.28	.00	.00	.00	1.16	.25	.00	.04	.00	.00	.00				
23	.00	.00	.00	.00	.24	.32	.10	.05	.00	.92	.00	.07				
24	.02	.00	.00	.00	.00	.00	.00	1.21	.00	2.27	.00	.00				
25	.01	.00	.00	.00	.00	.00	.09	.16	.00	.00	.29	.00				
26	.60	.00	.00	.06	.00	.00	.25	.15	.09	.00	.00	.00				
27	.00	.00	.01	.00	.00	.00	.00	.00	.07	.00	.00	.00				
28	.00	.00	.07	.00	.00	.37	.56	.00	.19	.00	.00	.63				
29	.00	.00	.05	.00	.00	.27	.00	.00	.22	.01	.03	.00				
30	.00	-----	.13	.00	.00	1.04	.02	.09	.04	.00	.00	.00				
31	.00	-----	.01	-----	.00	-----	.00	.07	-----	.00	-----	.00				
TOTAL	1.53	2.91	1.34	0.42	0.30	7.00	5.48	5.99	3.62	6.55	0.45	1.73				
STA AV	2.19	3.09	3.49	3.26	3.32	6.16	5.71	5.90	7.94	6.54	2.16	1.51				
NOTES: THIESSEN WEIGHTED RAINFALL USING 5 GAGES. STA AV COVERS PERIOD FROM JULY 1, 1951 THROUGH 1967.																

1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (MAIN, NORTH, SOUTH CANALS) WATERSHED W-1 8.1						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	75.3	60.6	78.0	126.3	51.0	16.7	354.0	122.0	33.2	186.0	88.8	127.1
2	74.2	37.9	76.2	142.6	56.0	20.9	240.0	227.0	32.0	285.0	81.6	95.9
3	74.0	54.0	77.9	95.9	47.0	89.0	187.0	192.0	69.4	198.0	58.2	84.3
4	104.0	54.2	84.0	48.9	33.9	228.0	266.0	263.0	155.0	137.4	39.0	77.2
5	101.0	55.8	81.2	25.1	24.9	152.0	251.0	447.0	281.0	123.3	58.1	68.9
6	109.6	75.8	79.2	34.3	37.4	147.0	263.0	735.0	207.0	138.6	87.2	67.7
7	113.6	77.8	75.2	48.9	61.0	56.4	238.0	381.0	159.0	144.0	98.1	69.8
8	98.2	71.0	83.0	41.3	72.0	32.2	271.0	335.0	116.8	133.0	117.2	104.5
9	69.8	156.0	97.0	72.2	62.0	57.0	195.0	227.0	181.0	120.0	107.5	111.3
10	53.4	116.0	76.0	77.0	61.0	65.8	149.0	222.0	207.0	124.0	88.7	87.3
11	72.4	88.3	73.0	83.8	57.0	79.0	128.0	244.0	158.0	114.0	26.2	78.5
12	77.4	90.8	69.0	89.0	51.7	84.0	106.0	219.0	128.0	106.7	73.8	350.0
13	65.4	147.0	69.0	90.0	43.7	83.0	67.4	193.0	118.0	91.8	102.8	204.0
14	22.4	129.0	69.6	96.0	37.7	85.0	66.6	196.0	121.0	83.0	66.8	72.6
15	22.8	89.3	67.2	83.0	41.7	67.0	70.8	257.0	116.0	84.0	26.0	112.3
16	108.2	86.8	83.8	52.9	35.6	239.0	167.0	185.0	109.0	85.0	25.2	101.7
17	69.8	80.8	77.8	51.0	30.9	223.6	200.0	153.0	105.0	86.0	37.0	94.2
18	37.2	76.0	70.8	84.0	31.8	104.0	124.0	142.0	110.0	103.0	69.6	82.0
19	98.8	78.5	71.8	94.0	29.8	117.2	96.6	126.0	103.8	133.0	102.0	74.6
20	116.2	98.0	73.2	147.0	34.4	58.0	80.2	105.8	97.0	99.7	141.0	58.2
21	77.3	119.8	78.2	101.2	40.4	29.8	80.3	85.4	89.8	77.4	130.0	65.2
22	81.9	233.0	91.6	85.4	42.2	313.0	71.7	64.0	49.1	72.4	118.1	74.2
23	70.9	121.2	93.0	96.5	42.8	407.0	121.0	38.4	36.6	150.0	110.4	70.4
24	83.8	114.0	69.7	55.8	100.0	267.0	236.0	60.4	36.4	759.0	146.3	67.7
25	62.0	93.5	68.7	29.8	121.0	170.0	321.0	58.6	52.0	604.0	117.1	63.5
26	49.2	87.5	87.3	22.6	48.5	78.0	214.0	70.8	40.8	276.0	92.4	63.7
27	98.0	118.0	101.6	29.6	49.8	16.3	168.0	76.0	46.4	189.0	93.8	63.9
28	72.0	80.8	26.0	29.4	43.0	16.6	149.0	162.0	60.0	150.0	94.4	77.9
29	68.2	-----	53.9	45.8	40.8	74.6	183.0	86.0	144.0	129.0	92.9	107.3
30	93.2	-----	124.0	52.0	34.9	332.0	138.0	54.0	61.0	109.0	89.5	100.7
31	99.8	-----	121.3	-----	25.9	-----	106.0	32.4	-----	93.1	-----	88.5
MEAN	78.1	96.1	79.0	71.0	48.0	123.6	171.2	185.8	107.4	167.1	86.0	95.7
INCHES	1.15	1.28	1.17	1.02	0.71	1.77	2.53	2.75	1.54	2.47	1.23	1.41

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0004769. DAILY DISCHARGE IS COMBINED FLOWS OF NORTH, MAIN, AND SOUTH CANALS FROM RECORDS OF U.S. GEOLOGICAL SURVEY. RUNOFF SUBJECT TO CONTROL.

1967 SELECTED RUNOFF EVENT				VERO BEACH, FLORIDA (MAIN, NORTH, SOUTH CANALS) WATERSHED W-1 8.1											
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 (cfs)	ACC. (inches)					
Event of October 23 - 28, 1967															
10-23	2/.03	3/.05	10-23	5 RC	AVC 1/		10-23	1600	192	.0000					
				1100	.00			2400	314	.0200					
				1200	.04	.04		10-24	1200	891	.1640				
				1600	.23	.72			1400	1138	.2044				
				1900	.06	.90		1600	1273	.2524					
				10-24	0400	.00		.90	2000	1246	.3524				
					0600	.03		.96	2400	1060	.4440				
					1200	.36		3.12	10-25	1200	573	.6384			
					1300	.04		3.16	2400	379	.7524				
				10-26					2400			10-26	1200	282	.8316
									2400			2400	234	.8928	
									1200			10-27	1200	204	.9456
									2400			2400	183	.9912	
				10-28					1200			10-28	1200	164	1.032
2400			2400				4/ 156		1.070						

NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .00001987. FOR MAP OF WATERSHED SEE PAGE 8.1-7 IN SELECTED RUNOFF EVENTS FROM SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN, 1960. FOR 30-DAY ANTECEDENT P AND Q SEE TABLE ABOVE AND ON PREVIOUS PAGE. 1/ PRECIPITATION IS ARITHMETICAL AVERAGE OF 5 RC. 2/ RAINFALL PRIOR TO 1100. 3/ RUNOFF PRIOR TO 1600. 4/ END OF EVENT.



MONTHLY PRECIPITATION AND RUNOFF (inches)						VERO BEACH, FLORIDA (TAYLOR CREEK)						WATERSHED W-2		8.2
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P	.71	2.94	.89	.16	.11	13.50	8.57	10.88	5.38	3.58	.36	2.29	49.37	
3/Q	.12	.16	.14	.06	.02	.54	4.23	3.29	2.30	1.41	.21	.16	12.64	
STA AV P	1.94	2.57	3.05	2.30	3.90	8.13	6.31	6.80	6.59	3.88	1.12	1.64	48.23	
(55-67) Q	.42	.50	.86	.20	.32	1.56	1.85	2.11	2.99	2.00	2.37	.15	15.33	
MEAN P 4/49 YR	1.63	1.92	2.65	3.22	3.75	7.18	6.06	6.05	7.03	4.80	1.62	1.47	47.38	

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
1967	8-31	.022	8-31	.022	8-31	.044	8-31	.132	8-31	.260	8-31	.492	8-31	.878	8-31	1.78

MAXIMUMS FOR PERIOD OF RECORD																
1955 TO 1967	10-16 1956	.11	10-16 1956	.11	10-16 1956	.21	10-16 1956	.62	10-16 1956	1.23	10-16 1956	2.28	10-16 1956	4.16	10-16 1956	8.03

Notes: Watershed conditions: range and forest, 48%; improved pasture, 40%; citrus, 2%; miscellaneous, 10%.
 1/ Precipitation Thiessen weighted using 7 gages. 2/ Runoff data furnished by U.S. Geological Survey.
 3/ Precipitation and runoff records began July 1955. 4/ Mean P based on 49-yr (1919-1967) U.S. Weather Bureau record period at Okeechobee Hurricane Gate 6, Fla.

1967 DAILY AIR TEMPERATURE (degrees F)												VERO BEACH, FLORIDA (TAYLOR CREEK)						WATERSHED W-2		8.2				
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	84	62	78	51	79	57	78	63	82	50	98	65	93	74	90	71	93	72	86	71	84	62	85	62
2	84	62	77	50	76	54	78	57	85	59	99	65	89	73	90	72	90	71	86	67	83	68	82	61
3	84	67	80	56	76	59	80	55	88	67	93	68	90	76	92	74	91	71	82	65	81	61	78	67
4	85	69	82	62	81	57	84	51	90	56	88	67	91	73	90	73	91	69	85	64	83	60	83	44
5	71	37	76	45	84	61	87	52	87	63	91	68	89	72	91	72	89	69	86	69	81	58	75	63
6	63	34	76	45	84	64	85	52	89	62	94	69	89	76	88	72	92	71	85	69	76	55	75	60
7	72	53	80	67	85	70	87	57	92	69	92	65	88	75	90	73	90	70	80	68	76	52	77	53
8	79	61	77	56	87	64	89	54	92	70	94	65	88	74	87	72	90	71	84	64	75	57	78	54
9	78	64	71	64	83	66	92	64	95	70	91	68	91	73	87	70	89	74	90	69	75	53	81	59
10	82	55	76	37	84	66	80	57	94	54	94	68	90	72	88	71	88	72	81	72	76	54	84	63
11	81	52	67	48	86	61	86	57	91	66	92	70	92	73	90	73	93	74	87	59	77	62	82	70
12	69	51	78	67	87	60	90	60	93	68	90	70	92	74	85	74	91	75	87	63	78	64	84	65
13	72	54	85	62	89	60	89	60	97	63	90	73	93	73	91	73	93	74	85	65	82	60	79	67
14	78	53	64	45	85	53	83	59	100	68	85	69	90	74	89	71	85	72	84	65	82	52	88	64
15	82	63	73	47	84	49	85	55	96	64	87	68	91	72	90	70	88	70	83	62	82	52	85	63
16	77	60	76	53	86	64	88	61	95	68	91	70	91	72	92	72	87	69	84	59	77	54	84	63
17	71	49	80	58	76	49	90	61	97	69	88	68	90	70	89	73	89	71	89	65	79	57	81	61
18	80	59	80	55	79	51	89	62	87	54	86	71	91	73	87	73	92	71	90	69	80	62	81	60
19	78	60	84	53	78	50	92	67	90	54	87	70	92	72	90	74	92	69	81	54	80	51	84	60
20	79	54	82	55	72	56	88	65	88	53	89	69	91	73	87	72	90	72	79	57	77	46	84	61
21	78	53	84	65	77	49	84	56	90	62	90	67	90	75	87	73	89	70	81	59	81	50	83	59
22	77	56	75	58	82	61	85	56	90	68	91	72	90	75	90	71	92	71	84	60	78	48	82	58
23	78	59	73	54	82	56	88	69	88	68	90	70	91	71	89	72	90	68	85	69	77	58	83	50
24	78	58	68	37	82	49	89	67	89	64	92	68	91	71	89	74	90	67	77	68	83	60	58	37
25	79	56	69	38	83	53	93	69	84	54	91	70	90	73	90	73	89	68	83	64	84	65	70	51
26	83	61	55	29	82	54	90	70	87	50	92	71	92	74	89	72	92	68	88	66	85	68	75	51
27	83	66	62	37	81	59	91	68	95	61	92	74	92	73	90	72	88	69	86	64	88	64	73	49
28	82	43	70	44	81	65	91	56	99	66	94	72	93	73	92	72	85	73	86	60	85	64	77	66
29	62	32	---	---	75	63	84	53	100	67	93	72	93	72	92	71	81	72	86	62	81	58	73	49
30	68	33	---	---	79	62	79	52	96	67	93	71	92	71	91	70	78	67	84	63	81	61	62	43
31	72	38	---	---	80	59	---	---	96	71	---	---	92	70	92	68	---	---	85	66	---	---	74	47
LV.	71	54	75	51	81	58	87	60	92	63	91	69	91	73	90	72	89	71	84	64	80	58	79	57
MEAN	62.5	---	63.0	---	69.5	---	73.5	---	77.5	---	80.0	---	82.0	---	81.0	---	80.0	---	74.0	---	69.0	---	68.0	---
STA AV	74	51	76	54	79	57	84	63	88	68	90	74	91	75	92	75	90	74	86	66	80	61	74	52

NOTES: TEMPERATURE DATA FROM R-3, READINGS TAKEN DAILY. STA AV COVERS PERIOD FROM JULY 1, 1956 THROUGH 1967.

1967 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2							8.2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.00	.00	1.43	.72	.00	.77	.00	.00	
2	.00	.00	.00	.00	.00	1.95	.13	.00	.00	.00	.14	.00	
3	.06	.00	.17	.00	.00	1.12	.47	.15	.29	.01	.00	.00	
4	.17	.00	.00	.00	.00	.04	.65	.18	.81	.00	.00	.00	
5	.00	.00	.00	.00	.00	1.01	.00	1.40	.25	.34	.00	.00	
6	.00	.00	.00	.00	.00	.84	.50	.32	.00	.36	.00	.00	
7	.00	.06	.01	.00	.00	.40	.45	.01	.05	.00	.00	.00	
8	.00	.06	.44	.00	.00	.25	.36	.72	.00	.00	.00	.00	
9	.00	.58	.12	.00	.00	.03	.20	.00	.11	.23	.00	.00	
10	.00	.00	.00	.00	.00	.55	.00	.00	.00	.01	.00	.00	
11	.00	.36	.00	.00	.00	.03	.00	.40	.48	.03	.00	1.30	
12	.00	.11	.00	.00	.00	.02	.32	.19	.08	.00	.00	.10	
13	.00	.08	.00	.00	.00	.75	.63	.41	.98	.00	.00	.02	
14	.00	.00	.00	.00	.00	.27	1.39	.03	.02	.09	.00	.00	
15	.15	.00	.00	.00	.00	.09	.34	.08	.00	.00	.00	.00	
16	.04	.00	.00	.00	.01	.65	.25	.30	.00	.00	.22	.00	
17	.00	.00	.00	.03	.00	.21	.31	.94	.14	.05	.00	.00	
18	.08	.00	.00	.00	.00	.45	.00	.06	.00	.00	.00	.00	
19	.00	.00	.01	.13	.00	.18	.14	.76	.00	.00	.00	.00	
20	.00	.00	.00	.00	.00	.09	.15	.52	.00	.00	.00	.00	
21	.00	1.34	.00	.00	.00	.00	.26	.90	.03	.00	.00	.00	
22	.00	.35	.00	.00	.10	.52	.20	.12	.00	.00	.00	.00	
23	.00	.00	.00	.00	.00	1.18	.08	.00	.00	.41	.00	.05	
24	.00	.00	.00	.00	.00	.02	.16	.09	.00	1.21	.00	.00	
25	.21	.00	.00	.00	.00	.00	.00	.10	.41	.07	.00	.00	
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
27	.00	.00	.00	.00	.00	.59	.00	.00	.00	.00	.00	.00	
28	.00	.00	.05	.00	.00	.10	.00	.00	1.37	.00	.00	.82	
29	.00	.00	.01	.00	.00	.53	.00	.03	.36	.00	.00	.00	
30	.00	-----	.05	.00	.00	1.63	.15	2.45	.00	.00	.00	.00	
31	.00	-----	.03	-----	.00	-----	.00	.00	-----	.00	-----	.00	
TOTAL	0.71	2.94	0.89	0.16	0.11	13.50	8.57	10.88	5.38	3.58	0.36	2.29	
STA AV	1.94	2.57	3.05	2.30	3.90	8.13	6.31	6.80	6.59	3.88	1.12	1.64	

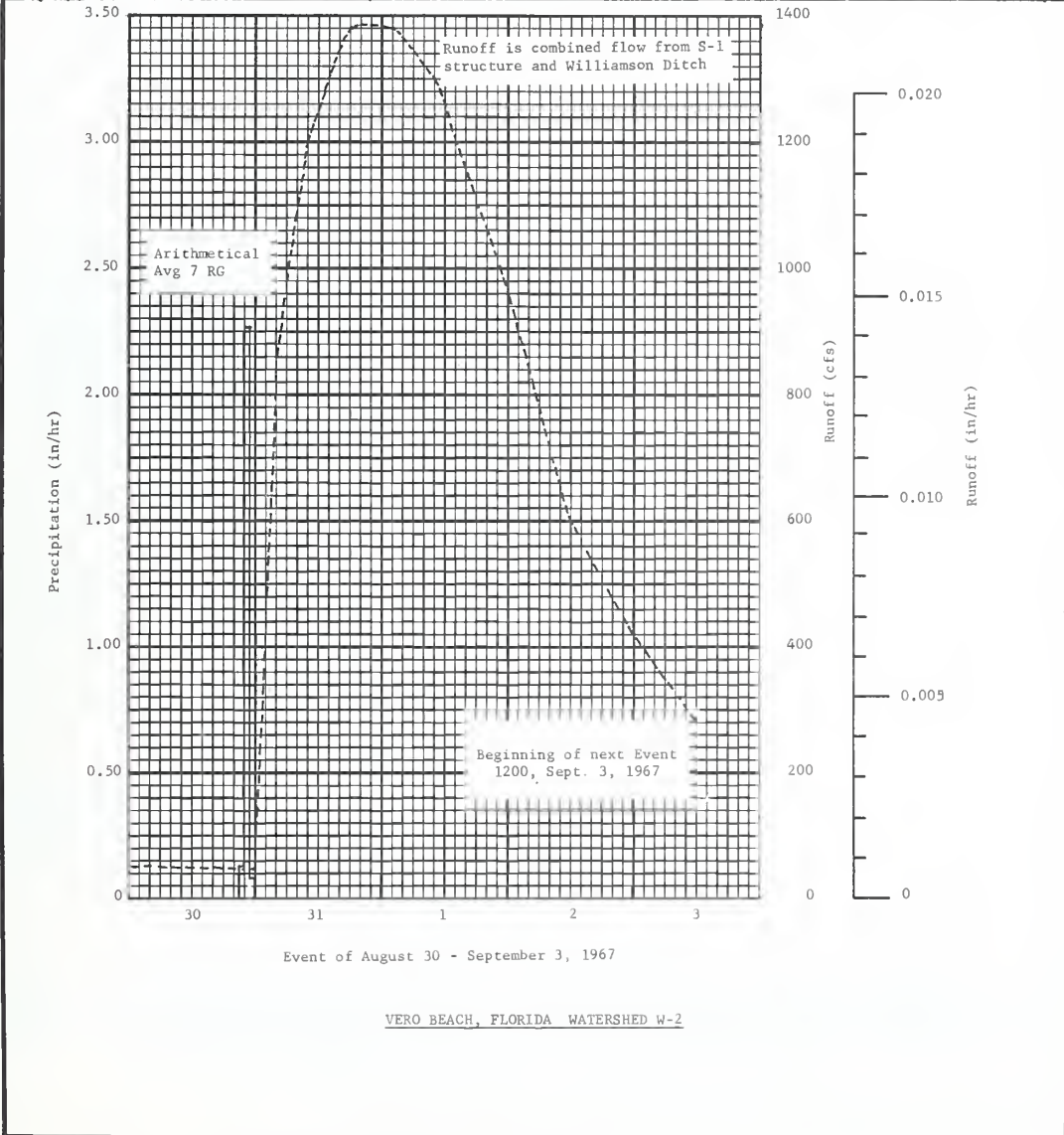
NOTES: THIESSEN WEIGHTED RAINFALL - USING 7 GAGES. STA AV BASED ON PERIOD JULY 1, 1955 THROUGH 1967.

1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2							8.2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	11.0	8.5	14.0	8.0	2.3	1.4	713.0	12.0	1260.0	232.0	34.0	11.0	
2	11.0	8.7	12.0	7.6	2.3	3.1	975.0	18.0	602.0	533.0	31.0	11.0	
3	12.0	8.7	12.0	8.0	2.3	4.7	562.0	32.0	278.0	391.0	32.0	12.0	
4	14.0	8.1	15.0	8.5	2.3	2.5	332.0	37.0	199.0	230.0	31.0	11.0	
5	11.0	7.6	13.0	7.6	2.3	7.7	463.0	59.0	441.0	131.0	26.0	12.0	
6	11.0	6.4	12.0	7.4	1.9	8.6	371.0	405.0	549.0	134.0	23.0	11.0	
7	11.0	8.0	12.0	7.4	1.9	20.0	361.0	254.0	226.0	208.0	21.0	11.0	
8	10.0	9.1	13.0	7.6	1.9	58.0	378.0	196.0	171.0	186.0	19.0	10.0	
9	11.0	11.0	17.0	7.0	2.3	28.0	363.0	251.0	122.0	146.0	18.0	10.0	
10	11.0	14.0	16.0	7.0	2.3	16.0	538.0	165.0	94.0	151.0	19.0	10.0	
11	11.0	12.0	16.0	7.6	2.3	15.0	390.0	118.0	137.0	113.0	18.0	14.0	
12	10.0	16.0	15.0	6.4	2.3	17.0	261.0	141.0	125.0	91.0	18.0	23.0	
13	10.0	16.0	14.0	5.9	1.9	20.0	258.0	135.0	102.0	74.0	17.0	23.0	
14	10.0	13.0	12.0	5.0	1.9	31.0	566.0	175.0	364.0	64.0	16.0	19.0	
15	11.0	12.0	13.0	3.8	1.9	28.0	920.0	128.0	329.0	64.0	16.0	16.0	
16	12.0	12.0	11.0	3.8	2.3	27.0	869.0	103.0	182.0	59.0	16.0	15.0	
17	12.0	12.0	9.6	3.1	2.3	41.0	675.0	232.0	111.0	32.0	16.0	15.0	
18	12.0	12.0	10.0	3.1	2.3	46.0	490.0	553.0	89.0	13.0	16.0	14.0	
19	11.0	12.0	8.5	3.1	1.7	52.0	352.0	552.0	70.0	12.0	15.0	14.0	
20	11.0	11.0	9.1	3.1	1.7	48.0	249.0	706.0	51.0	12.0	15.0	14.0	
21	9.9	15.0	9.3	2.9	1.7	40.0	190.0	647.0	43.0	26.0	14.0	13.0	
22	9.9	47.0	9.7	2.9	2.3	36.0	194.0	744.0	38.0	26.0	14.0	13.0	
23	9.1	50.0	9.7	2.9	2.3	38.0	218.0	876.0	34.0	26.0	13.0	13.0	
24	8.6	30.0	9.1	2.9	1.9	217.0	155.0	448.0	28.0	37.0	13.0	11.0	
25	8.6	20.0	9.1	2.5	1.7	153.0	115.0	110.0	26.0	167.0	13.0	11.0	
26	9.7	16.0	9.1	2.5	1.7	82.0	81.0	146.0	39.0	205.0	13.0	11.0	
27	10.0	14.0	8.2	2.5	1.7	52.0	59.0	106.0	34.0	125.0	13.0	12.0	
28	9.7	14.0	9.3	2.5	1.7	122.0	50.0	79.0	38.0	88.0	12.0	16.0	
29	7.6	-----	9.3	2.5	1.7	96.0	39.0	63.0	158.0	64.0	12.0	21.0	
30	7.0	-----	9.1	2.5	1.7	104.0	32.0	53.0	175.0	49.0	12.0	18.0	
31	6.8	-----	8.5	-----	1.7	-----	16.0	1180.0	-----	41.0	-----	15.0	
MEAN	10.3	15.1	11.4	4.9	2.0	47.2	362.4	281.4	203.8	120.2	18.2	13.9	
INCHES	0.12	0.16	0.14	0.06	0.02	0.54	4.23	3.29	2.30	1.41	0.21	0.16	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0003768. DISCHARGE IS COMBINED FLOW FROM WILLIAMSON DITCH AND S-1 STRUCTURE. RUNOFF DATA FURNISHED BY THE U. S. GEOLOGICAL SURVEY. DISCHARGE MEASUREMENTS GENERALLY MADE ONCE A WEEK.

1967 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-2				8.2			
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 (cfs)	ACC. (inches)
			Event of August 30-September 3, 1967							
8-30	2/ .00	3/ .02	8-30	7 RG	AVGL/		8-30	2200	45	.0000
				2100	.00	.00		2400	45	.0014
				2200	.13	.13	8-31	0400	840	.0290
				2300	2.27	2.40		1000	1200	.1250
				2400	.08	2.48		1800	1380	.2866
Watershed conditions:										
Approximate land use:										
(from SCS)										
40% in improved pasture										
2% in citrus										
48% in range and forest										
10% in miscellaneous										
							9-1	0200	1380	.4602
								1000	1300	.6346
								2400	960	.8824
							9-2	1200	600	1.029
								2400	420	1.125
							9-3	1200	4/280	1.191

NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .00001570. 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. FOR ANTECEDENT P AND Q SEE TABLES ON PREVIOUS PAGES. 1/ ARITHMETICAL AVERAGE OF 7 RG. 2/ PRECIPITATION PRIOR TO 2100. 3/ RUNOFF PRIOR TO 2200. 4/ BEGINNING OF NEXT EVENT.



MONTHLY PRECIPITATION ^{1/} AND RUNOFF ^{2/} (inches)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-3							8.3	
						AREA—10,050 ACRES (15.7 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P	.49	3.12	.29	.32	.00	13.33	9.12	8.42	4.69	3.38	.65	2.40	46.21
	Q	.03	.07	.06	.00	.00	1.56	4.91	3.33	1.84	.71	.29	.17	12.97
	3/ STA AV	1.85	2.43	3.06	2.65	3.93	7.56	6.78	6.53	6.19	3.82	1.02	1.63	47.45
	(55-67) Q	.38	.33	.84	.17	.24	1.14	1.57	1.92	2.94	1.74	1.17	.11	12.55
	MEAN P 4/													
49	YR	1.63	1.92	2.65	3.22	3.75	7.18	6.06	6.05	7.03	4.80	1.62	1.47	47.38

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			
1967			INDETERMINATE											7-2	1.18	7-1	1.89	6-28	3.05

MAXIMUMS FOR PERIOD OF RECORD																
19 55 TO	10-15	.25	10-15	.24	10-15	.47	10-15	1.35	10-15	2.55	10-15	3.14	10-15	6.21	10-15	8.67
19 67	1956		1956		1956		1956		1956		1956		1956		1956	

NOTES: Watershed conditions: range and forest, 55%; improved pasture, 35%; miscellaneous, 10%. 1/ Precipitation Thiessen weighted using 2 gages. 2/ Runoff data furnished by U. S. Geological Survey. 3/ Precipitation and runoff records began July 1955. 4/ Mean P based on 49-yr (1919-1967) U.S. Weather Bureau record period at Okeechobee Hurricane Gate 6, Fla.

1967 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	.00	.00	.00	.00	.00	.00	2.09	.35	.00	.26	.00	.00	
2	.00	.00	.00	.00	.00	2.02	.08	.00	.00	.00	.44	.00	
3	.00	.00	.13	.00	.00	1.42	.04	.57	.47	.03	.00	.00	
4	.11	.00	.00	.00	.00	.00	.96	.00	.54	.00	.00	.00	
5	.00	.00	.00	.00	.00	.85	.00	1.48	.32	.27	.00	.00	
6	.00	.00	.00	.00	.00	1.53	.17	.30	.00	.15	.00	.00	
7	.00	.01	.00	.00	.00	.00	.47	.02	.00	.00	.00	.00	
8	.00	.11	.08	.00	.00	.03	.36	.55	.00	.00	.00	.00	
9	.00	.90	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	
10	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	
11	.00	.40	.00	.00	.00	.00	.00	.24	.00	.05	.00	1.35	
12	.00	.07	.00	.00	.00	.09	.00	.11	.10	.00	.00	.06	
13	.00	.02	.00	.00	.00	2.37	.99	.45	1.09	.00	.00	.02	
14	.00	.00	.00	.00	.00	.32	.42	.06	.00	.00	.00	.00	
15	.11	.00	.00	.00	.00	.09	1.17	.01	.00	.00	.00	.00	
16	.05	.00	.00	.00	.00	.37	.83	.09	.00	.00	.21	.00	
17	.00	.00	.00	.15	.00	.13	.41	.40	.28	.10	.00	.00	
18	.05	.00	.00	.00	.00	.50	.00	.00	.00	.00	.00	.00	
19	.00	.00	.03	.17	.00	.35	.19	.06	.00	.00	.00	.00	
20	.00	.00	.00	.00	.00	.20	.00	1.22	.00	.00	.00	.00	
21	.00	1.27	.00	.00	.00	.00	.11	.42	.00	.00	.00	.00	
22	.00	.34	.00	.00	.00	.00	.03	.09	.00	.00	.00	.00	
23	.00	.00	.00	.00	.00	1.22	.17	.00	.00	.47	.00	.05	
24	.00	.00	.00	.00	.00	.00	.35	.40	.00	1.76	.00	.00	
25	.17	.00	.00	.00	.00	.00	.00	.19	.86	.00	.00	.00	
26	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
27	.00	.00	.00	.00	.00	.72	.00	.02	.00	.00	.00	.00	
28	.00	.00	.03	.00	.00	.05	.00	.00	.82	.00	.00	.92	
29	.00	.00	.01	.00	.00	.26	.00	.00	.21	.00	.00	.00	
30	.00		.00	.00	.00	.79	.28	1.39	.00	.00	.00	.00	
31	.00		.01		.00		.00	.00		.00		.00	
TOTAL	0.49	3.12	0.29	0.32	0.00	13.33	9.12	8.42	4.69	3.38	0.65	2.40	
STA AV	1.85	2.43	3.06	2.65	3.93	7.56	6.78	6.53	6.19	3.82	1.02	1.63	

NOTES: THIESSEN WEIGHTED AVERAGE OF 2 GAGES. STA AV IS BASED ON PERIOD JULY 1, 1955 THROUGH 1967.

1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-3 8.3						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.27	.23	1.4	.14	.0	.0	300.0	3.0	58.0	12.0	9.3	1.2
2	.30	.23	1.2	.13	.0	.0	500.0	3.4	33.0	14.0	8.5	1.2
3	.34	.23	1.2	.13	.0	1.4	102.0	3.8	30.0	11.0	10.0	1.0
4	.44	.23	1.2	.13	.0	4.8	87.0	12.0	38.0	8.4	9.3	1.0
5	.44	.23	1.2	.12	.0	3.2	122.0	23.0	78.0	8.1	7.9	1.0
6	.44	.23	.96	.09	.0	3.8	44.0	160.0	91.0	8.7	7.0	1.0
7	.40	.21	.88	.09	.0	4.3	32.0	57.0	36.0	10.0	5.9	1.0
8	.40	.25	.80	.08	.0	3.4	41.0	43.0	23.0	8.7	5.4	1.0
9	.40	.68	.80	.08	.0	2.4	28.0	37.0	17.0	8.4	4.8	1.8
10	.40	1.2	.80	.06	.0	2.0	20.0	22.0	14.0	13.0	4.6	2.0
11	.40	1.0	.80	.05	.0	1.8	16.0	16.0	11.0	9.9	4.3	2.6
12	.40	1.2	.80	.03	.0	1.4	10.0	14.0	9.0	8.4	4.3	6.2
13	.40	1.2	.80	.02	.0	9.7	7.2	18.0	29.0	8.1	4.1	5.1
14	.34	1.2	.80	.01	.0	14.0	70.0	24.0	86.0	6.2	3.6	3.8
15	.34	1.0	.72	.0	.0	7.5	57.0	15.0	37.0	.5	2.8	3.6
16	.37	.96	.72	.0	.0	5.9	179.0	13.0	26.0	3.2	2.4	3.4
17	.37	.96	.88	.0	.0	10.0	151.0	22.0	19.0	3.4	2.3	3.2
18	.37	.80	1.0	.0	.0	11.0	100.0	40.0	18.0	3.4	2.8	3.0
19	.40	.80	1.2	.0	.0	15.0	55.0	31.0	14.0	3.4	2.8	2.6
20	.40	.61	1.4	.0	.0	20.0	31.0	85.0	11.0	3.4	2.6	2.4
21	.37	.83	1.4	.0	.0	15.0	22.0	116.0	9.3	3.4	2.4	2.0
22	.37	3.8	1.0	.0	.0	10.0	16.0	102.0	8.4	2.0	2.0	1.8
23	.37	3.6	.80	.0	.0	50.0	13.0	53.0	8.4	2.4	1.8	1.4
24	.37	2.8	.52	.0	.0	100.0	13.0	35.0	8.1	11.0	1.6	1.0
25	.34	2.2	.32	.0	.0	80.0	13.0	29.0	8.1	36.0	1.6	1.0
26	.34	1.6	.25	.0	.0	60.0	14.0	26.0	9.9	29.0	1.6	1.0
27	.34	1.4	.21	.0	.0	45.0	17.0	17.0	8.1	20.0	1.6	1.0
28	.30	1.4	.19	.0	.0	60.0	6.6	14.0	7.8	14.0	1.6	1.8
29	.25	-----	.18	.0	.0	50.0	4.6	11.0	17.0	7.7	1.4	4.6
30	.23	-----	.16	.0	.0	65.0	3.6	12.0	16.0	12.0	1.2	3.8
31	.23	-----	.16	-----	.0	-----	3.2	347.0	-----	10.0	-----	3.2
MEAN	0.36	1.11	0.80	0.04	0.00	21.9	66.8	45.3	26.0	9.7	3.0	2.3
INCHES	0.03	0.07	0.06	0.00	0.00	1.56	4.91	3.33	1.84	0.71	0.29	0.17

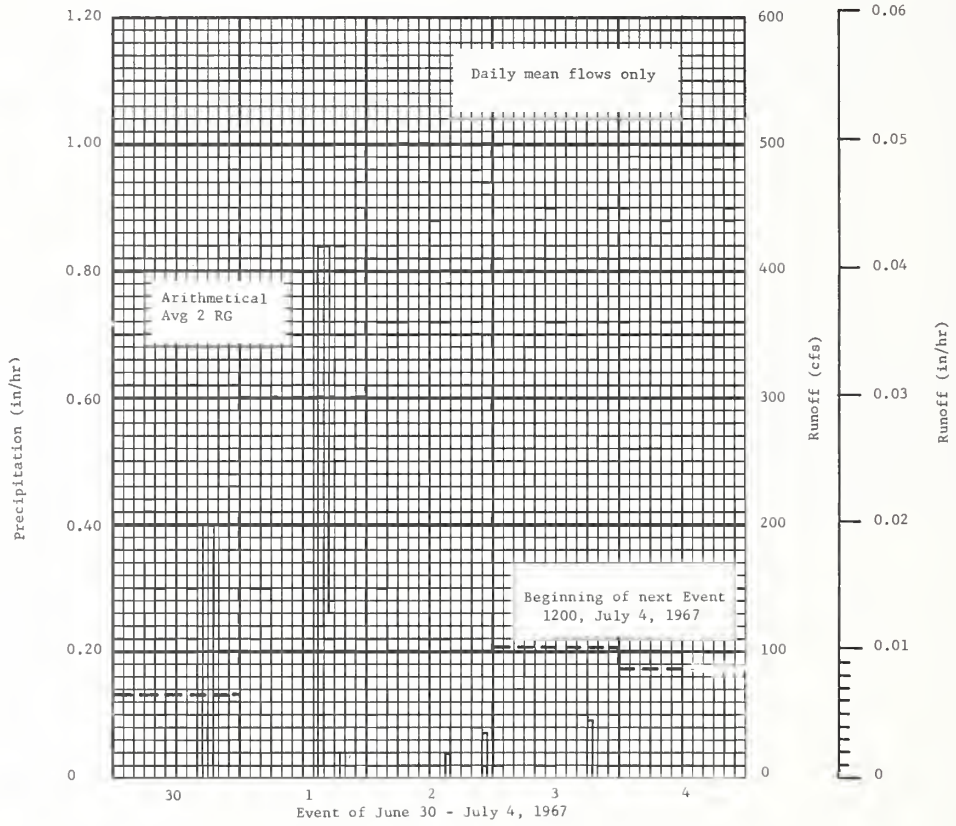
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY MULTIPLY BY .002368. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD. SOME DIVERSION DURING LOW FLOW FOR IRRIGATION.

1967 SELECTED RUNOFF EVENT VERO BEACH, FLORIDA (TAYLOR CREEK) WATERSHED W-3 8.3

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 (cfs)	ACC. (inches)					
Event of June 30 - July 4, 1967															
6-30	2/ .00	3/ .11	6-30	2 RG	AVG 4/		6-30	1700	65	.000					
				1700	.00	.00		2400	65	.045					
				1900	.40	.80		7-1	0000	300	.045				
				1500	.00	.80		7-1	2400	300	.755				
				1700	.84	2.48		7-2	0000	500	.755				
				1800	.26	2.74			7-2	2400	500	1.941			
				1900	.04	2.78		7-2	1500	.00	2.78	7-3	0000	102	1.941
				1500	.00	2.78			7-3	2400	102	2.184			
				1600	.04	2.82			7-4	2200	.00	2.82	0000	87	2.184
				2200	.00	2.82		1200		5/ 87	2.184				
				2300	.07	2.89		1200		5/ 87	2.287				
				7-3	1800	.00		1900	.00	2.89					
									.09	2.98					

Watershed conditions:
 Approximate land use (from SCS)
 35% in improved pasture
 55% in range and forest
 10% in miscellaneous

NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .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. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 1/ RUNOFF COMPUTED ON BASIS OF ESTIMATED DAILY MEANS FOR TOTAL DAILY RUNOFF ONLY. TANTIER GATE OPENED TO INDETERMINATE HEIGHTS DURING EVENT. 2/ PRECIPITATION PRIOR TO 1700. 3/ RUNOFF PRIOR TO 1700. 4/ PRECIPITATION IS ARITHMETICAL AVERAGE, 2 RAIN GAGES. 5/ BEGINNING OF NEXT EVENT.



VERO BEACH, FLORIDA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF ^{1/} (inches) ^{2/} (inches)						VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4 AREA - 3,970 ACRES (6.2 SQ. MILES)							8.4	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ₃	.88	3.16	2.48	.47	1.84	9.69	8.71	6.27	3.75	13.21	1.65	1.25	53.36
	I ³	.10	.24	.75	.63	1.37	.00	.00	.00	.00	.00	.00	.00	3.09
	Q	.13	.16	.21	.22	.16	.75	2.40	2.40	.39	5.94	1.25	.30	14.31
STA AV ^{4/} (61-67)I ³ (59-67)Q		2.20	2.96	2.24	2.67	4.67	8.08	6.97	7.19	7.75	7.72	2.04	2.01	56.50
		.47	.40	.86	.95	.73	.28	.02	.03	.02	.02	.06	.19	4.03
MEAN P ^{5/} 67 YR		2.30	2.58	2.97	3.30	4.16	5.93	5.53	5.57	7.90	7.33	2.65	2.08	52.30

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
1967	10-24	.041	10-24	.041	10-24	.080	10-24	.235	10-24	.434	10-24	.792	10-24	1.33	10-23	3.11

MAXIMUMS FOR PERIOD OF RECORD

19 59 TO 1967	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	4.08	9-22 1960	9.20
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NOTES: Watershed conditions: native range, 70%; improved pasture, 30%. ^{1/} Precipitation Thiessen weighted using 5 gages. ^{2/} Runoff data furnished by U. S. Geological Survey. ^{3/} (I) denotes pumped irrigation which augmented natural rainfall on area. ^{4/} Precipitation records began Jan. 1959, irrigation in Jan. 1960, and runoff records, July 1959. ^{5/} Mean P based on 67-yr (1901-1967) U.S. Weather Bureau record period at Fort Pierce No. 1, Fla.

1967 DAILY PRECIPITATION (inches)						VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4							8.4
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.00	.00	2.62	.21	.00	1.74	.00	.00	
2	.00	.00	.00	.00	.00	1.09	.13	.06	.00	.00	.00	.00	
3	.00	.00	.35	.00	.00	.45	1.01	.03	.19	.01	.00	.00	
4	.18	.00	.00	.00	.00	.01	.02	.44	.00	.00	.00	.00	
5	.00	.00	.00	.00	.00	.06	.26	.48	.13	3.74	.00	.00	
6	.00	.00	.00	.00	.00	.15	.53	.31	.00	.29	.00	.00	
7	.00	.02	.00	.00	.00	.68	.40	.02	.50	.00	.00	.00	
8	.00	.07	.68	.00	.00	.01	.00	.00	.00	.00	.00	.00	
9	.00	.57	.00	.00	.00	.43	.00	.46	.18	.38	.00	.00	
10	.00	.00	.00	.00	.00	.22	.00	.76	.00	.17	.00	.00	
11	.00	.07	.00	.00	.00	1.40	.00	.02	.00	.00	.07	1.05	
12	.00	.00	.00	.00	.00	.07	.00	.55	.00	.00	.01	.09	
13	.00	.06	.00	.00	.00	.05	.00	.21	1.83	.00	.00	.00	
14	.00	.00	.00	.00	.00	.01	.02	2.19	.02	.45	.00	.00	
15	.15	.00	.00	.00	.00	.26	.00	.12	.00	.00	.00	.00	
16	.05	.00	.00	.00	.53	1.57	1.47	.00	.00	.00	1.57	.00	
17	.00	.00	.00	.00	.00	1.21	.00	.00	.02	.58	.00	.00	
18	.23	.00	.04	.00	.00	.59	.00	.05	.00	.00	.00	.00	
19	.00	.00	.45	.47	.00	.15	.00	.00	.00	.00	.00	.00	
20	.03	.00	.00	.00	.00	.38	.00	.01	.00	.00	.00	.01	
21	.00	1.22	.00	.00	.17	.00	.00	.00	.00	.00	.00	.00	
22	.00	1.15	.00	.00	.66	.00	.00	.00	.02	.00	.00	.00	
23	.00	.00	.00	.00	.25	.52	.68	.17	.00	3.57	.00	.03	
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.04	.00	.00	
25	.00	.00	.00	.00	.00	.11	.00	.00	.05	.05	.00	.00	
26	.20	.00	.00	.00	.00	.12	.00	.12	.03	.00	.00	.00	
27	.04	.00	.00	.00	.00	.00	.02	.00	.32	.00	.00	.00	
28	.00	.00	.70	.00	.00	.00	1.24	.00	.03	.00	.00	.07	
29	.00	.00	.00	.00	.00	.08	.00	.00	.40	.19	.00	.00	
30	.00	-----	.22	.00	.23	.07	.00	.06	.03	.00	.00	.00	
31	.00	-----	.04	-----	.00	-----	.31	.00	-----	.00	-----	.00	
TOTAL	0.88	3.16	2.48	0.47	1.84	9.69	8.71	6.27	3.75	13.21	1.65	1.25	
STA AV	2.20	2.96	2.24	2.67	4.67	8.08	6.97	7.19	7.75	7.72	2.04	2.01	

NOTES: THIESSEN WEIGHTED RAINFALL 5 GAGES. STA AV BASED ON PERIOD FROM JANUARY 1959 THROUGH 1967.

1967 DAILY IRRIGATION (inches)						VERO BEACH, FLORIDA (MONREVE RANCH) 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	.00	
2	.00	.00	.00	.05	.02	.00	.00	.00	.00	.00	.00	.00	
3	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	
4	.00	.05	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	
5	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	
6	.04	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	
7	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	
8	.00	.03	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	
9	.00	.00	.03	.07	.00	.00	.00	.00	.00	.00	.00	.00	
10	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	
11	.00	.00	.12	.00	.06	.00	.00	.00	.00	.00	.00	.00	
12	.00	.00	.12	.08	.12	.00	.00	.00	.00	.00	.00	.00	
13	.00	.00	.08	.06	.12	.00	.00	.00	.00	.00	.00	.00	
14	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	
15	.00	.00	.05	.00	.12	.00	.00	.00	.00	.00	.00	.00	
16	.00	.01	.10	.00	.10	.00	.00	.00	.00	.00	.00	.00	
17	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
18	.00	.07	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	
19	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.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	.00	.00	
23	.00	.00	.02	.00	.03	.00	.00	.00	.00	.00	.00	.00	
24	.00	.00	.04	.00	.03	.00	.00	.00	.00	.00	.00	.00	
25	.06	.00	.07	.07	.00	.00	.00	.00	.00	.00	.00	.00	
26	.00	.00	.00	.05	.08	.00	.00	.00	.00	.00	.00	.00	
27	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	
28	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	
29	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
30	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
31	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
TOTAL	0.10	0.24	0.75	0.63	1.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
STA AV	0.47	0.40	0.86	0.95	0.73	0.28	0.02	0.03	0.02	0.02	0.06	0.19	

NOTES: IRRIGATION COMPUTED FROM STAGE-LIFT CURVE AGAINST HOURS OF PUMP OPERATION. STA AV IS BASED ON PERIOD OF 1961 THROUGH 1967.

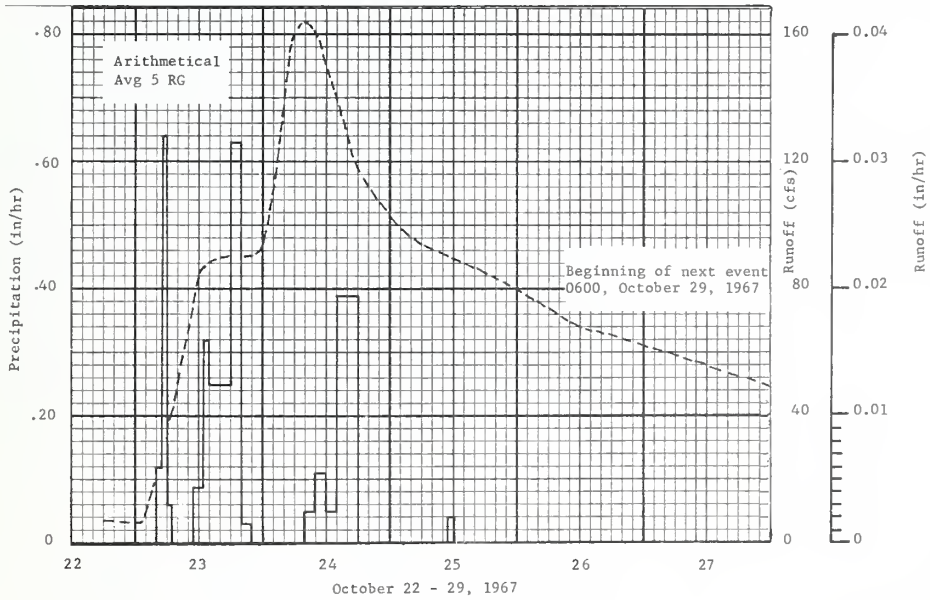
1967 MEAN DAILY DISCHARGE (cfs)						VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4							8.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.7	.6	1.1	.9	.6	.5	13.0	5.4	2.2	3.5	23.0	2.2	
2	.6	.6	1.0	.8	.9	.5	34.0	5.4	1.9	8.4	16.0	1.9	
3	.5	.5	1.0	1.4	1.6	.5	30.0	4.6	1.8	5.7	16.0	1.8	
4	.6	.6	1.0	1.6	1.8	.5	36.0	5.1	1.7	4.9	8.8	1.7	
5	.7	.8	.9	1.4	1.8	.4	32.0	8.4	1.6	42.0	9.2	1.6	
6	.6	.7	.9	1.1	1.9	.4	32.0	10.0	1.4	65.0	8.4	1.6	
7	.7	.7	.9	1.0	1.8	.4	35.0	10.0	1.4	42.0	7.2	1.6	
8	.8	.6	.9	1.7	1.5	.4	28.0	8.4	1.7	37.0	6.0	1.5	
9	.8	.7	.9	1.7	1.2	.4	22.0	8.0	1.7	30.0	5.4	1.5	
10	.8	.8	1.0	1.4	1.0	.4	16.0	12.0	1.6	32.0	4.9	1.4	
11	.7	.7	1.0	1.4	.7	.5	10.0	18.0	1.4	26.0	4.4	1.5	
12	.7	.7	1.0	1.1	.6	2.2	8.0	15.0	1.2	22.0	4.2	1.8	
13	.6	.7	1.0	1.6	.6	1.7	6.2	17.0	3.7	16.0	3.9	2.5	
14	.6	.6	1.0	1.7	.6	2.3	4.9	33.0	7.6	16.0	3.5	2.5	
15	.7	.6	.9	1.4	.7	1.0	5.5	60.0	6.0	16.0	3.0	2.2	
16	.8	.6	1.7	1.2	.7	4.0	5.3	42.0	4.6	13.0	3.5	2.0	
17	.7	.7	2.0	1.0	.7	9.6	13.0	30.0	3.7	12.0	12.0	1.8	
18	.8	1.4	1.5	.8	.6	15.0	8.4	22.0	3.3	16.0	11.0	1.7	
19	.8	1.2	1.4	1.5	.6	15.0	6.0	17.0	2.5	12.0	8.8	1.6	
20	.7	1.0	1.2	1.7	.5	12.0	4.6	13.0	2.0	9.2	7.2	1.5	
21	.6	1.0	1.1	1.4	.5	9.2	3.7	10.0	1.8	8.4	6.0	1.7	
22	.6	1.4	1.0	1.1	.5	7.2	3.1	8.0	1.5	7.2	5.7	1.6	
23	.6	1.7	1.0	.9	.5	6.9	2.8	6.9	1.4	57.0	5.1	1.5	
24	.6	1.9	1.0	.8	.5	8.0	4.2	6.0	1.2	132.0	4.6	1.4	
25	.7	1.5	1.5	.6	.5	5.7	3.5	4.9	1.0	90.0	4.2	1.4	
26	1.0	1.2	1.4	1.4	.5	5.4	3.1	4.2	1.0	71.0	3.9	1.4	
27	.9	1.1	1.2	1.4	.5	5.4	2.6	3.9	1.1	55.0	3.5	1.2	
28	.8	1.1	1.2	1.0	.5	3.9	4.9	3.5	1.0	44.0	3.1	1.2	
29	.7	.8	1.2	.8	.5	3.0	9.2	3.1	1.0	37.0	2.8	1.2	
30	.7	.8	1.1	.6	.5	2.8	6.6	2.6	1.1	33.0	2.5	1.1	
31	.6	.8	1.0	.6	.5	5.4	2.3	2.3	1.0	27.0	2.5	1.0	
MEAN	0.70	0.92	1.13	1.21	0.84	4.17	12.9	12.9	2.17	31.9	6.93	1.63	
INCHES	0.13	0.16	0.21	0.22	0.16	0.75	2.40	2.40	0.39	5.94	1.25	0.30	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY MULTIPLY BY .005998. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE FAIR. FLOW OCCASIONALLY REGULATED BY STOPLOG CONTROL 1,500 FT UPSTREAM.

1967 SELECTED RUNOFF EVENT			VERO BEACH, FLORIDA (MONREVE RANCH) WATERSHED W-4				8.4			
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 (cfs)	ACC. (inches)
Event of October 22 - 29, 1967										
10-22	.00	<u>2/</u> .03	10-23	5 RG	AVG <u>1/</u>		10-22	1800	7.2	.0000
				0400	.00	.00	10-23	0100	6.9	.0126
				0500	.12	.12		0600	33.	.0376
				0600	.64	.76		1200	85.	.1258
				0700	.06	.82		1800	91.	.2578
				1100	.00	.82				
				1300	.09	1.00	10-24	2300	91.	.3713
				1400	.32	1.32		0500	151.	.5525
				1800	.25	2.32		0800	164.	.6707
				2000	.63	3.58		1200	151.	.8283
				2200	.03	3.64		1800	118.	1.030
			10-24	0800	.00	3.64	10-25	0600	94.	1.348
				1000	.05	3.74		1800	85.	1.617
				1200	.11	3.96	10-26	1200	68.	1.960
				1400	.05	4.06	10-27	2400	49.	2.486
				1800	.39	5.62				
			10-25	1100	.00	5.62				
				1200	.04	5.66				

Watershed conditions:
 Approximate land use:
 (From SCS)
 70% in native range
 30% in improved pasture
 Good cover on entire area

NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .0002499. FOR MAP OF WATERSHED SEE PAGE 8.4-11 IN HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1962 USDA MISC. PUB. 1070. FOR 30-DAY ANTECEDENT P AND Q SEE TABLES ON PREVIOUS PAGES. 1/ PRECIPITATION ARITHMETICAL AVERAGE, 5 GAGES. 2/ RUNOFF PRIOR TO 1800.



VERO BEACH, FLORIDA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-III AREA—19.3 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 ^{1/} _Q	2.15 T	2.23 .00	3.60 T	2.41 T	4.71 T	1.81 T	5.16 .01	4.53 T	2.49 T	2.97 T	1.38 .00	4.16 T	37.60 .01
STA AVG ^{2/} _P (40-67) ^o	2.68 .06	2.86 .01	3.22 T	3.00 .03	3.58 .05	3.58 .10	4.03 .05	3.73 .03	2.98 .01	2.37 T	2.17 T	2.76 .01	36.96 .35
MEAN ^{3/} _{77 YR}	3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E

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
1967	7-8	.03	7-8	.01	7-8	.01	7-8	.01	7-8	.01	7-8	.01	7-8	.01	7-8	.01

MAXIMUMS FOR PERIOD OF RECORD

1939 TO 19 57	6-5 1942	1.90	6-16 1942	.49	6-16 1942	.50	1-21 1964	.80	1-21 1964	.92	1-21 1964	.92	1-20 1964	1.32	1-19 1964	1.52
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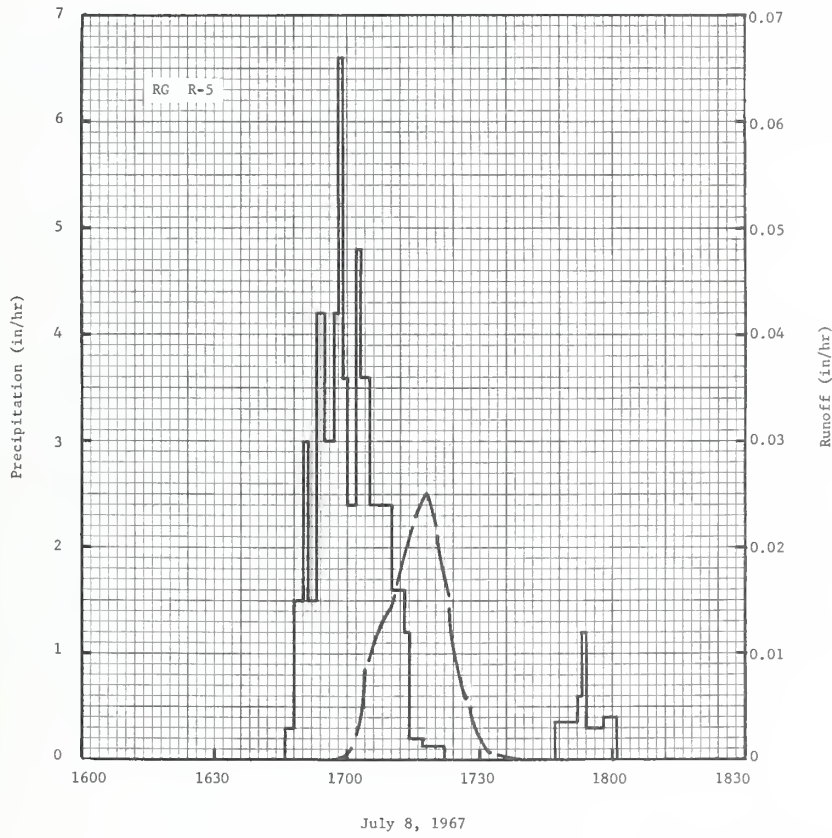
Notes: Watershed conditions: Contour strips of clover, planted to corn in May, 33%; contour strips of fall sown barley, harvested for ensilage in June, with a cover crop of spring seeded clover, 55%; pasture, good cover, 9%; woods, good cover, 3%. 1/ Precipitation obtained from rain gage R-5. 2/ Determined from continuous records, 1940-67; precipitation and runoff records began May 1939. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.

1967 SELECTED RUNOFF EVENT

BLACKSBURG, VIRGINIA WATERSHED W-III

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 July 8, 1967</u>										
	RG R-5			RG	R-5					
6-18	.88	.0005	7-8	1646	.00	.00	7-8	1657	.0000	.0000
6-19	.07	.0000		1648	.30	.01		1659	.0001	.0000
6-22	.08	.0000		1650	1.50	.06		1700	.0007	T
6-23	.02	.0000		1651	3.00	.11		1701	.0011	T
6-25	.07	.0000		1653	1.50	.16		1702	.0024	T
6-29	.02	.0000		1654	4.20	.23		1703	.0038	.0001
6-30	.07	.0000		1655	4.20	.30		1704	.0085	.0002
7-1	.96	.0006		1657	3.00	.40		1705	.0093	.0003
7-2	.11	.0000		1658	4.20	.47		1706	.0112	.0005
7-6	.35	.0000		1659	6.60	.58		1707	.0121	.0007
7-7	.07	.0000		1700	3.59	.64		1710	.0142	.0014
				1701	2.40	.68		1714	.0206	.0025
				1702	2.40	.72		1716	.0236	.0033
				1703	4.80	.80		1718	.0251	.0041
				1704	3.60	.86		1720	.0221	.0049
				1705	3.60	.92		1721	.0192	.0052
				1706	2.40	.96		1723	.0154	.0058
				1708	2.40	1.04		1724	.0102	.0060
				1709	2.40	1.08		1726	.0068	.0063
				1710	2.40	1.12		1728	.0049	.0065
				1713	1.60	1.20		1729	.0029	.0065
				1714	1.20	1.22		1732	.0007	.0066
				1717	.20	1.23		1734	.0004	.0066
				1722	.12	1.24		1736	.0001	.0067
				1747	.00	1.24		1739	.0000	.0067
				1752	.36	1.27		1740	.0000	.0067
				1753	.60	1.28		1744	.0000	.0067
				1754	1.20	1.30				
				1758	.30	1.32				
				1801	.40	1.34				

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



BLACKSBURG, VIRGINIA WATERSHED W-III

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-IV AREA—3.49 ACRES								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P ^{1/} o	1.76 .00	1.65 .00	3.56 .00	2.37 .00	4.00 T	1.85 .02	3.18 T	4.04 .00	2.36 .00	3.15 .00	1.38 .00	3.65 .00	32.95 .02
STA AVG ^{2/} (52-57) o		2.44 .03	3.05 .01	3.31 .01	2.93 .01	3.18 .02	2.96 .01	3.28 .01	3.38 .03	3.05 .02	2.40 T	2.18 T	2.69 T	34.85 .15
77 YR MEAN P ^{3/}		3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E

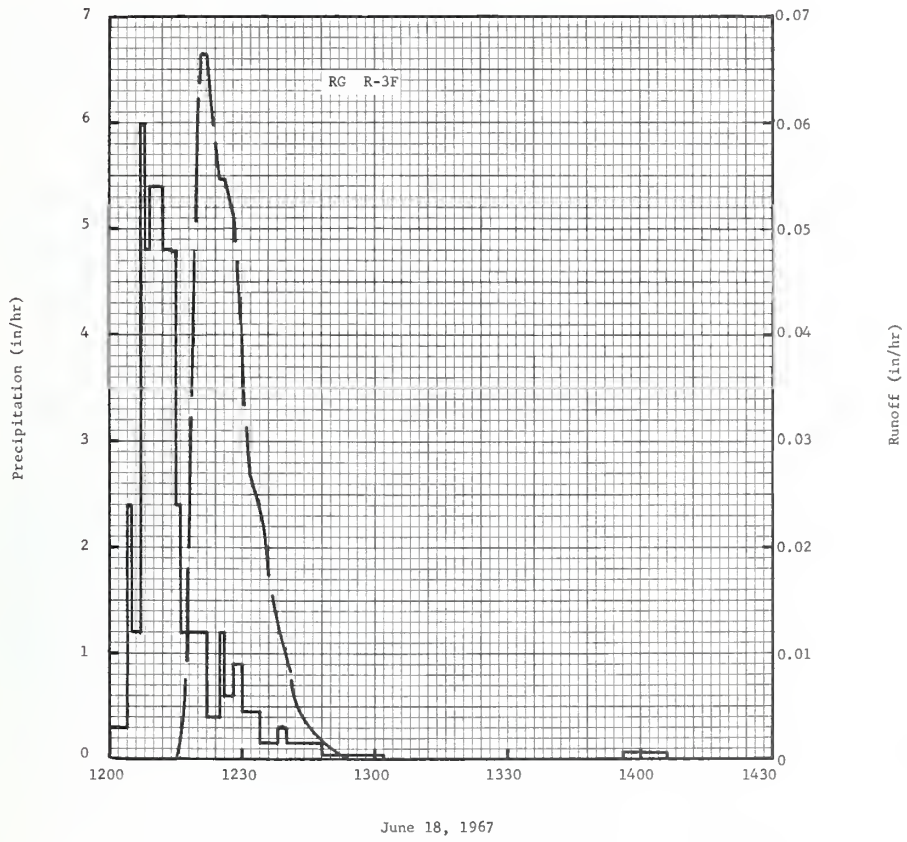
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-18	.07	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02

MAXIMUMS FOR PERIOD OF RECORD																
1951 to 1967	5-5 1958	.75	5-5 1958	.21	5-5 1958	.21	5-5 1958	.23	5-5 1958	.24	5-5 1958	.24	5-5 1958	.24	5-5 1958	.24

Notes: Watershed conditions: Contour strips of spring seeded oats and clover, oats harvested in August, good cover, 31%; intermixed with contour strips of second year clover, cut in June, then allowed to produce cover crop, excellent cover, 69%. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-67; precipitation and runoff records began September 1951. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA WATERSHED W-IV									
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 18, 1967												
	RG R-3F			RG	R-3F							
5-14	.00	.0014	6-18	1200	.00	.00	6-18	1215	.0000	.0000		
5-19	.27	.0000		1204	.30	.02		1216	.0020	.0020		
5-21	.31	.0000		1205	2.40	.06		1217	.0065	.0001		
5-22	.18	.0000		1207	1.20	.10		1218	.0219	.0003		
5-29	.01	.0000		1208	5.99	.20		1219	.0412	.0009		
5-30	.06	.0000		1209	4.80	.28		1220	.0588	.0017		
5-31	.61	.0000		1211	5.40	.46		1221	.0665	.0027		
6 -1	.32	.0000		1212	5.40	.55		1222	.0665	.0038		
6 -3	.02	.0000		1214	4.80	.71		1223	.0625	.0049		
6 -4	.08	.0000		1215	4.79	.79		1225	.0548	.0069		
				1216	2.40	.83		1226	.0548	.0078		
				1218	1.20	.87		1228	.0512	.0096		
				1221	1.20	.93		1230	.0381	.0110		
				1222	1.20	.95		1232	.0267	.0121		
				1225	.40	.97		1234	.0241	.0130		
				1226	1.20	.99		1236	.0173	.0137		
				1228	.60	1.01		1239	.0117	.0144		
				1230	.90	1.04		1241	.0082	.0147		
				1234	.45	1.07		1242	.0054	.0148		
				1238	.15	1.08		1245	.0031	.0150		
				1240	.30	1.09		1249	.0014	.0152		
				1248	.15	1.11		1254	.0000	.0152		
				1302	.04	1.12		1300	.0000	.0152		
				1356	.00	1.12						
				1406	.06	1.13						

NOTES: TO CONVERT 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, P. 13.3-5.



BLACKSBURG, VIRGINIA WATERSHED W-IV

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-V AREA—6.08 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/ o	1.76 .00	1.65 .00	3.56 .00	2.37 .00	4.00 .00	1.85 T	3.18 .00	4.04 .00	2.36 .00	3.15 .00	1.38 .00	3.65 .00	32.95 T
	STA AV ² /P (52-67) _o	2.44 .02	3.05 .02	3.31 .02	2.93 T	3.18 .01	2.96 T	3.28 T	3.38 .02	3.05 .01	2.40 T	2.18 T	2.69 .01	34.85 .11
	MEAN P 3/ 77 YR	3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E

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
1967	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T	6-18	T

MAXIMUMS FOR PERIOD OF RECORD																
19 52 TO	5-5	.70	5-5	.15	5-5	.16	3-1	.18	3-1	.23	3-1	.23	3-1	.23	3-1	.23
19 67	1958		1958		1958		1963		1963		1963		1963		1963	

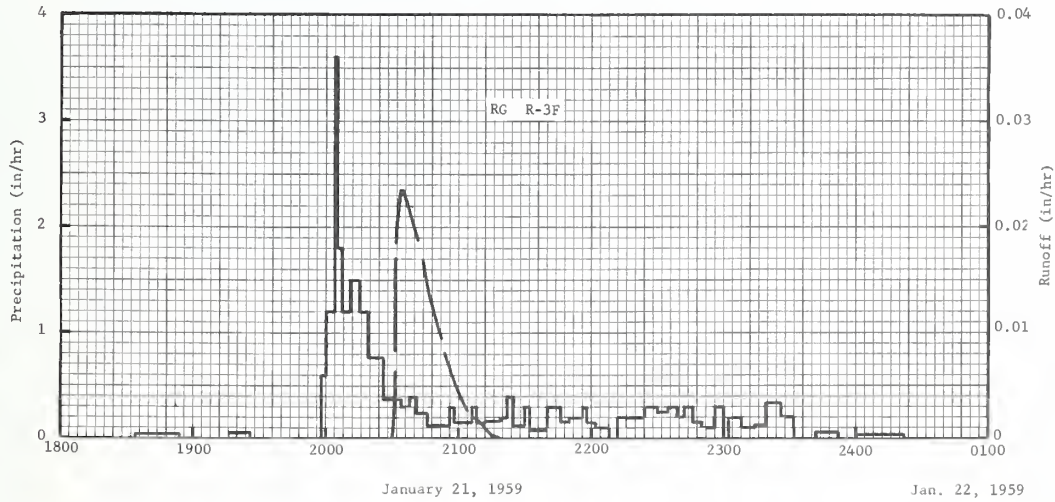
Notes: Watershed conditions: Contour strips of spring seeded oats and clover, harvested in August, good cover, 34%; intermixed with contour strips of second year clover, cut in June, then allowed to produce cover crop, excellent cover, 57%; waterway, good cover, 9%. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-67; precipitation and runoff records began January 1952. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.

1959 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA WATERSHED W-V							
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 21 and 22, 1959 ^{4/}										
	RG R-3F			RG	R-3F					
12-23-58	.06	.0000	1-21	1834	.00	.00	1-21	2030	.0000	.0000
12-28	2.72	.0459		1854	.03	.01		2031	.0100	.0001
12-29	.26	.0086		1916	.00	.01		2032	.0201	.0003
1-1-59	.19	.0000		1926	.06	.02		2034	.0236	.0011
1-2	.05	.0000		1958	.00	.02		2035	.0236	.0015
1-8	.40	.0000		2000	.60	.04		2040	.0201	.0033
1-14	.07	.0000		2004	1.20	.12		2048	.0126	.0054
1-15	.03	.0000		2005	3.60	.18		2050	.0112	.0058
1-16	.21	.0000		2007	1.80	.24		2056	.0067	.0068
1-19	.05	.0000		2011	1.20	.32		2103	.0031	.0073
1-20	.04	.0000		2015	1.50	.42		2108	.0018	.0075
				2019	1.20	.50		2109	.0018	.0076
				2026	.77	.59		2113	.0008	.0076
				2034	.38	.64		2115	.0003	.0077
				2038	.30	.66		2120	.0000	.0077
				2041	.40	.68				
				2046	.24	.70				
				2056	.12	.72				
				2058	.30	.73				
				2106	.15	.75				
				2108	.30	.76				
				2112	.15	.77				
				2119	.17	.79				
				2122	.20	.80				
				2125	.40	.82				
				2130	.12	.83				
				2132	.30	.84				
				2140	.08	.85				
				2146	.30	.88				
				2150	.15	.89				
				2156	.20	.91				
				2158	.30	.92				
				2202	.15	.93				
				2208	.10	.94				
				2212	.00	.94				
Continued on next page										

NOTES: TO CONVERT 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, P. 13.3-5. 4/ NO SUITABLE EVENT OCCURRED IN 1967.

1959 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA			WATERSHED W-V				
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 21 and 22, 1959 ^{1/} —Continued										
			1-21-59	RG	R-3F					
				2224	.20	.98				
				2230	.30	1.01				
				2235	.24	1.03				
				2239	.30	1.05				
				2242	.20	1.06				
				2246	.30	1.08				
				2250	.15	1.09				
				2256	.10	1.10				
				2300	.30	1.12				
				2302	.00	1.12				
				2308	.20	1.14				
				2314	.10	1.15				
				2319	.12	1.16				
				2326	.34	1.20				
				2332	.20	1.22				
				2342	.00	1.22				
				2352	.06	1.23				
				2400	.00	1.23				
			1-22	0022	.03	1.24				

NOTES: TO CONVERT IN/HR TO CFS, MULTIPLY BY 6.131. ^{1/} NO SUITABLE EVENT OCCURRED IN 1967.



BLACKSBURG, VIRGINIA WATERSHED W-V

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA WATERSHED W-VI AREA—7.70 ACRES								
YEAR	MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ^{1/}	1.76	1.65	3.56	2.37	4.00	1.85	3.18	4.04	2.36	3.15	1.38	3.65	32.95
	O	.00	.00	.01	.00	.00	.02	.00	.00	.00	.00	.00	.00	.03
	STA AVG ^{2/}	2.44	3.05	3.31	2.93	3.18	2.96	3.28	3.38	3.05	2.40	2.18	2.69	34.85
	(52-67) ^{2/}	.05	.06	.06	.04	.03	.02	.02	.05	.03	.01	.01	.04	.42
	MEAN ^{3/}													
77 YR		3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E

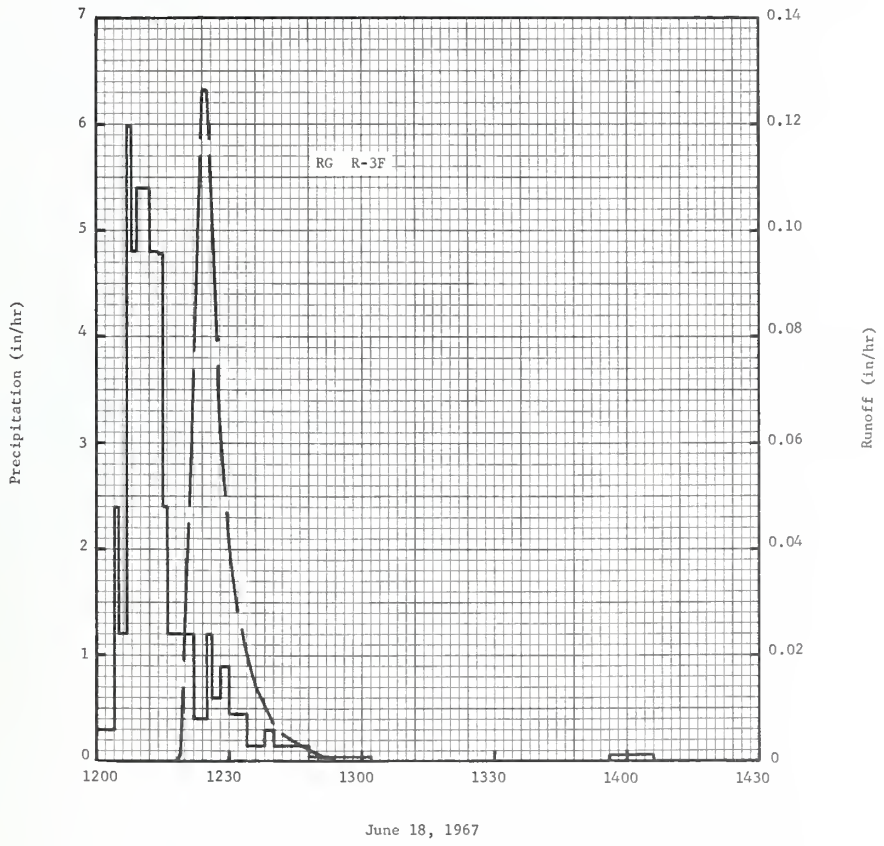
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	6-18	.13	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02	6-18	.02

MAXIMUMS FOR PERIOD OF RECORD																
1951 TO	5-5	.95	8-8	.27	8-8	.30	5-5	.32	5-5	.35	5-5	.39	5-5	.44	5-5	.46
1967	1958		1958		1958		1958		1958		1958		1958		1958	

Notes: Watershed conditions: Contour strips of spring seeded oats and clover, harvested in August, good cover, 12%; intermixed with contour strips of second year clover, cut in June, then allowed to produce cover crop, excellent cover, 73%; grassed waterway, good cover, 15%. 1/ Precipitation obtained from rain gage R-3F. 2/ Determined from continuous records, 1952-67; precipitation and runoff records began September 1951. 3/ Mean P based on 77-yr (1891-1967) U. S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA WATERSHED W-VI											
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 18, 1967														
	RG R-3F		6-18	RG	R-3F		6-18							
3-15	.00	.0072		1200	.00	.00		1218	.0000	.0000				
5-19	.27	.0000		1204	.30	.02		1219	.0014	.0000				
5-21	.31	.0000		1205	2.40	.06		1220	.0267	.0002				
5-22	.18	.0000		1207	1.20	.10		1221	.0447	.0008				
5-29	.01	.0000		1208	5.99	.20		1222	.0737	.0018				
5-30	.06	.0000		1209	4.80	.28		1223	.0929	.0032				
5-31	.61	.0000		1211	5.40	.46		1224	.1263	.0050				
6-1	.32	.0000		1212	5.40	.55		1225	.1263	.0071				
6-3	.02	.0000		1214	4.80	.71		1226	.1072	.0091				
6-4	.08	.0000		1215	4.79	.79		1227	.0862	.0107				
				1216	2.40	.83		1228	.0622	.0119				
				1218	1.20	.87		1229	.0518	.0129				
				1221	1.20	.93		1230	.0424	.0137				
				1222	1.20	.95		1231	.0340	.0143				
				1225	.40	.97		1232	.0283	.0148				
				1226	1.20	.99		1233	.0249	.0153				
				1228	.60	1.01		1234	.0216	.0157				
				1230	.90	1.04		1235	.0173	.0160				
				1234	.45	1.07		1236	.0145	.0162				
				1238	.15	1.08		1238	.0110	.0167				
				1240	.30	1.09		1239	.0089	.0168				
				1248	.15	1.11		1240	.0070	.0170				
				1302	.04	1.12		1242	.0053	.0172				
				1356	.00	1.12		1244	.0030	.0173				
				1406	.06	1.13		1247	.0018	.0174				
								1249	.0009	.0175				
								1251	.0000	.0175				
								1252	.0000	.0175				
								1253	.0000	.0175				

NOTES: TO CONVERT 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, P. 13.3-5.



BLACKSBURG, VIRGINIA WATERSHED W-VI

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA THORNE CREEK W-I 13.06 AREA—3054 ACRES (4.77 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁ /Q	1.74	2.04	3.28	1.81	3.12	1.19	1.87	7.83	2.12	2.99	1.55	4.19	33.73
	.39	.31	.62	.31	.20	.12	.09	.19	.06	.05	.03	.09	2.46
STA AVG ₂ /P	2.21	3.00	3.42	2.71	3.43	2.27	3.15	3.92	3.68	2.70	2.43	2.91	35.83
(57-67) O	.38	.37	.65	.67	.52	.30	.19	.21	.13	.13	.12	.22	3.89
MEAN P ₃ /Q	2.92	2.71	3.25E	2.75	3.24	3.31	4.26E	3.34E	2.76	2.72	2.17	2.82	36.25E

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
1967	8-24	.02	8-24	.01	8-24	.02	8-24	.05	8-24	.06	8-24	.07	8-22	.09	3-13	.21

MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	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: Watershed conditions: Pasture, usually good cover of bluegrass and other native grasses and clovers, 59%; corn, 8%; hay, 26%; total cultivated, 34%. Farm woods, 4%; idle land, 2%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2 and R-3. 2/ Determined from continuous records from June, 1957 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 62-yr (1906-67) U.S. Weather Bureau record period at Radford 6 WSW, Virginia, except for missing monthly totals for June, July, August, November and December, 1967, which were obtained from nearby Weather Bureau records at Pulaski 2E, Virginia.

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA THORNE CREEK W-I 13.06							
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.02	.32	.00	.00	.00	.00	.07	.00	
2	.00	.05	.00	.00	.27	.30	.26	.00	.00	.00	.22	.38	
3	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.52	
4	.21M	.00	.19	.00	.04	.04	.00	1.56	.00	.00	.00	.00	
5	.04S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
6	.00	.29S	.87	.00	.00	.00	.31	.00	.00	.14	.00	.00	
7	.02	.31S	.36	.00	.61	.00	.23	.03	.00	.11	.00	.00	
8	.09	.00	.00	.00	.13	.00	.02	.07	.00	.01	.00	.00	
9	.06	.00	.00	.00	.07	.00	.00	.00	.28	.25	.00	.04	
10	.00	.00	.00	.10	.00	.00	.08	.00	.00	.41	.00	1.01	
11	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.32	
12	.00	.00	.49	.00	.00	.00	.00	.00	.00	.00	.00	.00	
13	.08E	.00	.40	.15	.10	.00	.00	.00	.00	.00	.00	.00	
14	.24	.00	.00	.00	.33	.00	.06	.00	.00	.00	.00	.00	
15	.00	.00	.48	.00	.10	.00	.01	.00	.00	.00	.00	.00	
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
17	.00	.75M	.00	.18	.01	.00	.07	.00	.00	.05	.00	.00	
18	.00	.18M	.00	.00	.00	.00	.15	.00	.00	.85	.00	.38E	
19	.11S	.00	.00	.00	.22	.00	.00	.00	.00	.00	.00	.05	
20	.00	.39	.12M	.00	.00	.00	.01	.14	.00	.00	.00	.00	
21	.00	.00	.29	.00	.38	.00	.00	.95	.12	.00	.09	.00	
22	.00	.00	.00	.45	.19	.29	.00	2.23	.00	.00	.31	.41	
23	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.07	.00	
24	.00	.00	.00	.04	.00	.00	.00	2.37E	.00	.00	.28	.00	
25	.00	.00	.00	.00	.00	.11	.00	.11	.00	1.14	.01	.00	
26	.00	.00	.00	.88	.00	.00	.01	.09	.00	.00	.00	.00	
27	.89	.04S	.00	.01	.00	.00	.00	.08	.12	.00	.00	.00	
28	.00	.03M	.08	.00	.00	.00	.36	.00	1.60	.00	.00	.82S	
29	.00	-----	.00	.00	.00	.00	.03	.00	.00	.00	.03	.04S	
30	.00	-----	.00	-----	.08	.13	.00	.00	.00	.00	.47	.00	
31	.00	-----	.00	-----	.57	-----	.22	.06	-----	.03	-----	.22S	
TOTAL	1.74	2.04	3.28	1.81	3.12	1.19	1.87	7.83	2.12	2.99	1.55	4.19	
STA AV	2.21	3.00	3.42	2.71	3.43	2.27	3.15	3.92	3.68	2.70	2.43	2.91	

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 & R-3. STA AV IS FOR PERIOD JUNE, 1957 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P. 13.6-5.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA THORNE GREEK W-I 13.06						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	OEC
1	.94	1.50	1.52	1.83	1.00	.86	.40	.32	.42	.22	.18	.16
2	1.09	1.49	1.60	1.72	1.17	.91	.44	.29	.34	.22	.24	.17
3	1.17	1.43	1.50	1.66	1.00	.67	.42	.29	.34	.20	.22	.60
4	1.27	1.33	1.52	1.60	.96	.61	.38	2.50	.32	.20	.19	.26
5	1.30	1.33	1.44	1.53	.99	.54	.36	.86	.32	.18	.16	.22
6	1.27	1.38	1.83	1.52	.95	.54	.57	.43	.31	.19	.17	.20
7	1.57	1.39	3.80	1.47	1.25	.52	.62	.35	.26	.20	.10	.20
8	2.16	1.15	2.79	1.45	1.02	.40	.45	.40	.26	.20	.16	.17
9	2.30	1.14	2.58	1.42	.95	.50	.38	.32	.30	.22	.16	.16
10	2.28	1.22	2.50	1.44	.90	.52	.32	.31	.28	.36	.16	.63
11	2.07	1.21	2.36	1.35	.91	.49	.35	.27	.26	.22	.14	.69
12	2.04	1.13	2.77	1.36	.88	.48	.33	.26	.25	.20	.12	.57
13	2.04	1.12	3.22	1.32	.83	.48	.33	.25	.25	.19	.13	.45
14	2.14	1.09	3.07	1.28	1.06	.48	.33	.25	.23	.17	.14	.47
15	1.87	1.06	3.69	1.26	.91	.49	.34	.23	.23	.17	.14	.35
16	1.73	1.03	3.44	1.19	.80	.52	.30	.23	.23	.16	.13	.35
17	1.72	1.26	3.41	1.33	.84	.51	.30	.23	.22	.17	.13	.31
18	1.61	1.21	3.22	1.24	.73	.52	.25	.23	.22	.37	.10	.43
19	1.60	1.18	3.18	1.15	.90	.46	.33	.21	.22	.25	.11	.37
20	1.58	1.82	3.09	1.12	.77	.46	.30	.26	.23	.18	.11	.33
21	1.57	2.06	3.26	1.17	.86	.46	.30	.40	.25	.16	.13	.32
22	1.44	1.99	2.82	1.35	.91	.50	.32	2.31	.25	.17	.17	.51
23	1.35	2.01	2.73	1.13	.77	.44	.31	1.07	.23	.16	.14	.40
24	1.25	2.11	2.55	1.12	.74	.39	.29	8.30	.22	.17	.15	.46
25	1.17	1.70	2.44	1.10	.67	.40	.31	.94	.20	.62	.15	.42
26	1.12	1.61	2.36	1.54	.61	.38	.30	.61	.20	.29	.14	.39
27	2.53	1.71	2.20	1.23	.56	.36	.29	.52	.22	.25	.12	.34
28	1.81	1.69	2.23	1.05	.52	.36	.34	.46	.57	.22	.09	.34
29	1.63		2.04	1.00	.43	.38	.37	.41	.31	.20	.11	.36
30	1.45	-----	1.90	1.00	.58	.40	.30	.38	.24	.20	.20	.36
31	1.58	-----	1.85	-----	.79	-----	.33	.40	-----	.17	-----	.35
MEAN	1.63	1.44	2.55	1.33	.85	.50	.35	.78	.27	.22	.15	.37
INCHES	.39	.31	.62	.31	.20	.12	.09	.19	.06	.05	.03	.09

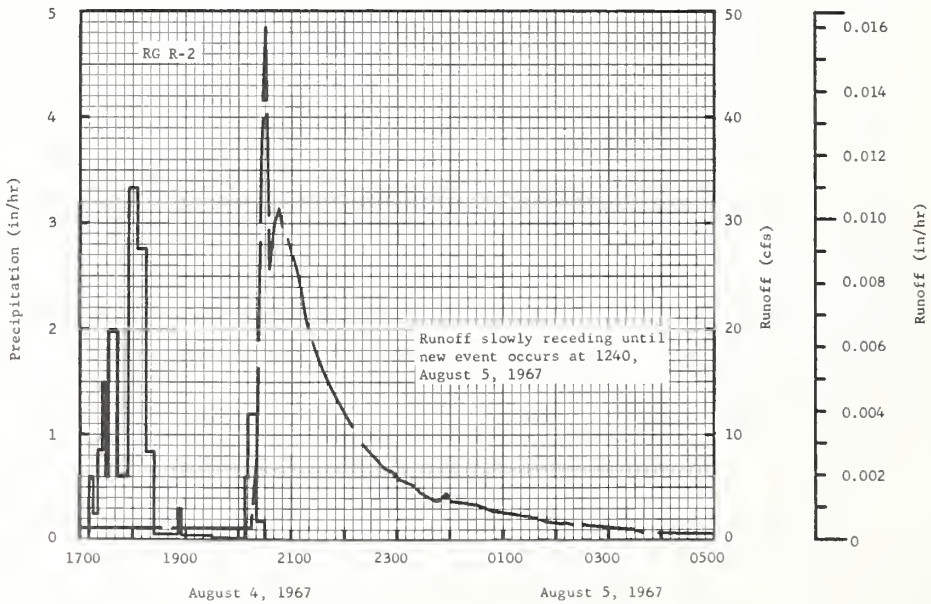
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.0077935.

1967 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA THORNE GREEK 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 August 4 and 5, 1967										
8 -4	3 RG ¹ / _{.00}	2/.0024	8 -4	RC	R-2	.00	8 -4	2015	1.1086	.0000
				1710	.60	.05		2020	8.0682	.0001
				1720	.24	.07		2025	34.4286	.0007
				1725	.84	.14		2030	48.5326	.0018
				1729	1.50	.24		2035	25.7445	.0028
				1732	.60	.27		2040	30.0249	.0036
				1742	1.98	.60		2045	31.3183	.0044
				1754	.60	.72		2050	29.6862	.0052
				1805	3.33	1.33		2055	28.5776	.0060
				1815	2.76	1.79		2100	27.2534	.0068
				1823	.83	1.90		2105	25.8368	.0075
				1851	.06	1.93		2110	24.1739	.0082
				1855	.30	1.95		2130	17.0295	.0104
				1930	.05	1.98		2220	9.1153	.0139
				2008	.02	1.99		2225	8.8073	.0142
				2010	.60	2.01		2230	8.1914	.0144
				2020	1.20	2.21		2235	7.9451	.0146
				2030	.18	2.24		2245	6.9288	.0150
				RG	R-3	.00		2255	6.4361	.0154
				1710	.04	.06		2300	5.9126	.0156
				1715	.24	.12		2320	5.0503	.0162
				1720	.72	.21		2325	4.6500	.0163
				1725	.12	.21		2345	3.8494	.0167
				1729	1.35	.21		2350	3.9725	.0169
				1732	.60	.24		2355	4.4345	.0170
				1742	1.74	.53		2400	3.8186	.0171
				1754	.55	.64		0025	3.4182	.0176
				1805	2.95	1.18		0030	3.4182	.0177
				1815	2.40	1.58		0050	2.8023	.0180
								0055	2.8023	.0181

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0003247. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/THIESSEN WEIGHTED AVERAGE FOR RG, R-1, R-2, AND R-3. 2/CONTINUOUS FLOW PRIOR TO 2015.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA			THORNE CREEK 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 August 4 and 5, 1967 - Continued										
			8 -4	RG 1823	R-3 .75	1.68	8 -5	0105	2.5560	.0182
				1851	.04	1.70		0110	2.5560	.0183
				1855	.30	1.72		0125	2.1864	.0185
				1930	.05	1.75		0130	2.1864	.0185
				2008	.02	1.76		0135	2.0633	.0186
				2010	.60	1.78		0140	2.0633	.0187
				2020	1.02	1.95		0150	1.8169	.0188
				2030	.18	1.98		0155	1.8169	.0188
				RG 3RG	R-1 AVG1/	.49 1.56		0205	1.6013	.0189
								0210	1.7861	.0190
								0220	1.5397	.0191
								0230	1.4474	.0191
								0240	1.3550	.0192
								0250	1.2626	.0193
								0300	1.1394	.0194
							8 -5	0315	1.1086	.0194
								0325	1.1086	.0195
								0340	.8623	.0196
								0410	.8315	.0197
								0440	2/ .7391	.0199
								0515	.6467	.0200
								0605	.5543	.0201
								0735	.4927	.0204
								1150	.5543	.0211

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0003247. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, R-3. 2/ RUNOFF SLOWLY RECEDING UNTIL SMALL EVENT OCCURRED ON 8-5-67 AT 1240.



BLACKSBURG, VIRGINIA THORNE CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA CRAB CREEK W-I 13.07 AREA—786 ACRES (1.23 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁	2.06	1.92	4.20	1.98	3.79	2.40	2.19	6.44	2.18	2.21	1.24	4.00	34.61
Q	.76	.54	1.56	.40	.31	.19	.17	.41	.16	.15	.12	.25	5.02
STA AVG ² _P (57-67)	2.24	2.81	3.23	2.66	3.12	2.30	3.58	3.57	3.15	2.55	2.32	2.84	34.37
Q	.72	.76	1.20	.90	.60	.30	.27	.32	.23	.25	.25	.47	6.27
MEAN P ₃ 77 YR	3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E

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
1967	3-13	.17	3-13	.15	3-13	.23	3-13	.36	3-13	.42	3-13	.47	3-13	.54	3-7	.84

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	8-21	.23	3-13	.15	3-13	.23	3-13	.36	4-3	.42	4-3	.52	4-3	.73	3-27	1.76
19 67	1966		1967		1967		1967		1960		1960		1960		1960	

Notes: Watershed conditions: Permanent pasture, usually good cover of native bluegrass combined with other grasses and clovers, 42%; alfalfa and other hay crops, 29%; corn, 11%; total cultivated 40%, Farm woods, hardwood predominantly, 13%; idle land, 4%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2, R-3 and R-4. 2/ Determined from continuous records from August, 1957 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Sta. at Blacksburg, Va.

1967 DAILY AIR TEMPERATURE (degrees F)											BLACKSBURG, VIRGINIA CRAB CREEK W-I 13.07														
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	30	62	46	32	17	76	42	71	54	50	45	82	56	84	60	70	49	68	42	57	46	32	28	
2	43	30	60	30	58	22	77	50	68	40	65	49	76	67	83	60	69	43	75	44	59	42	31	25	
3	49	30	43	24	63	38	72	39	59	39	61	46	78	63	88	65	70	46	78	47	61	35	39	26	
4	34	18	50	20	46	35	60	31	58	39	69	53	74	56	81	63	70	46	79	50	48	29	50	24	
5	29	18	47	28	70	30	77	44	68	45	69	53	76	47	82	60	76	46	78	51	35	20	57	23	
6	38	20	44	23	62	30	79	56	62	52	70	50	66	55	80	57	79	49	76	51	34	18	50	27	
7	47	28	26	13	60	23	77	43	67	44	72	52	68	60	72	60	74	51	51	46	36	18	60	36	
8	44	32	33	6	48	21	63	38	59	41	77	49	77	63	83	55	74	53	61	48	42	23	60	41	
9	40	30	27	15	57	26	64	43	51	40	80	55	81	63	83	64	64	58	58	53	57	25	48	35	
10	40	26	36	19	65	38	66	47	65	40	83	57	82	63	78	57	70	52	61	49	61	35	41	35	
11	24	14	41	28	75	52	59	38	66	50	79	58	84	68	72	55	60	45	53	44	64	44	40	34	
12	48	10	34	18	57	40	61	34	75	57	83	56	87	66	73	52	63	45	57	40	66	46	48	32	
13	55	26	47	14	58	39	53	40	65	52	86	58	78	63	74	51	66	42	63	40	47	36	58	30	
14	50	38	59	29	72	42	78	50	67	52	80	62	76	56	77	50	69	42	70	46	47	31	58	34	
15	46	32	56	38	70	30	76	55	75	43	84	62	74	52	79	50	75	43	67	52	33	18	43	21	
16	35	26	58	31	44	23	78	56	58	40	85	58	77	52	80	52	80	50	68	51	45	15	39	18	
17	45	22	31	22	39	11	72	56	63	38	84	60	74	55	81	55	76	58	70	56	53	26	60	25	
18	30	18	34	22	31	8	63	43	70	39	82	60	74	57	81	60	79	51	61	37	50	36	55	43	
19	28	13	36	26	42	13	56	39	74	46	80	62	78	59	86	62	78	58	46	33	44	31	66	52	
20	42	15	40	31	39	28	71	34	70	53	78	62	79	58	79	63	83	60	59	29	46	30	55	47	
21	52	22	39	17	56	31	66	49	54	43	86	60	80	58	68	64	77	61	60	41	50	34	58	44	
22	65	40	33	15	44	32	70	53	50	42	83	65	82	57	72	65	62	44	63	30	58	32	59	22	
23	67	40	30	17	57	29	64	46	59	44	82	62	84	59	72	64	62	40	65	35	44	22	22	14	
24	64	46	17	1	56	27	58	35	64	38	84	57	86	62	70	61	66	39	63	39	35	22	40	14	
25	66	41	11	1	70	34	58	28	74	42	84	63	80	65	80	64	69	41	56	40	51	33	43	28	
26	66	40	29	3	75	44	51	40	70	53	74	56	84	64	82	62	73	44	54	36	60	29	38	21	
27	56	24	38	18	61	44	48	38	84	49	71	54	84	56	77	59	72	51	56	36	46	24	30	21	
28	34	24	34	24	66	46	53	33	84	61	72	55	84	62	69	54	65	48	51	29	33	18	30	23	
29	38	25	---	---	66	45	67	34	80	59	76	56	78	62	78	52	49	34	56	26	40	19	28	14	
30	40	27	---	---	61	40	68	46	59	50	80	61	81	61	79	52	58	31	62	36	39	29	31	13	
31	50	28	---	---	67	39	---	---	50	48	---	---	80	60	76	56	---	---	54	44	---	---	---	32	25
AV.	45	26	39	20	57	32	66	42	65	46	76	56	78	59	78	58	69	47	62	41	48	28	45	28	
MEAN	38.5		31.5		41.5		53.5		61.0		65.5		67.0		69.0		57.0		52.5		40.5		39.5		43
STA AV	43	24	44	24	53	31	63	39	72	47	79	56	82	59	80	58	76	51	66	40	54	30	44	25	

NOTES: TEMPERATURE DATA FROM CRAB CREEK W-I STATION LOCATED IN MONTGOMERY COUNTY, VIRGINIA, 2 MILES WEST OF CHRISTIANBURG, VA., NEW RIVER. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB. 1194, P. 13.7-5.

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CRAB CREEK W-I 13.07						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.07	.25	.04	.00	.00	.00	.00	.00
2	.00	.12	.00	.00	.78	.02	.11	.00	.00	.00	.24	.33
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.62
4	.15M	.00	.18	.00	.03	.04	.00	2.28	.00	.00	.00	.00
5	.03S	.00	.00	.00	.01	.00	.00	.02	.00	.00	.00	.00
6	.00	.17S	.32	.00	.01	.00	.20	.00	.00	.04	.00	.00
7	.00	.27S	.88	.00	.71	.00	.08	.00	.00	.06	.00	.00
8	.24	.00	.00	.00	.15	.00	.51	.00	.00	.00	.00	.00
9	.00	.03S	.00	.00	.00	.00	.00	.04	.27E	.11	.00	.06
10	.00	.00	.00	.04	.00	.00	.20	.07	.03E	.16	.00	.68
11	.00	.00	.00	.00	.04	.00	.42	.00	.00	.00	.00	.16
12	.00	.00	.43	.00	.00	.00	.00	.00	.00	.00	.00	.01
13	.06	.00	1.32	.36	.03	.00	.00	.00	.00	.00	.00	.00
14	.33	.00	.01	.00	.23	.00	.04	.00	.00	.00	.00	.00
15	.00	.00	.40	.00	.16	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.70S	.00	.41	.01	.00	.02	.00	.00	.00	.00	.00
18	.00	.12S	.00	.00	.00	.80	.09	.00	.00	1.02	.00	.34
19	.08S	.00	.00	.00	.13	.00	.00	.08	.00	.00	.00	.09
20	.00	.43	.08M	.00	.00	.00	.00	.00	.00	.00	.00	.00
21	.00	.00	.48	T	.39	.00	.00	.68	.14	.00	.06	.00
22	.00	.00	.00	.27	.19	.74	.00	1.32	T	.00	.21	.60
23	.00	.05S	.01	T	.00	.19	.00	.09	.00	.00	.08	.00
24	.00	.00	.01	.04	.00	.00	.00	1.71	.00	.00	.20	.00
25	.00	.00	.02	.00	.00	.29	.00	T	.00	.82	T	.00
26	.00	.00	.00	.82	.00	.00	.00	T	.00	.00	.00	.00
27	1.17	T	.00	.04	.00	.00	.00	.15	T	.00	.00	.00
28	.00	.03M	.06	.00	.00	.00	.25	.00	1.74	.00	.00	.92S
29	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.03S
30	.00	-----	.00	.00	.28	.07	.10	.00	.00	.00	.45	.00
31	.00	-----	.00	-----	.57	-----	.13	.00	-----	T	-----	.16S
TOTAL	2.06	1.92	4.20	1.98	3.79	2.40	2.19	6.44	2.18	2.21	1.24	4.00
STA AV	2.24	2.81	3.23	2.66	3.12	2.30	3.58	3.57	3.15	2.55	2.32	2.84

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2, R-3 AND R-4. STA AV IS FOR PERIOD AUGUST, 1957 THROUGH 1967.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CRAB CREEK W-I 13.07						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.51	.59	.53	.62	.37	.34	.16	.18	.19	.16	.13	.14
2	.71	.60	.56	.62	.51	.27	.19	.16	.19	.13	.16	.14
3	.76	.55	.56	.59	.50	.25	.18	.16	.18	.13	.15	.58
4	.76	.50	.63	.56	.37	.24	.16	4.24	.17	.13	.13	.26
5	.63	.50	.62	.53	.36	.22	.16	.81	.17	.13	.13	.21
6	.56	.47	.67	.52	.34	.22	.20	.21	.16	.14	.13	.18
7	1.03	.47	5.11	.53	.66	.21	.19	.19	.16	.16	.13	.16
8	2.11	.41	1.31	.50	.42	.19	.23	.19	.16	.16	.13	.16
9	1.37	.44	1.01	.50	.38	.19	.23	.19	.20	.16	.12	.16
10	1.03	.43	.89	.50	.32	.21	.19	.18	.19	.16	.13	.38
11	.76	.48	.81	.45	.34	.20	.28	.16	.16	.14	.13	.37
12	.68	.50	1.22	.39	.31	.19	.18	.16	.16	.13	.13	.29
13	.68	.48	14.84	.48	.30	.19	.16	.16	.16	.13	.13	.24
14	1.07	.48	2.63	.41	.36	.18	.16	.16	.16	.13	.13	.22
15	.75	.47	3.30	.37	.36	.18	.18	.16	.16	.13	.12	.21
16	.67	.44	1.74	.34	.32	.16	.16	.16	.16	.13	.12	.19
17	.58	.51	1.42	.41	.30	.16	.16	.16	.16	.15	.13	.19
18	.51	.50	1.18	.40	.29	.31	.16	.16	.16	.30	.13	.25
19	.47	.55	1.13	.34	.26	.21	.16	.16	.16	.18	.15	.24
20	.50	1.61	1.17	.34	.28	.19	.16	.16	.16	.16	.16	.22
21	.51	1.58	1.81	.37	.31	.19	.16	.25	.18	.16	.16	.22
22	.53	1.03	1.14	.44	.34	.25	.16	.43	.18	.16	.18	.62
23	.49	.90	1.06	.37	.28	.38	.16	.35	.16	.13	.18	.42
24	.44	.69	.93	.36	.25	.18	.16	2.32	.16	.13	.16	.34
25	.41	1.11	.89	.34	.24	.20	.16	.54	.14	.34	.14	.30
26	.37	.59	.81	.60	.23	.19	.16	.37	.13	.18	.13	.28
27	3.08	.56	.82	.43	.22	.18	.16	.33	.13	.16	.11	.25
28	1.04	.56	.81	.37	.21	.16	.18	.28	.50	.14	.11	.27
29	.80	-----	.73	.34	.21	.16	.19	.25	.18	.13	.11	.26
30	.76	-----	.65	.34	.26	.16	.19	.25	.16	.13	.18	.24
31	.64	-----	.65	-----	.41	-----	.17	.21	-----	.13	-----	.22
MEAN	.81	.64	1.67	.45	.33	.21	.18	.44	.18	.16	.14	.26
INCHES	.76	.54	1.56	.40	.31	.19	.17	.41	.16	.15	.12	.25

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

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CRAB CREEK W-I		13.07	
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 August 4 and 5, 1967										
8 -4	4RG 1/ .00	2/.0044	8 -4	RG 1830	R-2 .00	.00	8 -4	1900	.2061	.0000
				1835	.24	.02		1905	.2695	T
				1842	3.09	.38		1910	.3487	.0001
				1845	2.00	.48		1920	.4042	.0001
				1850	1.32	.59		1925	.3963	.0002
				1900	.18	.62		1935	.4518	.0003
				1905	.00	.62		1945	.5231	.0004
				1910	.24	.64		1950	.5786	.0004
				1920	.12	.66		1955	.5944	.0005
				1925	.36	.69		2000	.7688	.0006
				1930	.12	.70		2005	1.2839	.0007
				1940	1.20	.90		2010	3.7646	.0009
				1947	.17	.92		2015	6.6257	.0015
				1953	2.00	1.12		2020	12.0388	.0025
				1957	1.20	1.20		2025	20.1228	.0042
				2000	.80	1.24		2030	23.7052	.0065
				2010	1.32	1.46		2035	73.6279	.0116
				2015	1.32	1.57		2040	100.0436	.0207
				2025	1.80	1.87		2045	113.9925	.0320
				2028	.60	1.90		2055	91.4682	.0536
				2033	1.92	2.06		2100	79.9683	.0626
				2040	.34	2.10		2105	65.2506	.0702
				2107	.04	2.12		2110	49.0113	.0762
				2113	.50	2.17		2115	40.1664	.0809
				2200	.01	2.18		2125	25.3854	.0878
			8 -5	0800	.00	2.18		2135	20.4319	.0926
				0930	.02	2.21		2145	17.3648	.0966
				RG	R-3	.00		2150	16.6039	.0984
			8 -4	1815	.00	.00		2220	10.9768	.1071
				1835	.03	.01		2225	10.9530	.1083
				1837	.30	.02		2230	9.7642	.1093
				1845	2.85	.40		2235	9.7880	.1104
				1853	.90	.52		2250	8.2267	.1132
				1854	6.60	.63		2330	7.2915	.1197
				1930	.15	.72		2340	7.2756	.1213
				1934	.30	.74		2345	6.7922	.1220
				1940	1.40	.88		2350	6.7922	.1227
				1948	.15	.90		2400	6.1185	.1241
				1954	1.60	1.06	8 -5	0010	5.4765	.1253
				2000	1.00	1.16		0015	5.4765	.1259
				2005	1.20	1.26		0020	5.1119	.1264
				2010	1.92	1.42		0025	4.6602	.1270
				2015	1.20	1.52		0030	4.6840	.1274
				2030	1.52	1.90		0050	3.7805	.1292
				2039	1.47	2.12		0055	3.7805	.1296
				2045	.40	2.16		0110	3.1861	.1307
				2110	.02	2.17		0115	3.1861	.1311
				2115	.60	2.22		0125	2.8215	.1317
				2240	.01	2.24		0130	2.8373	.1320
				0800	.00	2.24		0140	2.6471	.1326
			8 -5	0900	.02	2.26		0145	2.4965	.1328
				RG	R-4	.00		0150	2.4965	.1331
			8 -4	1800	.00	.00		0200	2.1716	.1336
				1805	.12	.01		0210	2.1795	.1341
				1833	.11	.06		0220	2.0369	.1345
				1835	.60	.08		0235	1.7753	.1351
				1840	3.12	.34		0245	1.7753	.1355
				1845	.72	.40		0300	1.5058	.1360
				1905	.06	.42		0330	1.3077	.1369
				1908	.40	.44		0405	1.1016	.1378
				1918	.06	.45		0455	.9194	.1388
				1923	.24	.47		0600	.7608	.1400
				1930	.09	.48		0725	3/ .6182	.1412
								0945	.4993	.1428
								1255	.3883	.1446

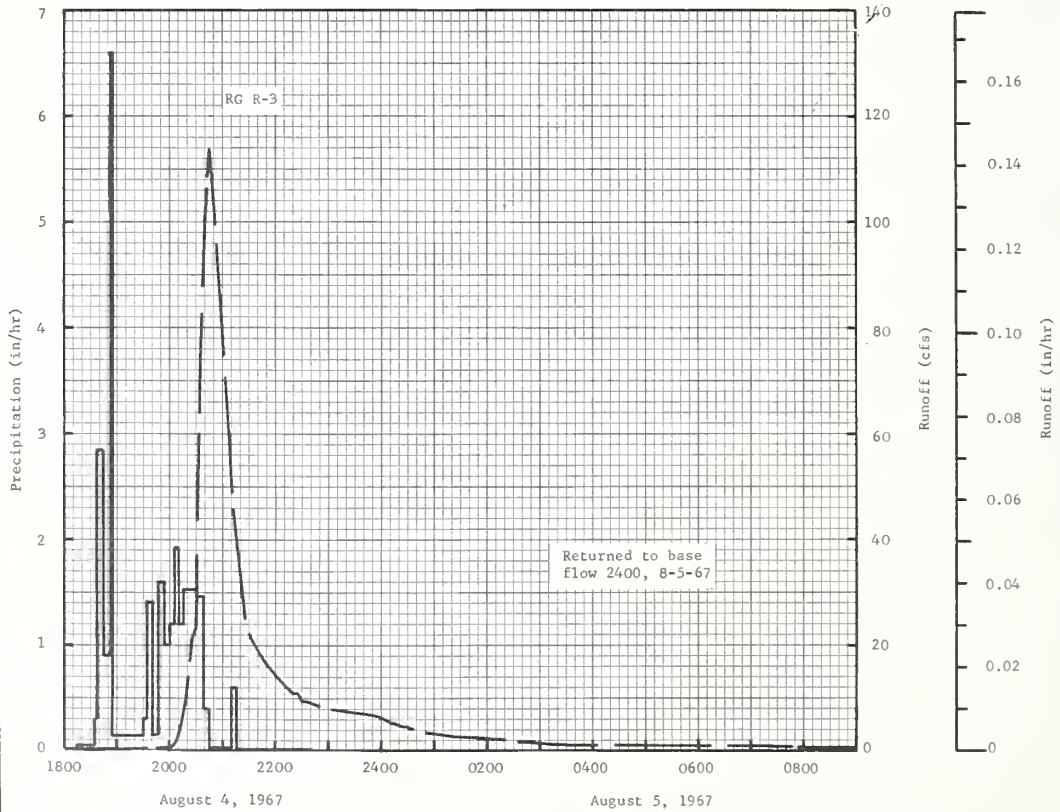
Watershed conditions

Pasture, mostly a mixture of native grasses 3 to 6 in. high, good cover, 42%; hay, mostly clover and orchard grass, 4 to 12 in. high, 29%; corn, 5 to 6 ft. high, good cover, 11%; woods, hardwood and conifers mixed, good cover, 13%; idle, good cover of weeds and grasses, 4%; paved roads, 1%.

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0012618. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON PREVIOUS PAGE. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, R-3, AND R-4. 2/ CONTINUOUS FLOW PRIOR TO 1900. 3/ RUNOF SLOWLY RECEDES TO BASE FLOW.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA			CRAB CREEK W-I		13.07		
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 August 4 and 5, 1967 - Continued										
			8 -4	RG	R-4		8 -5			
				1945	.48	.60		1625	.3012	.1461
				1950	4.32	.96		2400	.2536	.1488
				2000	1.68	1.24				
				2008	2.03	1.51				
				2015	3.51	1.92				
				2025	1.92	2.24				
				2030	4.08	2.58				
				2035	1.08	2.67				
				2045	.12	2.69				
				2102	.04	2.70				
				2110	.60	2.78				
				2200	.02	2.80				
			8 -5	0800	.00	2.80				
				0900	.01	2.81				
				RG	R-1	2.56				
				4 RG	AVG 1/	2.30				

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0012618. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2, R-3, AND R-4.



BLACKSBURG, VIRGINIA CRAB CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA BRUSH CREEK W-I 13.08 AREA—893 AGRES (1.40 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ¹ / _o	1.80	1.71	4.27	1.81	4.04	.82	3.44	5.47	1.71	2.50	1.15	3.62	32.34
	1.54	1.10	2.26	1.07	1.18	.66	.63	.81	.56	.71	.62	1.09	12.23
STA AVG ² / _o	2.20	3.11	3.28	2.85	3.49	2.15	3.81	3.86	3.83	2.74	2.52	2.94	36.78
(57-67) P ³ / _o	1.68	1.98	2.44	1.92	1.60	.96	.93	.91	1.18	1.21	1.23	1.59	17.63
MEAN 77 YR	3.16	3.07	3.63	3.12	3.66	4.04	4.63	3.97	3.02	2.73	2.34	3.03E	40.40E

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
1967	3-7	.09	3-7	.08	3-7	.14	3-7	.25	3-6	.33	3-6	.41	3-6	.49	3-6	1.08

MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	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: Watershed conditions: Permanent pasture, usually a fair cover of native grasses, 33%; farm woods, a mixture of hardwoods and conifers, 32%; corn, 5%; hay, 20%; total cultivated, 25%; idle land, 8%; roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from August, 1957 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 77-yr (1891-1967) U.S. Weather Bureau record period at Blacksburg, Virginia. Missing records for 11 months were estimated from nearby Weather Bureau records at Christiansburg, Va. and Va. Agr. Expt. Station at Blacksburg, Va.

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA BRUSH CREEK W-I 13.08						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.04	.20	.04	.00	.00	.00	.02	.00
2	.00	.06	.00	.00	.48	.02	.11	.04	.00	.00	.21	.13
3	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.80
4	.11M	.00	.06	.00	.19	.15	.00	.16	.00	.00	.00	.00
5	.03S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.00	.12S	.54	.00	.01	.00	.23	.00	.00	.01	.00	.00
7	.00	.22S	1.19	.00	.61	.00	.00	.34	.00	.05	.00	.00
8	.20	.00	.00	.00	.25	.00	.08	.00	.00	.00	.00	.00
9	.00	.08S	.00	.00	.01	.00	.02	.01	.54	.32	.00	.08
10	.00	.02S	.00	.05	.00	.00	.11	.00	.01	.25	.00	.79
11	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.22
12	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.01
13	.08	.00	.94	.19	.00	.00	.02	.00	.00	.00	.00	.00
14	.35	.00	.00	.00	.19	.00	.04	.00	.00	.00	.00	.00
15	.00	.00	.51	.00	.40	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.76M	.00	.35	.04	.00	.53	.00	.00	.00	.00	.00
18	.00	.09M	.00	.00	.00	.00	1.18	.00	.00	.85	.00	.17
19	.12S	.00	.00	.00	.30	.02	.05	.07	.00	.00	.00	.01
20	.00	.36	.07M	.00	.00	.00	.60	.04	.06	.00	.00	.00
21	.00	.00	.41	.03	.42	.00	.00	1.27	.09	.00	.05	.00
22	.00	.00	.00	.23	.23	.29	.00	.85	.00	.00	.13	.28
23	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	.07	.00
24	.00	.00	.02	.01	.00	.00	.00	1.69	.00	.00	.06	.00
25	.00	.00	.00	.00	.00	.07	.00	.06	.00	.99	.00	.01
26	.00	.00	.00	.82	.00	.00	.00	.00	.00	.00	.00	.00
27	.91	.00	.00	.13	.00	.00	.00	.16	.14	.00	.00	.00
28	.00	.00	.02	.00	.00	.00	.00	.00	.87	.00	.00	.91S
29	.00	-----	.00	.00	.36	.00	.00	.00	.00	.00	.00	.01
30	.00	-----	.00	.00	.15	.05	.16	.00	.00	.00	.61	.00
31	.00	-----	.00	-----	.33	-----	.27	.58	-----	.03	-----	.20S
TOTAL	1.80	1.71	4.27	1.81	4.04	.82	3.44	5.47	1.71	2.50	1.15	3.62
STA AV	2.20	3.11	3.28	2.85	3.49	2.15	3.81	3.86	3.83	2.74	2.52	2.94

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD AUGUST 1957 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB. 1194, P. 13.8-5.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA		BRUSH CREEK W-I		13.08		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.59	1.38	1.23	1.39	1.27	1.68	.58	.65	.98	.63	.79	1.07
2	1.80	1.44	1.40	1.33	1.68	1.30	.71	.64	.70	.61	1.03	.97
3	1.79	1.29	1.54	1.33	1.50	1.20	.58	.58	.65	.60	.87	4.01
4	1.66	1.26	1.54	1.29	1.40	1.34	.53	.59	.63	.57	.79	1.30
5	1.43	1.27	1.51	1.28	1.35	1.08	.50	.61	.64	.57	.74	1.06
6	1.35	1.21	1.89	1.31	1.32	1.00	.72	.52	.62	.57	.70	.99
7	2.77	1.26	15.30	1.25	2.73	.93	.68	.71	.59	.64	.74	.99
8	5.32	1.14	2.93	1.21	1.81	.93	.77	.63	.58	.67	.70	.96
9	2.86	1.16	2.12	1.22	1.52	.84	.64	.53	1.18	.98	.79	1.00
10	2.11	1.23	1.86	1.34	1.32	.86	.59	.52	.89	1.08	.72	3.06
11	1.53	1.41	1.74	1.20	1.30	.77	.65	.45	.70	.75	.72	2.29
12	1.40	1.27	3.20	1.21	1.21	.76	.54	.46	.62	.70	.70	1.78
13	1.52	1.28	9.69	1.47	1.21	.73	.59	.44	.64	.70	.70	1.31
14	2.79	1.48	3.60	1.30	1.37	.71	.54	.43	.59	.67	.70	1.21
15	1.87	1.40	4.90	1.21	1.89	.67	.53	.40	.60	.69	.67	1.11
16	1.53	1.24	2.88	1.16	1.44	.67	.52	.40	.58	.66	.70	1.03
17	1.42	1.28	2.25	1.58	1.23	.64	.97	.39	.57	.68	.74	1.01
18	1.23	1.29	1.87	1.39	1.18	.70	2.56	.40	.55	2.14	.72	1.22
19	1.18	1.48	1.85	1.12	1.38	.68	1.09	.43	.55	.89	.66	1.11
20	1.26	3.62	2.01	1.14	1.31	.70	2.04	.49	.58	.74	.68	1.01
21	1.37	2.93	3.00	1.21	1.70	.65	1.14	1.84	.64	.72	.69	.99
22	1.39	1.85	2.00	1.47	2.02	.80	.72	2.73	.60	.68	.84	1.52
23	1.37	1.69	1.82	1.21	1.50	.78	.62	1.24	.57	.67	.91	1.09
24	1.32	1.33	1.70	1.12	1.25	.64	.61	6.72	.55	.68	.81	.99
25	1.24	1.54	1.68	1.08	1.17	.62	.61	1.65	.54	3.06	.79	1.08
26	1.21	.91	1.63	2.73	1.08	.60	.62	1.04	.51	1.14	.70	1.02
27	5.00	1.25	1.58	1.95	1.01	.58	.54	1.10	.59	.96	.70	.96
28	2.07	1.34	1.62	1.33	.91	.58	.54	.88	1.91	.85	.66	1.47
29	1.60	-----	1.55	1.19	1.22	.60	.57	.74	.87	.81	.67	1.24
30	1.46	-----	1.48	1.21	1.22	.64	.65	.68	.67	.78	1.62	1.06
31	1.42	-----	1.40	-----	1.86	-----	.75	1.54	-----	.78	-----	1.10
MEAN	1.87	1.47	2.74	1.34	1.43	.82	.76	.98	.70	.86	.78	1.32
INCHES	1.54	1.10	2.26	1.07	1.18	.66	.63	.81	.56	.71	.62	1.09

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

1967 SELECTED RUNOFF EVENT						BLACKSBURG, VIRGINIA		BRUSH CREEK 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 March 6-9, 1967											
3 -6	2 RG 1/ .00	2/.0359	3 -6	RG	R-2		3 -6	2045	1.6388	.0000	
				1800	.00	.00					
				1830	.04	.02					
				1930	.03	.05					
				2005	.02	.06					
				2045	.02	.07					
				2130	.04	.10					
				2150	.09	.13					
				2200	.24	.17					
				2212	.15	.20					
				2230	.67	.40					
				2245	.16	.44					
				2325	.08	.49					
				2331	.30	.52					
				2345	.30	.59					
2400	.04	.60									
3 -7			3 -7	0010	.06	.61	3 -7	0035	10.4721	.0212	
				0020	.30	.66					
				0030	.18	.69					
				0043	.09	.71					
				0140	.23	.93					
				0150	.18	.96					
				0215	.02	.97					
				0248	.02	.98					
				0300	.70	1.12					
				0315	.32	1.20					
				0320	.12	1.21					
				0330	.72	1.33					
				0337	.86	1.43					
				0350	.18	1.47					
				0400	.78	1.60					
<p>Watershed conditions</p> <p>Pasture, fair cover of native grass mixture, dormant, 1/2 to 1 in. tall, 33%; woods, mixture of dormant hardwood and conifers, good cover of mulch 3 to 4 in. high, 32%; cultivated, poor, sparse cover of dormant grass and weeds with some corn stover, 5%; hay, fair cover of dormant alfalfa and grass mixture, 1 to 2 in. high, 8%; paved roads, 2%.</p>											

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.001106. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ THIESSEN WEIGHTED FOR RG, R-1 AND R-2. 2/ CONTINUOUS FLOW PRIOR TO 2045.

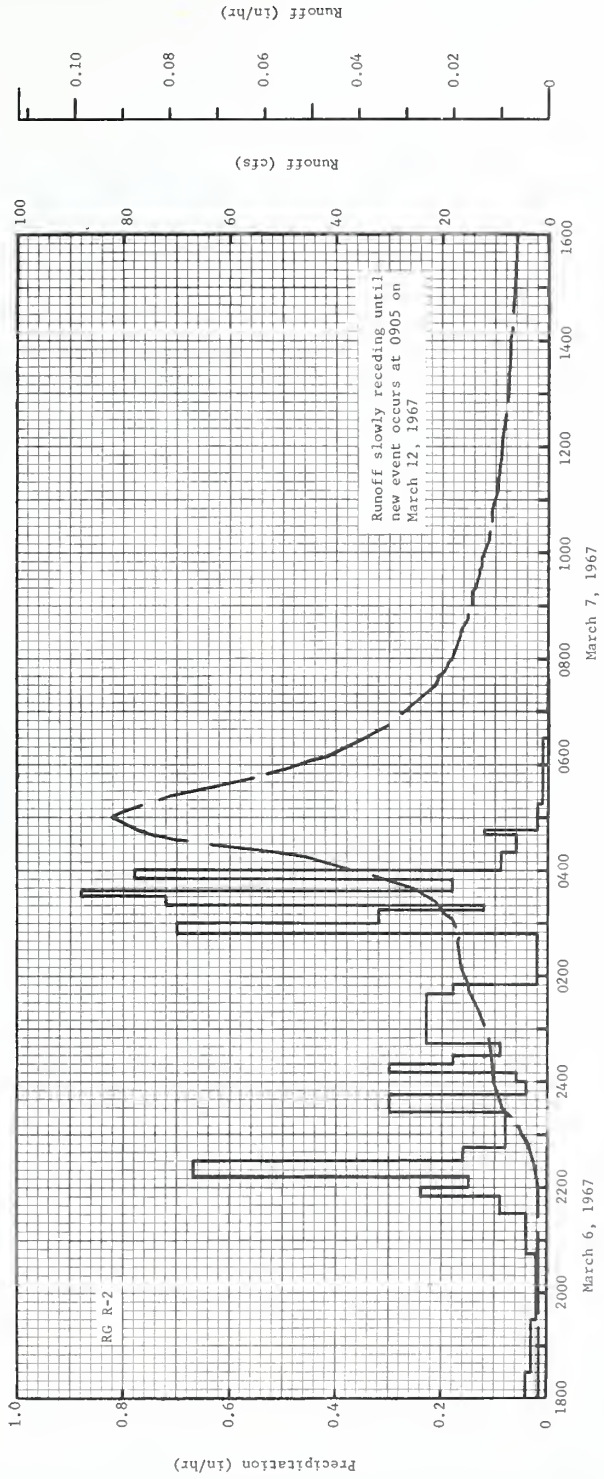
1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				BRUSH CREEK W-I		13.08	
ANTECEDENT CONDIIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of March 6-9, 1967 - Continued										
			3 -7	RG	R-2		3 -7	0310	19.3594	.0637
				0420	.09	1.63		0315	20.0618	.0655
				0440	.06	1.65		0320	20.4669	.0674
				0445	.12	1.66		0325	21.3854	.0693
				0515	.02	1.67		0340	25.6805	.0758
				0630	.01	1.68				
				RG	R-1	1.76		0350	30.8220	.0811
				2 RG	AVG 1/	1.73		0355	33.1001	.0840
								0400	36.5668	.0872
								0405	39.5382	.0908
								0410	42.0594	.0945
								0415	45.8053	.0986
								0420	50.6586	.1031
								0430	63.9581	.1137
								0435	70.0991	.1199
								0440	74.0970	.1265
								0445	77.1045	.1335
								0450	79.0674	.1408
								0455	80.1119	.1481
								0500	82.1739	.1557
								0505	80.7332	.1632
								0515	76.4111	.1777
								0520	73.2686	.1847
								0525	71.1076	.1913
								0535	62.6344	.2037
								0540	59.4829	.2094
								0545	55.7641	.2147
								0550	52.9818	.2197
								0555	49.4070	.2245
								0605	44.7067	.2332
								0610	41.7353	.2372
								0630	34.5228	.2513
								0635	33.3882	.2544
								0645	30.0386	.2603
								0730	21.4124	.2817
								0740	20.5570	.2856
								0745	19.7376	.2875
								0755	18.9272	.2911
								0800	18.1168	.2928
								0825	16.2979	.3007
								0830	16.2979	.3022
								0845	15.2264	.3066
								0850	15.2264	.3080
								0900	14.4970	.3108
								0915	14.1459	.3148
								0920	13.8037	.3161
								0925	13.8037	.3173
								0935	13.1374	.3198
								0940	13.0924	.3210
								0945	12.4711	.3222
								0955	12.5251	.3245
								1015	11.2915	.3289
								1020	11.3095	.3300
								1035	10.6972	.3330
								1045	10.7062	.3350
								1055	10.3640	.3370
								1110	9.8688	.3398
								1120	9.8778	.3416
								1130	9.5807	.3434
								1145	9.0764	.3460
								1210	8.8153	.3501
								1225	8.2840	.3525
								1300	7.7978	.3577
								1320	7.7798	.3606
								1335	7.3386	.3627
								1400	7.3386	.3661

Continued on next page

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0011106. 1/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				BRUSH CREEK 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)
			<u>Event of March 6-9, 1967 - Continued</u>							
							3 -7	1415	6.8974	.3681
								1500	6.4832	.3737
								1545	<u>1/</u> 6.0419	.3789
								1640	5.6097	.3848
								1745	5.2586	.3913
								1900	4.9074	.3984
								2020	4.5562	.4054
								2155	4.2050	.4131
								2345	3.8539	.4213
								2400	3.8539	.4224
							3 -8	0135	3.5657	.4289
								0400	3.2956	.4381
								0755	3.0165	.4518
								1435	2.8814	.4737
								1800	2.6023	.4841
								2320	2.3591	.4988
								2400	2.3591	.5005
							3 -9	0620	2.1520	.5164

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0011106. 1/ RUNOFF SLOWLY RECEDING UNTIL NEW EVENT OCCURRED AT 0905 ON 3-12-67.



BLACKSBURG, VIRGINIA BRUSH CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA POWELLS CREEK W-I 13.09 AREA—182 ACRES											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 1	1.73	2.88	1.35	1.57	4.53	2.35	2.05	6.77	2.34	1.51	1.35	5.75	34.18			
	O	1.16	1.23	.48	.26	.37	.22	.20	.63	.21	.23	.25	1.65	6.89			
STA AV 2/P (58-67)	O	3.02	3.37	3.37	2.94	3.83	2.55	4.33	4.56	2.63	3.07	2.47	3.18	39.32			
	P 2	1.70	2.00	2.05	1.29	.86	.33	.54	.58	.29	.69	.66	1.24	12.23			
MEAN 77 YR		3.49	3.38	3.74	3.36	3.86	3.72	4.49	4.40	3.47	2.77	2.61	3.27	42.56			
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		
1967		12-28	.14	12-28	.12	12-28	.17	12-28	.36	12-28	.45	12-28	.50	12-28	.54	12-22	.95
MAXIMUMS FOR PERIOD OF RECORD																	
1958 TO 1967	7-11 1965	2.29	7-11 1965	1.61	7-11 1965	1.92	7-11 1965	2.07	7-11 1965	2.10	7-11 1965	2.17	12-28 1958	2.25	3-5 1963	3.41	
Notes: Watershed conditions: Farm woods, predominantly hardwood, 16%; pasture, native grass mixture, usually good to excellent cover, 50%; small grain, 1%; corn, 11%; tobacco, 1%; alfalfa & other hay crops, 15%; total cultivated 28%; idle land, 4%; roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from January, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Danville Bridge St., Virginia. Missing monthly totals for July and August, 1946 were estimated from nearby Weather Bureau records at Danville, Va., (Airport).																	
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA POWELLS CREEK W-I 13.09											
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	.00	.00	.00	.00	.00	.13	.00	.00	.64	.00	.00	.00	.00				
2	.00	.00	.00	.00	.38	.01	.74	.00	.00	.00	.05	.02					
3	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.82					
4	.45S	.00	.00	.00	.00	.00	.00	1.48	.00	.00	.00	.00					
5	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00					
6	.00	.18S	.04	.00	.00	.00	.00	.00	.00	.72	.00	.00					
7	.01	.25S	.00	.00	1.10	.00	.00	.32	.00	.02	.00	.00					
8	.48	.00	.00	.00	.25	.00	.14	.00	.00	.00	.00	.00					
9	.01	.37S	.00	.00	.00	.00	.00	1.30	.65	.00	.00	.00					
10	.00	.00	.00	.05	.00	.00	.00	.00	.00	.19	.00	1.73					
11	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.22					
12	.00	.00	.17	.00	.18	.00	.00	.00	.00	.00	.00	.03					
13	.00	.00	.17	.10	.01	.00	.00	.00	.00	.00	.00	.00					
14	.37	.00	.00	.00	.10	.00	.31	.00	.00	.00	.00	.00					
15	.00	.00	.22	.00	.43	.00	.00	.00	.00	.00	.00	.00					
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
17	.00	1.35S	.00	.11	.00	.00	.28	.00	.00	.00	.00	.00					
18	.00	.34S	.00	.00	.00	.75	.02	.00	.00	.34	.00	.25					
19	.14S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
20	.00	.36	.03	.00	.00	.00	.00	.14	.00	.00	.00	.00					
21	.00	.00	.53	.00	.27	.00	.00	.79	.24	.00	.04	.00					
22	.00	.00	.00	.07	.50	.26	.00	.33E	.00	.00	.07	1.26					
23	.00	.00	.00	.00	.10	.00	.00	1.11E	.00	.00	.15	.07					
24	.00	.00	.00	.00	.00	.00	.00	.56E	.00	.00	.60	.00					
25	.00	.00	.00	.00	.00	.00	.14	.69	.00	.24	.00	.00					
26	.00	.00	.00	1.22	.00	.00	.00	.00	.00	.00	.00	.00					
27	.27	.01M	.00	.02	.00	.00	.00	.04	.31	.00	.00	.00					
28	.00	.02M	.15	.00	.00	.00	.00	.00	.50	.00	.00	1.29S					
29	.00	-----	.04	.00	.23	.00	.00	.00	.00	.00	.01	.00					
30	.00	-----	.00	.00	.27	1.12	.09	.00	.00	.00	.43	.00					
31	.00	-----	.00	-----	.66	-----	.32	.00	-----	.00	-----	.06S					
TOTAL	1.73	2.88	1.35	1.57	4.53	2.35	2.05	6.77	2.34	1.51	1.35	5.75					
STA AV	3.02	3.37	3.37	2.94	3.83	2.55	4.33	4.56	2.63	3.07	2.47	3.18					
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD OF JANUARY, 1958 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB.1194, P. 13.9-5.																	

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA POWELLS CREEK W-I 13.09						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.48	.13	.13	.08	.05	.11	.04	.03	.15	.04	.07	.07
2	.50	.13	.14	.08	.07	.09	.28	.04	.06	.05	.05	.06
3	.37	.12	.13	.07	.07	.08	.07	.03	.05	.04	.05	.41
4	.82	.12	.13	.06	.05	.06	.04	.30	.05	.04	.06	.08
5	.52	.12	.13	.07	.06	.06	.04	.05	.05	.04	.06	.06
6	.32	.14	.13	.06	.05	.05	.04	.04	.05	.09	.06	.06
7	.29	.20	.14	.06	.42	.05	.04	.05	.04	.06	.06	.06
8	1.00	.14	.13	.06	.12	.05	.04	.04	.04	.05	.06	.05
9	.42	.15	.12	.06	.09	.05	.04	.74	.07	.05	.06	.05
10	.29	.16	.10	.06	.07	.04	.04	.07	.07	.05	.06	2.43
11	.24	.41	.10	.06	.06	.04	.04	.04	.05	.05	.05	.33
12	.22	.20	.11	.05	.07	.04	.04	.04	.04	.05	.06	.38
13	.20	.16	.15	.06	.06	.04	.04	.04	.04	.05	.05	.13
14	.43	.15	.11	.06	.07	.04	.04	.04	.05	.05	.05	.11
15	.22	.15	.15	.06	.13	.04	.04	.04	.04	.05	.05	.11
16	.18	.14	.11	.05	.09	.03	.04	.04	.04	.05	.05	.09
17	.17	1.73	.09	.06	.06	.03	.05	.04	.04	.05	.05	.08
18	.15	1.78	.09	.06	.06	.06	.04	.04	.04	.07	.05	.12
19	.15	.48	.08	.05	.05	.04	.04	.04	.04	.06	.06	.12
20	.19	1.08	.08	.05	.05	.04	.04	.05	.04	.05	.06	.10
21	.20	.47	.28	.05	.06	.04	.04	.08	.05	.05	.05	.10
22	.17	.26	.12	.06	.11	.05	.03	.09	.05	.05	.06	1.65
23	.16	.22	.11	.05	.13	.04	.03	.52	.04	.05	.07	.89
24	.15	.19	.10	.05	.06	.04	.04	.84	.04	.05	.14	.20
25	.14	.14	.10	.05	.05	.05	.04	.75	.04	.07	.09	.16
26	.14	.13	.10	.23	.05	.04	.04	.40	.04	.06	.06	.13
27	.23	.15	.10	.08	.05	.04	.03	.08	.05	.05	.06	.11
28	.16	.17	.10	.06	.05	.04	.04	.06	.08	.05	.05	3.70
29	.13	-----	.11	.06	.06	.05	.04	.05	.05	.05	.05	.37
30	.13	-----	.09	.05	.06	.24	.03	.05	.05	.06	.13	.20
31	.13	-----	.08	-----	.34	-----	.04	.05	-----	.06	-----	.24
MEAN	.29	.34	.12	.07	.09	.06	.05	.15	.05	.06	.06	.41
INCHES	1.16	1.23	.48	.26	.37	.22	.20	.63	.21	.23	.25	1.65

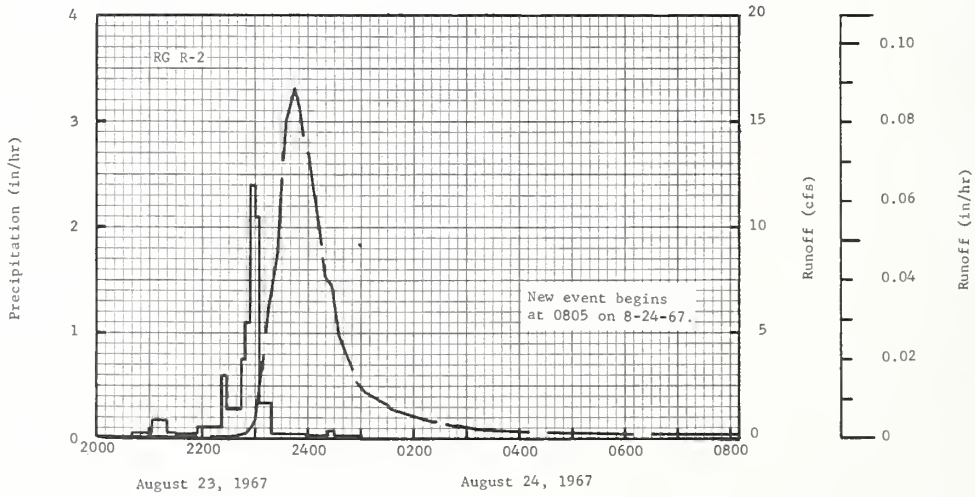
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.130779.

1967 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA POWELLS CREEK W-I 13.09								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MD-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 August 23 and 24, 1967</u>												
8-23	RG R-1	2/.0096	8-23	RG	R-2	.00	.00	8-23	2210	.0826	.0000	
	1/ .14			2040	.05				.02	2220	.1028	.0001
	RG R-2			2120	.18				.07	2225	.1156	.0001
	3/ .13			2130	.06				.08	2230	.1156	.0002
				2155	.05				.10	2235	.1431	.0002
				2222	.11				.15	2240	.1890	.0003
				2227	.60				.20	2250	.2569	.0005
				2244	.28				.28	2255	.5028	.0007
				2248	.75				.33	2300	.9139	.0010
				2254	1.10				.44	2305	2.2114	.0017
				2300	2.40				.68	2310	3.9566	.0031
				2304	2.10				.82	2315	6.2304	.0054
				2318	.34				.90	2325	8.8895	.0123
				2400	.04				.93	2330	12.3121	.0171
	8-24 0022	.03	.94	2335	15.0942	.0233						
	0030	.08	.95	2345	16.5898	.0377						
	0100	.02	.96	2350	15.7071	.0450						
	RG	R-1	1.04	2355	14.2904	.0519						
	2 RG	AVG 4/	1.01	2400	13.5820	.0582						
				8-24 0005	12.1543	.0640						
				0010	10.9706	.0693						
				0020	7.8049	.0778						
				0025	7.3315	.0812						
				0035	4.9329	.0868						
				0050	3.2629	.0924						

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0054491. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .09 IN. FROM 0020 TO 0300; .03 IN. FROM 0530 TO 0630; .02 IN. FROM 1850 TO 1930. 2/ CONTINUOUS FLOW PRIOR TO 2210. 3/ .08 IN. FROM 0020 TO 0300; .03 IN. FROM 0530 TO 0630; .02 IN. FROM 1850 TO 1930. 4/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				POWELLS CREEK 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 August 23-24, 1967 - Continued										
							8-24	0055	2.7179	.0938
								0105	2.2040	.0960
								0130	1.6755	.1004
								0135	1.4773	.1011
								0220	.8203	.1058
								0225	.8203	.1062
								0245	.6001	.1075
								0250	.6019	.1077
								0300	.5469	.1083
								0310	.4955	.1087
								0320	.4551	.1092
								0335	.3762	.1097
								0410	.3083	.1108
								0500	.2459	.1121
								0630	.1945	.1139
								0805	<u>1</u> /.2000	.1156

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0054491. 1/ NEW EVENT BEGINS AT 0805 ON 8-24-67.



BLACKSBURG, VIRGINIA POWELLS CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I 13.10 AREA—1471 ACRES (2.30 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁	1.73	3.28	1.14	1.49	4.46	2.48	4.75	5.44	2.57	1.86	1.29	5.91	36.40
O	.57	.91	.46	.36	.42	.28	.39	.41	.28	.23	.23	1.05	5.59
STA AVG ² _P (58-67)	3.20	3.56	3.32	2.97	3.61	3.00	3.94	4.66	2.93	3.14	2.41	3.16	39.90
O	.99	1.33	1.36	1.04	.89	.59	.49	.60	.40	.68	.54	.85	9.76
MEAN 37 YR P ₃	3.35	3.25	3.83	3.51	3.74	4.00	4.56	4.24	3.70	2.79	3.00	3.26	43.23

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
1967	7-14	.05	7-14	.04	7-14	.06	12-28	.14	12-28	.20	12-28	.25	12-28	.29	2-17	.59

MAXIMUMS FOR PERIOD OF RECORD																
1958 TO	10-10	1.12	10-10	.71	10-10	1.03	10-10	1.41	10-10	1.51	10-10	1.58	10-10	1.62	10-10	1.91
1967	1959		1959		1959		1959		1959		1959		1959		1959	

NOTES: Watershed conditions: Farm woods, mixture of hardwoods and conifers, with pine predominating, 58%; small grain 2%; corn, 5%; tobacco, 3%; alfalfa and other hay crops, 6%; other cultivated areas, 5%; total cultivated, 21%; pasture, native grass mixture, usually fair cover, 9%; idle land, 12%; conditions are consistent from year to year. 1/ Precipitation Thiessen weighted R-1, R-2 and R-3. 2/ Determined from continuous records from January, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 37-yr (1931-67) U.S. Weather Bureau record period at Halifax (1 mile N), Virginia, thru July 1966 at which time station was closed. Thereafter, missing monthly totals were obtained from nearby Weather Bureau records at Halifax (2SSE), Virginia.

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I 13.10						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.00	.13	.00	.00	.55	.00	.00	.00
2	.00	.00	.00	.00	.41	.03	.97	.00	.00	.00	.02	.02
3	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.95
4	.31M	.00	.00	.00	.00	.00	.00	.82	.00	.00	.00	.00
5	.07S	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00
6	.00	.17S	.02	.00	.00	.00	.00	.00	.00	.31	.00	.00
7	.00	.34S	.00	.00	1.44	.00	.00	.40	.00	.08	.00	.00
8	.42	.00	.00	.00	.16	.00	.04	.00	.00	.00	.00	.00
9	.00	.46S	.00	.00	.00	.00	.00	1.35	.79	.00	.00	.00
10	.00	T	.00	.04	.00	.00	.00	.00	.00	.32	.00	1.71
11	.00	.02S	.00	.00	.05	.00	.00	.00	.00	.00	.00	.20
12	.00	.00	.12	.00	.21	.01	.00	.00	.00	.00	.00	.01
13	.00	.00	.14	.10	.00	.00	.02	.00	.00	.00	.00	.00
14	.40	.00	.00	.00	.09	.00	1.68	.00	.00	.00	.00	.00
15	.00	.00	.16	.00	.08	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	1.55M	.00	.05	.00	.00	.66	.00	.00	.00	.00	.00
18	.00	.34M	.00	.00	.00	.63	.03	.00	.00	.83	.00	.32
19	.14S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.35	.02M	.00	.00	.00	.00	.09	.00	.00	.00	.00
21	.00	.00	.56	.00	.34	.00	.00	.58	.41	.00	.01	.00
22	.00	.00	.00	.05	.47	.24	.00	.29	.00	.00	.09	1.21
23	.00	.00	.00	.00	.11	.00	.00	.50	.00	.00	.16	.21
24	.00	.00	.00	.00	.00	.00	.00	.55	.00	.00	.60	.00
25	.00	.00	.00	.00	.00	.00	.72	.16	.00	.32E	.00	.00
26	.00	.00	.00	1.24	.00	.00	.00	T	.00	.00	.00	.00
27	.39	.00	.00	.01	.00	.00	.00	.06	.09	.00	.00	.00
28	.00	.05M	.03	.00	.00	.00	.00	.00	.73	.00	.00	1.28S
29	.00	-----	.09	.00	.39	.00	.00	.00	.00	.00	T	.00
30	.00	-----	.00	.00	.03	1.39	.56	.00	.00	.00	.41	.00
31	.00	-----	.00	-----	.68	-----	.07	.60	-----	.00	-----	T
TOTAL	1.73	3.28	1.14	1.49	4.46	2.48	4.75	5.44	2.57	1.86	1.29	5.91
STA AV	3.20	3.56	3.32	2.97	3.61	3.00	3.94	4.66	2.93	3.14	2.41	3.16

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 AND R-3. STA AV IS FOR PERIOD JANUARY 1958 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.10-8.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA				LITTLE WINNS CREEK W-I 13.10		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.18	.85	1.05	.82	.68	.74	.50	.44	3.39	.38	.45	.56
2	1.30	.81	1.02	.79	.71	.68	1.50	.41	.62	.38	.46	.55
3	1.64	.79	.99	.79	.74	.62	.83	.38	.53	.39	.44	2.88
4	1.76	.76	.95	.76	.66	.60	.48	2.01	.48	.40	.42	.73
5	1.43	.80	.95	.78	.65	.58	.45	.55	.50	.45	.42	.63
6	1.26	.89	.96	.78	.66	.54	.44	.45	.43	.49	.42	.60
7	1.07	.94	.91	.77	3.94	.53	.48	.62	.45	.50	.42	.59
8	1.74	.77	.82	.73	1.34	.50	.48	.51	.31	.46	.45	.58
9	1.66	1.02	.87	.73	.99	.50	.47	6.36	.69	.45	.44	.55
10	1.23	.96	.88	.76	.83	.49	.42	1.40	.65	.57	.46	9.27
11	1.08	1.26	.67	.73	.79	.46	.41	.68	.45	.45	.48	2.96
12	1.09	1.14	.91	.71	.87	.43	.39	.60	.45	.42	.46	1.77
13	1.08	1.09	.97	.76	.79	.42	.44	.54	.46	.42	.46	1.13
14	1.60	1.21	.89	.75	.79	.46	4.47	.49	.45	.43	.46	.96
15	.79	1.13	.97	.71	.75	.46	1.66	.48	.41	.42	.44	.89
16	1.11	1.05	.89	.68	.69	.44	.55	.45	.42	.43	.44	.79
17	.81	6.47	.82	.71	.68	.43	1.61	.45	.44	.42	.46	.76
18	1.00	7.41	.82	.70	.65	.71	.92	.44	.43	1.16	.46	.87
19	.72	3.34	.82	.68	.64	.53	.59	.41	.42	.46	.46	.84
20	.95	7.44	.86	.67	.59	.45	.54	.47	.49	.44	.46	.76
21	.97	5.77	1.36	.65	.69	.44	.51	.77	.48	.42	.46	.76
22	.89	2.47	1.04	.70	.78	.51	.50	.67	.43	.42	.46	3.06
23	.89	1.92	.92	.65	.81	.53	.47	.72	.39	.42	.54	6.17
24	.89	1.39	.89	.67	.64	.44	.43	1.31	.38	.41	.64	1.80
25	.85	1.23	.89	.62	.60	.41	1.65	.85	.47	.54	.71	1.39
26	.86	1.20	.86	1.48	.59	.41	.55	.65	.43	.46	.50	1.22
27	1.68	1.15	.82	.86	.56	.38	.44	.57	.39	.42	.50	1.05
28	.95	1.17	.84	.71	.52	.37	.43	.52	.88	.42	.50	13.23
29	.93	-----	.90	.68	.70	.38	.41	.48	.47	.42	.48	4.37
30	.87	-----	.82	.68	.64	2.55	.75	.45	.53	.44	.72	1.98
31	.86	-----	.79	-----	1.06	-----	.46	.47	-----	.46	-----	1.50
MEAN	1.13	2.02	.91	.75	.84	.57	.78	.83	.58	.46	.48	2.10
INCHES	.57	.91	.46	.36	.42	.28	.39	.41	.28	.23	.23	1.05

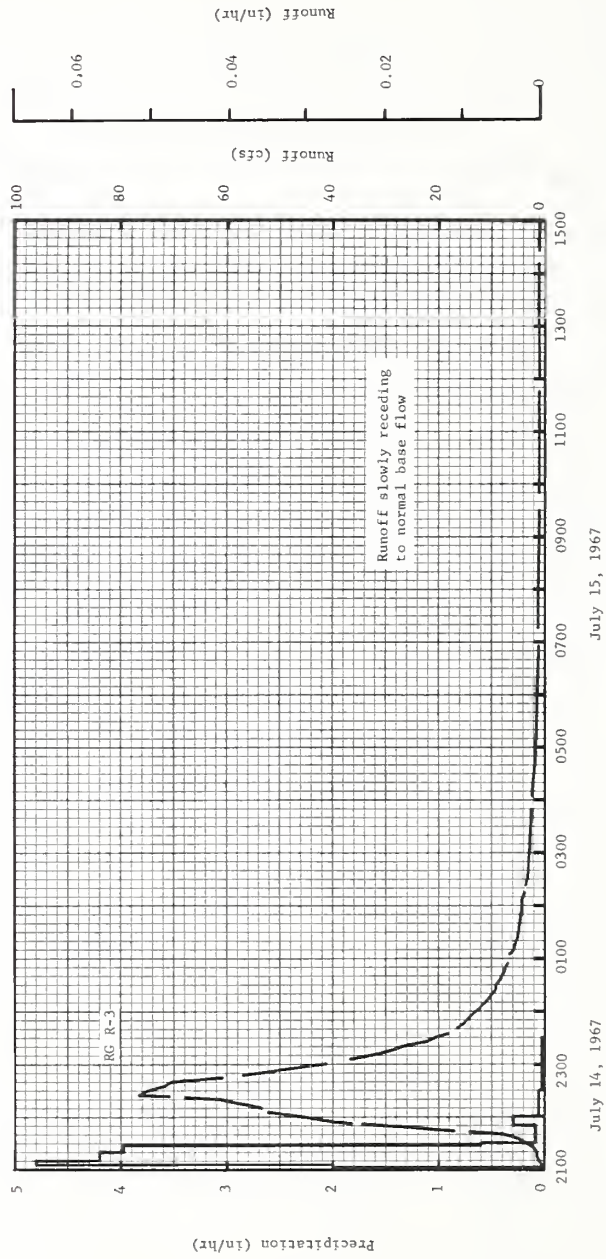
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.016181.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				LITTLE WINNS CREEK 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)	
<u>Event of July 14 and 15, 1967</u>											
7-14	RG R-1 1/ .22	2/4.0085	7-14	RG 2052	R-2 .00	.00	7-14	2100	.6675	.0000	
	RG R-2			2058	.10	.01		2105	.5933	T	
				2100	3.00	.11		2115	1.5426	.0002	
7-14	3/ .28			2110	3.24	.65		2120	1.6612	.0002	
				2125	2.20	1.20		2125	2.0766	.0004	
	RG R-3			2127	1.50	1.25		2130	3.6785	.0005	
				2145	.03	1.26		2135	4.8799	.0008	
7-14	4/ .27			2200	.20	1.31		2140	8.0244	.0011	
				2210	.18	1.34		2145	20.5282	.0019	
				2300	.01	1.35		2150	31.8009	.0034	
<u>Watershed conditions</u>											
Woods, mixture of hardwood and conifers, good cover, 58%; idle, weeds and grass, good to excellent cover, 12%; pasture, mostly native grass 3 to 4 in. high, good cover, 9%; corn, 4 to 5 ft. high, fair cover, 5%; tobacco, 1 to 1½ ft. tall, fair cover, 3%; hay, mostly clovers and grass, good cover, 6%; idle, good cover, 5%; small grain stubble, fair cover, 2%.			7-14	RG	R-3	.00	.00	2155	40.4780	.0054	
				2102	.00	.00	2200	45.3875	.0078		
				2105	2.00	.10	2205	52.2550	.0106		
				2110	4.80	.50	2210	53.4119	.0135		
							2215	57.4909	.0167		
							2120	60.9765	.0200		
							2128	76.4172	.0238		
							2130	74.8598	.0281		
							2150	71.8636	.0322		
							2200	70.3655	.0362		
				2230	60.5464	.0399					
				2330	53.1746	.0431					
				RG	R-1	1.11	2255	47.7756	.0459		
				3 RG	AVG 5/	1.42	2300	41.3234	.0484		
							2310	32.3942	.0526		
							2315	29.0866	.0543		
							2320	26.7134	.0559		
							2325	22.3823	.0572		
							2330	20.6469	.0584		
							2335	18.0660	.0595		

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0006742. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .22 IN. FROM 0900 TO 1300. 2/ CONTINUOUS FLOW PRIOR TO 2100. 3/ .28 IN. FROM 0800 TO 1050. 4/ .27 IN. FROM 0810 TO 1120. 5/ THIESSEN WEIGHTED FOR RG R-1, R-2 AND R-3.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				LITTLE WINNS CREEK 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)
<u>Event of July 14-15, 1967 - Continued</u>										
							7-14	2340	16.6718	.0605
								2345	15.5000	.0614
								2350	14.8622	.0623
								2355	13.9426	.0631
								2400	12.8153	.0638
							7-15	0010	11.2431	.0652
								0025	9.4483	.0669
								0030	9.4187	.0674
								0035	8.2617	.0679
								0040	8.0689	.0684
								0045	7.8167	.0689
								0050	7.3124	.0693
								0055	6.8081	.0697
								0105	6.6153	.0704
								0110	5.9033	.0708
								0120	5.4732	.0714
								0125	5.0727	.0717
								0145	4.4794	.0728
								0150	4.4053	.0730
								0155	4.0344	.0733
								0205	4.1234	.0737
								0230	3.3225	.0748
								0235	3.3670	.0750
								0245	3.1593	.0753
								0255	3.1148	.0757
								0305	2.8923	.0760
								0315	2.7588	.0764
								0325	2.6105	.0767
								0340	2.3880	.0771
								0350	2.3880	.0773
								0405	2.1359	.0777
								0440	1.9431	.0785
								0520	1.7947	.0794
								0605	1.5574	.0802
								0655	1.3794	.0810
								0800	1.2311	.0820
								0930	1.0679	.0832
								1105	.9493	.0842
								1320	.9493	.0857
								1445	<u>1/</u> .8010	.0865
								1720	.6971	.0878
								2310	.6081	.0904

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0006742. 1/ RUNOFF SLOWLY RECEDING TO BASE FLOW.



BLACKSBURG, VIRGINIA LITTLE WINNS CREEK W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA ROCKY RUN BRANCH W-I 13.11 AREA—555 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ₁	2.14	3.92	1.44	1.47	4.73	3.72	1.90	5.16	2.41	1.13	1.76	4.92	34.70
	O	.74	1.05	.56	.36	.51	.26	.18	.20	.12	.11	.14	.54	4.77
	STA AV _{IS} P	3.04	3.56	3.03	2.33	3.50	4.22	4.14	3.86	3.12	2.69	2.43	3.06	38.98
	(58-67) O	.93	1.31	1.37	.94	.93	.68	.48	.37	.31	.39	.51	.76	8.98
	MEAN 37 YR P	3.17	3.33	3.37	3.21	3.87	4.12	5.81	5.10	3.82	2.37	2.74	3.18	44.09

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
1967	5-7	.02	2-20	.02	2-20	.04	2-20	.10	2-20	.16	2-20	.22	2-20	.29	2-17	.67

MAXIMUMS FOR PERIOD OF RECORD

19 58 TO	6-7	.22	6-7	.19	5-8	.34	5-6	.71	5-6	.98	5-6	1.45	5-5	2.09	4-30	2.86
19 67	1961		1961		1958		1958		1958		1958		1958		1958	

Notes: Watershed conditions: Mixed cover; farm woods, mixture of hardwoods and conifers, 57%; permanent pasture, usually a good cover of native grass and clover mixture, 13%; alfalfa and other hay crops, 9%; corn, 4%; tobacco, 1%; other cultivated areas, 4%; total cultivated, 18%. Idle land, usually a good cover of tall weeds, vines and short growing plants, 10%; roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from April, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 37-yr (1931-67) U.S. Weather Bureau record period at Emporia (1 mile WNW), Virginia. Missing monthly totals for Jan. thru May 1966, were estimated from nearby Weather Bureau records at Lawrenceville, (5W), Virginia.

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA ROCKY RUN BRANCH W-I 13.11								
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	.00		
2	.00	.00	.00	.00	.13	.00	.10	.00	.00	.00	.39	.00		
3	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	1.01		
4	.41M	.00	.00	.00	.05	.00	.54	.90	.00	.00	.00	.00		
5	.05S	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00		
6	.00	.13S	.00	.00	.04	.00	.00	.00	.00	T	.00	.00		
7	.00	.49S	.27	.00	2.20	.00	.44	.06	.00	.16	.00	.00		
8	.23	.00	.00	.00	.16	.00	.04	.00	.00	.00	.00	.00		
9	.00	.53S	.00	.00	.00	.00	.00	.05	.40	.00	.00	.03		
10	.17	.23S	.00	.05E	.00	.00	.00	.05	.21	.44	.00	1.21		
11	.00	.00	.00	.00	.07	.00	.11	.05	.00	.00	.00	.18		
12	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.47		
13	.00	.00	.00	.05E	.00	.00	.03	.00	.00	.00	.00	.00		
14	.79	.00	.10	.00	.00	.00	.49	.00	.00	.00	.00	.00		
15	.00	.00	.08	.00	.05	.00	.01	.00	.00	.00	.00	.00		
16	.00	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00		
17	.00	1.33S	.00	.29	.00	.00	.00	.00	.01	.00	.00	.00		
18	.00	.10S	.00	.00	.00	1.94	.00	.00	.00	.20	.00	.28		
19	.36S	.10	.00	.00	.16	.00	.14	.11	.12	.00	.00	.00		
20	T	.77	.10E	.00	.00	.00	T	.01	.07	.00	.00	.00		
21	.00	.00	.80E	.00	.73	.00	.00	.62	.24	.00	.00	.00		
22	.00	.04	.00	.12	.25	.56	.00	.08	.00	.00	.12	.70		
23	.00	.01	.00	.01	.12	.00	.00	.77	.00	.00	.23	.21		
24	.00	.00	.00	.00	.00	.00	.00	1.48	.00	.00	.47	.00		
25	.00	.00	.00	.00	.00	.92	.00	.01	.00	.33	.00	.00		
26	.00	.00	.00	.90	.00	.20	.00	.00	.00	.00	.00	.00		
27	.13	.07S	.00	.05	.00	.00	.00	.73	.13	.00	.00	.00		
28	.00	.12M	.00	.00	.18	.00	.00	.00	1.15	.00	.00	.78S		
29	.00	-----	.09	.00	.05	.00	.00	.00	.00	.00	.00	.00		
30	.00	-----	.00	.00	.01	.10	.00	.00	.00	.00	.55	.00		
31	.00	.00	.00	-----	.50	-----	.00	.05	.00	.00	-----	.05S		
TOTAL	2.14	3.92	1.44	1.47	4.73	3.72	1.90	5.16	2.41	1.13	1.76	4.92		
STA AV	3.04	3.56	3.03	2.33	3.50	4.22	4.14	3.86	3.12	2.69	2.43	3.06		

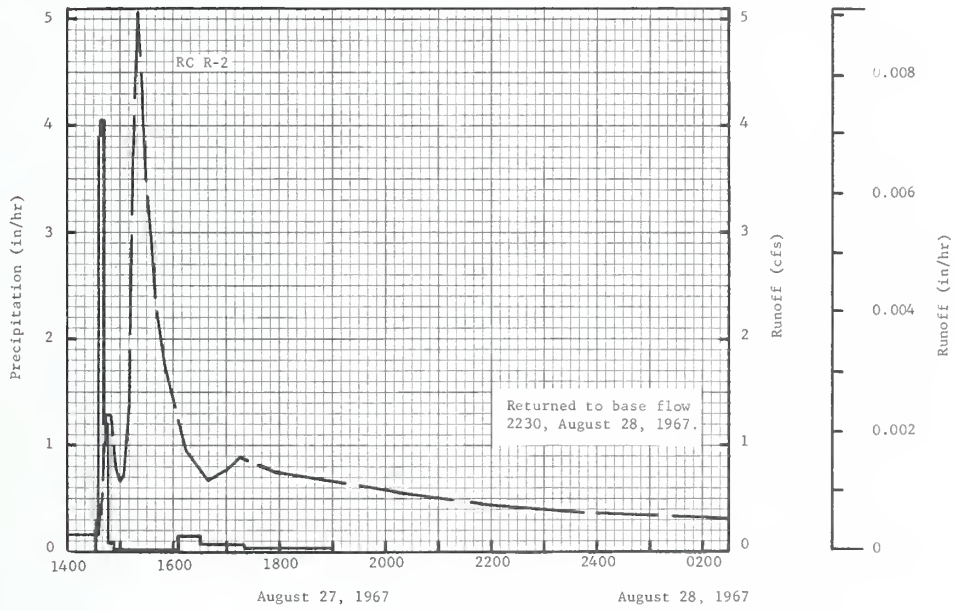
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD APRIL 1958 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, MISC. PUB. 1194, P. 13.11-6.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA		ROCKY RUN BRANCH W-I		13.11		
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.80	.34	.50	.34	.23	.22	.14	.08	.10	.07	.09	.13
2	.78	.34	.48	.34	.23	.20	.13	.07	.10	.06	.13	.13
3	.61	.31	.46	.34	.21	.18	.14	.07	.10	.08	.10	.73
4	.60	.32	.43	.34	.19	.17	.25	.17	.10	.08	.09	.23
5	.82	.31	.45	.32	.20	.15	.14	.12	.10	.09	.09	.18
6	.68	.34	.43	.31	.19	.14	.12	.11	.09	.07	.09	.16
7	.55	.45	.51	.28	3.35	.14	.20	.09	.08	.10	.09	.15
8	.53	.38	.44	.28	1.12	.14	.19	.09	.08	.10	.09	.00
9	.51	.31	.39	.28	.60	.12	.14	.08	.11	.10	.09	.00
10	.46	.40	.38	.30	.40	.13	.14	.09	.13	.13	.09	1.11
11	.56	.57	.38	.29	.35	.13	.14	.09	.09	.09	.09	.78
12	.48	.71	.38	.28	.30	.12	.12	.09	.09	.08	.10	1.21
13	.40	.55	.38	.29	.29	.10	.14	.08	.08	.08	.10	.46
14	1.50	.52	.38	.28	.29	.11	.23	.06	.08	.08	.10	.33
15	.97	.50	.41	.28	.27	.11	.18	.06	.08	.06	.10	.28
16	.64	.44	.33	.26	.23	.10	.14	.06	.09	.07	.09	.25
17	.52	1.71	.32	.30	.20	.11	.13	.06	.09	.07	.10	.23
18	.44	3.08	.31	.26	.21	.56	.13	.05	.07	.09	.11	.27
19	.44	1.19	.31	.23	.20	.51	.14	.05	.08	.07	.09	.29
20	.44	3.42	.32	.23	.19	.18	.13	.08	.10	.06	.10	.28
21	.49	3.10	.94	.22	.27	.14	.12	.18	.12	.06	.11	.26
22	.55	1.28	.56	.26	.39	.18	.10	.16	.13	.06	.11	.37
23	.49	.96	.48	.22	.34	.27	.10	.26	.07	.06	.14	.74
24	.43	.73	.42	.21	.26	.14	.09	.97	.05	.07	.14	.41
25	.42	.61	.40	.19	.23	.46	.10	.23	.05	.13	.15	.34
26	.41	.53	.38	.47	.19	.51	.10	.14	.06	.14	.11	.31
27	.44	.55	.38	.36	.19	.20	.08	.42	.08	.08	.10	.28
28	.40	.62	.38	.26	.17	.15	.09	.25	.24	.07	.09	.94
29	.35	-----	.37	.25	.19	.15	.09	.16	.14	.07	.09	.87
30	.34	-----	.34	.25	.18	.16	.11	.14	.08	.08	.17	.46
31	.34	-----	.34	-----	.30	-----	.09	.13	-----	.08	-----	.40
MEAN	.56	.88	.42	.28	.39	.20	.13	.15	.10	.08	.11	.41
INCHES	.74	1.05	.56	.36	.51	.26	.18	.20	.12	.11	.14	.54

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

1967 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA		ROCKY RUN BRANCH 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 August 27 and 28, 1967										
8-27	RG R-1 1/ .05	2/.0040	8-27	RG 1432	R-2 .00	.00	8-27	1435	.1679	.0000
	RG R-2			1436	.30	.02		1440	.5486	.0001
				1438	3.90	.15		1445	1.2932	.0002
				1442	4.05	.42		1450	1.2876	.0004
8-27	.00			1446	1.20	.50		1455	.8005	.0005
				1453	.09	.51		1500	.6662	.0006
				1606	.01	.52		1505	.7222	.0007
				1630	.15	.58		1510	1.3380	.0009
				1720	.07	.64		1515	3.7340	.0013
				1800	.03	.66		1520	5.0719	.0019
				1900	.03	.69		1525	4.2770	.0026
				RG	R-1	.75		1530	3.4877	.0032
				2 RG	AVG 3/	.71		1535	2.9838	.0037
								1540	2.3960	.0041
								1550	1.7690	.0047
								1615	.9517	.0057
								1640	.6886	.0063
								1700	.7725	.0068
								1715	.8957	.0071
								1755	.7446	.0081
								1915	.6438	.0098
								2015	.5430	.0108
								2150	.4535	.0122
								2345	.3751	.0137
								2400	.3751	.0138
							8-28	0230	4/ .3079	.0154
								1220	.2463	.0202
								2230	.1903	.0242

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0017869. FOR 30-DAY ANTECEDENT P AND Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .05 IN, FROM 0010 TO 0100. 2/ CONTINUOUS FLOW PRIOR TO 1435. 3/ THIESSEN WEIGHTED FOR RG R-1 AND R-2. 4/ RUNOFF SLOWLY RECEDED TO NORMAL BASE FLOW.



BLACKSBURG, VIRGINIA ROCKY RUN BRANCH W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I 13.12 AREA—192 ACRES											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ¹	1.21	1.80	5.37	.65	3.92	1.78	3.12	7.09	.78	3.30	1.76	6.22	37.00			
	R ²	.92	.37	2.45	.02	.08	.08	.07	.33	.00	.04	T	2.26	6.62			
STA AVG ² P		2.68	3.35	3.52	2.87	3.08	3.00	3.04	3.46	3.71	2.48	2.47	2.57	36.23			
(58-67) ²		1.10	1.63	1.77	.92	.35	.32	.08	.14	.35	.22	.14	.49	7.51			
MEAN P ³		3.03	2.59	3.19	3.45	3.85	3.99	4.11	4.32	3.55	2.88	2.75	2.89	40.60			
61 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		
1967		3-7	.19	3-7	.17	3-7	.31	3-7	.74	3-6	1.01	3-6	1.18	3-6	1.27	3-6	1.59
MAXIMUMS FOR PERIOD OF RECORD																	
1958 to 1967	6-24 1958	.48	5-19 1966	.29	2-7 1965	.44	2-7 1965	.89	2-7 1965	1.23	2-7 1965	1.45	2-7 1965	1.61	2-18 1961	2.76	
NOTES: Watershed conditions: Mixed cover, farm woods, predominantly hardwood, 53%; permanent pasture with a fair cover of native grass mixture, 29%; corn, 15%; hay crop, 1%; total cultivated, 16%; paved roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from May, 1958 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 61-yr (1907-67) U.S. Weather Bureau record period at Culpeper, Virginia. Monthly records missing for Jan. through July 1907, Nov. 1949, Dec. 1950, and for Jan. through Apr. and July 1951.																	
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I 13.12											
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	.00	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	.00	.04				
2	.00	.12	.00	.00	.28	.00	.38	.00	.00	.00	.40	.00	.16				
3	.00	.00	.00	.04	.13	.00	.00	.41	.00	.00	.00	.00	1.11				
4	.00	.00	.08	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00				
5	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00				
6	.00	.175	1.28	.04	.38	.00	.00	.00	.00	.16	.00	.00	.00				
7	.00	.50S	1.49	.03	.97	.00	.00	.08	.00	.10	.00	.00	.01				
8	.10	.00	.00	.02	.11	.00	.41	.00	.00	.11	.00	.00	.00				
9	.00	.11S	.00	.00	.00	.00	.00	.00	.10	.00	.00	.00	.08				
10	.00	.00	.00	.00	.00	.00	.00	.14	.00	.78	.00	.00	1.74				
11	.00	.00	.38	.00	.08	.00	.09	.00	.00	.00	.00	.00	.40				
12	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	.15				
13	.00	.00	.07	.05	.05	.00	.00	.00	.00	.00	.00	.00	.00				
14	.14	.00	.61	.00	.54	.01	1.66	.00	.00	.00	.00	.00	.00				
15	.00	.00	.53	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00				
17	.00	.65M	.00	.04	.00	.00	.13	.00	.00	.00	.10	.00	.00				
18	.00	.13S	.00	.00	.00	.00	.16	.00	.00	1.49	.00	.00	.10				
19	.10S	.00	.00	.00	.27	.00	.00	.02	.00	.00	.00	.00	.00				
20	.00	.07	.16	.00	.00	.00	.15	.19	.00	.00	.00	.00	.00				
21	.00	.05	.58	.00	.25	.00	.00	.03	.05	.00	.05	.00	.00				
22	.00	.00	.00	.04	.13	1.28	.00	.13	.00	.00	.01	.83	.00				
23	.00	.00	.00	.00	.00	.21	.00	1.65	.00	.00	.10	.00	.00				
24	.00	.00	.00	.00	.00	.00	.00	2.93	.00	.00	.12	.00	.00				
25	.00	.00	.00	.00	.00	.11	.00	.01	.00	.66	.00	.00	.00				
26	.00	.00	.00	.35	.00	.00	.00	.10	.00	.00	.00	.00	.00				
27	.87	.00	.00	.02	.00	.00	.00	.30	.07	.00	.00	.00	.00				
28	.00	.00	.19	.00	.00	.00	.00	.00	.52	.00	.00	.00	1.44S				
29	.00	-----	.00	.00	.63	.02	.05	.01	.00	.00	.00	.00	.00				
30	.00	-----	.00	.00	.00	.14	.00	.00	.00	.00	.98S	.00	.00				
31	.00	-----	.00	-----	.10	.00	.00	-----	.00	.00	-----	.16S	.00				
TOTAL	1.21	1.80	5.37	.65	3.92	1.78	3.12	7.09	.78	3.30	1.76	6.22	37.00				
STA AV	2.68	3.35	3.52	2.87	3.08	3.00	3.04	3.46	3.71	2.48	2.47	2.57	36.23				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 AND R-2. STA AV IS FOR PERIOD MAY, 1958 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.12-7.																	

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I 13.12						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.21	.04	.01	.02	T	.00	.00	.00	.00	.00	.00	.00
2	.26	.04	.01	.02	T	.00	.00	.00	.00	.00	T	.00
3	.34	.03	.01	.01	T	.00	.00	.00	.00	.00	.00	1.26
4	.35	.02	.01	.01	.00	.00	.00	.00	.00	.00	.00	.18
5	.32	.02	.02	.01	.00	.00	.00	.15	.00	.00	.00	.12
6	.18	.01	.78	.02	.01	.00	.00	.00	.00	.00	.00	.09
7	.48	.04	8.95	.02	.32	.00	.00	.00	.00	.00	.00	.12
8	1.47	.16	.60	T	.06	.00	.00	.00	.00	.00	.00	.12
9	.74	.01	.37	.01	.02	.00	.00	.00	.00	.00	.00	.06
10	.42	.01	.24	T	T	.00	.00	.00	.00	.02	.00	3.99
11	.22	.04	.45	T	.01	.00	.00	.00	.00	.00	.00	2.45
12	.14	.03	.31	T	T	.00	.00	.00	.00	.00	.00	1.40
13	.13	.02	.22	T	T	.00	.00	.00	.00	.00	.00	.38
14	.20	.24	1.08	T	.09	.00	.53	.00	.00	.00	.00	.20
15	.12	.53	2.69	T	.04	.00	T	.00	.00	.00	.00	.13
16	.07	.22	.77	T	.01	.00	.00	.00	.00	.00	.00	.09
17	.07	.12	.35	T	T	.00	.00	.00	.00	.00	.00	.06
18	.04	.12	.19	T	T	.00	.00	.00	.00	.24	.00	.07
19	.02	.11	.15	T	.01	.00	.00	.00	.00	.00	.00	.05
20	.05	.28	.15	T	T	.00	.00	.00	.00	.00	.00	.03
21	.05	.43	.98	T	T	.00	.00	.00	.00	.00	.00	.04
22	.05	.17	.43	T	.01	.53	.00	.00	.00	.00	.00	1.23
23	.03	.11	.28	T	T	.09	.00	.38	.00	.00	.00	.49
24	.02	.05	.16	T	.00	.00	.00	1.60	.00	.00	.00	.25
25	.02	.03	.13	T	.00	.00	.00	.42	.00	.03	.00	.22
26	.02	.03	.09	T	.00	.00	.00	.03	.00	T	.00	.14
27	.98	.01	.07	T	.00	.00	.00	.11	.00	.00	.00	.11
28	.25	.02	.08	T	.00	.00	.00	.01	.00	.00	.00	2.27
29	.11	-----	.09	T	.09	.00	.00	T	.00	.00	.00	1.72
30	.07	-----	.04	T	-----	.00	.00	.00	.00	.00	.00	.60
31	.06	-----	.03	T	-----	.00	.00	.00	.00	.00	-----	.39
MEAN	.24	.11	.64	T	.02	.02	.02	.09	.00	.01	T	.59
INCHES	.92	.37	2.45	.02	.05	.08	.07	.33	.00	.04	T	2.26

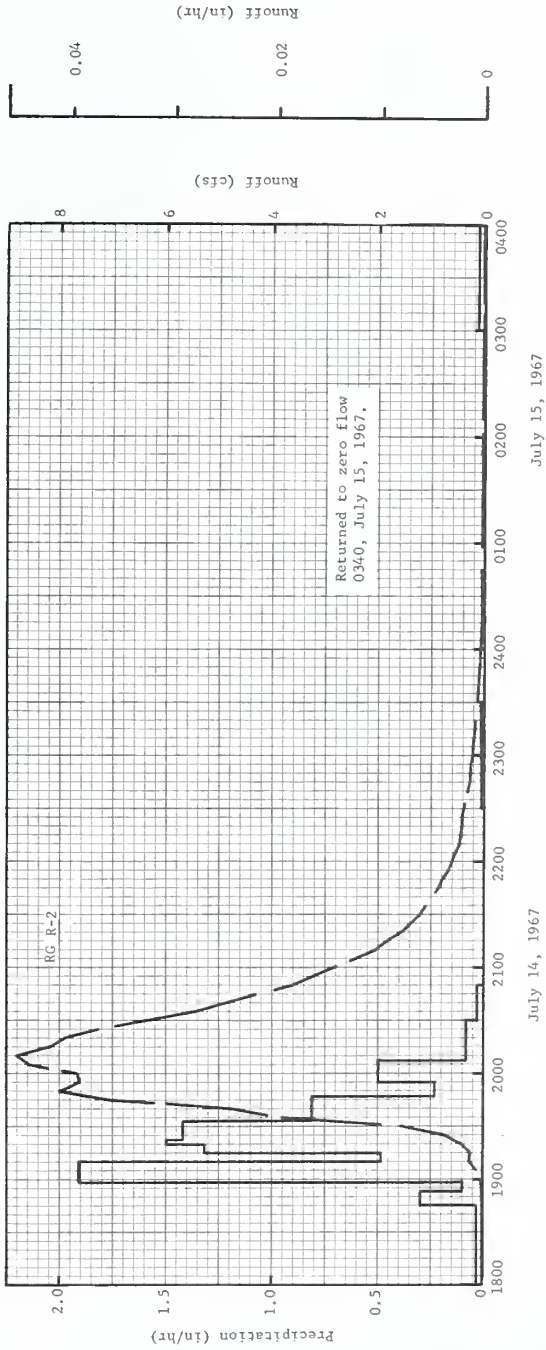
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.123967.

1967 SELECTED RUNOFF EVENT												BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH 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)				
Event of July 14 and 15, 1967														
7-14	RG R-1 1/ .43	2/ .0073	7-14	RG 1800	R-2 .00	.00	7-14	1810	.0058	.0000				
	RG R-2			1845	.03	.02		1815	.0116	.0000				
				1853	.30	.06		1830	.0077	T				
				1859	.10	.07		1845	.0077	T				
7-14	3/ .58			1910	1.91	.42		1850	.0097	T				
				1915	.48	.46		1855	.0097	T				
				1920	1.32	.57		1900	.0503	T				
				1922	1.50	.62		1905	.1470	.0001				
				1933	1.42	.88		1910	.2862	.0002				
				1947	.81	1.07		1915	.2437	.0003				
				1955	.23	1.10		1920	.4119	.0004				
				2007	.50	1.20		1925	.7252	.0007				
				2030	.08	1.23		1930	1.5819	.0012				
				2050	.03	1.24		1935	3.8058	.0023				
				2230	.00	1.24		1940	4.7360	.0042				
				2330	.01	1.25		1945	7.0082	.0067				
			7-15	0300	.00	1.25		1950	7.9810	.0099				
				0400	.03	1.28		1955	7.6329	.0133				
				RG	R-1	1.19		2000	7.6851	.0166				
				2 RG	AVG 4/	1.22		2005	8.5843	.0201				
								2010	8.8087	.0238				
								2015	8.1937	.0275				
								2020	7.9017	.0310				
								2025	7.2751	.0342				
								2035	5.4322	.0397				
								2045	4.2970	.0439				
								2050	3.6298	.0456				
								2110	2.0460	.0505				
								2115	1.8333	.0513				
								2120	1.5393	.0521				

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0051653. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .43 IN. FROM 1300 TO 1400. 2/ CONTINUOUS FLOW PRIOR TO 1810. 3/ .58 IN. FROM 1440 TO 1540. 4/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				PONY MOUNTAIN BRANCH 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 July 14-15, 1967 - Continued</u>										
							7-14	2130	1.2125	.0533
								2135	1.1352	.0538
								2145	.8548	.0546
								2150	.7929	.0550
								2155	.6768	.0553
								2205	.5705	.0559
								2210	.4777	.0561
								2220	.4080	.0565
								2225	.4080	.0566
								2245	.2669	.0572
								2250	.2669	.0573
								2300	.2089	.0575
								2305	.2089	.0576
								2315	.1605	.0578
								2320	.1605	.0579
								2330	.1199	.0580
								2335	.1218	.0580
								2350	.0870	.0582
								2400	.0870	.0582
							7-15	0015	.0580	.0583
								0045	.0387	.0585
								0125	.0232	.0586
								0220	.0116	.0586
								0340	<u>1</u> /.0058	.0587
								0640	.0039	.0588

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0051653. 1/ ZERO FLOW.



BLACKSBURG, VIRGINIA PONY MOUNTAIN BRANCH W-I

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA CHUB RUN W-I 13.13 AREA—2023 ACRES (3.16 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	1.38	1.46	4.94	.93	3.66	1.18	1.96	6.71	2.97	3.88	1.22	4.67	34.96		
	O	.95	.97	1.95	.61	.49	.15	.07	.18	.14	.46	.30	.94	7.21		
	STA AV 2/p	2.47	3.45	3.53	2.79	3.09	3.06	2.62	2.91	3.33	2.39	2.88	2.45	34.97		
	(59-67) O	.94	1.13	1.79	1.17	.74	.48	.19	.11	.11	.28	.43	.55	7.92		
	MEAN P 3/	2.57	2.33	3.31	2.84	3.62	3.36	3.90	4.36	3.47	3.33	2.77	2.64	38.50		
	27 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
1967	3-7	.05	3-7	.05	3-7	.10	3-7	.22	3-7	.30	3-7	.39	3-6	.49	3-6	.85
MAXIMUMS FOR PERIOD OF RECORD																
1959 TO	9-30	.24	9-30	.17	9-30	.24	9-30	.34	9-30	.40	6-20	.52	6-19	.90	3-29	1.58
1967	1959		1959		1959		1959		1959		1962		1962		1960	
NOTES: Watershed conditions: Mixed cover; farm woods, predominantly hardwoods mixed with conifers, 57%; permanent pasture, a fair cover of native grasses, 29%; corn, 2%; alfalfa and other hay crops, 7%; total cultivated, 9%; idle, 4%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2 and R-3. 2/ Determined from continuous records from September, 1959 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 27-yr (1941-67) U.S. Weather Bureau record period at Luray (5 miles E), Virginia. Missing monthly totals for Jan. and Feb., 1941 were estimated from nearby Weather Bureau records at Riverton, Va.																
1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CHUB RUN W-I 13.13										
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00	.05				
2	.00	.18	.00	.00	.60	.00	.27	.00	.00	.00	.11	.13				
3	.00	.00	.00	.01	.00	.00	.00	.36	.00	.00	.00	.94				
4	.00	.00	.14	.00	.00	.00	.09	.36	.00	.00	.00	.00				
5	.00	T	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00				
6	.00	.10S	1.08	.33	.45	.00	.01	.00	.00	.25	.00	.00				
7	.00	.46S	1.36	.08	.75	.00	.04	.28	.00	.18	.00	.00				
8	.07	.00	.00	.00	.02	.00	.09	.00	.00	.00	.00	.00				
9	.00	.07S	.00	.00	.03	.00	.01	.05	.10	.00	.00	.00				
10	.00	.01S	.00	.00	.00	.00	.00	.08	.00	.76	.00	1.32				
11	.00	.00	.07	.00	.10	.00	.47	.00	.00	.00	.00	.13				
12	.00	.00	.00	.00	.00	.00	T	.00	.00	.00	.00	.01				
13	.00	.00	.09	.06	.07	.00	.00	.00	.00	.00	.00	.00				
14	.00	.00	.92	.00	.46	.00	.20	.00	.00	T	.00	.00				
15	.10	.00	.46	.00	.03	.00	.31	.00	.00	.00	.03	.00				
16	.00	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00				
17	.00	.51M	.00	.14	.07	.00	.11	.00	.02	.00	.14	.00				
18	.00	.05M	.00	.00	.00	.00	T	.00	.00	1.65	.00	.15				
19	.16S	.00	.00	.00	.16	.00	.00	.87	.00	.00	.00	.00				
20	.00	.08	.16M	.00	.00	.00	.18	.26	.00	.00	.00	.00				
21	.00	.00	.66	.02	.23	.00	.00	.02	.40	.00	.10	.00				
22	.00	.00	.00	.01	.03	.90	.00	.07	.00	.00	.02	.28				
23	.00	.00	.00	.00	.00	.00	.00	1.36	.00	.00	.07	.00				
24	.00	.00	.00	.02	.00	.00	.00	2.22	.00	.00	.05	.00				
25	.00	.00	.00	.00	.00	.05	.00	.10	.00	1.04	.00	.00				
26	.00	.00	.00	.12	.00	.00	.00	.16	.00	.00	.00	.00				
27	1.05	.00	.00	.09	.00	.00	.00	.59	.00	.00	.00	.00				
28	.00	.00	.00	.00	.00	.00	.09	.00	2.31	.00	.00	1.35S				
29	.00	-----	.00	.00	.45	.04	.09	.00	.00	.00	.00	.19S				
30	.00	-----	.00	.00	.00	.19	.00	.00	.00	.00	.70N	.00				
31	.00	-----	.00	-----	.18	-----	.00	.00	-----	.00	-----	.12S				
TOTAL	1.38	1.46	4.94	.93	3.66	1.18	1.96	6.71	2.97	3.88	1.22	4.67				
STA AV	2.47	3.45	3.53	2.79	3.09	3.06	2.62	2.91	3.33	2.39	2.88	2.45				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1, R-2 & R-3. STA AV IS FOR PERIOD SEPTEMBER 1959 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.13-5.																

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA CHUB RUN W-I 13.13						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.65	2.67	2.14	2.75	1.09	.88	.17	.10	.48	.53	1.38	.74
2	3.09	2.74	2.55	2.52	1.27	.82	.60	.07	.45	.44	1.35	.77
3	2.85	2.56	1.83	2.37	1.38	.71	.22	.12	.40	.41	1.22	4.29
4	2.50	2.33	1.91	2.31	1.11	.42	.22	.17	.37	.39	1.06	2.60
5	2.78	2.17	1.79	2.31	1.05	.63	.17	.08	.35	.38	.95	2.12
6	3.20	2.03	2.93	2.57	1.32	.58	.20	.13	.32	.45	.94	1.96
7	3.21	2.19	32.66	2.54	2.72	.49	.18	.24	.30	.53	.91	1.83
8	3.28	3.91	8.56	2.13	1.91	.50	.24	.17	.28	.49	.85	1.68
9	3.15	3.58	5.94	2.02	1.73	.50	.21	.11	.29	.42	.89	1.63
10	3.03	2.08	5.10	1.95	1.56	.49	.17	.07	.33	1.29	.84	5.88
11	2.89	2.58	4.65	1.73	1.66	.45	.28	.08	.30	.83	.84	7.93
12	2.78	2.35	4.30	1.76	1.50	.41	.16	.08	.25	.72	.84	5.07
13	2.63	2.34	3.82	1.82	1.50	.39	.18	.07	.22	.61	.84	3.97
14	2.69	2.66	6.69	1.74	1.97	.37	.20	.20	.21	.58	.80	3.37
15	2.41	2.87	11.54	1.66	1.70	.36	.36	.23	.21	.55	.76	2.90
16	2.13	2.64	6.49	1.56	1.43	.32	.19	.18	.23	.53	.66	2.55
17	1.96	2.70	5.53	1.64	1.46	.31	.20	.07	.26	.53	.81	2.36
18	1.85	2.63	4.73	1.56	1.38	.31	.20	.06	.22	4.09	.80	2.51
19	2.06	2.75	4.39	1.42	1.41	.34	.18	.31	.20	2.81	.72	2.20
20	2.46	3.22	4.21	1.40	1.06	.31	.20	.31	.21	1.97	.74	1.95
21	1.84	3.24	6.76	1.40	1.46	.29	.20	.18	.36	1.58	.75	1.89
22	1.74	2.91	5.40	1.35	1.44	.68	.17	.14	.28	1.34	.84	2.28
23	1.65	2.72	4.68	1.29	1.18	.46	.14	1.03	.23	1.24	.82	1.84
24	1.56	2.57	4.14	1.23	1.11	.36	.12	3.65	.22	1.10	.73	1.74
25	1.50	5.38	3.77	1.19	.05	.30	.13	1.90	.22	3.30	.74	1.73
26	1.50	7.42	3.67	1.27	.88	.27	.10	.86	.18	2.95	.69	1.63
27	4.24	3.17	3.43	1.29	.84	.24	.11	1.65	.19	2.35	.67	1.54
28	3.98	2.02	3.32	1.15	.79	.19	.17	1.19	2.12	2.01	.61	.00
29	3.23	-----	3.16	1.04	1.11	.19	.20	.81	1.23	1.79	.73	5.53
30	2.93	-----	2.91	1.07	.88	.24	.18	.60	.71	1.65	.91	2.04
31	2.78	-----	2.74	-----	.99	-----	.15	.53	-----	1.50	-----	1.47
MEAN	2.60	2.94	5.35	1.73	1.35	.43	.20	.50	.39	1.27	.86	2.58
INCHES	.95	.97	1.95	.61	.49	.15	.07	.18	.14	.46	.30	.94

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

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA CHUB RUN 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 March 6-9, 1967										
3 -6	RG R-1 1/ .20	2/.0119	3 -6	1150	RG R-2 .00	.00	3 -6	1150	2.3050	.0000
				1230	.03	.02		1735	2.4886	.0068
	RG R-2			1310	.03	.04		1825	2.8150	.0078
3 -6	3/ .19			1350	.00	.04		1910	3.0190	.0089
				1500	.02	.06		1925	3.3250	.0093
	RG R-3			1610	.01	.07		1955	3.7329	.0102
3 -6	4/ .17			1700	.04	.10		2005	3.7533	.0105
				1730	.04	.12		2015	3.9981	.0108
				1810	.06	.16		2025	4.1409	.0111
				1850	.06	.20		2030	4.4469	.0113
Watershed conditions:				1904	.13	.23		2035	4.4469	.0115
Woods, mixture of dormant hardwood and conifers, good cover of forest litter, 57%; pasture, 2 to 4 in. good cover, 29%; hay, mostly alfalfa and grasses beginning to grow, 1 to 2 in. high, fair cover, 7%; fallow land, poor cover, 2%; idle, very good cover of weeds and grass, 4%; paved roads, 1%.				1912	.22	.26		2050	5.1404	.0121
				1917	.12	.27		2115	5.3240	.0131
				1930	.14	.30		2125	5.6912	.0136
				1940	.06	.31		2140	6.2011	.0143
				2028	.13	.41		2235	6.7111	.0172
				2040	.35	.48		2245	6.7519	.0178
				2120	.08	.53		2300	7.3843	.0186
				2140	.21	.60		2330	7.7310	.0205
				2230	.10	.68		2335	8.0166	.0208
				2250	.21	.75		2340	7.9350	.0211
	2330	.13	.84		2350	8.6286	.0218			
	2400	.14	.91		2400	8.7102	.0225			
	0034	.19	1.02	3 -7	0005	9.0569	.0229			
	0042	.45	1.08		0010	9.0569	.0233			

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0004902. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .19 IN. FROM 0700 TO 0800; .01 IN. FROM 0900 TO 1000. 2/ CONTINUOUS FLOW PRIOR TO 1150. 3/ .19 IN. FROM 0724 TO 0810. 4/ .17 IN. FROM 0720 TO 0830.

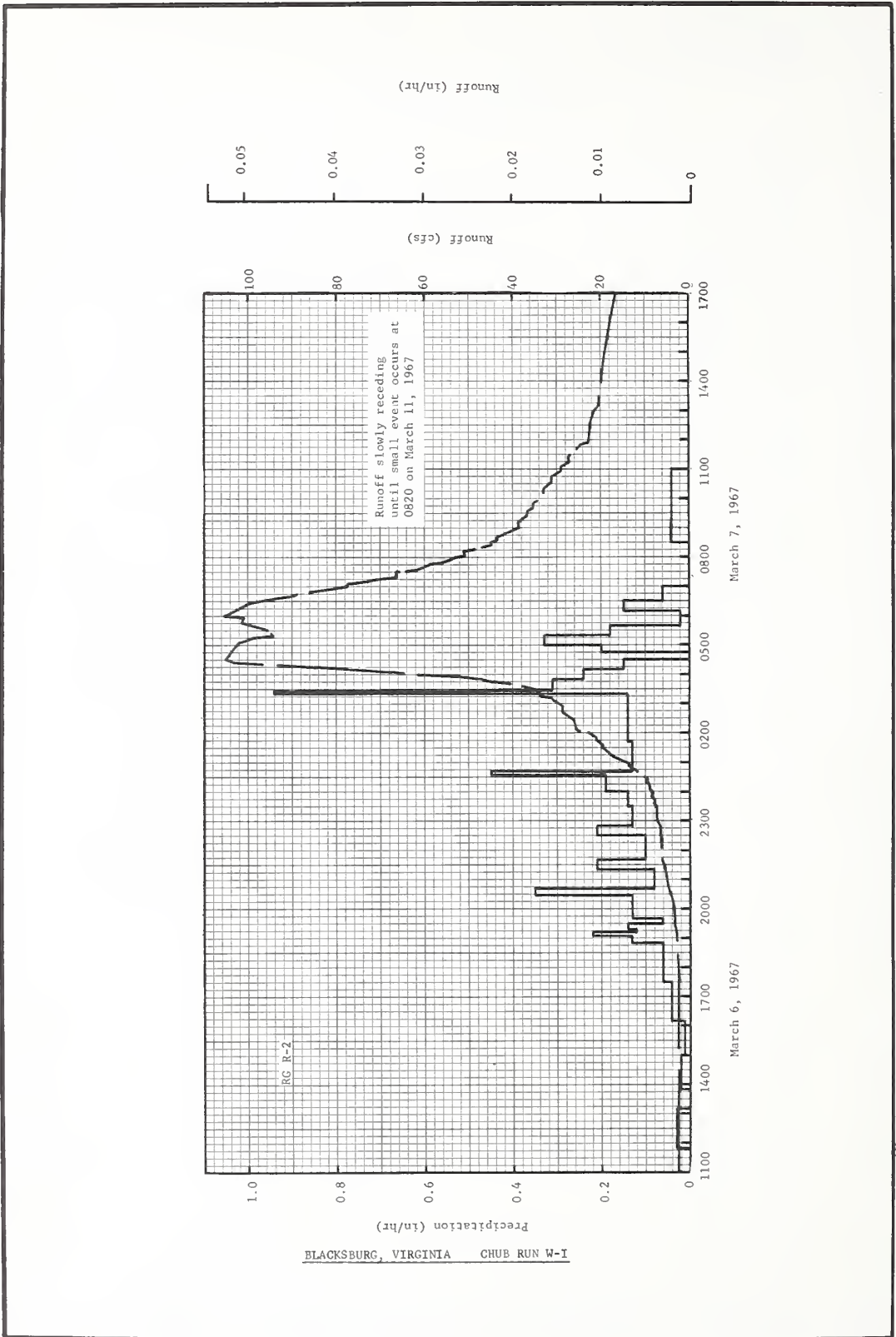
1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CHUB RUN W-I		13.13	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of March 6-9, 1967 - Continued										
					R-2					
			3 -7	RG 0142	.13	1.21	3 -7	0020	9.9341	.0240
				0254	.14	1.38		0025	9.9749	.0245
				0320	.14	1.44		0045	12.3003	.0263
				0327	.94	1.55		0050	13.3202	.0268
				0350	.31	1.67		0055	13.8506	.0273
				0410	.24	1.75		0110	17.3387	.0293
				0430	.15	1.80		0130	19.6642	.0323
				0445	.00	1.80		0135	19.6642	.0331
				0500	.20	1.85		0145	20.9697	.0347
				0520	.33	1.96		0150	20.9697	.0356
				0540	.18	2.02		0200	22.7851	.0374
				0610	.02	2.03		0205	25.7225	.0384
				0630	.15	2.08		0225	26.0081	.0426
				0700	.06	2.11		0240	28.6191	.0460
				0830	.00	2.11		0255	28.6191	.0495
				1100	.04	2.20		0305	30.4754	.0519
				RG	R-3			0310	31.1077	.0531
			3 -6	1210	.00	.00		0315	33.6167	.0545
				1230	.06	.02		0325	34.1675	.0572
				1430	.02	.06		0330	34.8202	.0586
				1600	.01	.08		0340	40.4502	.0617
				1640	.03	.10		0345	45.1419	.0635
				1720	.06	.14		0350	47.2021	.0653
				1800	.04	.17		0355	52.5465	.0674
				1850	.06	.22		0400	61.7055	.0697
				1900	.18	.25		0405	67.4987	.0724
				1906	.30	.28		0415	84.7354	.0786
				1930	.08	.31		0425	103.1348	.0862
				1950	.09	.34		0430	104.7055	.0905
				2030	.13	.43		0505	102.0945	.1201
				2048	.17	.48		0510	99.9323	.1242
				2124	.08	.53		0515	98.7696	.1283
				2135	.22	.57		0520	94.1799	.1322
				2210	.09	.62		0530	95.6486	.1399
				2220	.06	.63		0545	101.6458	.1520
				2225	.24	.65		0555	100.8094	.1603
				2240	.16	.69		0600	105.1543	.1645
				2320	.18	.81		0625	99.6875	.1854
				2400	.13	.90		0635	93.6087	.1933
				0030	.20	1.00		0640	89.5902	.1971
			3 -7	0040	.48	1.08		0645	88.7947	.2007
				0051	.11	1.10		0700	77.4939	.2109
				0125	.16	1.19		0705	77.4735	.2141
				0145	.18	1.25		0710	72.5983	.2171
				0210	.14	1.31		0715	70.5584	.2201
				0300	.13	1.42		0720	66.5195	.2229
				0317	.21	1.48		0730	66.1320	.2283
				0335	.87	1.74		0735	61.8075	.2309
				0400	.22	1.83		0745	58.8701	.2358
				0430	.18	1.92		0750	55.9531	.2382
				0450	.12	1.96		0800	53.0361	.2426
				0530	.29	2.15		0805	50.6087	.2447
				0610	.06	2.19		0810	51.0983	.2468
				0630	.18	2.25		0820	47.1613	.2508
				0740	.02	2.27		0825	44.7543	.2527
				0750	.12	2.29		0830	45.2643	.2546
				0850	.01	2.30		0835	43.8160	.2564
				0900	.12	2.32		0840	43.8160	.2582
				0930	.02	2.33		0900	38.5328	.2649
				RG	R-1	2.14		0910	38.7164	.2681
				3 RG	AVG 1/	2.26		0925	36.8397	.2727
								0935	36.6357	.2757
								0940	35.6974	.2772
								0950	35.6974	.2801
								0955	34.3511	.2815

Continued on next page

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0004902. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2 AND R-3.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CHUB RUN 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 March 6-9, 1967 - Continued										
							3 -7	1010	33.1068	.2856
								1020	33.1068	.2883
								1035	31.2505	.2923
								1045	31.0057	.2948
								1055	29.1495	.2973
								1105	29.1291	.2997
								1115	27.2728	.3020
								1125	27.4972	.3042
								1140	25.6409	.3075
								1150	24.6618	.3095
								1155	22.5811	.3105
								1235	22.2344	.3178
								1255	21.9080	.3214
								1310	20.2149	.3240
								1435	19.5010	.3378
								1535	18.1955	.3470
								1645	16.9104	.3571
								1800	15.6049	.3670
								1935	14.4421	.3787
								2110	13.4018	.3895
								2225	12.3819	.3974
								2400	11.8515	.4068
							3 -8	0105	10.8316	.4128
								0300	10.3012	.4228
								0410	9.3221	.4284
								0535	9.3425	.4349
								0630	8.9753	.4390
								0805	8.9753	.4459
								1035	8.6286	.4567
								1330	8.6286	.4691
								1415	8.6286	.4723
								1655	7.3027	.4827
								2050	7.0171	.4964
								2135	7.3231	.4991
								2400	6.9967	.5076
							3 -9	0325	6.3847	.5188
								0715	6.1196	.5305
								0900	6.1196	.5358
								1145	5.8544	.5438
								1225	5.8748	.5458
								1305	6.1400	.5477
								1545	5.5688	.5554
								2110	5.3240	.5699
								2150	5.5892	.5716
								2400	5.3036	.5774

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0004902. 1/RUNOFF SLOWLY RECEDING UNTIL SMALL EVENT OCCURS 0820 ON 3-11-67.



MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA FOSTERS CREEK W-I 13.14 AREA—389 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ^{1/}	1.40	2.04	4.26	1.00	4.44	1.68	2.68	7.19	1.15	3.34	1.66	6.76	37.60
D	.68	.55	1.41	.38	.64	.16	.17	.69	.14	.21	.18	2.26	7.47
STA AVG ^{2/} (60-67) D	2.62	3.67	3.69	2.37	2.97	2.72	2.61	3.32	3.31	3.23	2.51	3.22	36.24
MEAN 52 YR ^{3/}	1.06	1.84	1.96	.92	.66	.31	.20	.20	.21	1.06	.34	.83	9.59
	3.31	2.90	3.59	3.36	3.39	3.46	4.51	4.26	3.23	2.86	2.68	3.04	40.59

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
1967	12-11	.22	12-11	.18	12-11	.28	12-11	.42	12-11	.51	12-11	.59	12-10	.96	12-10	1.07

MAXIMUMS FOR PERIOD OF RECORD

19 50 TO 19 67	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
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Notes: Watershed conditions: Mixed cover; farm woods, predominantly hardwoods, 44%; permanent pasture, usually a good cover of native grass and clover mixture, 28%; corn, 5%; hay mixtures such as alfalfa, orchardgrass, lespedeza and other clovers, 19%; other cultivated areas, 1%; total cultivated, 25%; idle land, usually a good cover of tall weeds, brush and native grass, 1%; paved roads, 2%. 1/ Precipitation Thiessen weighted from R-1 and R-2. 2/ Determined from continuous records from September, 1960 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 52-yr (1916-67) U.S. Weather Bureau record period at Louisa, Virginia. Records at Mineral, Va. utilized to 1940. During change over, months of Jan. and Feb. 1941 and Mar., Oct., Nov., and Dec. 1940, had missing records.

1967 DAILY PRECIPITATION (inches)

BLACKSBURG, VIRGINIA FOSTERS CREEK W-I 13.14

DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.18	.00	1.64	.00	.00	.00	.45	.15
3	.00	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	1.07
4	.11M	.00	.07	.0C	.00	.00	.00	.21	.00	.00	.00	.00
5	.00	.00	.00	.16	.00	.00	.00	1.00	.00	.00	.00	.00
6	.00	.30E	.47	.00	.24	.00	.00	.00	.00	.30	.00	.00
7	.00	.71E	.98	.00	1.26	.00	.07	.00	.00	.27	.00	.00
8	.09	.00	.00	.00	.02	.00	.19	.00	.00	.01	.00	.00
9	.01	.17	.00	.00	.05	.00	.00	.11	.17	.05	.00	.00
10	.00	.00	.00	.00	.00	.00	.00	.26	.00	1.27	.00	1.49
11	.00	.00	.18	.00	.08	.00	.00	.00	.00	.00	.00	1.07
12	.00	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00	.02
13	.00	.00	.04	.05	.01	.00	.06	.00	.00	.00	.00	.00
14	.19	.00	.75	.00	.93	.00	.35	.00	.00	.00	.00	.00
15	.00	.00	.69	.00	.46	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00
17	.00	.63S	.00	.17	.03	.00	.00	.00	.00	.00	.01	.00
18	.00	.08S	.00	.00	.00	.00	.24	.00	.00	.90	.00	.38
19	.12S	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.15	.22	.00	.00	.00	.06	.09	.00	.00	.00	.00
21	.00	.00	.59	.00	.22	.00	.00	.42	.23	.00	.00	.00
22	.00	.00	.00	.00	.18	.35	.00	.81	.00	.00	.00	1.16
23	.00	.00	.00	.00	.00	.57	.00	1.80	.00	.00	.10	.02
24	.00	.00	.00	.02	.00	.00	.00	2.10	.00	.00	.48	.00
25	.00	.00	.00	.00	.00	.55	.00	.02	.00	.54	.00	.00
26	.00	.00	.00	.45	.00	.00	.00	.00	.00	.00	.00	.00
27	.88	.00	.00	.15	.00	.00	.00	.00	.02	.00	.00	.00
28	.00	.00	.13	.00	.06	.00	.00	.00	.69	.00	.00	1.22S
29	.00	-----	.01	.00	.51	.00	.00	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.00	.21	.07	.00	.00	.00	.62	.00
31	.00	.00	.00	-----	.19	.00	.00	.00	.00	.00	-----	.18S
TOTAL	1.40	2.04	4.26	1.00	4.44	1.68	2.68	7.19	1.15	3.34	1.66	6.76
STA AV	2.62	3.67	3.69	2.37	2.97	2.72	2.61	3.32	3.31	3.23	2.51	3.22

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES R-1 & R-2. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1967. FOR TOPOGRAPHIC (REVISED DRAINAGE PATTERN) MAP OF WATERSHED, SEE P. 13.14-5 THIS VOLUME.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA FOSTERS CREEK W-I 13.14						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.36	.19	.21	.25	.18	.14	.05	.02	.05	.04	.09	.13
2	.49	.18	.20	.23	.19	.13	1.01	.01	.05	.03	.17	.14
3	.62	.17	.21	.22	.19	.12	.30	.03	.04	.04	.12	3.51
4	.56	.17	.20	.21	.15	.11	.09	.05	.04	.04	.09	.41
5	.52	.17	.22	.27	.15	.10	.06	.33	.04	.04	.08	.22
6	.35	.16	.26	.26	.19	.11	.05	.10	.04	.04	.08	.17
7	.34	.17	5.19	.22	2.34	.09	.07	.04	.04	.14	.08	.15
8	.95	.17	.56	.19	.43	.09	.11	.03	.04	.09	.08	.13
9	.56	.16	.37	.20	.25	.08	.07	.04	.07	.09	.08	.13
10	.33	.20	.32	.22	.18	.08	.06	.13	.06	.62	.08	4.68
11	.26	.23	.35	.19	.20	.07	.05	.05	.04	.13	.08	9.09
12	.21	.25	.39	.19	.16	.06	.04	.03	.04	.07	.08	2.41
13	.19	.21	.39	.20	.16	.06	.05	.02	.04	.06	.08	.45
14	.28	.51	1.92	.22	1.29	.08	.06	.02	.03	.05	.08	.28
15	.22	.85	4.70	.20	1.26	.07	.13	.02	.03	.06	.08	.21
16	.18	.44	.87	.19	.51	.07	.06	.02	.04	.06	.07	.18
17	.17	.31	.44	.23	.25	.06	.05	.02	.06	.06	.09	.17
18	.16	.29	.32	.21	.20	.06	.09	.01	.05	.56	.09	.41
19	.14	.31	.30	.17	.17	.07	.06	.02	.06	.11	.08	.29
20	.17	.64	.35	.17	.14	.06	.05	.03	.09	.07	.08	.21
21	.19	1.07	1.91	.17	.18	.05	.05	.08	.14	.06	.09	.19
22	.19	.50	.63	.18	.25	.06	.03	.27	.14	.06	.10	2.78
23	.17	.42	.42	.16	.18	.22	.03	1.94	.13	.06	.12	1.86
24	.17	.30	.33	.16	.15	.11	.02	6.24	.13	.06	.15	.41
25	.17	.24	.31	.15	.13	.18	.03	1.28	.13	.21	.21	.31
26	.16	.21	.28	.28	.12	.11	.02	.18	.13	.12	.11	.24
27	1.85	.22	.28	.34	.11	.05	.02	.10	.13	.08	.09	.20
28	.43	.23	.31	.20	.11	.04	.02	.07	.27	.08	.09	4.62
29	.25	-----	.31	.20	.25	.04	.02	.06	.07	.08	.09	1.98
30	.20	-----	.26	.19	.17	.07	.03	.06	.04	.07	.17	.55
31	.19	-----	.25	-----	.19	-----	.03	.05	-----	.07	-----	.41
MEAN	.36	.32	.74	.21	.34	.09	.09	.37	.07	.11	.10	1.19
INCHES	.68	.55	1.41	.38	.64	.16	.17	.69	.14	.21	.18	2.26

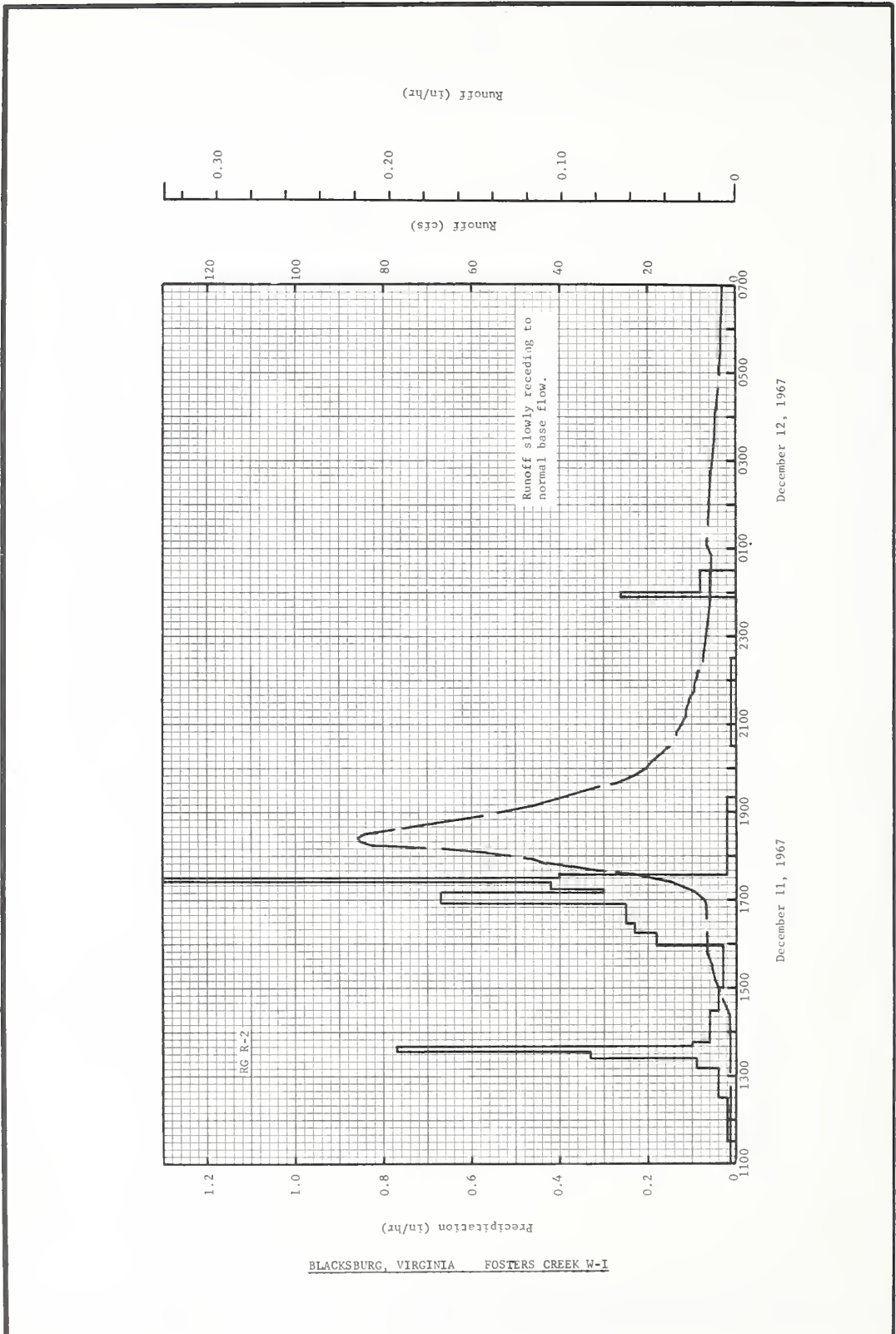
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.061187.

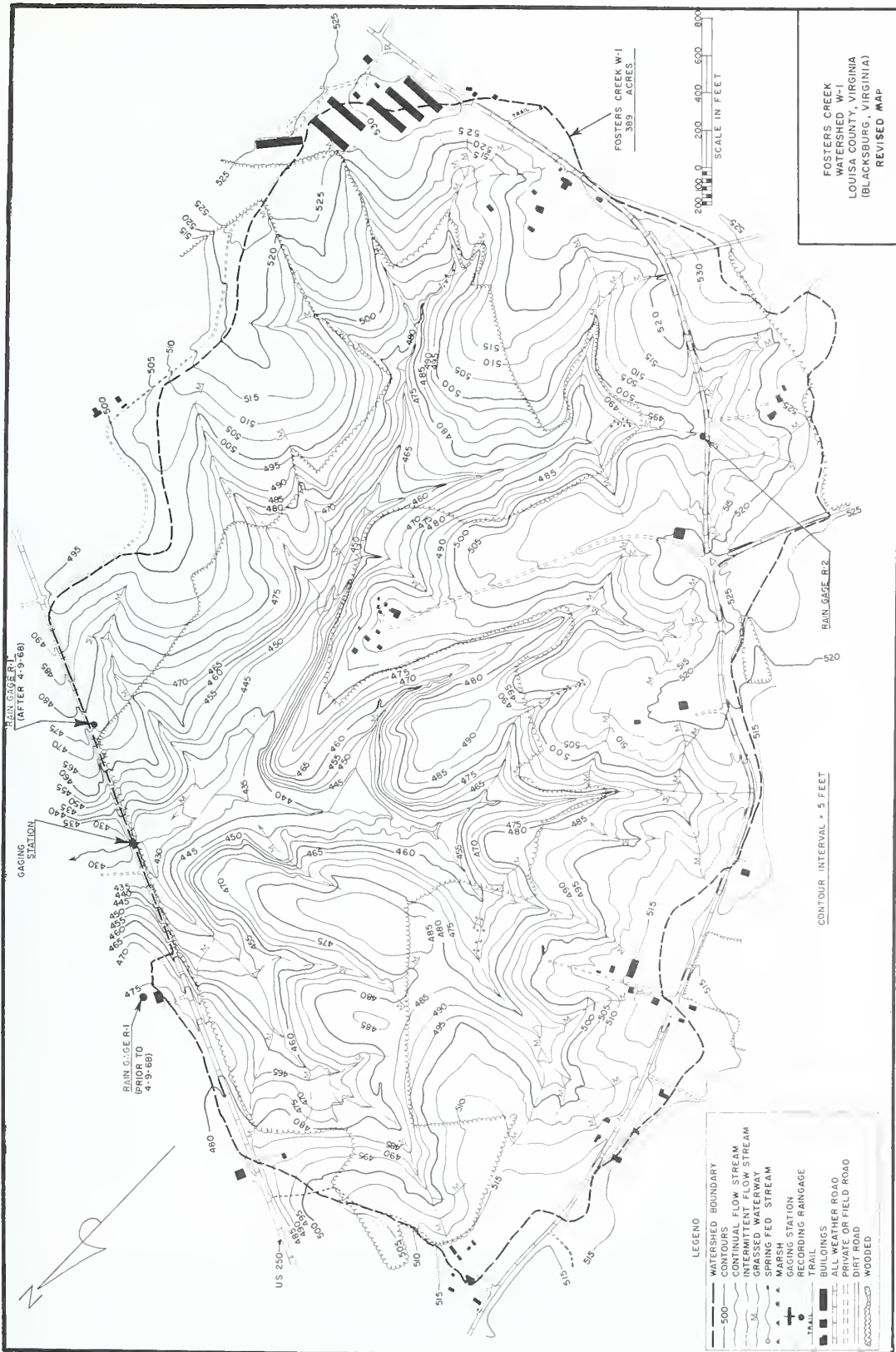
1967 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA FOSTERS CREEK W-I 13.14						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
<u>Event of December 11-13, 1967</u>										
12-11	RG R-1 1/ .02	2/ .0810	12-11	1130	RG R-2	.00	12-11	1215	1.2401	.0000
				1230		.02		1355	1.3264	.0054
	RG R-2			1310		.04		1405	1.3539	.0060
12-11	3/ .03			1324		.09		1425	1.7777	.0073
				1333		.33		1435	2.2565	.0082
				1340		.77		1445	3.0256	.0093
				1346		.10		1455	3.6535	.0107
				1429		.06		1500	4.1636	.0116
				1500		.04		1505	4.3088	.0125
				1558		.03		1510	4.7641	.0134
				1615		.18		1525	5.3723	.0167
				1628		.23		1530	5.3723	.0178
				1654		.25		1545	6.2671	.0215
				1710		.67		1645	6.5653	.0379
				1714		.30		1650	6.8596	.0393
				1724		.42		1655	6.8596	.0407
				1730		1.30		1700	7.3894	.0423
				1733		.40		1710	9.2927	.0458
				1850		.02		1715	10.8349	.0479
				1920		.02		1725	14.9554	.0534
				2030		.00		1735	23.8439	.0617
				2230		.01	1.00	1740	31.6335	.0675
				2353		.00	1.00	1745	37.4100	.0749
				2400		.26	1.03	1750	43.2964	.0834
			12-12	0030		.08	1.07	1755	46.1023	.0929
				RG	R-1	1.05		1800	51.1293	.1033
				2 RG	AVG 4/	1.06		1805	56.6821	.1147
								1810	66.4653	.1278
								1815	82.2644	.1436
								1820	85.5451	.1614

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0025495. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .01 IN. FROM 0100 TO 0200; .01 IN. FROM 0900 TO 1000. 2/ CONTINUOUS FLOW PRIOR TO 1215. 3/ .01 IN. FROM 0100 TO 0200; .02 IN. FROM 0600 TO 0700. 4/ THIESSEN WEIGHTED FOR RG R-1 AND R-2.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				FOSTERS CREEK 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)
<u>Event of December 11-13, 1967 - Continued</u>										
							12-11	1825	85.9532	.1796
								1830	84.2148	.1977
								1835	79.6155	.2151
								1840	74.0823	.2314
								1845	68.5059	.2465
								1855	57.5258	.2733
								1900	53.8723	.2851
								1910	44.9525	.3061
								1925	36.5624	.3321
								1935	30.7113	.3464
								1940	27.6190	.3526
								1950	23.3455	.3634
								1955	21.9367	.3682
								2000	20.1119	.3727
								2010	18.9150	.3809
								2020	16.6350	.3885
								2025	16.0660	.3920
								2030	15.0574	.3953
								2045	13.6682	.4044
								2050	13.6015	.4073
								2055	12.6204	.4101
								2110	11.3529	.4177
								2115	11.3804	.4202
								2125	10.8584	.4249
								2130	10.4150	.4271
								2135	10.4150	.4294
								2145	9.4732	.4336
								2155	9.4732	.4376
								2205	8.5588	.4414
								2210	8.5745	.4433
								2225	7.6837	.4484
								2235	7.6680	.4517
								2240	7.2089	.4533
								2305	6.4947	.4605
								2350	5.9178	.4724
								2400	5.9217	.4749
							12-12	0050	5.6549	.4872
								0105	6.2514	.4910
								0240	5.8982	.5155
								0255	5.2938	.5191
								0330	4.8543	.5266
								0405	4.3991	.5335
								0440	3.9949	.5397
								0525	3.6378	.5470
								0615	1/3.2768	.5544
								0705	2.9824	.5610
								0800	2.6881	.5676
								0850	2.4252	.5731
								0945	2.1976	.5785
								1045	1.9661	.5838
								1150	1.7698	.5889
								1310	1.5776	.5946
								1425	1.3970	.5994
								1540	1.2361	.6036
								1700	1.0752	.6075
								1840	.9457	.6118
								2035	.8162	.6161
								2300	.7024	.6208
								2400	.7024	.6225
							12-13	0235	.5965	.6268
								0655	.4945	.6329
								1220	.4160	.6391
								1950	.3375	.6463

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0025495. 1/ RUNOFF SLOWLY RECEDING TO NORMAL BASE FLOW.





(Revision of Previously Published Map, P. 13.14-4, 1960-61)

MONTHLY PRECIPITATION AND RUNOFF (inches)						BLACKSBURG, VIRGINIA CHESTNUT BRANCH W-I 13.15 AREA—1058 ACRES (1.65 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P 1	1.82	1.84	3.40	1.83	3.49	1.77	3.69	11.82	1.33	1.94	1.08	5.83	39.84
Q	.91	.66	1.11	.45	.44	.22	.15	2.93	.25	.23	.22	.97	8.54
STA AVG 2/P (60-67)Q	2.63	3.83	3.47	2.07	3.22	2.93	3.30	3.77	3.64	2.75	3.05	3.09	37.75
MEAN P 3/ 37 YR	.93	1.33	1.40	.76	.50	.44	.26	.60	.28	.45	.56	.73	8.24
	3.33	3.14	3.99	3.27	3.87	4.24	4.37	5.04	3.42	3.00	2.97	3.34	43.98

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
1967	8-23	.39	8-23	.33	8-24	.55	8-24	1.03	8-23	1.63	8-23	2.26	8-22	2.42	8-20	2.80
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	8-23 1967	.39	8-23 1967	.33	8-24 1967	.55	8-24 1967	1.03	8-23 1967	1.63	8-23 1967	2.26	8-22 1967	2.42	8-20 1967	2.80

Notes: Watershed conditions: Mixed cover; corn, 10%; tobacco, 1%; hay mixture such as alfalfa, red clover, lespedeza and native grass, 22%; other cultivated areas, 1%; total cultivated, 34%; permanent pasture, usually a good cover of native grass mixture, 26%; farm woods, a mixture of hardwoods and pine, 37%; idle land with good cover of weeds and annual grasses, 2%; roads, 1%. 1/ Precipitation Thiessen weighted from R-1, R-2 and R-3. 2/ Determined from continuous records from September, 1960 through 1967, precipitation Thiessen weighted. 3/ Mean P based on 37-yr (1931-67) U.S. Weather Bureau record period at Bedford, Virginia. Missing totals for 16 months were estimated from nearby Weather Bureau records at Lynchburg, Virginia (Airport).

1967 DAILY PRECIPITATION (inches)						BLACKSBURG, VIRGINIA CHESTNUT BRANCH W-I 13.15							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	.09	.14	.00	.00	.00	.00	.00	.00	
2	.00	.03	.00	.00	.37	.00	.02	.00	.00	.00	.14	.31	
3	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.86	
4	.20M	.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	.16S	.39	.00	.05	.00	.01	.00	.00	.02	.00	.00	
7	.02	.29S	1.25	.00	.97	.00	.14	.76	.00	.09	.00	.00	
8	.22	.00	.00	.00	.04	.00	.53	.00	.00	.00	.00	.00	
9	.00	.11S	.00	.00	.00	.00	.01	.26	.14	.17	.00	.04	
10	.00	.00	.00	.00	.00	.00	.14	.00	T	.47	.00	1.40	
11	.00	.00	.00	.00	.10	.00	.19	.00	.00	.00	.00	.44	
12	.00	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	
13	.01	.00	.17	.44	.00	.00	.02	.00	.00	.00	.00	.00	
14	.31	.00	.29	.00	.21	.00	.72	.00	.00	.00	.00	.00	
15	.00	.00	.29	.00	.53	.00	.00	.00	.00	.00	.00	.00	
16	.00	.00	.00	.00	.00	.00	.51	.00	.00	.00	.00	.00	
17	.00	.65S	.00	.54	.00	.00	.04	.00	.00	.00	.02	.00	
18	.00	.21S	.00	.00	.00	.00	.55	.00	.00	.56	.00	.49	
19	.27S	.00	.00	.00	.01	.00	.00	.05	.00	.00	.00	.00	
20	.00	.39	.17M	.00	.00	.00	.33	1.51	.00	.00	.00	.00	
21	.00	.00	.57	T	.18	.00	.00	.89	.47	.00	.03	.00	
22	.00	.00	.00	.09	.28	.35	.00	2.12	.00	.00	.04	.46	
23	.00	.00	.00	.00	.00	.61	.00	3.07	.00	.00	.01	.00	
24	.00	.00	.00	.00	.00	.00	.00	2.63	.00	.00	.28	.00	
25	.00	.00	.00	.00	.00	.50	.00	.00	.00	.63	.00	.00	
26	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00	.00	
27	.79	.00	.00	.10	.00	.00	.00	.53	.24	.00	.00	.00	
28	.00	.00	.03	.00	.00	.00	.00	.00	.48	.00	.00	1.50M	
29	.00	-----	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00	
30	.00	-----	.00	.00	.05	.12	.00	.00	.00	.00	.56	.00	
31	.00	-----	.00	-----	.50	.00	.48	.00	-----	.00	-----	.33S	
TOTAL	1.82	1.84	3.40	1.83	3.49	1.77	3.69	11.82	1.33	1.94	1.08	5.83	
STA AV	2.63	3.83	3.47	2.07	3.22	2.93	3.30	3.77	3.64	2.75	3.05	3.09	

NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AMOUNTS FROM R-1, R-2 AND R-3. STA AV IS FOR PERIOD SEPTEMBER 1960 THROUGH 1967. FOR DRAINAGE PATTERN MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, MISC. PUB. 994, P. 13.15-5.

1967 MEAN DAILY DISCHARGE (cfs)						BLACKSBURG, VIRGINIA			CHESTNUT BRANCH W-I 13.15			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.00	.87	.81	.84	.57	.54	.18	.18	.55	.28	.34	.40
2	1.24	.84	.81	.66	.60	.44	.20	.14	.49	.29	.35	.40
3	2.11	.81	.81	.77	.65	.45	.16	.13	.48	.28	.34	2.59
4	2.46	.78	.78	.73	.53	.41	.14	.14	.43	.27	.30	.68
5	2.15	.75	.75	.75	.51	.39	.14	.13	.43	.28	.30	.53
6	1.63	.71	.74	.75	.54	.38	.16	.11	.41	.27	.30	.49
7	1.48	.80	10.40	.68	1.78	.36	.17	.51	.40	.30	.30	.45
8	2.47	.70	2.54	.67	.88	.35	.28	.20	.37	.32	.28	.42
9	2.05	.68	1.69	.67	.73	.33	.24	.19	.44	.32	.31	.42
10	1.60	.71	1.40	.70	.61	.32	.16	.18	.44	.48	.31	4.55
11	1.21	.70	1.23	.64	.65	.29	.24	.13	.36	.33	.32	3.97
12	1.04	.72	1.28	.61	.57	.30	.14	.12	.34	.30	.30	2.14
13	1.01	.72	1.46	.83	.55	.28	.16	.12	.34	.30	.32	1.16
14	1.27	.86	1.92	.69	.67	.27	.26	.12	.33	.30	.30	.94
15	1.01	.87	2.40	.64	1.12	.28	.33	.11	.30	.30	.29	.77
16	.93	.78	1.74	.59	.75	.25	.60	.10	.30	.30	.29	.69
17	.87	.84	1.47	.92	.64	.25	.22	.09	.30	.28	.31	.64
18	.81	.86	1.31	.70	.57	.26	.47	.09	.30	.52	.30	1.16
19	.85	.99	1.16	.58	.51	.26	.24	.10	.30	.37	.29	.82
20	.81	2.57	1.23	.56	.50	.24	.28	1.56	.30	.34	.30	.75
21	.86	3.00	2.49	.59	.50	.23	.25	1.39	.49	.33	.32	.64
22	.87	1.97	1.57	.62	.69	.24	.21	5.35	.33	.30	.30	1.07
23	.81	1.56	1.33	.54	.54	.60	.18	42.51	.28	.30	.34	1.02
24	.78	1.21	1.20	.52	.46	.24	.17	63.48	.29	.30	.35	.84
25	.75	1.09	1.11	.50	.47	.41	.17	4.28	.27	.66	.34	.75
26	.72	.96	1.04	.86	.45	.27	.15	1.82	.28	.39	.28	.65
27	3.01	.93	.98	.75	.43	.24	.15	3.17	.31	.34	.30	.64
28	1.47	.90	.96	.56	.40	.24	.14	1.38	.48	.33	.30	6.50
29	1.16	-----	.93	.53	.45	.24	.14	.94	.35	.31	.30	3.73
30	1.01	-----	.87	.55	.45	.25	.14	.77	.29	.32	.61	1.90
31	.93	-----	.84	-----	.64	-----	.21	.68	-----	.35	-----	1.44
MEAN	1.30	1.04	1.59	.67	.63	.32	.22	4.20	.37	.33	.32	1.39
INCHES	.91	.66	1.11	.45	.44	.22	.15	2.93	.25	.23	.22	.97

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

1967 SELECTED RUNOFF EVENT				BLACKSBURG, VIRGINIA			CHESTNUT BRANCH 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 August 23-26, 1967											
8-23	RG R-1 1/ .05	2/ .0513	8-23	RG 1433	R-2 .00	.00	8-23	1610	1.5250	.0000	
				1436	.20	.01		1615	1.6849	.0001	
				1600	.01	.02		1620	2.0262	.0003	
8-23	RG R-2 2/ .07			1608	.08	.03		1625	2.6127	.0005	
				1610	.60	.05		1630	4.1270	.0007	
				1615	.36	.08		1635	9.6724	.0013	
8-23	RG R-3 .00			1630	.76	.27		1640	30.7555	.0028	
				1634	1.50	.37		1645	72.4951	.0069	
				1640	3.50	.72		1650	140.1914	.0152	
				1644	3.00	.92		1700	260.5154	.0465	
				1648	3.60	1.16		1705	264.9091	.0670	
				1654	.50	1.21		1710	247.3771	.0870	
				1705	.00	1.21		1715	249.4567	.1065	
				1710	1.08	1.30		1720	308.0457	.1282	
				1721	.60	1.41		1725	392.3354	.1556	
				1728	.77	1.50		1730	417.6096	.1873	
				1736	.30	1.54		1735	413.0666	.2197	
				1745	.33	1.59		1740	397.8915	.2514	
				1800	.12	1.62		1745	384.9878	.2820	
				1830	.02	1.63		1755	346.1382	.3391	
				1920	.02	1.65		1800	324.6498	.3653	
				2050	.01	1.67		1805	303.4068	.3899	
				2105	.12	1.70		1810	279.6683	.4126	
				2110	.24	1.72		1815	256.7403	.4336	
				2120	.12	1.74		1820	230.3251	.4526	
				2125	.24	1.76		1825	201.2545	.4695	
				2128	1.00	1.81		1830	174.4661	.4842	
				2135	1.97	2.04		1835	144.8623	.4967	
				2138	.80	2.08		1840	125.5068	.5072	
				2146	.22	2.11		1845	111.6327	.5165	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374. FOR 30-DAY ANTECEDENT P & Q, SEE DAILY TABLES ON THIS AND PREVIOUS PAGE. 1/ .04 IN. FROM MDT. 8-22-67 TO 0245, 8-23-67; .01 IN. FROM 0400 TO 0500. 2/ CONTINUOUS FLOW PRIOR TO 1610. 3/ .04 IN. FROM MDT. 8-22-67 TO 0230, 8-23-67; .03 IN. FROM 0430 TO 0710.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA CHESTNUT BRANCH 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 August 23-26, 1967 - Continued										
			8-23	RG 2150	R-2 .75	2.16	8-23	1850	100.8619	.5248
				2204	1.07	2.41		1855	89.3659	.5322
				2207	.60	2.44		1900	78.0832	.5388
				2218	.16	2.47		1905	70.3090	.5446
				2246	.09	2.51		1910	61.4684	.5497
				2252	.20	2.53		1920	55.0165	.5588
				2258	.10	2.54		1930	46.8691	.5668
				2305	.43	2.59		1935	44.5230	.5703
				2320	.16	2.63		1940	41.5583	.5737
				2340	.09	2.66		1945	39.3402	.5769
			8-24	2400	.21	2.73		1950	36.4928	.5798
				0030	.14	2.80		2005	30.9581	.5877
				0045	.24	2.86		2010	30.0197	.5901
				0052	.34	2.90		2015	29.4332	.5924
				0055	1.00	2.95		2020	27.8015	.5947
				0058	.80	2.99		2025	26.8524	.5968
				0102	.15	3.00		2030	26.2659	.5989
				0110	.38	3.05		2035	24.6769	.6009
				0140	.10	3.10		2040	24.1970	.6028
				0144	.30	3.12		2045	23.1200	.6046
				0205	.17	3.18		2115	20.1446	.6148
				0207	.90	3.21		2120	20.2939	.6164
				0237	.40	3.41		2130	22.7680	.6197
				0244	.86	3.51		2135	27.7802	.6217
				0254	1.80	3.81		2140	30.0623	.6240
				0259	1.20	3.91		2145	31.0115	.6263
				0330	.14	3.98		2150	35.4371	.6289
				0340	.06	3.99		2155	77.6459	.6334
				0354	.34	4.07		2200	132.0760	.6416
				0405	.22	4.11		2205	149.1280	.6525
				0410	1.32	4.22		2210	172.5785	.6651
				0414	1.80	4.34		2215	190.3664	.6793
				0430	.15	4.38		2220	193.1817	.6943
				0440	.18	4.41		2225	190.1211	.7093
				0454	.64	4.56		2230	191.2729	.7242
				0520	.25	4.67		2235	196.1571	.7393
				0540	.15	4.72		2240	200.9879	.7548
				0610	.04	4.74		2245	198.5245	.7704
				0616	.20	4.76		2250	192.2966	.7857
				0745	.01	4.77		2255	182.9441	.8004
				0820	.05	4.80		2300	172.8345	.8143
				0847	.09	4.84		2305	156.0064	.8271
				0900	.18	4.88		2310	140.6713	.8387
				0905	.48	4.92		2320	106.3433	.8580
				0950	.09	4.99		2325	95.3058	.8659
				1014	.08	5.02		2330	84.4497	.8729
				1018	.15	5.03		2335	75.6731	.8792
				1100	.04	5.06		2340	70.4263	.8849
				1150	.02	5.08		2345	69.6691	.8904
				1200	.06	5.09		2350	64.2944	.8956
				1216	.15	5.13		2355	60.3593	.9005
				1300	.03	5.15		2400	58.8450	.9051
				1350	.01	5.16	8-24	0015	53.7795	.9183
				1500	.04	5.21		0020	53.7048	.9225
				1544	.01	5.22		0025	51.0921	.9266
				1700	.03	5.26		0030	49.6205	.9306
				2050	.00	5.26		0040	48.2128	.9382
				2220	.06	5.35		0050	50.0257	.9459
								0055	51.7853	.9499
								0100	54.2700	.9540
			8-23	RG 1553	R-3 .00	.00		0105	56.2323	.9583
				1559	.20	.02		0110	61.6923	.9629
				1613	.69	.18		0115	65.9793	.9679
				1622	1.33	.38		0120	70.7782	.9733
				1627	1.80	.53		0125	71.3861	.9788

Continued on next page

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA			CHESTNUT BRANCH W-I			13.15	
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)
<u>Event of August 23-26, 1967 - Continued</u>										
			8-23	RG 1632 1637 1640 1646 1657	R-3 3.60 7.20 2.80 .60 .65	.83 1.43 1.57 1.63 1.75	8-24	0130 0135 0145 0150 0155	73.8602 73.7748 77.4220 80.1094 80.8665	.9845 .9903 1.0021 1.0082 1.0145
				1700 1706 1710 1714 1720	2.40 .00 .60 2.85 1.00	1.87 1.87 1.91 2.10 2.20		0215 0225 0230 0235 0240	77.8699 80.0241 82.6794 90.8162 102.7281	1.0393 1.0517 1.0580 1.0648 1.0724
				1726 1738 1746 1810 1920	.50 .20 .08 .08 .01	2.25 2.29 2.30 2.33 2.34		0245 0250 0255 0300 0305	140.0954 192.4353 258.8305 308.8135 327.5932	1.0819 1.0949 1.1125 1.1347 1.1595
				1940 2033 2040 2050 2055	.03 .00 .09 .06 .36	2.35 2.35 2.36 2.37 2.40		0310 0315 0320 0325 0335	328.7236 319.4137 309.0801 305.3797 316.5877	1.1852 1.2105 1.2351 1.2591 1.3077
				2057 2110 2115 2119 2123	.60 .23 .48 1.95 1.80	2.42 2.47 2.51 2.64 2.76		0340 0345 0350 0355 0400	311.0103 308.5043 294.2142 284.2752 280.0842	1.3322 1.3564 1.3800 1.4026 1.4246
				2129 2135 2140 2150 2155	1.00 .30 .84 .90 2.04	2.86 2.89 2.96 3.11 3.28		0405 0410 0415 0420 0425	282.0571 293.9476 302.6709 304.3772 297.3815	1.4466 1.4691 1.4924 1.5161 1.5396
				2210 2230 2240 2250 2300	.20 .12 .06 .24 .18	3.33 3.37 3.38 3.42 3.45		0430 0435 0440 0445 0450	285.1284 267.1272 240.8933 224.8864 222.4976	1.5624 1.5840 1.6038 1.6220 1.6395
				2330 2400 0015 0030 0045	.10 .14 .20 .16 .40	3.50 3.57 3.62 3.66 3.76		0455 0500 0505 0510 0515	226.4220 235.8918 247.4411 251.6108 251.9094	1.6570 1.6751 1.6940 1.7135 1.7331
			8-24	0047 0100 0140 0205 0211	1.50 .23 .13 .26 .50	3.81 3.86 3.95 4.06 4.11		0520 0525 0530 0535 0540	245.9055 236.8516 220.1408 207.2691 197.3514	1.7526 1.7715 1.7893 1.8060 1.8218
				0230 0235 0242 0245 0250	.66 1.44 1.29 2.80 1.44	4.32 4.44 4.59 4.73 4.85		0545 0550 0555 0600 0605	189.7372 184.2665 174.4234 163.7379 152.4552	1.8370 1.8516 1.8656 1.8788 1.8911
				0255 0310 0325 0340 0347	.24 .12 .12 .16 .60	4.87 4.90 4.93 4.97 5.04		0615 0625 0635 0645 0650	134.0808 110.0011 96.2336 83.9911 76.8461	1.9135 1.9326 1.9487 1.9628 1.9691
				0354 0400 0406 0410 0420	.09 1.60 2.20 .30 .12	5.05 5.21 5.43 5.45 5.47		0655 0700 0705 0715 0720	72.8791 69.5092 65.3715 60.3593 56.8934	1.9749 1.9805 1.9858 1.9956 2.0002
				0433 0444 0510 0520 0530	.18 .55 .35 .24 .06	5.51 5.61 5.76 5.80 5.81		0725 0740 0745 0805 0810	54.4300 49.4818 47.0717 41.0784 40.3320	2.0045 2.0167 2.0205 2.0343 2.0374
Continued on next page										

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374.

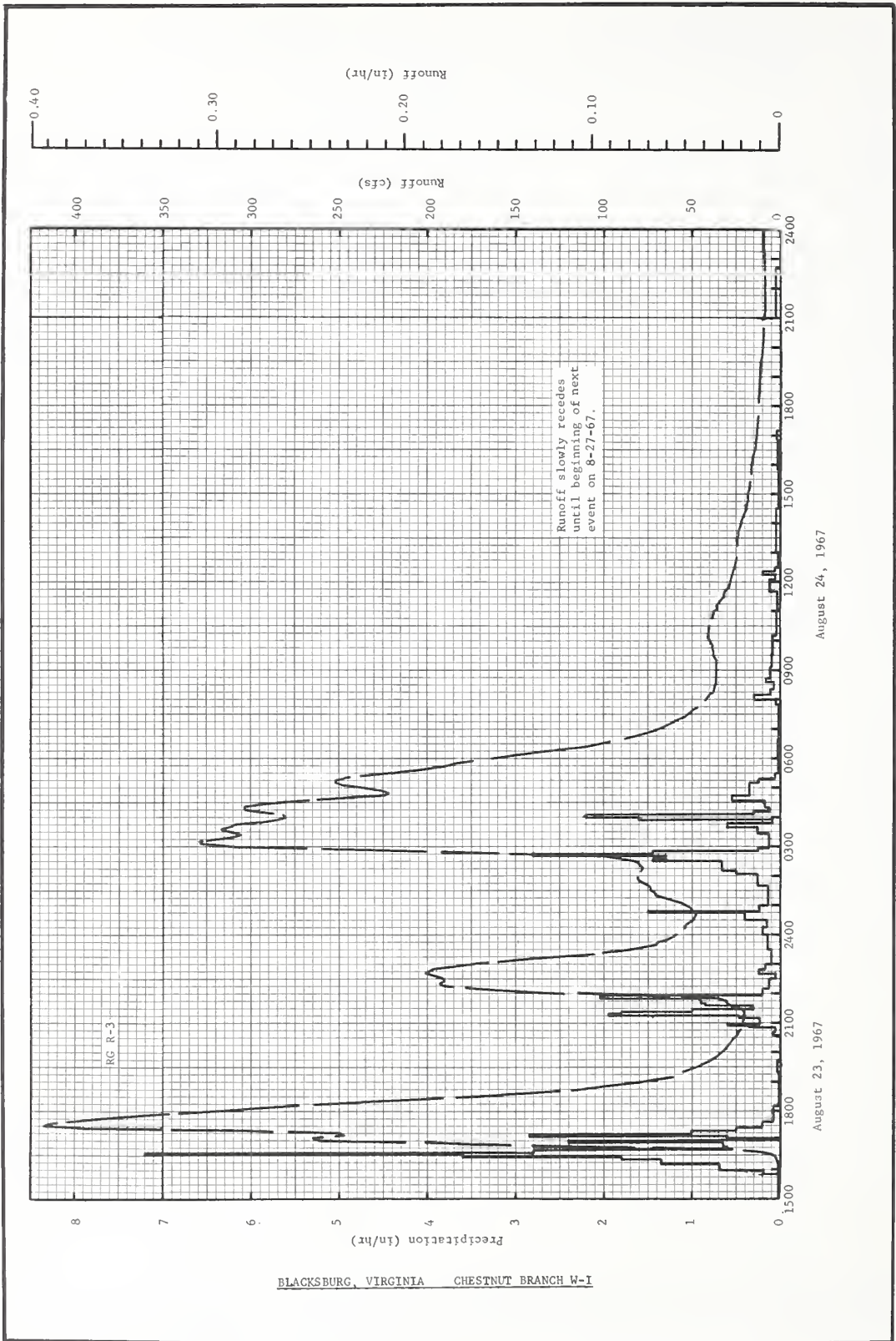
1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA				CHESTNUT BRANCH W-I 13.15			
ANTECEDENT CONITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of August 23-26, 1967 - Continued										
			8-24	RG 0600	R-3 .02	5.82	8-24	0815	38.8496	2.0405
				0640	.03	5.84		0835	36.2262	2.0523
				0750	.01	5.85		0920	36.3542	2.0778
				0800	.06	5.86		0930	37.6126	2.0836
				0810	.30	5.91		0935	37.6126	2.0865
				0821	.11	5.93		0945	39.0949	2.0925
				0837	.08	5.95		0950	39.0949	2.0956
				0844	.17	5.97		1005	41.3131	2.1050
				0905	.11	6.01		1030	40.4493	2.1210
				0930	.10	6.05		1045	38.2311	2.1302
				1010	.09	6.11		1050	38.2311	2.1332
				1100	.04	6.14		1100	36.7381	2.1390
				1140	.03	6.16		1105	35.5331	2.1419
				1150	.12	6.18		1110	35.5971	2.1446
				1205	.12	6.21		1125	33.5922	2.1527
				1215	.06	6.22		1130	32.3871	2.1553
				1221	.20	6.24		1135	32.3871	2.1579
				1230	.07	6.25		1140	31.0754	2.1603
				1300	.02	6.26		1145	30.5529	2.1627
				1430	.04	6.32		1150	29.4865	2.1651
				1550	.01	6.33		1155	29.0173	2.1674
				1650	.02	6.35		1225	25.8820	2.1803
				1710	.03	6.36		1250	24.8689	2.1902
				2100	.00	6.36		1330	24.8369	2.2057
				2240	.06	6.46		1335	24.2930	2.2076
				RG	R-1	5.50		1340	24.2930	2.2095
				3 RG	AVG 1/	5.65		1400	22.1602	2.2168
								1405	22.1602	2.2185
								1430	19.7394	2.2267
								1435	19.7394	2.2282
								1450	18.5024	2.2327
								1455	18.5344	2.2342
								1505	18.0971	2.2370
								1515	17.6919	2.2398
								1525	17.2760	2.2425
								1540	16.4762	2.2465
								1550	16.4868	2.2491
								1600	16.0709	2.2516
								1610	15.6764	2.2541
								1620	15.2818	2.2565
								1635	14.5246	2.2600
								1645	14.5246	2.2623
								1700	13.7355	2.2656
								1740	12.9677	2.2739
								1825	12.2851	2.2828
								1835	12.2745	2.2847
								1845	11.9332	2.2866
								1900	11.3360	2.2894
								1915	11.3360	2.2920
								1925	11.0054	2.2938
								1940	10.3976	2.2963
								2010	9.7897	2.3010
								2040	9.2139	2.3055
								2110	8.7126	2.3097
								2210	8.4674	2.3177
								2255	8.9899	2.3239
								2310	9.0006	2.3260
								2325	9.5231	2.3281
								2400	2/ 9.4911	2.3333
							8-25	0015	9.2032	2.3355
								0030	8.7020	2.3376
								0040	8.7020	2.3390
								0055	8.1688	2.3410
								0125	7.6676	2.3447
								0200	7.1450	2.3487

Continued on next page

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374. 1/ THIESSEN WEIGHTED FOR RG R-1, R-2 & R-3. 2/ RUNOFF SLOWLY RECEDES UNTIL BEGINNING OF NEXT EVENT ON 8-27-67.

1967 SELECTED RUNOFF EVENT			BLACKSBURG, VIRGINIA			CHESTNUT BRANCH 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)
<u>Event of August 23-26, 1967 - Continued</u>										
							8-25	0245	6.6864	2.3536
								0330	6.2599	2.3581
								0420	5.8440	2.3629
								0525	5.4281	2.3686
								0640	5.0122	2.3747
								0750	4.6389	2.3800
								0925	4.3190	2.3866
								1110	3.9884	2.3935
								1220	3.8284	2.3977
								1400	3.4979	2.4035
								1545	3.1673	2.4089
								1715	2.9220	2.4132
								1900	2.6767	2.4178
								2315	2.4314	2.4280
								2400	2.4314	2.4297
							8-26	0350	2.1862	2.4380
								0625	2.1862	2.4433
								0900	1.9409	2.4483
								1255	1.7596	2.4551
								1505	1.5890	2.4585

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.0009374.



MONTHLY PRECIPITATION AND RUNOFF (inches)						IOWA CITY, IOWA RALSTON CREEK AREA—1930 ACRES (3.01 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P 1/ Q 2/	.67 .21	.60 .07	2.69 .70	4.65 .97	1.37 .24	7.74 2.32	2.55 .12	5.22 .32	4.46 .18	5.58 .94	1.74 1.19	1.04 .34	38.31 7.60
STA AV 3/P (25-67) Q	1.11 .43	1.04 .90	2.01 1.24	3.00 .74	3.59 .69	4.63 .81	3.89 .50	3.38 .29	3.53 .33	2.55 .29	2.07 .39	1.23 .26	32.03 6.87
MEAN P 4/ 117 YR -	1.50	1.40	2.33	2.92	4.02	4.54	3.87	3.57	3.97	2.59	2.06	1.55	34.32

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	
1967	6 -7	.54	6 -7	.45	6 -7	.78	6 -7	1.29	6 -7	1.66	6 -7	1.70	6 -7	1.74	6 -7	2.19

MAXIMUMS FOR PERIOD OF RECORD																
1925 TO 1967	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: Watershed conditions: Approximately 20% timber; 13% row crops; 6% small grain; 12% hay; 45% pasture; and 4% roads and farmsteads. 1/ Precipitation, Thiessen average of five recording rain gages. 2/ Runoff records furnished by U. S. Geological Survey. 3/ Precipitation and runoff records began Sept. 1, 1924. Sept. 1-Dec. 31, 1924 amounts not included in average. 4/ Mean P based on 117-yr (1851-1967) U. S. Weather Bureau record period at Dubuque, Ia.

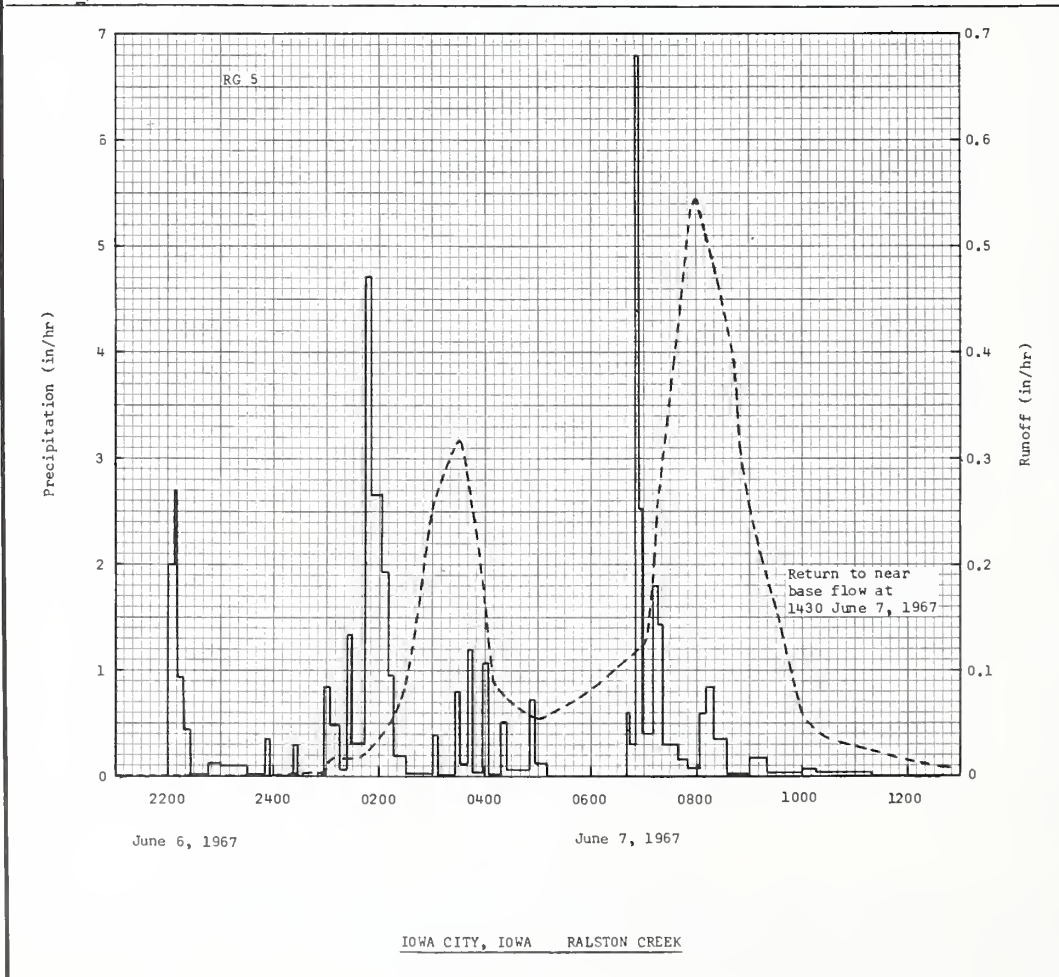
1967 SELECTED RUNOFF EVENT			IOWA CITY, IOWA				RALSTON CREEK				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)	
Event of June 6 and 7, 1967											
5 -7	5 RG 5/ .28	.0148	6 -6	RG	5	.00	6 -6	2140	.0006	.0000	
5 -8	.00	.0136		2200	.00	.00		2200	.0007	.0002	
5 -9	.00	.0106		2206	2.00	.20		2315	.0012	.0015	
5-10	.00	.0114		2210	2.70	.38	6 -7	2400	.0009	.0023	
				2217	.95	.49		0030	.0028	.0032	
5-11	.19	.0110		2225	.45	.55		0055	.0034	.0045	
5-12	.00	.0082		2245	.03	.56		0105	.0164	.0062	
5-13	.00	.0078		2300	.12	.59		0130	.0164	.0130	
5-14	.00	.0069		2330	.10	.64		0200	.0374	.0265	
5-15	.00	.0059		2350	.03	.65		0230	.0865	.0574	
5-16	.00	.0042		2355	.36	.68		0250	.1928	.1040	
5-17	.00	.0044	6 -7	0021	.00	.68		0300	.2519	.1410	
5-18	.24	.0061		0025	.30	.70		0330	.3197	.2839	
5-19	.00	.0042		0057	.00	.70		0345	.2519	.3554	
5-20	.00	.0042		0104	.86	.80		0400	.1635	.4073	
5-21	.00	.0032		0115	.49	.89		0410	.0881	.4283	
5-22	.00	.0032		0123	.08	.90		0500	.0535	.4872	
5-23	.03	.0032		0127	1.35	.99		0550	.0776	.5418	
5-24	.00	.0028		0142	.32	1.07		0630	.1013	.6014	
5-25	.00	.0026		0150	4.73	1.70		0700	.1259	.6582	
5-26	.00	.0019		0201	2.67	2.19		0715	.2519	.7055	
5-27	.00	.0019		0210	1.93	2.48		0800	.5449	1.0042	
5-28	.12	.0031		0215	.96	2.56		0845	.3881	1.3541	
5-29	.03	.0033		0230	.20	2.61		0900	.2519	1.4341	
5-30	.27	.0043		0300	.04	2.63		0930	.1593	1.5369	
5-31	.05	.0037		0306	.40	2.67		1000	.0604	1.5918	
6 -1	.00	.0025		0325	.03	2.68		1030	.0374	1.6163	
6 -2	.00	.0021		0331	.80	2.76		1200	.0156	1.6561	
6 -3	.00	.0021		0340	.13	2.78		1300	.0071	1.6674	
6 -4	.00	.0020		0345	1.20	2.88		1430	6/.0049	1.6765	
6 -5	.09	.0022		0357	.05	2.89					
6 -6	.00	7/.0030		0402	1.08	2.98					
				0417	.04	2.99					
				0424	.51	3.05					
				0450	.07	3.08					
				0455	.72	3.14					
				0510	.12	3.17					
				0640	.01	3.18					
				0642	.60	3.20					
				0650	.30	3.24					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1946.08. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA MISC. PUB. 1164, P. 21.1-4. 5/ THIESSEN AVERAGE OF FIVE RECORDING RAIN GAGES. 6/ RETURN TO NEAR BASE FLOW. 7/ RUNOFF PRIOR TO 2140.

1967 SELECTED RUNOFF EVENT			IOWA CITY, IOWA				RALSTON CREEK			
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 6 and 7, 1967-Continued							
			6 -7	0653	6.80	3.58				
				0658	2.52	3.79				
				0710	.40	3.87				
				0716	1.80	4.05				
				0721	1.44	4.17				
				0739	.30	4.26				
				0750	.16	4.29				
				0803	.09	4.31				
				0810	.60	4.38				
				0820	.84	4.52				
				0832	.35	4.59				
				0900	.02	4.60				
				0920	.18	4.66				
				1000	.03	4.68				
				1017	.07	4.70				
				1120	.04	4.74				
				RG	1	5.52				
				RG	2	6.04				
				RG	3	6.01				
				RG	4	5.13				
				5 RG	AVG 1/	5.54				

Watershed conditions:
 Crop heights:
 Corn 2-12 in.
 Soybeans 0-6 in.
 Small grain 28 in.
 Hay 8-14 in.
 Pasture 3-12 in.

NOTES: 1/ THIESSEN AVERAGE OF FIVE RECORDING RAIN GAGES.



MONTHLY PRECIPITATION AND RUNOFF (inches)						McCREDIE, MISSOURI AREA—154 ACRES								STATION RESERVOIR WATERSHED W-1		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P <u>1</u> / Q	1.89	.91	3.39	3.77	4.69	4.24	3.87	.24	1.89	4.79	1.72	2.26	33.66			
STA AV <u>2</u> / (41-67) Q	1.41	1.64	2.77	3.65	4.01	4.31	3.52	2.82	3.51	3.33	1.90	1.62	34.49			
MEAN P <u>3</u> / 78 YR	1.82	1.78	2.89	3.71	4.66	4.62	3.50	3.64	4.30	2.88	2.15	1.81	37.76			
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
1967	1 -6	.05	12-18	.02	12 -2	.03	5 -6	.06	5 -6	.08	12 -5	.12	12 -4	.15	12 -4	.28
MAXIMUMS FOR PERIOD OF RECORD																
19 ⁴¹ to 19 ⁶⁷	10 -4 1941	2.02	10 -4 1941	1.20	10 -4 1941	1.96	10 -4 1941	3.94	10 -4 1941	6.97	10 -4 1941	7.74	10 -3 1941	8.06	10 -2 1941	8.80
NOTES: Watershed conditions: 41% pasture and meadow; 28% alfalfa; 10% row crops of corn and soybeans; 15% small grain; and 6% roads and farmsteads. <u>1</u> / Precipitation, Thiessen average of 4 recording gages and 1 non-recording gage. <u>2</u> / Precipitation and runoff records began Jan. 1, 1941. <u>3</u> / Mean P based on 78-yr (1890-1967) U. S. Weather Bureau record period at Columbia, Mo.																
NOTES: NO SIGNIFICANT RUNOFF EVENT FOR PRESENTATION OCCURRED IN 1967. FOR REVISED TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 25.1-8.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						GOSHOCTON, OHIO WATERSHED 102 AREA - 1.26 ACRES						26.01				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.96	1.98	4.85	2.98	4.87	.67	6.87	1.19	3.47	1.61	3.46	2.96	35.87			
O	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.01			
STA AV ₂ /P	1.72	2.43	4.18	3.40	3.90	4.69	3.97	3.28	2.36	2.33	2.39	2.21	36.86			
(37-67) O	.03	.06	.14	.06	.01	.18	.03	.04	.02	.01	T	.00	.58			
MEAN P ₃																
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
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	
1967	7-19	.02	7-19	.01	7-19	.01	7-19	.01	7-19	.01	7-19	.01	7-19	.01	7-19	.01
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	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	3-4 1963	1.50	3-1 1963	1.69
NOTES: Watershed conditions: Improved permanent pasture. 1/ Rain gage Y101. 2/ Precipitation and runoff records began Apr. 1937. Watershed discontinued Jan. 1, 1947, to Apr. 30, 1957, and Sept. 1, 1957, to Mar. 29, 1960. 3/ Mean P based on 57-yr. (1909-65) U.S. Weather Bureau record period at Goshocton, Ohio. 4/ No maximums taken for 1947 through 1956 or 1958 and 1959.																
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. 26.1-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, PP. 26.1-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.1-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						GOSHOCTON, OHIO WATERSHED 129 AREA - 2.71 ACRES						26.03				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.93	1.71	5.08	3.09	5.22	.76	6.38	1.08	3.65	1.56	3.47	2.81	35.74			
O	.00	.00	.00	.00	.01	.00	.02	.00	.00	.00	.00	.01	.04			
STA AV ₂ /P	2.70	2.49	3.51	3.45	3.78	4.07	4.14	2.99	2.58	2.08	2.45	2.17	36.41			
(38-67) O	.05	.12	.18	.05	.05	.15	.06	.04	.04	.01	T	.01	.76			
MEAN P ₃																
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
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	
1967	7-19	.12	7-19	.02	7-19	.02	7-19	.02	7-19	.02	7-19	.02	7-19	.02	7-19	.02
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	6-12 1957	2.36E	6-12 1957	.98E	9-1 1950	1.01	3-4 1963	1.53	3-4 1963	2.42	3-4 1963	2.90	3-3 1963	3.51	3-3 1963	4.00
NOTES: Watershed conditions: Improved permanent pasture. 1/ Rain gage 100. 2/ Precipitation and runoff records began Apr. 1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Goshocton, Ohio.																
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. 26.3-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, PP. 26.3-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.1-1 above)																
26.3-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 135 AREA - 2.69 ACRES								26.04		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.93	1.71	5.08	3.09	5.22	.76	6.38	1.08	3.65	1.56	3.47	2.81	35.74			
O	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
STA AV2/P (38-67) _O	2.70	2.49	3.51	3.45	3.78	4.07	4.14	2.99	2.58	2.08	2.45	2.17	36.41			
MEAN P ₂	.04	.13	.12	.03	.02	.11	.04	.04	.04	T	.01	.01	.59			
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
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	
1967		.00		.00		.00		.00		.00		.00		.00		.00
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	6-12 1957	2.38	6-12 1957	.92	9-1 1950	.94	3-4 1963	1.55	3-4 1963	2.19	3-4 1963	2.51	3-3 1963	3.06E	3-3 1963	3.07E
NOTES: Watershed conditions: Prevailing practice permanent pasture. 1/ Rain gage 100. 2/ Precipitation and runoff records began Apr. 1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.4-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.4-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.4-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 130 AREA - 1.63 ACRES								26.05		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.92	1.59	4.37	2.89	4.85	.70	6.28	1.05	3.35	1.58	3.35	2.68	33.61			
O	.00	.00	.03	.00	.02	.00	.00	.00	.00	.00	.00	.01	.06			
STA AV2/P (38-67) _O	2.65	2.38	3.35	3.33	3.72	4.00	4.20	2.88	2.59	2.08	2.42	2.13	35.73			
MEAN P ₂	.10	.14	.20	.09	.03	.18	.06	.02	.05	T	T	.01	.88			
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
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	
1967	5-7	.03	5-7	.01	3-6	.01	3-6	.01	3-5	.01	3-5	.03	3-5	.03	3-5	.03
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	6-12 1957	4.06	6-12 1957	1.42	6-12 1957	1.44	3-4 1963	1.55	3-4 1963	2.16	3-4 1963	2.54	3-3 1963	3.14E	3-3 1963	3.33E
NOTES: Watershed conditions: Improved practice meadow. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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.26.5-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.5-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center (See 26.4-1 above) 26.5-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						CDSHOCTDN, OHIO WATERSHED 131						26.07				
						AREA - 2.21 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ /O	.92 .00	1.59 .00	4.37 .00	2.89 .00	4.85 .00	.70 .00	6.28 .00	1.05 .00	3.35 .02	1.58 T	3.35 .00	2.68 T	33.61 .02		
	STA AV2/P (38-67) _O	2.65 .03	2.38 .02	3.35 .04	3.33 .02	3.72 .01	4.00 .03	4.20 T	2.88 T	2.59 T	2.08 T	2.42 T	2.13 T	35.73 .16		
	MEAN P ₃₇ 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	9-9	.01	9-9	T	9-28	.01	9-28	.01	9-27	.02	9-27	.02	9-27	.02	9-27	.02
MAXIMUMS FOR PERIOD OF RECORD																
19 38 TO 19 67	6-12 1957	1.18	6-12 1957	.41	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45	6-12 1957	.45
NOTES: Watershed conditions: Uneven age stand of mixed hardwoods in good woodland management. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.7-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.7-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.7-1																
MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 132						26.08				
						AREA - 0.590 ACRE										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ /O	.92 .00	1.59 .02	4.37 1.61	2.89 .15	4.85 .75	.70 .00	6.28 T	1.05 .00	3.35 .00	1.58 .00	3.35 .00	2.68 .02	33.61 2.55		
	STA AV2/P (48-67) _O	3.16 .23	2.55 .23	3.25 .52	3.46 .37	3.20 .12	3.43 .14	4.39 T	2.54 T	2.63 .01	1.85 T	2.54 .00	2.25 .01	35.25 1.63		
	MEAN P ₃₇ 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.05	5-7	.05	5-7	.09	3-5	.22	3-5	.37	3-5	.63	3-5	.76	3-3	.86
MAXIMUMS FOR PERIOD OF RECORD																
19 48 TO 19 67	6-12 1957	2.00E	4-25 1961	.73	4-25 1961	.99	4-25 1961	1.37	3-9 1964	1.67	3-9 1964	2.37	3-9 1964	2.78	3-4 1964	3.52
NOTES: Watershed conditions: Uneven age stand of mixed hardwoods in good woodland management. 1/ Rain gage 103. 2/ Precipitation and runoff records began May 1948. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.8-2. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.8-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.7-1 above)																
26.8-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO							WATERSHED 123		26.10
						AREA - 1.37 ACRES									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P ₁	.92	1.90	5.17	3.20	5.12	.76	7.00	1.14	3.36	1.56	3.41	2.92	36.46		
O	.00	.00	.65	.00	.05	.00	.00	.00	.00	.00	.00	.00	.70		
STA AV ₂ /P	2.74	2.53	3.47	3.57	3.78	4.26	4.27	2.98	2.62	2.21	2.55	2.30	37.28		
(39-67) O	.37	.35	.45	.26	.12	.30	.12	.08	.05	.02	.01	.12	2.25		
MEAN P ₃															
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-5	.09	3-5	.08	3-5	.12	3-5	.19	3-5	.31	3-5	.43	3-5	.43	3-5	.43

MAXIMUMS FOR PERIOD OF RECORD

1939 TO	6-12	5.97	6-12	1.37	6-12	1.48	6-28	1.51	1-21	1.84	1-21	2.33	1-21	2.33	3-4	2.66
1967	1957		1957		1957		1957		1959		1959		1959		1964	

Notes: Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; improved practice. 1/ Rain gage Y103. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr (1909-65) U.S. Weather Bureau record period at Coshocton, Ohio.

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. 26.10-6. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.10-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.10-1

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		
1967 P ₁	.92	1.90	5.17	3.20	5.12	.76	7.00	1.14	3.36	1.56	3.41	2.92	36.46		
O	.00	.00	.33	T	.09	.00	T	.00	.00	.00	.00	.06	.48		
STA AV ₂ /P	2.78	2.47	3.47	3.57	3.78	4.26	4.27	2.98	2.62	2.21	2.55	2.30	37.26		
(39-67) O	.22	.25	.23	.14	.15	.39	.29	.16	.12	.03	.02	.05	2.05		
MEAN P ₃															
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.10	3-6	.09	3-6	.15	3-6	.21	3-5	.21	3-5	.30	3-5	.31	3-3	.33

MAXIMUMS FOR PERIOD OF RECORD

1939 TO	6-12	4.12	9-1	1.33	9-1	1.56	9-1	1.58	9-1	1.59	9-1	1.59	3-3	1.66	6-29	2.85
1967	1957		1950		1950		1950		1950		1950		1963		1941	

NOTES:

Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; prevailing practice. 1/ Rain gage Y103. 2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.11-6. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.11-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

(See 26.10-1 above)

26.11-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 127 AREA - 1.65 ACRES							26.12			
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / O	.92 .00	1.90 .02	5.17 .77	3.20 T	5.12 .32	.76 .00	7.00 .00	1.14 .00	3.36 .00	1.56 .00	3.41 .00	2.92 .24	36.46 1.35			
STA AV2/P (49-67) _O	3.17	2.72	3.41	3.79	3.31	3.59	4.45	2.84	2.65	1.91	2.66	2.41	36.91			
MEAN P ₃ / 57 YR	.76	.74	.62	.36	.09	.27	.11	.07	.08	.02	.04	.27	3.43			
MEAN P ₃ / 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
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	
1967	5-7	.12	3-5	.06	3-5	.09	3-20	.19	3-20	.27	3-5	.33	3-5	.34	3-3	.40
MAXIMUMS FOR PERIOD OF RECORD																
1949 TO 1967	6-12 1957	3.12	9-1 1950	1.33	9-1 1950	1.48	6-12 1957	1.49	1-26 1952	1.97	1-26 1952	2.65	1-25 1952	2.82	1-25 1952	2.85
NOTES: Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; improved practice. 1/ Rain gage Y103. 2/ Precipitation and runoff records began May 1949. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.12-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.12-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center 26.12-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 109 AREA - 1.69 ACRES							26.13			
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / O	.91 .00	1.43 .00	4.64 .05	3.03 .01	4.92 .02	.74 .00	6.60 .00	1.00 .00	3.37 .00	1.59 .00	3.14 .00	2.72 .00	34.09 .08			
STA AV2/P (38-67) _O	2.63	2.40	3.42	3.53	3.80	4.24	4.34	2.93	2.64	2.16	2.45	2.18	36.72			
MEAN P ₃ / 57 YR	.07	.16	.14	.05	.11	.28	.22	.16	.05	.01	T	.02	1.27			
MEAN P ₃ / 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
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	
1967	3-6	.01	3-6	T	3-6	.01	3-6	.02	3-6	.02	3-6	.02	3-6	.02	3-6	.02
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	5-17 1941	4.34E	6-29 1941	.82E	6-28 1940	1.09	3-4 1963	1.35	3-4 1963	1.92	3-4 1963	2.17	3-3 1963	2.55	3-1 1963	2.66
NOTES: Watershed conditions: First year meadow, of a meadow, meadow, corn, wheat rotation; improved practice. 1/ Rain gage Y102. 2/ Precipitation and runoff records began Nov.1938. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.13-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.13-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center (See 26.12-1 above) 26.13-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 103 AREA - 0.650 ACRE								26.14
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P ₁ / _Q	.89 .00	1.64 .00	4.38 .46	2.75 .00	4.98 .02	.86 .00	6.40 .01	1.20 .00	3.53 .00	1.60 .00	3.19 .00	2.61 .00	34.03 .49	
STA AV ₂ /P (39-67) _Q	2.62 .32	2.28 .37	3.29 .61	3.36 .29	3.58 .14	4.03 .38	4.14 .26	2.85 .13	2.62 .14	2.07 .03	2.38 .03	2.13 .09	35.35 2.79	
MEAN P ₃ / _Q 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.07	3-6	.06	3-6	.10	3-6	.17	3-5	.19	3-5	.21	3-5	.21	3-5	.30

MAXIMUMS FOR PERIOD OF RECORD

1939 TO 1967	7-23 1940	4.72	9-1 1950	1.95	9-1 1950	2.60	9-1 1950	2.62	3-4 1963	2.82	3-4 1963	3.07	3-3 1963	3.50	3-1 1963	4.15
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NOTES: Watershed conditions: Wheat, of a wheat, meadow, meadow, corn rotation; improved practice. 1/ Rain gage 107. 2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshockton, Ohio.

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. 26.14-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.14-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.14-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 110 AREA - 1.27 ACRES								26.15
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P ₁ / _Q	.89 .00	1.64 .00	4.38 .04	2.75 .00	4.98 .02	.86 .00	6.40 .01	1.20 .00	3.53 .00	1.60 .00	3.19 .00	2.61 .01	34.03 .08	
STA AV ₂ /P (39-67) _Q	2.62 .22	2.28 .24	3.29 .39	3.36 .15	3.58 .12	4.03 .35	4.14 .26	2.85 .11	2.62 .14	2.07 .03	2.38 .02	2.13 .09	35.35 2.12	
MEAN P ₃ / _Q 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-28	.02	3-6	.01	5-11	.02	3-6	.02	3-6	.02	3-5	.02	3-5	.02	3-5	.02

MAXIMUMS FOR PERIOD OF RECORD

1939 TO 1967	7-28 1950	4.44	9-1 1950	2.24	9-1 1950	3.16	9-1 1950	3.19	9-1 1950	3.19	9-1 1950	3.20	3-3 1963	4.12	3-1 1963	5.05
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NOTES: Watershed conditions: Wheat, of a wheat, meadow, meadow, corn rotation; prevailing practice. 1/ Rain gage 107. 2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshockton, Ohio.

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. 26.14-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.15-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
(See 26.14-1 above)

26.15-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO WATERSHED 113							26.16		
							AREA - 1.45 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/} O	.85 .00	1.86 .00	5.19 .35	3.29 .00	4.91 .00	1.25 .02	6.54 .71	1.13 .00	3.36 .04	1.61 .00	3.29 .09	2.68 .03	35.96 1.24		
	STA AV ^{2/} (39-67) Q	2.67 .22	2.37 .39	3.37 .31	3.38 .15	3.79 .12	4.15 .35	4.05 .16	2.93 .17	2.69 .08	2.14 .04	2.45 .02	2.22 .06	36.21 2.07		
	MEAN 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-27	.75	7-19	.22	7-19	.22	7-19	.22	7-19	.22	7-27	.28	3-4	.29	7-19	.39
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-12 1957	3.77	9-1 1950	1.03	4-25 1961	1.20	6-28 1957	1.35	3-4 1963	1.50	3-4 1963	1.70	3-3 1963	2.00	3-1 1963	2.69
NOTES: Watershed conditions; Corn, of a corn, wheat, meadow, meadow rotation; improved practice. 1/ Rain gage 109. 2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHEDS, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 26.16-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.16-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.16-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)							COSHOCKTON, OHIO WATERSHED 118							26.17		
							AREA - 1.96 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/} O	.90 .01	2.02 .08	4.75 1.37	3.22 .03	4.94 .10	1.17 .00	6.59 .55	1.22 .00	3.48 .03	1.58 .00	3.32 .07	2.72 .10	35.91 2.34		
	STA AV ^{2/} (40-67) Q	2.77 .27	2.45 .35	3.48 .53	3.46 .22	3.75 .11	4.10 .39	4.12 .16	2.95 .23	2.80 .13	2.08 .01	2.57 .04	2.28 .08	36.81 2.52		
	MEAN 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-27	.73	7-19	.10	7-19	.10	7-27	.13	3-5	.19	3-5	.34	3-5	.55	3-4	1.07
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1967	6-12 1957	3.11	9-1 1950	1.30	9-1 1950	1.59	9-1 1950	1.60	9-1 1950	1.60	3-9 1964	1.90	3-9 1964	2.41	3-4 1964	3.43
NOTES: Watershed conditions: Corn, of a corn, wheat, meadow, meadow rotation; prevailing practice. 1/ Rain gage 108. 2/ Precipitation and runoff began Jan. 1940. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.17-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.17-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.16-1 above)																
26.17-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 111 AREA - 1.18 ACRES							26.18
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁	.85	1.86	5.19	3.29	4.91	1.25	6.54	1.13	3.36	1.61	3.29	2.68	35.96
O	.00	.00	1.38	.07	.00	.01	.01	.00	T	.00	.17	.96	2.60
STA AV2/P (39-67)Q	2.67	2.37	3.37	3.38	3.79	4.15	4.05	2.93	2.69	2.14	2.45	2.22	36.21
MEAN P ₂ 57 YR	.49	.56	.63	.30	.15	.32	.09	.05	.08	.02	.03	.21	2.93
	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-5	.14	12-11	.12	12-11	.17	3-5	.32	3-5	.53	3-5	.74	3-4	.80	3-3	.87

MAXIMUMS FOR PERIOD OF RECORD

19 39 to 19 67	6-12 1957	3.83	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
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NOTES:

Watershed conditions: Corn, of a corn, wheat, meadow, meadow rotation; improved practice. 1/ Rain gage 109. 2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocoton, Ohio.

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. 26.18-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.18-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.18-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 121 AREA - 1.42 ACRES							26.19
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁	.85	1.14	4.11	2.94	4.83	.84	6.61	1.23	3.34	1.57	3.23	2.64	33.33
O	.00	.00	.64	.01	.12	.00	.00	.00	.00	.00	.00	.01	.78
STA AV2/P (39-67)Q	2.63	2.23	3.21	3.27	3.63	4.10	4.31	2.87	2.66	2.07	2.35	2.11	35.44
MEAN P ₂ 57 YR	.18	.20	.33	.17	.06	.23	.19	.13	.08	.02	.01	.03	1.63
	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-5	.11	3-5	.08	3-5	.11	3-5	.16	3-5	.20	3-5	.30	3-5	.31	3-5	.34

MAXIMUMS FOR PERIOD OF RECORD

19 39 to 19 67	8-23 1944	7.82	9-1 1950	1.32	9-1 1950	1.39	9-1 1950	1.39	9-1 1950	1.39	9-1 1950	1.39	3-3 1963	1.66	3-1 1963	1.87
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NOTES:

Watershed conditions: Second year meadow, of a meadow, corn, wheat, meadow rotation; improved practice. 1/ Rain gage 113. 2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocoton, Ohio.

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. 26.20-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.19-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

(See 26.18-1 above)

26.19-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 106 AREA - 1.56 ACRES						26.20		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ^{1/} O	.85 .00	1.14 .01	4.11 .23	2.94 .01	4.83 .07	.84 .00	6.61 .01	1.23 .00	3.34 .01	1.57 T	3.23 .00	2.64 .08	33.33 .42
	STA AV2/P (39-67) O	2.63 .23	2.23 .24	3.21 .27	3.27 .13	3.63 .10	4.10 .31	4.31 .29	2.87 .22	2.66 .17	2.07 .02	2.35 .03	2.11 .08	35.44 2.09
	MEAN P ^{3/} 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.06	3-5	.02	3-5	.04	12-21	.05	3-5	.07	3-5	.12	3-5	.13	3-3	.17

MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	8-23	7.63	9-1	1.26	9-1	1.38	9-1	1.39	2-23	1.41	2-23	1.41	2-23	2.00	2-19	2.44
19 67	1944		1950		1950		1950		1960		1962		1962		1962	

NOTES:
 Watershed conditions: Second year meadow, of a meadow, corn, wheat, meadow rotation; prevailing practice.
 1/ Rain gage 113. 2/ Precipitation and runoff records began Apr. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.20-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.20-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
 26.20-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 188 AREA - 2.05 ACRES						26.21		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ^{1/} O	.95 .00	1.47 .00	4.12 .00	3.01 .00	4.89 .00	1.15 .00	6.55 .00	1.20 .00	3.16 .00	1.56 .00	3.19 .00	2.67 .00	33.92 .00
	STA AV2/P (39-67) O	2.56 .17	2.26 .17	3.19 .25	3.26 .10	3.78 .10	4.01 .28	4.13 .09	2.96 .17	2.66 .14	2.07 .05	2.36 .02	2.11 .03	35.35 1.57
	MEAN P ^{3/} 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967		.00		.00		.00		.00		.00		.00		.00		.00

MAXIMUMS FOR PERIOD OF RECORD																
19 39 TO	8-23	3.06	9-1	1.84	9-1	2.07	9-1	2.08	9-1	2.08	9-1	2.08	3-3	2.34	3-1	2.43
19 67	1944		1950		1950		1950		1950		1950		1963		1963	

NOTES:
 Watershed conditions: Second year meadow, of a meadow, corn, wheat, meadow rotation; improved practice. Plow 16 in. deep, minimum tillage in 1964. 1/ Rain gage 115. 2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.21-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.21-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
 (See 26.20-1 above)
 26.21-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 185 AREA - 7.40 ACRES								26.23
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1	.92	1.28	4.23	2.96	4.65	.96	6.37	1.16	3.16	1.52	3.41	2.72	33.34	
O	.00	.01	.38	T	.08	.00	.00	.00	.01	.00	.00	.01	.49	
STA AV2/P	2.67	2.26	3.25	3.30	3.69	3.88	4.06	2.91	2.64	2.03	2.36	2.14	35.19	
(39-67)Q	.13	.23	.35	.14	.12	.28	.18	.12	.14	.05	.02	.05	1.81	
MEAN P 3/														
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.04	3-6	.02	3-6	.04	3-5	.06	3-5	.10	3-5	.18	3-4	.22	3-3	.26

MAXIMUMS FOR PERIOD OF RECORD

19 39 TO	6-16	3.35	9-1	1.91	9-1	2.31	9-1	2.32	3-4	2.42	3-4	2.88	3-3	3.55	3-1	4.11
19 67	1946		1950		1950		1950		1963		1963		1963		1963	

NOTES:

Watershed conditions: Second year meadow, and wheat strips, of a corn, wheat, meadow, meadow rotation; improved practice with contour strips. 1/ Rain gage 123. 2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.23-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.23-1 AND 26.30-3

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.23-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 187 AREA - 7.20 ACRES								26.24
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1	.85	1.68	5.08	3.04	5.13	1.43	6.78	1.23	3.48	1.68	3.19	2.68	36.25	
O	.00	.00	1.72	.00	.08	.00	.03	.00	T	.00	.00	.04	1.37	
STA AV2/P	2.69	2.32	3.35	3.33	3.79	4.07	4.27	2.89	2.84	2.11	2.42	2.17	36.25	
(41-67)Q	.84	.68	1.13	.56	.22	.34	.12	.06	.11	.02	.02	.26	4.33	
MEAN P 3/														
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.06	3-6	.12	3-5	.18	3-5	.30	3-5	.53	3-5	1.12

MAXIMUMS FOR PERIOD OF RECORD

19 41 TO	6-12	2.75	9-1	1.37	9-1	1.54	9-1	1.57	3-4	2.01	3-4	2.35	3-4	2.95	1-20	3.36
19 67	1957		1950		1950		1950		1963		1963		1963		1959	

NOTES:

Watershed conditions: Corn, and first year meadow strips, of a corn, wheat, meadow, meadow rotation; improved practice with contour strips. 1/ Rain gage 116. 2/ Precipitation and runoff records began Jan. 1941. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.24-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USOA MISC. PUB. 1070, P. 26.24-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
(See 26.23-1 above)

26.24-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 192						26.25				
						AREA - 7.59 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ / O	.92 .00	1.28 .05	4.23 1.38	2.96 .01	4.65 .20	.96 .00	5.37 .01	1.16 .00	3.16 T	1.52 .00	3.41 T	2.72 .10	33.34 1.75		
	STA AV ₂ /P (40-67)Q	2.67 .44	2.26 .54	3.25 .65	3.30 .25	3.69 .16	3.88 .31	4.06 .16	2.91 .07	2.64 .11	2.03 .02	2.36 .04	2.14 .17	35.15 2.92		
	MEAN P ₃ / 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-7	.11	3-6	.04	3-6	.06	3-20	.12	3-8	.16	3-5	.30	3-5	.40	3-4	.93
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1967	6-16 1946	4.60	6-16 1946	1.85	9-1 1950	2.02	9-1 1950	2.04	3-4 1963	2.11	3-4 1963	2.53	3-4 1963	3.85	3-3 1963	4.72
NOTES: Watershed conditions: Wheat, of a wheat, meadow, meadow, corn rotation; prevailing practice. 1/ Rain gage 128. 2/ Precipitation and runoff records began Sept. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.23-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.25-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.25-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 172						26.26				
						AREA - 43.6 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ / Q ₂	.92 .09	1.59 .35	4.37 3.85	2.89 1.79	4.85 2.98	.70 .15	6.28 .11	1.05 .05	3.35 .04	1.58 .06	3.35 .09	2.68 .39	33.61 9.95		
	STA AV ₃ /P (39-67)Q	2.69 1.19	2.38 1.49	3.35 2.55	3.33 2.29	3.68 1.47	4.00 .77	4.22 .28	2.86 .10	2.58 .12	2.13 .11	2.41 .22	2.17 .53	35.80 11.12		
	MEAN P ₄ / 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	5-11	.04	5-11	.04	5-11	.06	5-11	.15	3-5	.25	3-5	.48	3-5	.71	5-8	1.46
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-12 1957	2.64E	6-12 1957	1.07E	6-12 1957	1.23E	6-12 1957	1.38E	1-26 1952	1.43	1-26 1952	1.95	1-26 1952	2.34	4-3 1957	3.22
NOTES: Watershed conditions: Cover of 33% uneven age hardwoods, 67% pines planted in 1939. 1/ Rain gage 103. 2/ Parshall flume for measuring runoff was replaced Jan. 1, 1967 by 16-in. broadcrested concrete weir with 2:1 side slopes, 4 ft. deep. 3/ Precipitation and runoff records began Feb. 1939. 4/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.26-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.26-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.25-1 above)																
26.26-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 169 AREA - 29.0 ACRES								26.27
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P ₁	.85	1.14	4.11	2.94	4.83	.84	6.61	1.23	3.34	1.57	3.23	2.64	33.33	
Q	.02	.14	2.36	.50	1.07	.01	.21	.00	.04	T	.07	.58	5.00	
STA AV2/P (40-67)Q	2.63	2.23	3.21	3.25	3.71	4.00	4.22	2.92	2.72	1.98	2.41	2.13	35.41	
MEAN P ₃	.85	.96	1.43	.95	.51	.48	.25	.16	.16	.04	.09	.36	6.24	
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	7-19	.07	3-6	.06	3-6	.09	3-6	.16	3-5	.24	3-5	.45	3-4	.59	3-3	1.07

MAXIMUMS FOR PERIOD OF RECORD

1940 TO 1967	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
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NOTES:

Watershed conditions: Cover of 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 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.27-6. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.27-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.27-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 177 AREA - 75.6 ACRES								26.28
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P ₁	.92	1.59	4.37	2.89	4.85	.70	6.28	1.05	3.35	1.58	3.35	2.68	33.61	
Q	.04	.49	3.45	.68	1.49	.01	.15	T	.02	T	.11	.96	7.40	
STA AV2/P (40-67)Q	2.69	2.33	3.34	3.32	3.77	3.92	4.15	2.91	2.63	2.02	2.47	2.19	35.74	
MEAN P ₃	1.09	1.16	1.81	1.19	.62	.55	.25	.12	.13	.06	.15	.53	7.66	
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.05	3-6	.05	3-6	.08	3-6	.15	3-5	.24	3-5	.46	3-5	.71	3-4	1.46

MAXIMUMS FOR PERIOD OF RECORD

1940 TO 1967	6-12 1957	3.14	6-12 1957	1.33	9-1 1950	1.55	9-1 1950	1.63	3-4 1963	1.77	3-4 1963	2.06	3-4 1963	2.48	3-4 1964	3.22
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NOTES:

Watershed conditions: Cover of 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 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.28-7. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.28-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
(See 26.27-1 above)

26.28-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 196 AREA - 303 ACRES										26.30
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/}	.88	1.85	4.92	3.13	5.04	1.30	6.68	1.22	3.48	1.63	3.26	2.70	36.09		
	O	.19	.78	5.23	1.76	2.75	.19	.38	.09	.12	.11	.43	1.52	13.55		
STA AV2/P		2.70	2.50	3.56	3.47	3.74	4.33	4.26	2.88	2.68	2.17	2.47	2.25	37.01		
(37-67)Q		1.75	1.94	2.95	2.38	1.47	1.09	.57	.29	.24	.21	.40	.95	14.24		
MEAN P ^{3/}																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.07	3-6	.07	3-6	.12	3-6	.25	3-5	.41	3-5	.79	3-5	1.17	3-4	2.20
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO	6-12	3.72	6-12	1.31E	6-12	1.44E	5-16	1.63	1-21	2.06	1-21	2.92	1-20	3.21	3-4	4.63
1967	1957		1957		1957		1946		1959		1959		1959		1964	
NOTES: Watershed conditions: Cover of 27% woodland, 50% grassland, 19% cultivated, 4% miscellaneous; prevailing practice. 1/ Arithmetic average rain gages 108 and 116. 2/ Precipitation and runoff records began May 1937. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.30-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.30-1 AND 26.30-3.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.30-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO WATERSHED 10 AREA - 122 ACRES										26.31
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/}	.93	1.85	4.70	3.05	4.65	.97	6.81	1.59	3.29	1.59	3.54	2.92	35.89		
	O	.07	.35	2.95	.94	1.47	.16	.24	.09	.09	.10	.31	1.08	7.85		
STA AV2/P		2.79	2.55	3.48	3.50	3.61	4.07	4.22	2.89	2.56	2.19	2.53	2.34	36.73		
(39-67)Q		1.15	1.36	1.90	1.55	.88	.68	.35	.16	.12	.15	.24	.62	9.16		
MEAN P ^{3/}																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.15	3-20	.24	3-5	.44	3-5	.68	3-4	1.19
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-28	1.76E	6-28	.98E	6-28	1.39E	5-28	1.80E	6-28	1.99E	6-28	2.14E	6-28	2.25E	3-1	2.94E
1967	1957		1957		1957		1957		1957		1957		1957		1963	
NOTES: Watershed conditions: Cover of 21% cropland, 48% grassland, 25% woodland, 6% miscellaneous; improved practice. 1/ Rain gage 27. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.31-4. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.31-1 AND 26.37-2.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.30-1 above)																
26.31-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO							WATERSHED 5		26.32	
						AREA - 349 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 1/	.91	2.01	4.77	3.04	4.76	1.09	6.55	1.97	3.61	1.42	3.62	2.80	36.55		
	O	.14	.52	3.14	1.28	1.87	.11	.25	.11	.11	.09	.47	1.04	9.13		
STA AV2/P		2.79	2.50	3.47	3.48	3.68	3.97	4.21	2.94	2.64	2.15	2.61	2.36	36.80		
(40-67)Q		1.39	1.49	2.26	1.80	1.12	.77	.43	.20	.12	.18	.32	.72	10.80		
MEAN P 3/																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	
1967	7-19	.05	3-6	.04	3-6	.07	3-6	.14	3-5	.22	3-5	.43	3-5	.66	3-4	1.28
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO	6-28	1.09	6-28	.77	6-28	1.04	6-28	1.38	4/	1.58	1-21	2.31	1-20	2.64	1-20	3.04
1967	1957		1957		1957		1957				1959		1959		1959	
NOTES: Watershed conditions: Cover of 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 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ June 28, 1957, and Mar. 4, 1963.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.32-5 (REVISED). FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.32-1 AND 26.37-2.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.32-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCOTON, OHIO							WATERSHED 92		26.33	
						AREA - 920 ACRES (1.44 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 1/	.91	2.01	4.77	3.04	4.76	1.09	6.55	1.97	3.61	1.42	3.62	2.80	36.55		
	O	.13	.60	3.80	1.37	2.15	.11	.24	.06	.08	.06	.41	1.23	10.24		
STA AV2/P		2.77	2.56	3.48	3.49	3.60	4.03	4.25	2.91	2.58	2.22	2.54	2.33	36.76		
(39-67)Q		1.50	1.70	2.47	1.97	1.16	.83	.42	.18	.12	.19	.37	.82	11.73		
MEAN P 3/																
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	
1967	3-6	.05	3-6	.04	3-6	.08	3-6	.18	3-5	.29	3-5	.56	3-5	.86	3-4	1.64
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-28	.62	6-28	.52	6-28	.82	6-28	1.24	4/	1.60	1-21	2.41	4/	2.71	3-4	3.96
1967	1957		1957		1957		1957				1959		1959		1964	
NOTES: Watershed conditions: Cover of 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 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio. 4/ Jan. 21, 1959, and Mar. 4, 1963.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.32-5 (REVISED). FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.33-1 AND 26.37-2.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.32-1 above)																
26.33-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO 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		
1967	P ₁	.92	1.93	4.74	3.04	4.70	1.03	6.68	1.78	3.45	1.50	3.58	2.86	36.21		
	Q	.16	.57	3.79	1.43	2.25	.16	.29	.09	.09	.09	.41	1.25	10.58		
STA AV2/P (39-67)Q		2.77	2.56	3.48	3.49	3.60	4.03	4.26	2.91	2.58	2.21	2.53	2.33	36.75		
MEAN P ₃₇		1.51	1.68	2.49	1.96	1.18	.88	.45	.21	.14	.20	.35	.79	11.84		
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	3-6	.05	3-6	.05	3-6	.08	3-6	.18	3-5	.27	3-5	.52	3-5	.81	3-4	1.59
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-28	.92	6-28	.77	6-28	1.22	6-28	1.79	3-4	2.14	1-21	2.95	1-20	3.27	3-4	3.95
1967	1957		1957		1957		1957		1963		1959		1959		1963	
NOTES: Watershed conditions: Cover of 15% cropland, 57% grassland, 24% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.34-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.34-1 AND 26.37-2.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
26.34-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 95 AREA - 2,570 (4.02 SQ. MILES)								26.35		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁	.92	1.93	4.74	3.04	4.70	1.03	6.68	1.78	3.45	1.50	3.58	2.86	36.21		
	Q	.16	.58	3.79	1.37	2.12	.14	.27	.07	.07	.07	.39	1.25	10.28		
STA AV2/P (39-67)Q		2.79	2.56	3.48	3.50	3.61	4.07	4.21	2.89	2.56	2.20	2.54	2.33	36.74		
MEAN P ₃₇		1.48	1.67	2.50	1.98	1.16	.83	.42	.19	.13	.19	.35	.79	11.69		
57 YR		3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53		
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.17	3-6	.26	3-5	.52	3-5	.78	3-5	1.56
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-28	.61	6-28	.56	6-28	.95	3-4	1.58	3-4	2.32	3-4	2.78	3-4	3.49	3-2	4.24
1967	1957		1957		1957		1963		1963		1963		1963		1963	
NOTES: Watershed conditions: Cover of 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average rain gages 27 and 91. 2/ Precipitation and runoff records began Jan. 1939. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
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. 26.34-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.35-1 AND 26.37-2.																
Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center																
(See 26.34-1 above)																
26.35-1																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCKTON, OHIO WATERSHED 97 AREA - 4,580 AGRES (7.16 SQ. MILES)								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P 1/0 .89 .15	1.83 .55	4.79 3.52	2.95 1.17	4.73 2.00	.88 .13	6.97 .25	1.45 .06	3.40 .06	1.59 .07	3.42 .37	2.74 1.13	35.64 9.46	
STA AV2/P (37-67)0	2.97	2.49	3.49	3.52	3.67	4.18	4.24	2.84	2.52	2.19	2.48	2.32	36.91	
MEAN P 3/	1.74	1.64	2.47	2.03	1.18	.92	.47	.21	.13	.17	.34	.82	12.12	
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.17	3-5	.26	3-5	.51	3-5	.79	3-4	1.52

MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	6-28 1957	.72	6-28 1957	.66	6-28 1957	1.15	1-24 1937	1.89	1-21 1959	2.32	1-21 1959	3.24	1-20 1959	3.54	1-18 1937	6.77

NOTES: Watershed conditions: Cover of 18% cropland, 50% grassland, 28% woodland, 4% miscellaneous; improved practice. 1/ Arithmetic average rain gages 27, 54, 56, and 91. 2/ Precipitation and runoff records began Jan. 1937. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.34-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.36-1 AND 26.37-2.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center

26.36-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						GOSHOGTON, OHIO WATERSHED 99A AREA - 17,400 AGRES (27.2 SQ. MILES)								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P 1/0 .92 .19	1.80 .70	4.80 4.40	2.94 1.47	4.71 2.38	.88 .20	6.40 .22	1.75 .09	3.58 .10	1.60 .11	3.43 .52	2.69 1.57	35.50 11.95	
STA AV3/P (36-67)0	2.97	2.50	3.49	3.51	3.66	4.18	4.24	2.85	2.52	2.24	2.49	2.34	36.99	
MEAN P 4/	1.89	1.87	2.63	2.14	1.30	.97	.55	.25	.15	.22	.42	.89	13.28	
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.04	3-6	.04	3-6	.07	3-6	.20	3-6	.35	3-5	.69	3-5	1.10	3-5	1.88

MAXIMUMS FOR PERIOD OF RECORD																
1936 TO 1967	6-28 1957	.44	6-28 1957	.43	6-28 1957	.81	6-28 1957	1.71	6-28 1957	2.16	1-21 1959	3.06	1-21 1959	3.45	3-4 1964	4.79

NOTES: Watershed conditions: Cover of 15% cropland, 55% grassland, 26% woodland, 4% miscellaneous; generally under improved practice. 1/ Arithmetic average rain gages 27, 54, 56, 91, MG4, and MG6. 2/ Runoff data furnished by U. S. Geological Survey, New Philadelphia, Ohio. 3/ Precipitation and runoff records began Oct. 1936. 4/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

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. 26.37-5. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.37-1 AND 26.37-2.

Cooperative Research Project of USDA, U.S. Geological Survey, and Ohio Agricultural Research and Development Center
(See 26.36-1 above)
26.37-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 174 AREA - 52.8 ACRES						26.38		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P 1/2 0	.89 .07	1.64 .53	4.38 3.80	2.75 .92	4.98 1.71	.86 .03	6.40 .35	1.20 .15	3.53 .08	1.60 .08	3.19 .28	2.61 1.18	34.03 9.18
STA AV2/P (60-67)	2.16 0	2.55 1.19	3.92 2.71	3.66 1.63	2.80 .54	2.72 .31	3.43 .10	2.91 .10	2.49 .06	1.61 .08	2.53 .16	2.14 .36	32.92 7.83	
MEAN P 3/4 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.07	3-6	.07	5-11	.12	3-6	.22	3-5	.37	3-5	.68	3-4	.94	3-3	1.70

MAXIMUMS FOR PERIOD OF RECORD																
1961 to 1967	4-25 1961	1.03	4-25 1961	.82	4-25 1961	1.11	4-25 1961	1.33	3-4 1963	1.61	3-9 1964	1.99	3-9 1964	2.54	3-4 1964	3.71

Notes: Watershed conditions: Cover of 15% hardwoods, 2% reforested, 67% grassland, 16% miscellaneous; prevailing practice on 86% of area. 1/ Rain gage 107. 2/ Precipitation and runoff records began June 1960. 3/ Mean P based on 57-yr. (1909-65) U.S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. 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. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.38-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
26.38-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 194 AREA - 187 ACRES						26.39		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P 1/2 0	.89 .27	1.64 1.00	4.38 4.64	2.75 1.62	4.98 2.55	.86 .21	6.40 .36	1.20 .10	3.53 .13	1.60 .11	3.19 .56	2.61 1.65	34.03 13.20
STA AV2/P (60-67)	2.25 0	2.63 1.12	3.55 1.69	3.39 3.61	2.82 1.21	2.72 .57	3.43 .20	2.91 .13	2.49 .11	1.61 .16	2.53 .29	2.14 .59	32.47 12.02	
MEAN P 3/4 57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53	

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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.06	3-6	.06	5-11	.10	3-6	.20	3-5	.33	3-5	.62	3-5	.92	3-4	1.85

MAXIMUMS FOR PERIOD OF RECORD																
1960 to 1967	4-25 1961	.87	4-25 1961	.68	4-25 1961	.93	4-25 1961	1.12	3-9 1964	1.32	3-9 1964	1.91	3-9 1964	2.60	3-4 1964	3.89

NOTES: Watershed conditions: Cover of 21% hardwoods, 2% reforested, 58% grassland, 11% cultivated, 8% miscellaneous; prevailing practice. 1/ Rain gage 107. 2/ Precipitation and runoff records began Jan. 1960. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.

NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. 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. FOR GEOLOGY DESCRIPTION AND MAP, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 26.39-1 AND 26.30-3.

Cooperative Research Project of USDA and Ohio Agricultural Research and Development Center
(See 26.38-1 above)
26.39-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						COSHOCTON, OHIO WATERSHED 182 AREA - 69.6 ACRES 26.40										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/	.84	1.67	4.76	3.08	5.14	1.33	6.91	1.24	3.50	1.50	3.48	2.79	36.24			
0	.10	.58	4.23	1.49	2.07	.11	.30	.02	.03	.06	.25	1.29	10.53			
STA AV2/P	2.41	2.48	4.01	3.93	3.04	1.94	3.81	2.84	3.07	1.60	2.80	2.54	34.47			
(64-67) 0	.72	1.32	3.10	1.94	1.14	.09	.09	.02	.02	.08	.12	.62	9.26			
MEAN P 3/																
57 YR	3.25	2.60	3.60	3.74	3.75	4.33	4.16	3.77	3.13	2.56	2.82	2.82	40.53			
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	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	3-6	.06	3-6	.05	3-6	.09	3-6	.19	3-5	.30	3-5	.58	3-5	.86	3-4	1.70
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO	3-10	.20	3-10	.17	3-10	.32	3-9	.85	3-9	1.35	3-9	1.98	3-9	2.64	3-4	3.96
1967	1964		1964		1964		1964		1964		1964		1964		1964	
NOTES: Watershed conditions: Mixed cover. 3% woods, 9% pastured woodland, 5% reforested, 49% grassland, 34% cultivated. Prevailing practice except for 10% of area which was strip cropped. 1/ Rain gage 119. 2/ Precipitation and runoff records began Jan. 1964. 3/ Mean P based on 57-yr. (1909-65) U. S. Weather Bureau record period at Coshocton, Ohio.																
NO SUITABLE SELECTED RUNOFF EVENT TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MISC. PUB. 1226, P. 26.40-2.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-1							31.01	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ^{1/} Q	2/1.75 3.23	2/.67 .30	2/2.06 1.43	2.06 .14	3.26 .12	3.81 .12	.45 .04	3.14 .06	4.03 .07	4.65 .08	1.69 .06	1.52 .05	29.09 5.70
	ST AV ^{3/} (38-67) P Q	.91 .42	.90 .50	1.87 .97	3.02 .29	3.64 .27	4.78 .47	4.15 .38	3.91 .33	3.59 .25	2.25 .22	2.00 .21	1.09 .20	32.11 4.51
	MEAN P ^{4/} 77 YR	1.13	1.12	2.03	2.98	3.95	4.38	3.76	3.51	3.83	2.35	1.98	1.30	32.32

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
1967	1-24	.43	1-24	.38	1-24	.60	1-24	.92	1-24	1.11	1-20	1.13	1-22	1.90	1-20	3.15

MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	8-6 1951	1.69	8-6 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	1-20 1967	3.15

NOTES: Watershed conditions: 23% corn; 10% grain; 21% hay; (18% strip cropping); 23% pasture; 16% idle; 7% roads and buildings. ^{1/} Precipitation is from rain gage R-6. ^{2/} Snow on ground measurements: Jan. 17-1.54 in; Feb. 4-0.66 in; Feb. 14-0.96 in; Mar. 21-1.08 in; Mar. 1-1.12 in; Mar. 20-0.99 in. ^{3/} Average includes part-year amounts of 1938 for July-Dec. ^{4/} Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Lancaster, Wis.

1967 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	27	19	21	13	29	9	66	41	61	39	74	48	76	56	85	65	74	42	75	47	45	42	31	28
2	25	16	21	5	43	29	60	37	44	30	80	47	68	51	85	60	72	45	78	59	43	36	31	28
3	22	-2	28	7	31	21	48	28	43	29	80	47	63	48	84	57	75	46	76	54	39	24	37	21
4	23	0	35	19	33	18	54	34	50	31	79	51	-61	45	79	54	78	48	75	54	29	22	41	24
5	24	14	20	0	32	16	62	41	54	31	71	58	72	50	82	54	79	48	63	38	27	22	45	28
6	34	21	15	-7	31	8	43	37	58	31	77	57	76	44	69	58	78	53	53	40	39	20	39	36
7	30	10	16	-8	27	0	56	35	63	34	70	60	81	50	79	60	81	51	52	44	39	17	39	34
8	15	2	26	7	23	-3	48	40	53	40	79	63	81	61	87	60	82	56	52	40	49	22	34	31
9	29	8	36	14	48	18	61	37	62	35	79	61	82	66	71	55	69	46	40	32	52	29	31	28
10	23	3	35	4	58	35	50	26	52	44	79	62	84	63	67	50	68	38	40	32	52	37	29	28
11	29	-3	6	-13	43	29	51	23	52	39	75	64	84	61	70	45	70	42	45	28	62	47	29	27
12	35	24	9	-16	33	28	44	33	56	36	81	66	76	58	76	44	74	45	61	28	50	24	34	24
13	37	25	38	6	32	30	61	40	63	35	81	65	63	50	78	52	74	55	64	14	34	24	26	17
14	29	6	46	28	31	24	67	51	62	39	82	69	74	51	78	58	69	61	64	41	42	22	23	12
15	7	-4	30	0	35	18	71	49	60	38	85	69	80	48	85	56	69	59	53	48	32	12	23	9
16	32	6	13	-8	36	13	79	53	67	35	82	64	82	55	86	59	74	61	61	39	41	27	37	14
17	-6	-20	22	1	24	6	65	38	71	46	69	58	82	61	88	62	75	60	62	36	43	35	36	29
18	4	-27	26	9	33	2	45	30	84	54	76	55	82	59	69	52	77	59	47	33	42	24	35	24
19	22	4	28	6	34	25	56	30	61	40	75	57	84	56	69	49	73	49	54	30	33	19	37	21
20	40	19	11	-4	35	32	53	36	59	30	80	56	84	60	77	47	74	63	51	36	31	26	49	31
21	45	27	24	-5	33	23	63	41	67	35	74	56	85	64	77	54	69	47	56	30	33	30	51	8
22	42	31	25	3	40	18	41	26	63	30	79	54	86	66	64	46	68	45	70	38	31	21	11	4
23	41	32	16	-10	44	25	37	26	79	46	75	55	90	65	78	51	68	47	71	53	30	12	19	1
24	48	33	-3	-13	53	33	48	29	73	40	56	48	86	64	79	52	64	39	57	39	39	25	27	17
25	28	18	9	-15	60	41	51	28	81	48	71	47	86	58	83	50	72	45	39	33	38	24	28	2
26	22	16	34	3	46	38	50	33	89	61	77	52	92	65	65	53	69	44	38	28	29	13	15	0
27	24	12	33	19	51	36	57	36	73	56	73	56	77	59	72	51	50	38	37	30	19	13	20	13
28	30	12	29	9	54	26	62	34	58	47	77	57	84	54	79	50	49	32	40	30	18	8	16	3
29	23	18	---	---	61	34	56	52	64	46	80	54	89	59	80	60	55	27	44	36	26	13	24	3
30	29	16	---	---	79	55	70	54	61	49	87	60	86	56	63	46	74	41	45	38	37	23	21	4
31	33	17	---	---	67	45	---	---	68	48	---	---	88	62	67	38	---	---	43	39	---	---	4	-12
AV.	27	11	23	2	41	24	56	37	63	40	77	57	80	57	76	53	71	48	55	39	37	24	30	17
MEAN STA AV	19	7	27	13	37	21	55	33	67	46	76	56	81	59	79	58	70	49	61	40	42	26	28	14

NOTES: TEMPERATURE DATA TAKEN FROM HYGROTHERMOGRAPH CHARTS CHECKED WEEKLY WITH MAXIMUM AND MINIMUM THERMOMETERS. STATION AVERAGE IS AVERAGE FOR 28-YR PERIOD (1940-67).

1967 DAILY PRECIPITATION (inches)						FENNIMORE, WISCONSIN WATERSHED W-1 31.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1		.14	.00	.04	.00	.00	.27	.00	.00	.00	1.22	.02
2	.00	.00	.00	.27	.00	.00	.00	.40	.00	.00	.11	.02
3	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
4	.10	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00
5	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
6	.40	.00	.00	.00	.00	.00	.00	.51	.00	.00	.00	.04
7	.00	.00	.00	.00	.42	.90	.00	.00	.00	1.47	.00	.94
8	.00	.00	.00	.06	.00	.00	.00	.35	.00	.35	.00	.00
9	.00	.00	.00	.00	.00	.06	.05	.00	.00	.07	.00	.00
10	.00	.00	.00	.00	1.88	1.15	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.16	.43	.00	.00	.00	.00	.03	.00
12	.00	.06	.00	.09	.00	.00	.00	.00	.00	.00	.00	.02
13	.00	.00	.00	.51	.00	.00	.00	.00	1.18	.33	.00	.00
14	.00	.00	.00	.19	.00	.00	.00	.00	1.12	.00	.00	.00
15	.00	.10	.05	.00	.00	.00	.00	.00	1.40	.00	.00	.00
16	.14	.00	.00	.06	.00	.00	.00	.00	.06	.00	.02	.01
17	.00	.00	.00	.00	.00	.15	.00	1.31	.00	.00	.00	.12
18	.00	.07	.00	.00	.07	.00	.00	.00	.00	.00	.00	.12
19	.00	.00	.30	.00	.00	.05	.00	.00	.00	.00	.00	.00
20	.00	.00	.58	.15	.00	.00	.00	.00	.12	.00	.06	.15
21	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.02
22	.00	.00	.01	.00	.00	.00	.00	.40	.00	.00	.00	.00
23	.00	.03	.01	.00	.08	.00	.04	.00	.00	.00	.00	.00
24	1.01	.00	.05	.00	.00	.86	.00	.00	.00	1.05	.00	.00
25	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.21	.00
26	.00	.00	.81	.25	.00	.00	.09	.10	.15	.00	.04	.00
27	.00	.04	.00	.00	.00	.09	.00	.02	.00	.05	.00	.00
28	.00	.00	.05	.00	.65	.12	.00	.00	.00	.00	.00	.00
29	.03	.00	.00	.02	.00	.00	.00	.05	.00	.77	.00	.00
30	.00		.00	.17	.00	.00	.00	.00	.00	.53	.00	.00
31	.07		.20		.00		.00					
TOTAL	1.75	.67	2.06	2.06	3.26	3.81	.45	3.14	4.03	4.65	1.69	1.52
STA AV	.91	.90	1.87	3.02	3.64	4.78	4.15	3.91	3.59	2.25	2.00	1.09

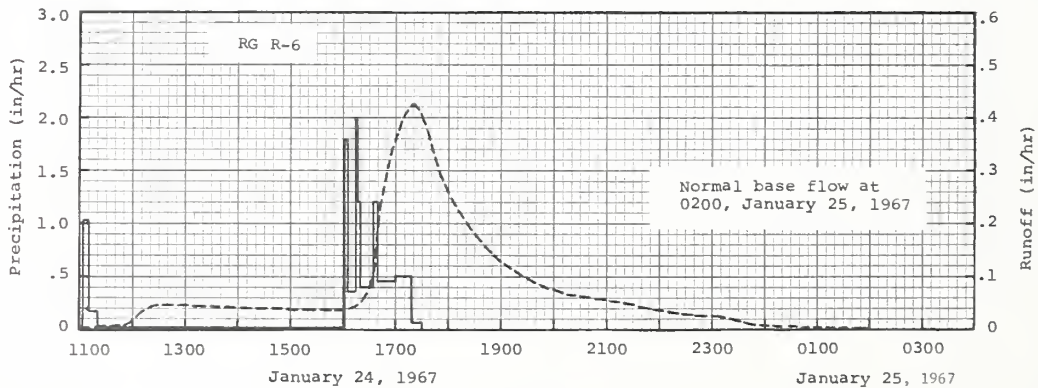
NOTES: PRECIPITATION VALUES ARE TAKEN FROM RAIN GAGE R-6. STA AV IS 29-YR AVERAGE (1939-67).

1967 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	.015	.022	.029	.118	.049	.033	.046	.010	.006	.013	.207	.010
2	.015	.022	.917	.133	.037	.037	.033	.010	.006	.010	.089	.010
3	.015	.022	.722	.078	.037	.037	.029	.010	.006	.010	.037	.010
4	.015	1.750	.226	.074	.037	.037	.029	.010	.006	.010	.037	.013
5	.015	.031	.074	.074	.037	.037	.025	.010	.006	.010	.037	.018
6	.015	.022	.050	.074	.037	.037	.022	.033	.006	.010	.037	.022
7	.058	.022	.141	.067	.098	.110	.022	.033	.006	.097	.037	.173
8	.025	.022	.151	.060	.054	.049	.022	.049	.006	.186	.033	.037
9	.018	.019	1.617	.054	.037	.043	.022	.025	.006	.022	.025	.029
10	.015	.010	4.042	.049	.263	.243	.018	.022	.006	.022	.022	.029
11	.015	.010	1.123	.049	.190	.097	.015	.022	.006	.022	.022	.029
12	.015	.010	.218	.058	.067	.054	.015	.022	.006	.022	.022	.025
13	.444	.010	.076	.112	.054	.049	.015	.022	.136	.044	.022	.022
14	.015	1.169	.078	.085	.043	.043	.015	.022	.194	.029	.022	.022
15	.015	.717	.069	.037	.033	.037	.015	.022	.372	.112	.022	.018
16	.015	.043	.060	.043	.029	.037	.015	.022	.039	.043	.018	.015
17	.015	.022	.086	.049	.029	.047	.015	.240	.025	.015	.015	.015
18	.015	.022	.080	.049	.033	.033	.015	.022	.017	.015	.015	.015
19	.015	.022	.062	.049	.037	.029	.015	.022	.010	.013	.015	.015
20	7.311	.022	.060	.058	.037	.029	.015	.022	.017	.010	.015	.015
21	8.295	.022	.054	.057	.037	.029	.013	.018	.018	.010	.015	.007
22	1.378	.022	.090	.046	.037	.029	.010	.051	.015	.010	.015	.015
23	10.910	.022	.183	.037	.037	.029	.010	.031	.015	.008	.015	.015
24	15.580	.022	8.503	.037	.033	.194	.010	.022	.015	.094	.015	.015
25	.294	.022	.207	.043	.029	.043	.010	.018	.015	.026	.018	.015
26	.037	.022	.290	.082	.029	.037	.010	.015	.015	.022	.018	.015
27	.033	.025	.118	.060	.029	.037	.010	.015	.015	.022	.013	.015
28	.029	.029	.103	.054	.061	.037	.010	.013	.015	.022	.010	.015
29	.025		.103	.049	.047	.037	.010	.010	.015	.062	.010	.015
30	.022		.103	.051	.033	.033	.010	.008	.015	.140	.010	.015
31	.022		.150		.029		.010	.006		.054		
MEAN	1.44	.149	.635	.063	.054	.054	.017	.029	.034	.038	.030	.023
INCHES	3.23	.301	1.43	.135	.119	.118	.038	.064	.075	.078	.065	.050

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 BETWEEN STILLING WELL AND WEIR.

1967 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 DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)
			Event of January 24-25, 1967							
1-24	.00	$\frac{1}{2}$.0256	1-24	RG	R-6		1-24	1100	.0024	.0000
				1103	.00	.00		1155	.0074	.0042
				1110	1.03	.12		1215	.0349	.0111
				1120	.18	.15		1227	.0436	.0190
				1602	.01	.21		1300	.0463	.0437
				1605	1.80	.30				
				1615	.36	.36		1333	.0424	.0683
				1618	2.00	.46		1415	.0385	.0966
				1620	1.20	.50		1505	.0358	.1272
				1635	.40	.60		1600	.0340	.1592
				1640	1.20	.70		1617	.0412	.1696
				1700	.45	.85		1630	.0746	.1814
				1718	.50	1.00		1635	.1073	.1889
				1730	.05	1.01		1640	.1837	.2011
								1645	.2459	.2190
								1650	.2859	.2411
								1655	.3307	.2668
								1700	.3517	.2953
								1710	.4028	.3581
								1720	.4269	.4273
								1730	.4058	.4967
								1740	.3608	.5606
								1750	.3036	.6159
								1800	.2591	.6628
								1820	.2002	.7390
								1840	.1602	.7988
								1900	.1281	.8459
								1920	.1037	.8844
								2000	.0731	.9423
								2100	.0559	1.0066
								2200	.0358	1.0515
								2250	.0272	1.0778
								2310	.0242	1.0864
								2345	.0091	1.0960
								2400	.0074	1.0980
							1-25	0100	.0033	1.1034
								0200	.0017	1.1059

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 332.75. 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. FOR 30-DAY ANTECEDENT P AND Q SEE TABLES ON P. 31.1-2. $\frac{1}{2}$ RUNOFF PRIOR TO 1100 ON 1-24-67.



FENNIMORE, WISCONSIN WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						FENNIMORE, WISCONSIN WATERSHED W-2 31.02							
						AREA-22.8 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ¹ / _Q	2/1.75 2.67	2/.67 .00	2/2.06 1.32	2.06 .00	3.26 .00	3.81 .00	.45 .00	3.14 .00	4.03 .00	4.65 .00	1.69 .00	1.52 .00	29.09 3.99
STA AV ³ / _P (38-67) Q	.91 .25	.90 .36	1.87 .74	3.02 .05	3.64 .01	4.78 .12	4.15 .13	3.91 .08	3.59 .03	2.25 .00	2.00 .00	1.09 .00	32.11 1.77
MEAN P ⁴ / _{77 YR}	1.13	1.12	2.03	2.98	3.95	4.38	3.76	3.51	3.83	2.35	1.98	1.30	32.32

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
1967	1-24	.51	1-24	.41	1-24	.64	1-24	.88	1-24	1.13	1-24	1.20	1-22	1.62	1-22	1.81

MAXIMUMS FOR PERIOD OF RECORD

1938 TO 1967	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
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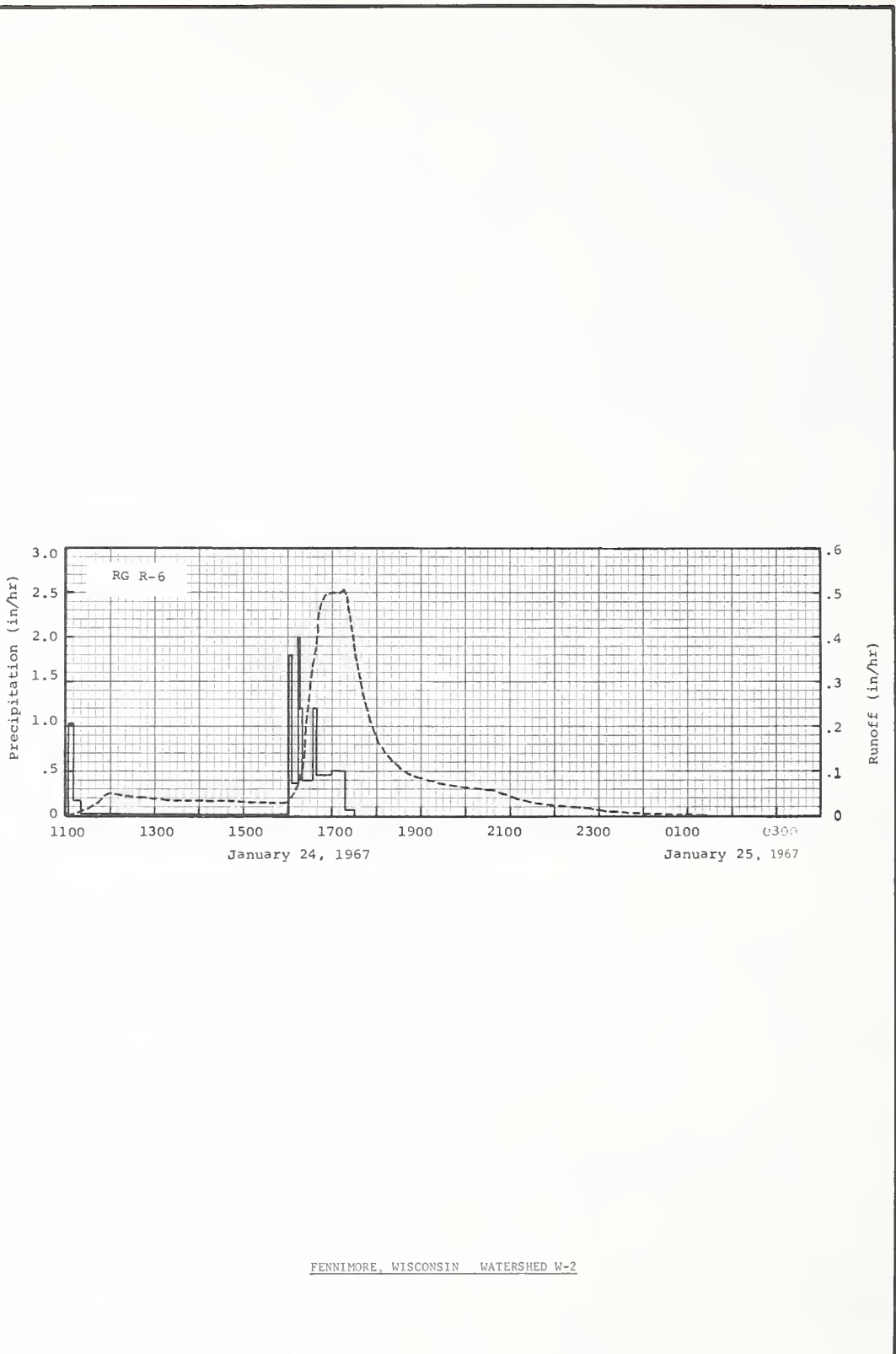
Notes: Watershed conditions: 77% pasture; 23% idle. 1/ Precipitation is from rain gage R-6. 2/ Snow on ground measurements: Jan. 17-1.54 in.; Feb. 4-.66 in.; Feb. 14-.96 in.; Feb. 21-1.08 in.; Mr. 1-1.12 in.; Mar. 20-.99 in. 3/ Average includes part-year amounts of 1938 for July-Dec. 4/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Lancaster, Wis.

1967 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 January 24-25, 1967											
1-24	.00	1/.0220	1-24	RG	R-6		1-24	1100	.0062	.0000	
				1103	.00	.00		1103	.0062	.0000	
				1110	1.03	.12		1104	.0115	.0043	
				1120	.18	.15		1105	.0286	.0101	
				1602	.01	.21		1106	.0453	.0144	
				1605	1.80	.30		1107	.0507	.0208	
				1615	.36	.36		1108	.0479	.0290	
				1618	2.00	.46		1109	.0418	.0510	
				1620	1.20	.50		1110	.0348	.0864	
				1635	.40	.60		1111	.0289	.1365	
				1640	1.20	.70		1112	.0278	.1601	
				1700	.45	.85		1113	.0358	.1628	
				1718	.50	1.00		1114	.0962	.1771	
				1730	.05	1.01		1115	.1596	.1877	
								1116	.2710	.2057	
								1117	.3280	.2306	
								1640	.3836	.2603	
								1645	.4684	.2958	
								1650	.4985	.3361	
								1710	.4995	.5024	
			1718	.5093	.5697						
			1725	.4513	.6257						
			1730	.3842	.6605						
			1740	.2962	.7172						
			1750	.2310	.7612						
			1800	.1825	.7956						
			1815	.1368	.8355						
			1845	.0961	.8925						
			1925	.0726	.9470						
			1950	.0639	.9754						
			2035	.0575	1.0209						
			2100	.0454	1.0423						
			2200	.0235	1.0762						
			2300	.0125	1.0984						
			2400	.0049	1.1016						
			1-25	0040	.0016	1.1039					
				0125	.0000	1.1043					

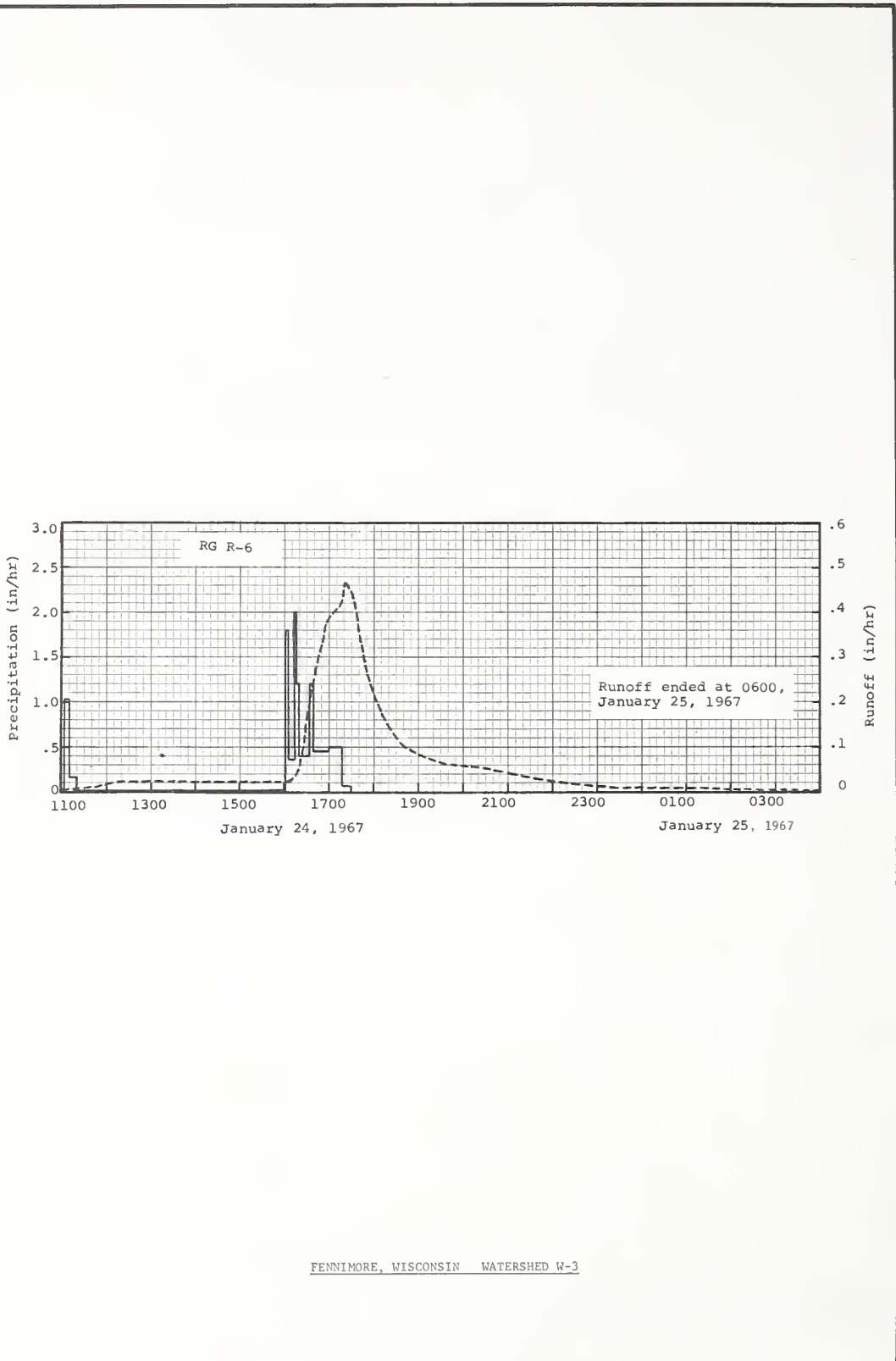
Watershed conditions:
1.25 in. snow on
ground (Est.).

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 22,990. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 31.1-5. 1/ RUNOFF PRIOR TO 1100 ON 1-24-67.



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			
1967 P ¹	2/1.75	2/.67	2/2.06	2.06	3.26	3.81	.45	3.14	4.03	4.65	1.69	1.52	29.09			
Q.	1.37	.09	.89	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.35			
STA AV ²	.91	.90	1.87	3.02	3.64	4.78	4.15	3.91	3.59	2.25	2.00	1.09	32.11			
(38-67) Q	.18	.31	.60	.03	.10	.12	.12	.08	.02	.01	.00	.00	1.57			
MEAN P ⁴	1.13	1.12	2.03	2.98	3.95	4.38	3.76	3.51	3.83	2.35	1.98	1.30	32.32			
77 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	
1967	1-24	.46	1-24	.38	1-24	.57	1-24	.79	1-24	.88	1-24	1.00	1-22	1.30	1-22	1.40
MAXIMUMS FOR PERIOD OF RECORD																
1938 ¹⁰	6-28	1.63	8-6	1.01	8-6	1.32	7-15	2.38	7-15	2.38	7-15	2.38	7-15	2.38	7-15	2.54
1967	1945		1951		1951		1950		1950		1950		1950		1950	
NOTES: Watershed conditions: 21% corn; 4% grain; (7% strip cropping); 28% hay; 35% pasture; 12% idle. 1/ Precipitation is from rain gage R-6. 2/ Snow on ground measurements: Jan. 17-1.54 in; Feb. 4-0.66 in; Feb. 14-0.96 in; Feb. 21-1.08 in; Mar. 1-1.12 in; Mar. 20-0.99 in. 3/ Average includes part-year amounts of 1938 for July-Dec. 4/ Mean P based on 77-yr. (1891-1967) U.S. Weather Bureau record period at Lancaster, Wis.																
1967 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 January 24-25, 1967																
1-24	.00	1/.0179	1-24	RG	R-6	.00	1-24	1107	.0034	.0000						
				1110	1.03			.12	1125	.0078	.0017					
				1120	.18	.15	1145	.0121	.0050							
				1602	.01	.21	1200	.0200	.0092							
				1605	1.80	.30	1240	.0234	.0037							
				1615	.36	.36	1415	.0223	.0598							
				1618	2.00	.46	1520	.0212	.0834							
				1620	1.20	.50	1602	.0212	.0978							
				1635	.40	.60	1610	.0287	.1010							
				1640	1.20	.70	1619	.0552	.1069							
				1700	.45	.85	1622	.0843	.1106							
				1718	.50	1.00	1625	.1051	.1154							
				1730	.05	1.01	1630	.1670	.1267							
							1640	.2570	.1622							
							1645	.2929	.1851							
							1650	.3212	.2107							
							1655	.3723	.2396							
							1700	.3874	.2712							
							1710	.4025	.3370							
							1720	.4630	.4092							
							1730	.4403	.4844							
							1740	.3553	.5507							
							1750	.2608	.6021							
							1800	.2079	.6411							
							1810	.1670	.6724							
							1835	.1051	.7270							
							1920	.0688	.7911							
							2025	.0508	.8538							
							2045	.0471	.8701							
							2120	.0333	.8935							
							2200	.0212	.9113							
							2240	.0130	.9226							
							2320	.0072	.9290							
							2400	.0072	.9338							
							1-25	0035	.0066	.9378						
								0145	.0042	.9439						
								0400	.0013	.9503						

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. 1/ RUNOFF PRIOR TO 1107 ON 1-24-67.



FENNIMORE, WISCONSIN WATERSHED W-3

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		
1967	P ^{1/}	2/1.75	2/.67	2/2.06	2.06	3.26	3.81	.45	3.14	4.03	4.65	1.69	1.52	29.09		
	Q	1.62	.05	1.12	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.79		
	STA AV ^{3/}	.91	.90	1.87	3.02	3.64	4.78	4.15	3.91	3.59	2.25	2.00	1.09	32.11		
	(38-67) Q	.22	.37	.79	.07	.03	.17	.15	.10	.03	.01	.00	.01	1.95		
	MEAN P ^{4/}															
77	YR	1.13	1.12	2.03	2.98	3.95	4.38	3.76	3.51	3.83	2.35	1.98	1.30	32.32		

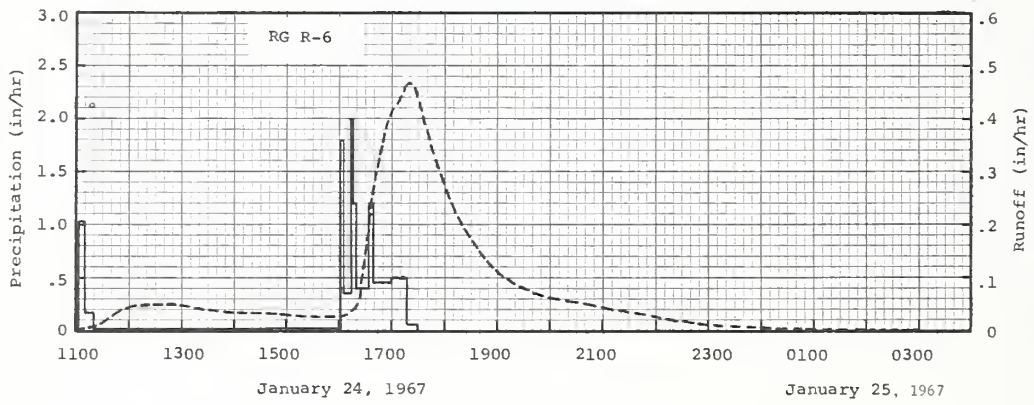
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																	
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL															
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS			
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME		
1967		1-24	.46	1-24	.21	1-24	.67	1-24	.92	1-24	1.08	1-24	1.12	1-22	1.57	1-22	1.60

MAXIMUMS FOR PERIOD OF RECORD																
1938 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
1967	1951		1951		1951		1950		1950		1950		1950		1950	

NOTES: Watershed conditions: 34% corn; 11% grain; 26% hay; (1.10% strip cropping); 12% pasture; 16% idle; 1% roads and buildings. 1/ Precipitation is from rain gage R-6. 2/ Snow on ground measurements: Jan. 17-1.54 in; Feb. 4-0.66 in; Feb. 14-0.96 in; Feb. 21-1.08 in; Mar. 1-1.12 in; Mar. 20-0.99 in. 3/ Average includes part-year amounts of 1938 for June-Dec. 4/ Mean P based on 77-yr (1891-1967) U.S. Weather Bureau record period at Lancaster, Wis.

1967 SELECTED RUNOFF EVENT			FENNIMORE, WISCONSIN WATERSHED W-4										31.04
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)			
1-24	.00	1/.0257	1-24				1-24						
<u>Event of January 24-25, 1967</u>													
				RG	R-6								
				1103	.00	.00	1-24	1100	.0029	.0000			
				1110	1.03	.12		1125	.0109	.0030			
				1120	.18	.15		1145	.0330	.0102			
				1602	.01	.21		1215	.0479	.0308			
				1605	1.80	.30		1230	.0493	.0430			
				1615	.36	.36		1300	.0465	.0669			
				1618	2.00	.46		1335	.0379	.0915			
				1620	1.20	.50		1500	.0284	.1378			
				1635	.40	.60		1600	.0238	.1638			
				1640	1.20	.70		1615	.0379	.1717			
				1700	.45	.85		1625	.0882	.1816			
				1718	.50	1.00		1635	.2118	.2077			
				1730	.05	1.01		1645	.3191	.2526			
								1655	.3932	.3119			
								1700	.4166	.3456			
								1710	.4392	.4169			
								1715	.4624	.4545			
								1725	.4624	.5316			
								1735	.4107	.6043			
								1745	.3504	.6678			
								1800	.2733	.7057			
								1815	.2118	.8063			
								1845	.1334	.8911			
								1920	.0882	.9543			
								2000	.0615	1.0026			
								2030	.0542	1.0316			
								2130	.0341	1.0762			
								2220	.0186	1.0977			
								2300	.0092	1.1069			
								2320	.0066	1.1095			
								2400	.0026	1.1124			
							1-25	0130	.0002	1.1138			
								0200	.0000	1.1138			
								0300	.0000	1.1138			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 172.42. 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/ RUNOFF PRIOR TO 1100 ON 1-24-67.

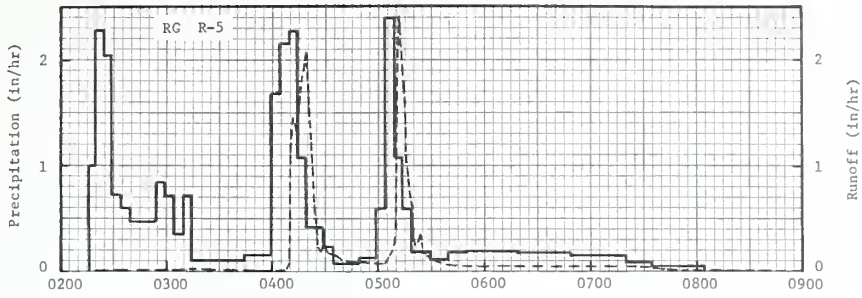


FENNIMORE, WISCONSIN WATERSHED W-4

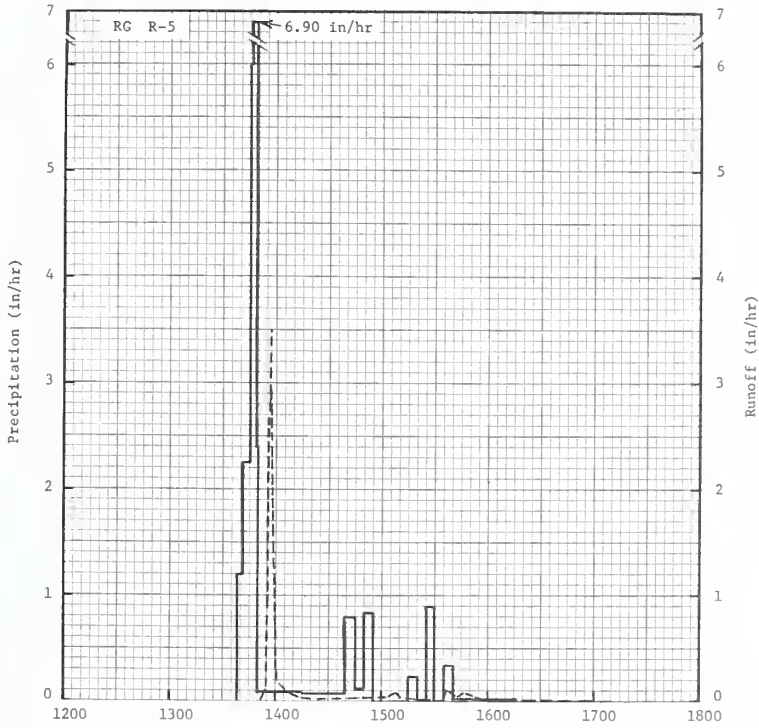
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-10 AREA - 1.68 ACRES								34.10		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.25	.23	.33	2.22	1.58	6.45	4.68	1.19	3.29	1.76	.19	1.10	23.27			
1960	.00	.00	.00	.00	.00	.13	.99	.00	.42	.12	.00	.01	1.67			
STA AV2/P (60-67)	.26	.53	1.08	2.08	2.25	4.58	2.89	2.78	2.80	1.44	1.34	.98	23.01			
MEAN P 49 YR	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44			
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	
1967	9-3	3.50	7-12	.50	7-12	.75	7-12	.85	7-12	.86	7-12	.86	7-12	.86	7-12	.99
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	9-14 1962	3.77	6-22 1963	1.16	6-22 1963	1.32	6-22 1963	1.37	6-22 1963	1.37	6-22 1963	2.42	6-22 1963	2.42	6-22 1963	2.42
Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with chisel type field cultivator (Hoeme) to 6-inch depth with cross chiseling, if necessary, to obtain good tillage, final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 5 location. 2/ Precipitation and runoff records began August 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA				WATERSHED W-10				34.10				
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 July 12, 1967																
	RG R-5		7-12	RG	R-5		7-12									
6-16	.16	.00		0216	.00	.00		0219	.0000	.00						
6-17	.27	.00		0219	1.00	.05		0304	.0138	T						
6-18	.28	.00		0224	2.28	.24		0312	.0084	T						
6-19	.48	.00		0229	2.04	.41		0315	.0138	T						
6-20	2.89	.12		0234	.72	.47		0318	.0084	T						
6-23	.32	.00		0239	.60	.52		0400	.0043	.01						
6-25	.77	.01		0244	.48	.56		0405	.0084	.01						
6-29	.17	.00		0254	.48	.64		0408	.0204	.01						
7-2	.23	T		0259	.84	.71		0409	.0665	.01						
7-3	.05	.00		0304	.72	.78		0410	.237	.01						
7-4	.05	.00		0309	.36	.81		0411	1.21	.02						
				0314	.72	.87		0412	1.45	.05						
				0344	.10	.92		0413	1.33	.07						
				0359	.16	.96		0415	1.51	.12						
				0404	1.68	1.10		0417	1.85	.17						
				0409	2.16	1.28		0419	2.08	.24						
				0414	2.28	1.47		0420	1.78	.27						
				0419	1.08	1.56		0421	1.51	.30						
				0429	.42	1.63		0422	1.15	.32						
				0434	.24	1.65		0423	.850	.34						
				0449	.08	1.67		0424	.524	.35						
				0459	.12	1.69		0425	.380	.36						
				0504	.60	1.74		0426	.260	.36						
				0509	2.40	1.94		0427	.204	.37						
				0514	1.08	2.03		0429	.260	.38						
				0519	.60	2.08		0432	.184	.39						
				0529	.18	2.11		0435	.156	.40						
				0539	.12	2.13		0439	.114	.41						
				0549	.18	2.16		0445	.0990	.42						
				0619	.20	2.26		0508	.0787	.45						
				0649	.18	2.35		0509	.365	.45						
				0719	.16	2.43		0510	.946	.46						
				0734	.08	2.45		0511	1.85	.49						
				0804	.04	2.47		0512	2.41	.52						
								0513	2.08	.56						
								0514	1.68	.59						
								0515	1.39	.62						
								0516	1.10	.64						
								0517	.760	.65						
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.																

1967			SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA		WATERSHED W-10		34.10	
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)		
<u>Event of July 12, 1967 -- continued</u>												
							7-12	0519	.560	.68		
								0520	.324	.68		
								0521	.237	.69		
								0523	.337	.70		
								0524	.272	.70		
								0525	.215	.71		
								0527	.174	.71		
								0529	.130	.72		
								0531	.106	.72		
								0537	.0852	.73		
								0559	.0501	.75		
								0728	.0501	.83		
								0754	.0240	.85		
								0810	.0110	.85		
								0852	.0000	.86		
<u>Event of September 3, 1967</u>												
	RG R-5		9-3	RG	R-5		9-3	1352	.0000	.00		
8-6	.10	.00		1338	.00	.00		1354	.106	T		
8-15	.24	.00		1341	1.20	.06		1355	1.05	.01		
8-21	.27	.00		1345	2.25	.21		1356	2.67	.04		
8-30	.15	.00		1346	6.00	.31						
				1348	6.90	.54		1357	3.50	.09		
8-31	.02	.00		1349	2.40	.58		1358	1.21	.13		
				1415	.09	.62		1359	.597	.15		
				1439	.07	.65		1400	.310	.16		
				1445	.80	.73		1401	.204	.16		
				1450	.12	.74		1405	.122	.17		
				1455	.84	.81		1407	.0919	.17		
				1515	.00	.81		1409	.0665	.18		
				1520	.24	.83		1412	.0501	.18		
				1525	.00	.83		1422	.0318	.19		
				1529	.90	.89		1451	.0240	.20		
				1535	.00	.89		1504	.0360	.21		
				1540	.36	.92		1508	.0787	.21		
				1616	.02	.93		1511	.0360	.21		
								1518	.0138	.22		
								1533	.0084	.22		
								1536	.0501	.22		
								1537	.114	.22		
								1543	.0405	.23		
								1547	.0787	.23		
								1558	.0138	.24		
								1606	.0084	.24		
								1619	.0043	.24		
								1639	.0012	.24		
								1709	.0000	.24		
<u>Event of September 7, 1967</u>												
	RG R-5		9-7	RG	R-5		9-7	1644	.0000	.00		
8-15	.24	.00		1640	.00	.00		1646	.001	T		
8-21	.27	.00		1643	1.20	.06		1647	1.15	.01		
8-30	.15	.00		1648	2.16	.24		1648	1.24	.03		
8-31	.02	.00		1732	.01	.25						
								1649	.897	.05		
9-3	.93	.24						1650	.636	.06		
9-4	.55	.04						1651	.365	.07		
9-6	.21	.00						1653	.184	.08		
								1658	.122	.09		
								1702	.0787	.10		
								1706	.0553	.10		
								1715	.0360	.11		
								1726	.0204	.11		
								1737	.0084	.12		
								1750	.0012	.12		
								1800	.0000	.12		
<p>Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.</p>												
<p>Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.</p>												

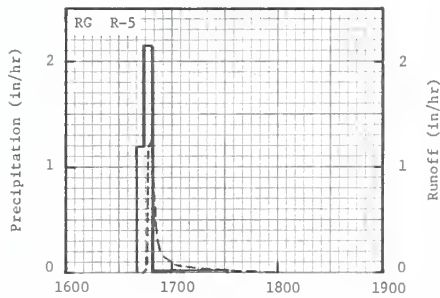
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940 .



July 12, 1967



September 3, 1967



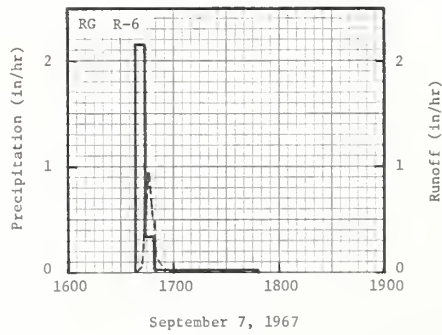
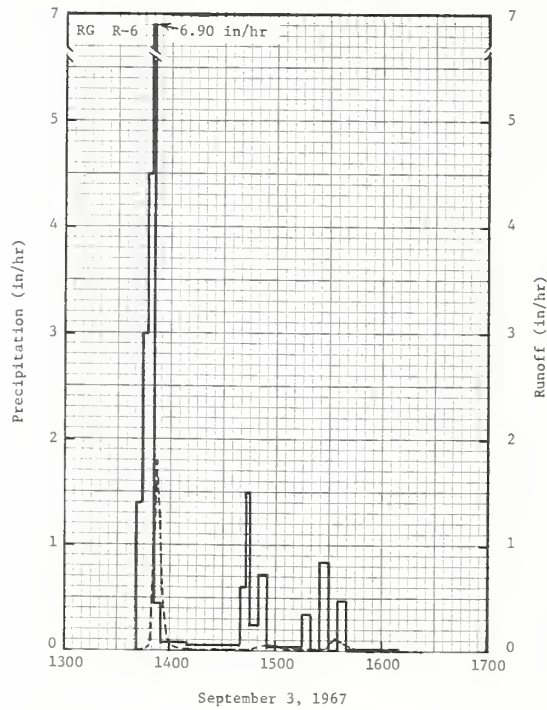
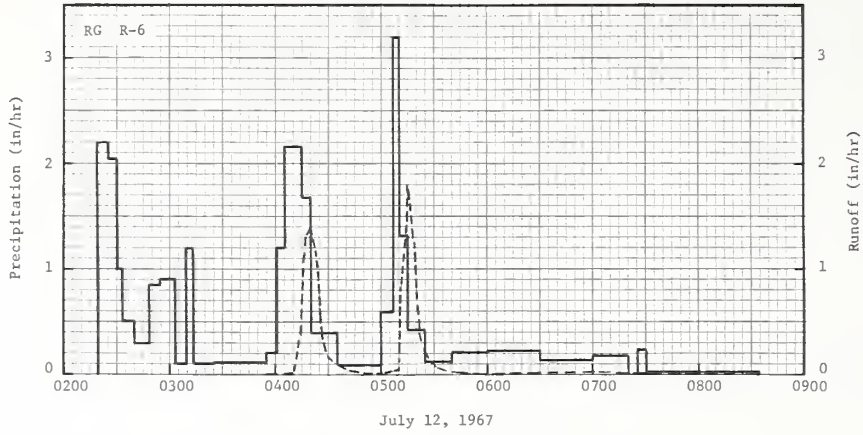
September 7, 1967

CHEROKEE, OKLAHOMA WATERSHED W-10

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-11 AREA - 2.12 ACRES							34.11			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.25 .00	.22 .00	.30 .00	2.25 .00	1.63 .00	6.41 .13	4.63 .58	1.19 .00	3.29 .29	1.78 .08	.18 .00	1.09 .01	23.22 1.09		
	STA AV2/P (60-67) Q	.26 .00	.54 .01	1.08 .07	2.10 .03	2.23 .18	4.52 .37	2.86 .17	2.78 .02	2.77 .24	1.40 .03	1.33 .12	.99 T	22.86 1.24		
	MEAN 49 YR P3/ Q	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44		
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	
1967	7-12	1.79	7-12	.35	7-12	.51	7-12	.53	7-12	.53	7-12	.53	7-12	.53	7-12	.58
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	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	9-4 1963	1.13
Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with large sweeps (8 ft.), final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 6 location. 2/ Precipitation and runoff records began August 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS						CHEROKEE, OKLAHOMA WATERSHED W-11							34.11			
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 July 12, 1967																
6-16	RG R-6 .16	.00	7-12	RG 0219	R-6 .00	.00	7-12	0354	.0000	.00						
6-17	.26	.00		0225	2.20	.22		0411	.0050	T						
6-18	.27	.00		0230	2.04	.39		0412	.121	T						
6-19	.48	T		0233	1.00	.44		0413	.327	.01						
6-20	2.98	.12		0240	.51	.50		0415	.641	.02						
6-23	.31	.00		0248	.30	.54		0416	1.02	.03						
6-25	.74	.01		0255	.86	.64		0417	1.30	.05						
6-29	.16	.00		0303	.90	.76		0419	1.39	.10						
7-2	.24	.00		0309	.10	.77		0422	1.20	.16						
7-3	.05	.00		0313	1.20	.85		0423	1.02	.18						
7-4	.05	.00		0325	.10	.87		0425	.641	.21						
				0355	.12	.93		0427	.327	.22						
				0401	.20	.95		0429	.191	.23						
				0405	1.20	1.03		0433	.121	.24						
				0410	2.16	1.21		0441	.0447	.25						
				0415	2.16	1.39		0501	.0072	.26						
				0420	1.68	1.53		0508	.0447	.26						
				0435	.40	1.63		0510	.154	.27						
				0500	.10	1.67		0512	.841	.28						
				0507	.60	1.74		0514	1.42	.32						
				0510	3.20	1.90		0515	1.79	.35						
				0515	1.32	2.01		0516	1.66	.38						
				0525	.42	2.08		0518	1.28	.42						
				0540	.12	2.11		0520	.698	.46						
				0600	.21	2.18		0522	.424	.48						
				0630	.22	2.29		0524	.254	.49						
				0700	.14	2.36		0528	.121	.50						
				0720	.18	2.42		0532	.0606	.50						
				0725	.00	2.42		0537	.0270	.51						
				0730	.24	2.44		0551	.0097	.51						
				0800	.02	2.45		0617	.0097	.51						
				0835	.02	2.46		0641	.0193	.52						
								0724	.0072	.53						
								0820	.0000	.53						
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.																

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-11				34.11
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)	
<u>Event of September 3, 1967</u>											
	RG R-6			RG	R-6						
8-6	.11	.00	9-3	1341	.00	.00	9-3	1342	.0000	.00	
8-15	.24	.00		1344	1.40	.07		1347	.0158	T	
8-21	.27	.00		1347	3.00	.22		1348	.0606	T	
8-30	.18	.00		1349	4.50	.37		1349	.221	T	
8-31	.02	.00		1351	6.90	.60		1350	.737	.01	
				1355	.45	.63		1351	1.09	.03	
				1410	.08	.65		1352	1.60	.05	
				1440	.06	.68		1353	1.79	.08	
				1443	.60	.71		1354	1.14	.10	
				1445	1.50	.76		1355	.698	.12	
				1450	.24	.78		1356	.395	.13	
				1455	.72	.84		1358	.145	.13	
				1515	.03	.85		1400	.0665	.14	
				1520	.36	.88		1402	.0354	.14	
				1525	.00	.88		1406	.0193	.14	
				1530	.84	.95		1410	.0072	.14	
				1535	.00	.95		1422	.0014	.14	
				1540	.48	.99		1440	.0004	.14	
				1610	.02	1.00		1443	.0014	.14	
								1446	.0097	.14	
								1451	.0354	.15	
								1458	.0551	.15	
								1503	.0331	.15	
								1508	.0158	.16	
								1525	.0031	.16	
								1528	.0158	.16	
								1531	.0551	.16	
								1534	.129	.17	
								1538	.0787	.17	
								1542	.0399	.18	
								1549	.0158	.18	
								1555	.0050	.18	
								1624	.0000	.18	
<u>Event of September 7, 1967</u>											
	RG R-6			RG	R-6						
8-15	.24	.00	9-7	1638	.00	.00	9-7	1638	.0000	.00	
8-21	.27	.00		1643	2.16	.18		1641	.0311	T	
8-30	.18	.00		1648	.36	.21		1642	.0551	T	
8-31	.02	.00		1748	.02	.23		1644	.518	.01	
9-3	1.00	.18						1645	.778	.02	
9-4	.53	.03						1646	.952	.03	
9-6	.17	.00						1647	.737	.05	
								1648	.518	.06	
								1649	.340	.07	
								1651	.121	.07	
								1653	.0551	.08	
								1655	.0270	.08	
								1658	.0126	.08	
								1703	.0031	.08	
								1740	.0000	.08	

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

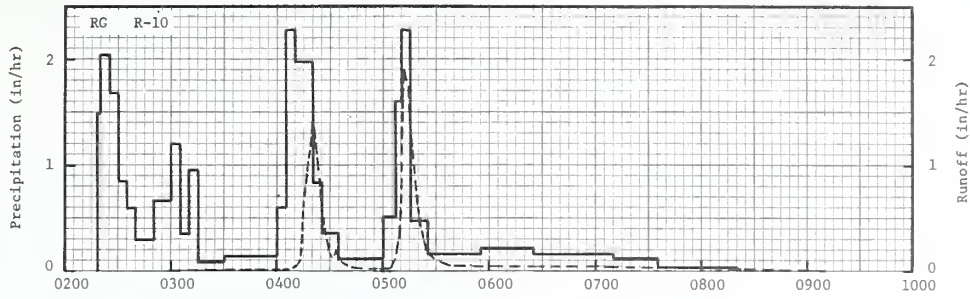


CHEROKEE, OKLAHOMA WATERSHED W-11

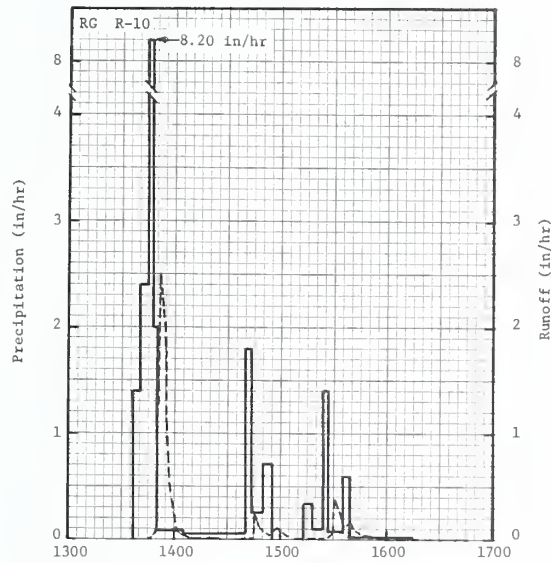
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-12							34.12			
						AREA - 1.68 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ₁ / O	.25 .00	.23 .00	.30 .00	2.09 .00	1.58 .00	6.26 .17	4.61 .71	1.13 .00	3.41 .43	1.86 .09	.17 .00	1.10 T	22.99 1.40		
	STA AV2/P (60-67) Q	.27 .00	.56 .01	1.07 .05	2.01 .02	2.18 .26	4.50 .66	3.14 .38	2.80 .05	2.76 .27	1.46 .05	1.35 .16	.96 T	23.06 1.91		
	MEAN P ₃ / 49 YR	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44		
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
1967	9-3	2.50	7-12	.40	7-12	.56	7-12	.66	7-12	.66	7-12	.66	7-12	.66	7-12	.71
MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	6-2	2.96	6-2	1.28	6-2	1.29	6-22	1.32	6-22	1.32	6-22	2.40	6-22	2.40	6-22	2.40
	1961	1961	1961	1961	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963	1963
Notes: Watershed conditions: Continuous wheat annually, first tillage during fallow period with one-way disc harrow shallow (2 in. to 2-1/2 in.), succeeding tillages with chisel type field cultivator (Hoeme) to maximum depth of 6 inches and final tillage before seeding wheat with same tool with sweeps on shanks. 1/ Precipitation data obtained from a standard gage at Rain Gage 10 location. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.																
1967 SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA WATERSHED W-12							34.12					
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)						
<u>Event of July 12, 1967</u>																
6-16	RG R-10 .13	.00	7-12	RG	R-10	.00	7-12	0259	.0000	.00						
6-17	.24	.00		0218	.00	.00		0313	.0027	T						
6-18	.27	.00		0225	2.04	.22		0404	.0012	T						
6-19	.52	T		0230	1.68	.36		0407	.0085	T						
6-20	2.77	.16		0235	.84	.43		0412	.0556	T						
6-23	.31	.00		0240	.60	.48		0413	.0994	.01						
6-25	.75	.01		0250	.30	.53		0415	.658	.02						
6-29	.16	.00		0300	.66	.64		0417	.925	.04						
7-2	.26	.00		0305	1.20	.74		0418	1.13	.06						
7-3	.06	.00		0310	.36	.77		0419	1.24	.08						
7-4	.04	.00		0315	.96	.85		0420	1.42	.10						
				0330	.08	.87		0421	1.27	.13						
				0400	.14	.94		0423	.925	.16						
				0405	.60	.99		0425	.618	.19						
				0410	2.28	1.18		0427	.427	.21						
				0420	1.98	1.51		0429	.195	.22						
				0425	.84	1.58		0432	.130	.22						
				0435	.36	1.64		0434	.205	.23						
				0500	.12	1.69		0437	.0923	.24						
				0507	.51	1.75		0440	.0406	.24						
				0510	1.60	1.83		0443	.0319	.24						
				0515	2.28	2.02		0504	.0241	.25						
				0525	.48	2.10		0507	.139	.26						
				0555	.16	2.18		0509	.599	.27						
				0625	.22	2.29		0510	1.00	.28						
				0640	.16	2.33		0511	1.36	.30						
				0710	.16	2.41		0512	1.90	.33						
				0735	.12	2.46		0513	1.75	.36						
				0820	.03	2.48		0515	1.36	.41						
								0517	1.03	.45						
								0519	.618	.48						
								0522	.411	.50						
								0524	.205	.51						
								0529	.107	.52						
								0549	.0556	.55						
								0700	.0556	.61						
								0754	.0279	.65						
								0910	.0000	.66						
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.																

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-12				34.12
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)	
<u>Event of September 3, 1967</u>											
	RG R-10			RG	R-10						
8-6	.10	.00	9-3	1337	.00	.00	9-3	1345	.0000	.00	
8-15	.19	.00		1340	1.40	.07		1347	.0085	T	
8-21	.27	.00		1344	2.40	.23		1348	.0362	T	
8-30	.16	.00		1347	8.20	.64		1349	.139	T	
8-31	.02	.00		1350	2.00	.74		1350	.396	.01	
				1405	.08	.76		1351	1.22	.02	
				1440	.05	.79		1352	2.50	.05	
				1443	1.80	.88		1353	2.09	.09	
				1450	.26	.91		1354	1.79	.12	
				1455	.72	.97		1355	1.16	.15	
				1513	.00	.97		1356	.901	.16	
				1518	.36	1.00		1357	.562	.18	
				1524	.10	1.01		1359	.262	.19	
				1527	1.40	1.08		1401	.139	.20	
				1535	.08	1.09		1403	.0610	.20	
				1538	.60	1.12		1406	.0319	.20	
				1615	.02	1.13		1409	.0110	.20	
								1414	.0027	.20	
								1427	.0000	.20	
								1437	.0000	.20	
								1445	.0085	.20	
								1446	.238	.20	
								1448	.114	.21	
								1451	.0790	.22	
								1454	.0406	.22	
								1456	.0790	.22	
								1458	.107	.22	
								1500	.0668	.23	
								1504	.0241	.23	
								1507	.0110	.23	
								1515	.0027	.23	
								1526	.0027	.23	
								1529	.0556	.23	
								1530	.262	.23	
								1531	.367	.24	
								1533	.262	.25	
								1536	.122	.26	
								1539	.156	.27	
								1541	.114	.27	
								1545	.0503	.28	
								1556	.0139	.28	
								1611	.0043	.28	
								1647	.0000	.28	
<u>Event of September 7, 1967</u>											
	RG R-10			RG	R-10						
8-15	.19	.00	9-7	1636	.00	.00	9-7	1636	.0000	.00	
8-21	.27	.00		1639	2.80	.14		1641	.0454	T	
8-30	.16	.00		1642	1.80	.25		1642	.262	T	
8-31	.02	.00		1652	.12	.27		1643	.580	.01	
9-3	1.13	.28		1729	.02	.28		1644	.808	.02	
9-4	.57	.04						1645	.763	.03	
9-6	.20	.00						1646	.678	.05	
								1647	.492	.06	
								1649	.325	.07	
								1651	.216	.08	
								1655	.107	.09	
								1658	.0728	.09	
								1701	.0319	.09	
								1706	.0170	.10	
								1732	.0027	.10	
								1807	.0000	.10	
<p>Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.</p>											
<p>Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.</p>											

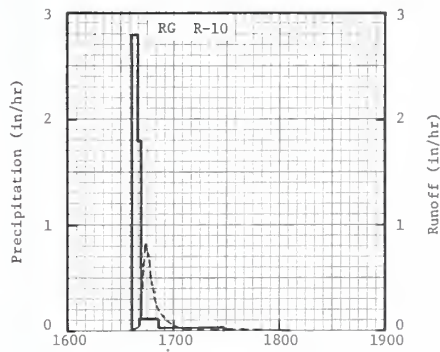
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1.6940



July 12, 1967



September 3, 1967



September 7, 1967

CHEROKEE, OKLAHOMA WATERSHED W-12

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-13							34.13	
						AREA - 1.99 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ₁ /O	.25	.22	.30	2.32	1.67	6.66	4.65	1.18	3.83	1.84	.19	1.13	24.24
		.00	.00	.00	.00	.00	.34	.75	.00	.63	.16	.00	T	1.88
	STA AV2/P (60-67) Q	.26	.55	1.08	2.14	2.25	4.53	3.20	2.78	2.88	1.48	1.37	.98	23.50
		.00	.02	.06	.02	.24	.52	.28	.01	.28	.05	.18	T	1.66
	MEAN P ₃ /49 YR	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44

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	
1967	9-3	3.83	7-12	.50	7-12	.62	7-12	.65	7-12	.65	7-12	.65	7-12	.65	7-12	.75

MAXIMUMS FOR PERIOD OF RECORD																
19 60 TO 19 67	9-3	3.83	6-2	1.16	6-2	1.20	6-2	1.20	6-2	1.20	6-22	1.56	6-22	1.56	6-22	1.56
	1967		1961		1961		1961		1961		1963		1963		1963	

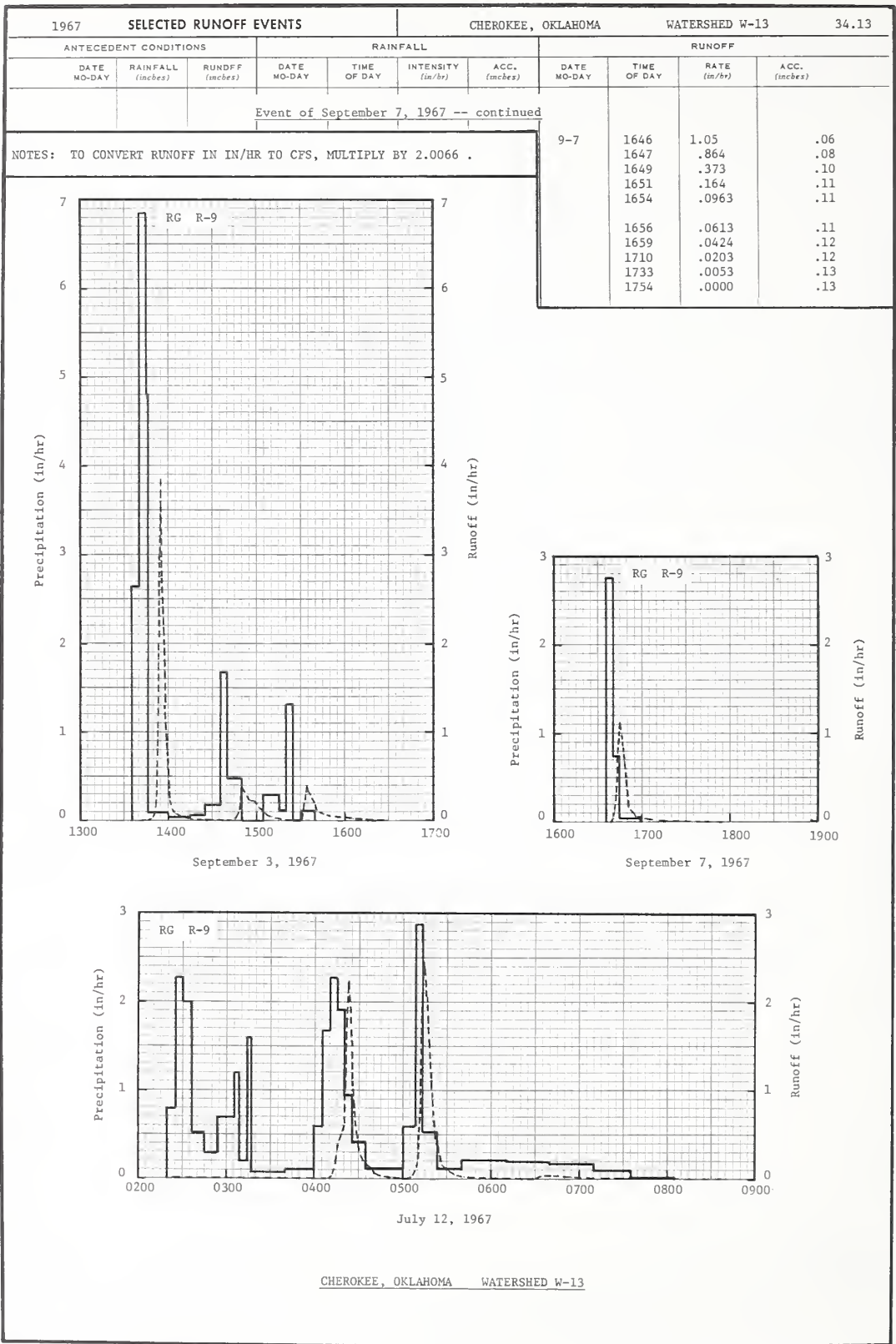
Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with chisel type field cultivator (Hoeme) to 6 inch depth with cross chiseling, if necessary, to obtain good tillage, final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 9 location. 2/ Precipitation and runoff records began July 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.

1967 SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA WATERSHED W-13							34.13
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 July 12, 1967											
	RG R-9			RG	R-9						
6-16	.15	.00	7-12	0219	.00	.00	7-12	0219	.0000	.00	
6-17	.24	.00		0225	.80	.08		0230	.0036	T	
6-18	.27	.00		0230	2.28	.27		0409	.0053	T	
6-19	.52	T		0236	2.00	.47		0411	.0305	.01	
6-20	3.00	.32		0245	.53	.55		0413	.117	.01	
6-23	.33	.00		0253	.30	.59		0416	.401	.02	
6-25	.75	.01		0305	.70	.73		0419	.607	.05	
6-29	.16	.00		0308	1.20	.79		0421	.977	.07	
7-2	.24	.00		0314	.20	.81		0422	2.00	.10	
7-3	.05	.00		0317	1.60	.89		0423	2.22	.13	
7-4	.04	.00		0340	.08	.92		0425	1.12	.18	
				0400	.12	.96		0427	.681	.21	
				0405	.60	1.01		0430	.309	.24	
				0410	1.68	1.15		0433	.201	.25	
				0415	2.28	1.34		0438	.124	.26	
				0420	1.92	1.50		0441	.0721	.27	
				0425	.96	1.58		0445	.0382	.27	
				0435	.42	1.65		0502	.0071	.28	
				0450	.12	1.68		0506	.0235	.28	
				0500	.12	1.70		0509	.164	.28	
				0508	.60	1.78		0510	.415	.29	
				0513	2.88	2.02		0511	.931	.30	
				0523	.54	2.11		0512	1.63	.32	
				0540	.11	2.14		0513	2.00	.35	
				0610	.22	2.25		0514	2.46	.39	
				0640	.20	2.35		0515	2.34	.43	
				0710	.18	2.44		0516	2.07	.46	
				0735	.10	2.48		0517	1.63	.49	
				0805	.02	2.49		0519	1.00	.54	
								0520	.822	.55	
								0522	.459	.57	
								0524	.297	.58	
								0527	.173	.60	
								0530	.0963	.60	
								0537	.0343	.61	
								0542	.0173	.61	
								0549	.0173	.61	
								0603	.0235	.62	
								0628	.0235	.63	

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.

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-13 34.13			
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)
<u>Event of July 12, 1967 -- continued</u>										
							7-12	0634	.0382	.63
								0646	.0269	.64
								0700	.0235	.64
								0721	.0117	.65
								0735	.0053	.65
								0757	.0010	.65
								0841	.0000	.65
<u>Event of September 3, 1967</u>										
	RG R-9		9-3	RG	R-9		9-3	1340	.0000	.00
8-6	.11	.00		1335	.00	.00		1347	.0071	T
8-15	.25	.00		1340	2.64	.22		1349	.0235	T
8-21	.25	.00		1345	6.84	.79		1351	.103	T
8-30	.23	.00		1346	4.80	.87				
8-31	.02	.00		1400	.09	.89		1352	.334	.01
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.										
				1415	.04	.90		1353	1.15	.02
				1425	.06	.91		1354	3.01	.05
				1435	.18	.94		1355	3.83	.11
				1440	1.68	1.08		1356	2.87	.17
				1450	.48	1.16		1357	2.04	.21
				1505	.00	1.16		1358	1.28	.23
				1515	.30	1.21		1359	.760	.25
				1520	.12	1.22		1401	.241	.27
				1525	1.32	1.33		1402	.156	.27
				1530	.00	1.33		1405	.0778	.28
				1540	.12	1.35		1413	.0173	.28
								1417	.0071	.28
								1431	.0000	.28
								1443	.0000	.28
								1446	.0093	.28
								1448	.117	.28
								1450	.401	.29
								1451	.347	.30
								1452	.322	.31
								1455	.231	.32
								1458	.221	.33
								1502	.156	.34
								1506	.0838	.35
								1511	.0382	.36
								1518	.0143	.36
								1528	.0000	.36
								1531	.0143	.36
								1533	.201	.36
								1534	.401	.37
								1536	.309	.38
								1539	.201	.39
								1541	.124	.40
								1550	.0613	.41
								1600	.0305	.42
								1606	.0173	.42
								1615	.0071	.42
								1629	.0000	.42
<u>Event of September 7, 1967</u>										
	RG R-9		9-7	RG	R-9		9-7	1638	.0000	.00
8-15	.25	.00		1635	.00	.00		1640	.0022	T
8-21	.25	.00		1640	2.76	.23		1641	.0382	T
8-30	.23	.00		1644	.75	.28		1642	.221	T
8-31	.02	.00		1700	.04	.29				
9-3	1.35	.42						1643	.643	.01
9-4	.65	.08						1644	1.07	.02
9-6	.20	.00						1645	1.12	.04
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.										

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



MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-14 AREA - 2.16 ACRES							34.14	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ₁ /Q	.25 .00	.22 .00	.30 .00	2.32 .00	1.67 .00	6.66 .20	4.65 .43	1.18 .00	3.83 .45	1.84 .05	.19 .00	1.13 T	24.24 1.13
	STA AV2/P (60-67) Q	.26 .00	.55 .01	1.08 .03	2.14 .02	2.25 .25	4.53 .65	2.86 .32	2.78 .02	2.88 .26	1.48 .01	1.37 .00	.98 T	23.16 1.57
	MEAN P ₃ /Q 49 YR	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44

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	
1967	9-3	3.61	7-12	.30	7-12	.41	7-12	.42	7-12	.42	7-12	.42	7-12	.42	9-3	.45

MAXIMUMS FOR PERIOD OF RECORD																
1960 TO 1967	9-3	3.61	7-28 1963	1.20	7-28 1963	1.36	7-28 1963	1.37	7-28 1963	1.37	6-22 1963	2.18	6-22 1963	2.18	6-22 1963	2.18

Notes: Watershed conditions: Continuous wheat annually, first tillage during fallow period with one-way disc harrow shallow (2 in. to 2-1/2 in), succeeding tillages with chisel type field cultivator (Hoeme) to maximum depth of 6 inches and final tillage before seeding wheat with same tool with sweeps on shanks. 1/ Precipitation data obtained from a standard gage at Rain Gage 9 location. 2/ No runoff record in 1964 due to hole in gage well. Precipitation and runoff records began September 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.

1967 SELECTED RUNOFF EVENTS				CHEROKEE, OKLAHOMA WATERSHED W-14							34.14
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 July 12, 1967											
	RG R-9			RG	R-9						
6-16	.15	.00	7-12	0219	.00	.00	7-12	0223	.0000	.00	
6-17	.24	.00		0225	.80	.08		0225	.0010	T	
6-18	.27	.00		0230	2.28	.27		0300	.0010	T	
6-19	.52	T		0236	2.00	.47		0320	.0010	T	
6-20	3.00	.32		0245	.53	.55		0345	.0000	T	
6-23	.33	.00		0253	.30	.59		0401	.0000	T	
6-25	.75	.01		0305	.70	.73		0409	.0048	T	
6-29	.16	.00		0308	1.20	.79		0411	.0517	T	
7-2	.24	.00		0314	.20	.81		0413	.231	.01	
7-3	.05	.00		0317	1.60	.89		0416	.284	.02	
7-4	.04	.00		0340	.08	.92		0418	.435	.03	
				0400	.12	.96		0420	.679	.05	
				0405	.60	1.01		0422	.876	.08	
				0410	1.68	1.15		0425	.625	.11	
				0415	2.28	1.34		0427	.421	.13	
				0420	1.92	1.50		0429	.212	.14	
				0425	.96	1.58		0432	.114	.15	
				0435	.42	1.65		0436	.0769	.16	
				0450	.12	1.68		0440	.0315	.16	
				0500	.12	1.70		0453	.0010	.16	
				0508	.60	1.78		0502	.0010	.16	
				0513	2.88	2.02		0505	.0107	.16	
				0523	.54	2.11		0508	.0085	.16	
				0540	.11	2.14		0511	.464	.17	
				0610	.22	2.25		0512	.855	.18	
				0640	.20	2.35		0513	1.18	.20	
				0710	.18	2.44		0514	1.87	.22	
				0735	.10	2.48		0515	1.94	.25	
				0805	.02	2.49		0516	1.65	.28	
								0517	1.38	.31	
								0518	.963	.33	
								0520	.643	.35	
								0523	.435	.38	
								0526	.222	.40	

Watershed conditions: 100% of area was in a moldboard tilled state and had been freshly worked with field cultivator just prior to event. Top soil dry and loose; below top 3 inches, soil fairly firm and moist.

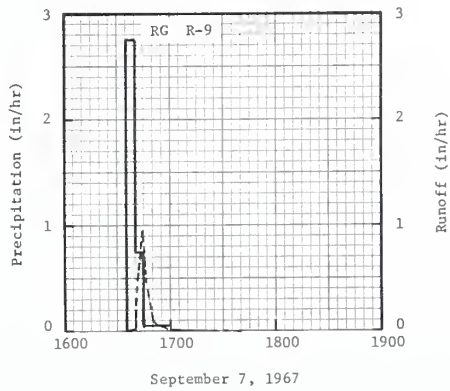
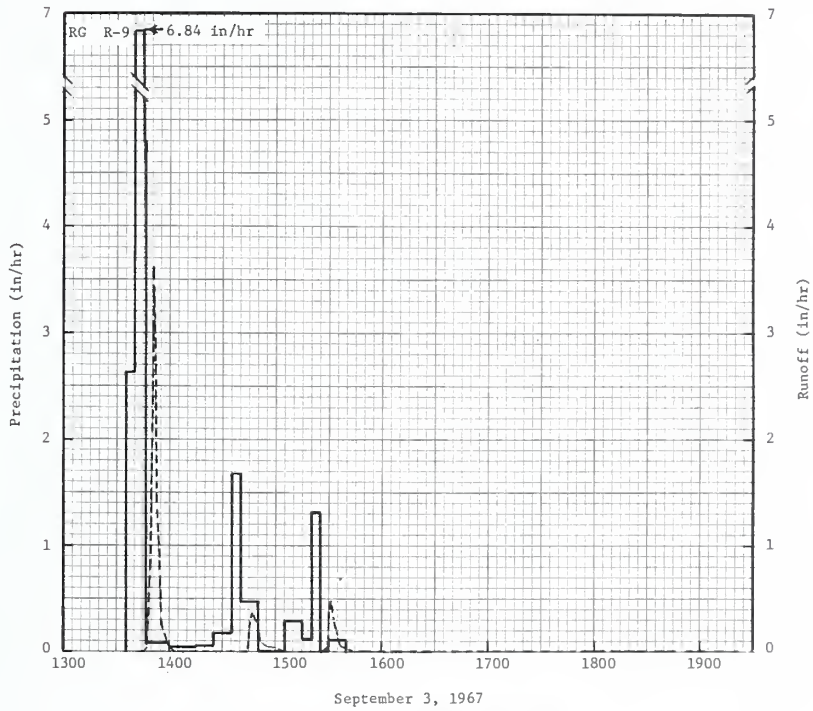
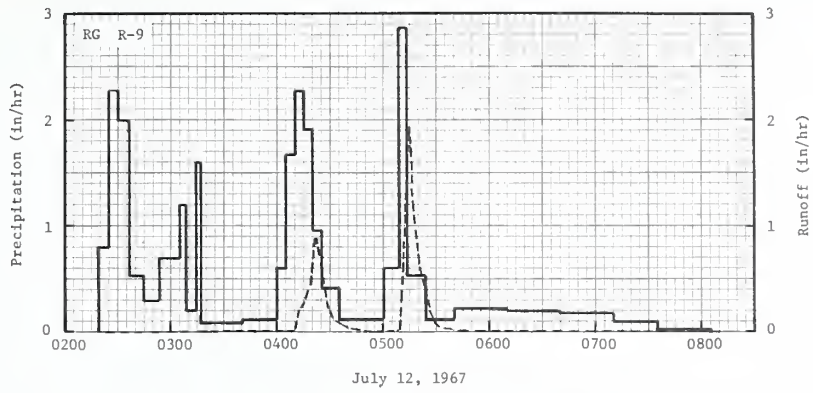
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1780 . FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 34.14-4.

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-14			34.14
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)
<u>Event of July 12, 1967 -- continued</u>										
							7-12	0528	.128	.40
								0530	.0715	.41
								0534	.0351	.41
								0539	.0159	.41
								0542	.0066	.41
								0550	.0033	.41
								0633	.0033	.42
								0810	.0000	.42
<u>Event of September 3, 1967</u>										
	RG R-9		9-3	RG R-9			9-3	1342	.0000	.00
8-6	.11	.00		1335	.00	.00		1346	.0033	T
8-15	.25	.00		1340	2.64	.22		1347	.0280	T
8-21	.25	.00		1345	6.84	.79		1348	.435	T
8-30	.23	.00		1346	4.80	.87		1349	.897	.02
8-31	.02	.00		1400	.09	.89		1350	2.01	.04
				1415	.04	.90		1351	3.61	.09
				1425	.06	.91		1352	2.76	.14
				1435	.18	.94		1353	1.50	.17
				1440	1.68	1.08		1354	.855	.19
				1450	.48	1.16		1355	.494	.21
				1505	.00	1.16		1357	.167	.22
				1515	.30	1.21		1359	.0612	.22
				1520	.12	1.22		1401	.0280	.22
				1525	1.32	1.33		1403	.0048	.22
				1530	.00	1.33		1444	.0010	.22
				1540	.12	1.35		1446	.284	.23
								1447	.355	.23
								1448	.284	.24
								1450	.143	.24
								1455	.0517	.25
								1500	.0390	.25
								1503	.0048	.25
								1510	.0010	.25
								1527	.0010	.26
								1529	.0351	.26
								1530	.381	.26
								1531	.479	.27
								1532	.381	.27
								1534	.212	.28
								1537	.0612	.29
								1539	.0351	.29
								1542	.0216	.29
								1545	.0021	.29
								1900	.0010	.30
								1922	.0000	.30
<u>Event of September 7, 1967</u>										
	RG R-9		9-7	RG R-9			9-7	1637	.0000	.00
8-15	.25	.00		1635	.00	.00		1640	.0010	T
8-21	.25	.00		1640	2.76	.23		1641	.241	T
8-30	.23	.00		1644	.75	.28		1642	.494	.01
8-31	.02	.00		1700	.04	.29		1643	.774	.02
9-3	1.35	.42						1644	.963	.03
9-4	.65	.08						1645	.834	.05
9-6	.20	.00						1646	.608	.06
								1647	.421	.07
								1649	.184	.08
								1651	.0885	.08
								1653	.0563	.09
								1655	.0390	.09
								1658	.0159	.09
								1711	.0033	.09
								1741	.0000	.09

Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.

Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.

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



CHEROKEE, OKLAHOMA WATERSHED W-14

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHEROKEE, OKLAHOMA WATERSHED W-15 AREA - 2.15 ACRES								34.15
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	.25	.23	.28	2.22	1.60	6.54	4.56	1.16	3.44	1.77	.17	1.13	23.35
	O	.00	.00	.00	.00	.00	.49	.54	.00	.44	.05	.00	T	1.52
STA AV2/P (60-67)	Q	.27	.56	1.08	2.06	2.20	4.45	2.81	2.68	2.74	1.44	1.35	.98	22.62
	Q	.00	.01	.08	.03	.37	.71	.19	.01	.22	.02	.15	T	1.79
MEAN 49 YR	P 3/	.80	.89	1.65	2.83	3.85	3.92	2.31	2.89	2.74	2.24	1.36	.96	26.44

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
1967	9-3	3.88	7-12	.35	7-12	.47	7-12	.49	7-12	.49	7-12	.49	7-12	.49	7-12	.54

MAXIMUMS FOR PERIOD OF RECORD																
19 60 to 19 67	9-3 1967	3.88	6-23 1963	1.30	6-23 1963	1.53	6-23 1963	1.58	6-22 1963	1.67	6-22 1963	2.90	6-22 1963	2.90	6-22 1963	2.90

Notes: Watershed conditions: Continuous wheat annually, tillage during fallow period with large sweeps (8 ft.), final tillage before seeding wheat with a rod weeder. 1/ Precipitation data obtained from a standard gage at Rain Gage 8 location. 2/ Precipitation and runoff records began September 1960. 3/ Mean P based on 49-yr (1915-63) U.S. Weather Bureau record period at Cherokee, Oklahoma, with 20 missing months between 1943-59 estimated. The Weather Bureau records began June 1915.

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA WATERSHED W-15								34.15
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 July 12, 1967											
6-16	RG R-8 .15	.00	7-12	RG	R-8	.00	7-12	0220	.0000	.00	
6-17	.25	.00		0225	2.28	.19		0234	.0030	T	
6-18	.26	.00		0230	2.04	.36		0255	.0014	T	
6-19	.49	T		0235	1.80	.51		0314	.0030	T	
6-20	3.04	.46		0245	.48	.59		0324	.0000	T	
6-23	.33	.00		0250	.24	.61		0346	.0049	T	
6-25	.72	.02		0300	.72	.73		0410	.0096	T	
6-29	.15	.00		0305	.96	.81		0412	.0441	T	
7-2	.24	.00		0310	.36	.84		0414	.119	.01	
7-3	.05	.00		0315	1.20	.94		0416	.309	.01	
7-4	.03	.00	0345	.06	.97	0418	.687	.03			
			0355	.24	1.01	0420	.849	.06			
			0400	.00	1.01	0422	1.03	.09			
			0405	.84	1.08	0423	1.13	.11			
			0410	2.16	1.26	0424	1.01	.12			
			0420	1.74	1.55	0426	.726	.15			
			0435	.44	1.66	0428	.448	.17			
			0500	.12	1.71	0430	.262	.18			
			0506	.90	1.80	0432	.169	.19			
			0511	2.64	2.02	0435	.0972	.20			
			0520	.80	2.14	0441	.0543	.21			
			0600	.18	2.26	0449	.0190	.21			
			0630	.22	2.37	0502	.0014	.21			
			0700	.14	2.44	0509	.0228	.21			
			0730	.14	2.51	0511	.0714	.21			
			0820	.02	2.53	0512	.239	.22			
						0513	.613	.22			
						0514	.893	.24			
						0515	1.70	.26			
						0516	2.11	.29			
						0517	2.22	.32			
						0518	1.93	.36			
						0519	1.57	.39			
						0520	1.10	.41			
						0521	.726	.43			
						0522	.543	.44			
						0524	.335	.45			
						0526	.188	.46			
						0528	.119	.47			

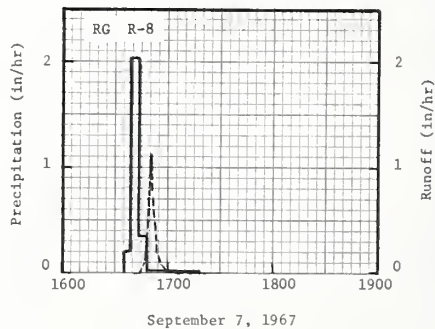
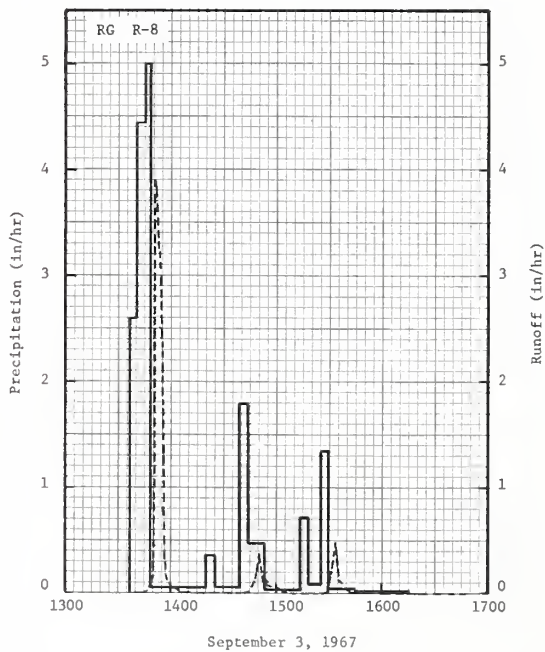
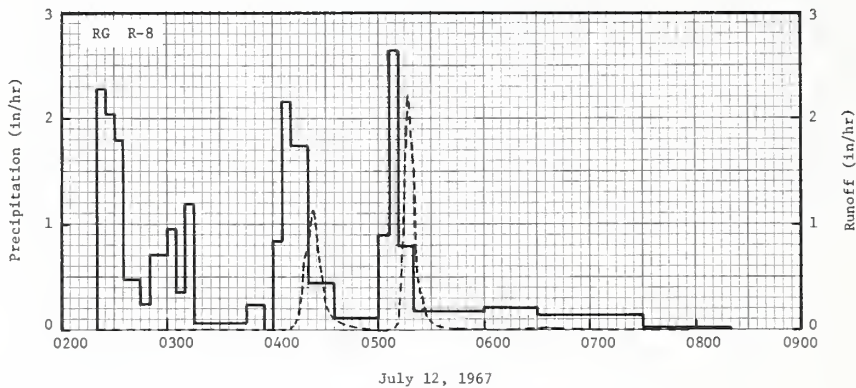
Watershed conditions: 100% of area was in a moldboard tilled state and had been freshly worked with field cultivator just prior to event. Top soil dry and loose; below top 3 inches, soil fairly firm and moist.

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.

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA			WATERSHED W-15			34.15												
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 (in/hr)	ACC. (inches)											
<u>Event of July 12, 1967 -- continued</u>																					
							7-12	0530	.0904	.47											
								0531	.0654	.47											
								0533	.0393	.47											
								0536	.0190	.47											
								0555	.0030	.48											
								0608	.0049	.48											
								0633	.0124	.48											
								0647	.0124	.48											
								0724	.0049	.49											
								0756	.0000	.49											
<u>Event of September 3, 1967</u>																					
8-6	RG R-8	.12	.00	9-3	RG	R-8															
8-15		.20	.00		1337	.00	.00	9-3	1339	.0000	.00										
8-21		.21	.00		1340	2.60	.13		1345	.0071	T										
8-30		.27	.00		1345	4.44	.50		1347	.0228	T										
					1348	5.00	.75		1349	.0972	T										
8-31		.02	.00		1420	.04	.77		1350	.229	.01										
Watershed conditions: 100% of area stubble mulched tilled; surface soil loose and dry.																					
															1425	.36	.80		1351	.448	.01
															1438	.05	.81		1352	3.88	.05
															1443	1.80	.96		1353	3.25	.11
															1453	.48	1.04		1354	2.41	.15
															1513	.03	1.05		1355	1.86	.19
															1518	.72	1.11		1356	.786	.21
															1525	.09	1.12		1357	.262	.22
															1529	1.35	1.21		1358	.119	.22
															1544	.04	1.22		1400	.0654	.23
															1615	.02	1.23		1402	.0393	.23
																			1404	.0155	.23
																			1411	.0049	.23
																			1441	.0004	.23
																			1445	.0190	.23
								1447	.0714	.23											
								1448	.143	.23											
								1449	.285	.24											
								1450	.375	.24											
								1451	.285	.25											
								1453	.0972	.26											
								1458	.0714	.26											
								1501	.0441	.27											
								1503	.0266	.27											
								1506	.0124	.27											
								1512	.0030	.27											
								1524	.0030	.27											
								1529	.0124	.27											
								1532	.208	.27											
								1533	.403	.28											
								1534	.478	.29											
								1536	.119	.29											
								1538	.0714	.30											
								1540	.0306	.30											
								1542	.0124	.30											
								1550	.0030	.30											
								1607	.0004	.30											
								1647	.0000	.30											
<u>Event of September 7, 1967</u>																					
8-15	RG R-8	.20	.00	9-7	RG	R-8															
8-21		.21	.00		1635	.00	.00	9-7	1642	.0000	.00										
8-30		.27	.00		1638	.20	.01		1645	.0049	T										
8-31		.02	.00		1643	2.04	.18		1647	.0972	T										
					1648	.36	.21		1648	.418	.01										
9-3		1.23	.30		1718	.02	.22		1649	.807	.02										
9-4		.61	.05						1650	1.13	.03										
9-6		.19	.00						1651	.960	.05										
Watershed conditions: 100% of area stubble mulched tilled; surface soil very wet, firm and smooth.																					
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.1679 .																					

1967 SELECTED RUNOFF EVENTS			CHEROKEE, OKLAHOMA				WATERSHED W-15		34.15	
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 September 7, 1967 -- continued										
							9-7	1652	.613	.06
								1653	.389	.07
								1654	.179	.08
								1656	.0838	.08
								1658	.0393	.08
								1702	.0124	.08
								1713	.0030	.08
								1731	.0000	.08

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

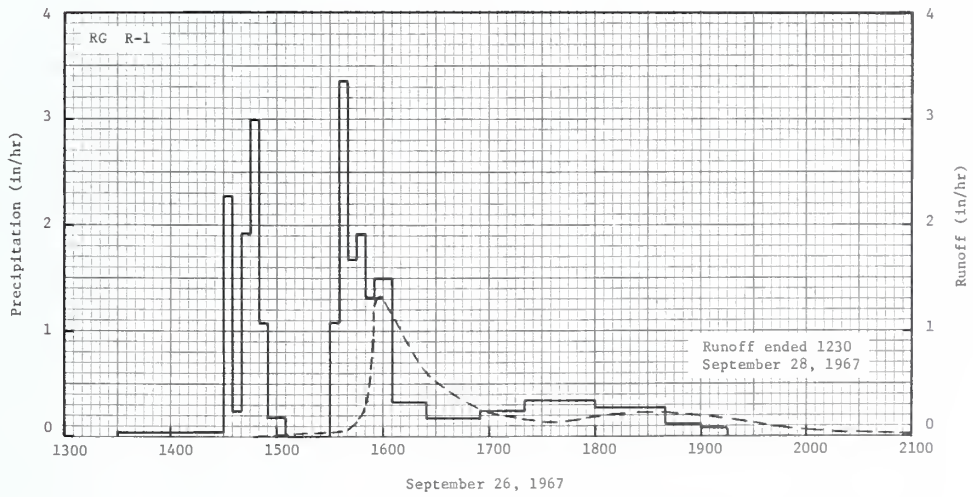
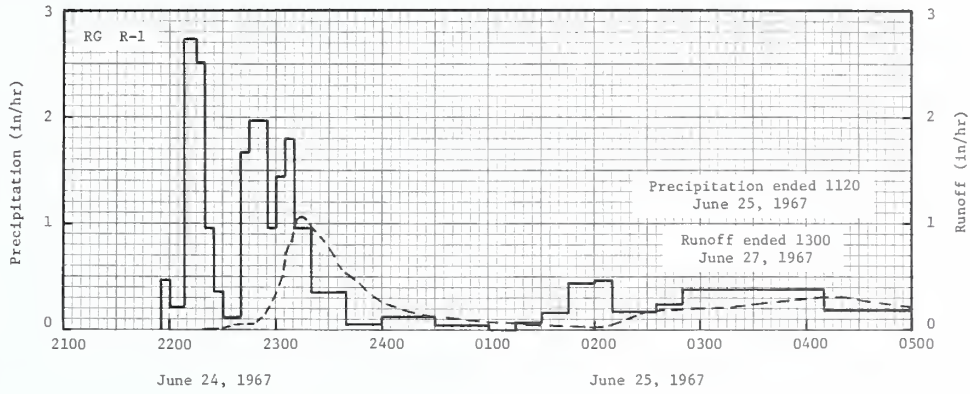


CHEROKEE, OKLAHOMA WATERSHED W-15

MONTHLY PRECIPITATION AND RUNOFF (inches)						STILLWATER, OKLAHOMA WATERSHED W-1 AREA - 16.7 ACRES								37.1		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ /Q	1.30	.45	1.30	2.59	4.01	7.25	4.23	1.71	7.15	2.79	.77	.78	34.33		
	Q	.24	.00	.03	.35	.79	2.23	.49	.00	1.64	.84	.04	.04	6.69		
STA AV2/P (51-67) Q		.58	1.06	1.87	2.16	5.00	3.87	4.43	2.88	3.54	2.42	1.43	1.10	30.34		
MEAN P ₃ /71 YR		1.10	1.26	2.13	3.43	4.78	4.14	3.12	3.03	3.71	2.89	2.05	1.34	32.98		
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
1967	9-26	1.33	9-26	.73	9-26	.92	6-24	1.55	6-24	2.03	6-24	2.13	6-24	2.15	6-20	2.21
MAXIMUMS FOR PERIOD OF RECORD																
1951 TO 1967	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: Watershed conditions: All native grass pasture. This pasture was grazed continuously from August 1966 to October 1967. There were 11 head of cattle in the 40-acre pasture from August 1966 to July 5, 1967, then an additional 13 head were added to the herd. All 24 head of cattle were removed on October 9, 1967. The cover was in poor condition when the cattle were removed. The poor cover condition can also be attributed to drought and overgrazing the previous 5 years. During the period from September 1966 to October 1967, the vegetative cover was reduced by 1.31 tons/acre due to the excessive number of cattle being grazed on this watershed. Precipitation for the year was 3.99 inches above station average. 1/ Precipitation data obtained from R-1 recording rain gage. 2/ Precipitation and runoff records began July 1951. Station average precipitation data from R-3 recording rain gage record. 3/ Mean P based on 71-yr (1893-1963) U.S. Weather Bureau record period at Stillwater, Okla.																
1967 SELECTED RUNOFF EVENTS						STILLWATER, OKLAHOMA WATERSHED W-1								37.1		
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 June 24 - 25, 1967																
	RG R-1			RG	R-1											
5-28	.03	.000	6-24	2155	.00	.00	6-24	2218	.0000	.000						
5-30	.10	.000		2200	.48	.04		2224	.0047	.000 T						
5-31	.03	.000		2208	.22	.07		2227	.0113	.001						
6- 7	.05	.000		2215	2.74	.39		2231	.0241	.002						
6-10	1.20	.002		2220	2.52	.60		2238	.0482	.006						
6-11	.37	.014		2225	.96	.68		2247	.0482	.013						
6-16	.11	.000		2230	.36	.71		2251	.0869	.018						
6-19	.21	.000		2240	.12	.73		2256	.204	.029						
6-20	1.40	.041		2245	1.68	.87		2300	.340	.046						
6-21	.00	.002		2255	1.98	1.20		2303	.470	.066						
6-23	.38	.007		2300	.96	1.28		2305	.687	.087						
				2305	1.44	1.40		2308	.809	.124						
				2310	1.80	1.55		2311	.955	.168						
				2320	.96	1.71		2313	1.06	.202						
Watershed conditions: 100% of area in native grass pasture in fair condition.																
				2340	.36	1.77		2314	1.07	.220						
				2400	.06	1.79		2317	1.06	.273						
			6-25	0030	.12	1.85		2320	1.00	.324						
				0100	.04	1.87		2328	.840	.449						
				0115	.00	1.87		2334	.662	.524						
				0130	.08	1.89		2338	.556	.564						
				0145	.16	1.93		2346	.470	.632						
				0200	.44	2.04		2353	.355	.679						
				0210	.48	2.12		2400	.283	.716						
				0235	.17	2.19	6-25	0017	.184	.781						
				0250	.24	2.25		0111	.0679	.887						
				0410	.39	2.77		0155	.0330	.921						
				0510	.19	2.96		0211	.0637	.932						
				0550	.16	3.07		0225	.154	.958						
				0650	.03	3.10		0253	.211	1.048						
				0750	.02	3.12		0309	.218	1.105						
				0850	.01	3.13		0340	.275	1.232						
				0950	.08	3.21		0417	.315	1.414						
				1020	.02	3.22		0427	.299	1.465						
				1120	.01	3.23		0450	.238	1.568						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839. FOR ORIGINAL MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.1-7. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 167.																

1967 SELECTED RUNOFF EVENTS			STILLWATER, OKLAHOMA				WATERSHED W-1				37.1
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)	
<u>Event of June 24 - 25, 1967 -- continued</u>											
							6-25	0521	.191	1.678	
								0610	.154	1.820	
								0716	.0679	1.939	
								0844	.0241	2.000	
								1014	.0241	2.032	
								1152	.0190	2.071	
								1345	.0089	2.096	
								1727	.0036	2.116	
								2400	.0017	2.133	
							6-26	1200	.0008	2.148	
								2400	.0004	2.155	
							6-27	1300	.0000	2.158	
<u>Event of September 26, 1967</u>											
	RG R-1		RG	R-1							
8-29	.01	.000	9-26	1330	.00	.00	9-26	1447	.0000	.000	
8-30	T	.000		1430	.04	.04		1453	.0042	T	
9- 2	.48	.000		1435	2.28	.23		1457	.0097	.001	
9- 3	.73	.001		1440	.24	.25		1502	.0167	.002	
9- 4	.22	.003		1445	1.92	.41		1509	.0274	.004	
9- 5	.08	.006		1450	3.00	.66		1513	.0330	.006	
9- 6	.87	.034		1455	1.08	.75		1528	.0375	.015	
9- 7	.00	.002		1505	.18	.78		1535	.0482	.020	
9-12	.09	.000		1530	.00	.78		1540	.0679	.025	
9-14	1.62	.132		1535	1.08	.87		1545	.129	.033	
9-15	.00	.003		1540	3.36	1.15		1548	.218	.042	
9-19	.02	.000		1545	1.68	1.29		1550	.299	.050	
9-20	.45	.024		1550	1.92	1.45		1552	.393	.062	
9-21	.00	.002		1555	1.32	1.56		1554	.933	.080	
Watershed conditions: 100% of area in native grass pasture in poor condition due to over-grazing.				1605	1.50	1.81		1555	1.16	.098	
				1625	.33	1.92		1556	1.31	.118	
				1655	.18	2.01		1557	1.31	.140	
				1720	.24	2.11		1558	1.33	.162	
				1800	.34	2.34		1559	1.32	.184	
				1840	.28	2.53		1602	1.23	.248	
				1900	.12	2.57		1605	1.17	.308	
				1915	.08	2.59		1613	.915	.447	
								1618	.770	.517	
								1623	.642	.576	
								1628	.552	.625	
								1634	.478	.675	
								1644	.355	.745	
								1656	.252	.805	
					1717	.176	.878				
					1732	.154	.920				
					1746	.161	.956				
					1835	.225	1.120				
					1859	.204	1.206				
					1937	.112	1.307				
					2024	.0375	1.360				
					2113	.0167	1.381				
					2200	.0097	1.391				
					2400	.0042	1.403				
					0155	.0026	1.410				
					0430	.0017	1.415				
					2400	.0004	1.431				
			9-28	1230	.0000				1.434		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.839 .



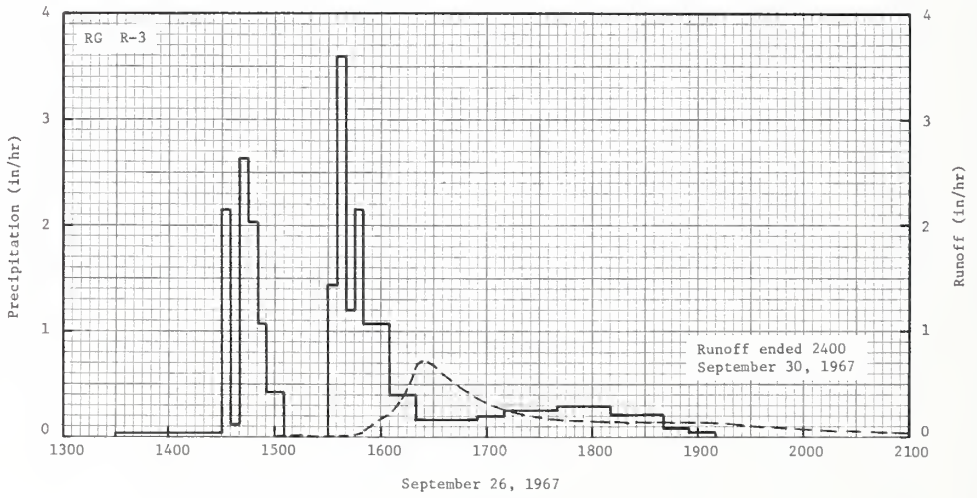
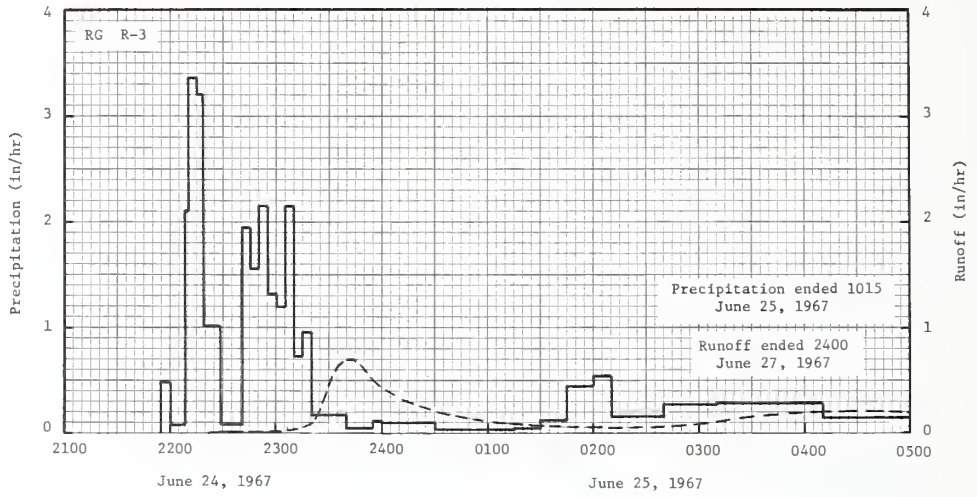
STILLWATER, OKLAHOMA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						STILLWATER, OKLAHOMA WATERSHED W-3							37.2			
						AREA - 92.0 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P1/ 0	1.37 .00	.45 .00	1.20 .00	2.46 .12	3.69 .31	6.95 1.61	3.98 .25	1.66 .00	6.67 1.25	2.44 .61	.77 .01	.82 .01	32.46 4.17		
STA AV2/P (51-67) Q		.58 .04	1.06 .12	1.87 .49	2.16 .47	5.00 1.47	3.87 .84	4.43 .68	2.88 .07	3.54 .38	2.42 .61	1.43 .20	1.10 .09	30.34 5.46		
MEAN P3/ 71 YR		1.10	1.26	2.13	3.43	4.78	4.14	3.12	3.03	3.71	2.89	2.05	1.34	32.98		
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
1967	9-26	.73	9-26	.49	9-26	.69	6-24	1.13	6-24	1.50	6-24	1.58	6-24	1.60	6-20	1.61
MAXIMUMS FOR PERIOD OF RECORD																
19 51 TO 1967	7-15 1951	4.74	7-15 1951	2.87	7-15 1951	3.49	7-15 1951	3.80	10-2 1959	4.96	10-1 1959	5.18	10-1 1959	6.08	9-30 1959	8.08
NOTES: Watershed conditions: All native grass cover, 32% of watershed is in hay meadow and 68% in pasture. The meadow was cut for hay the last part of July with a yield of 1.9 tons/acre. The meadow made a good regrowth in August and September due to sufficient moisture. The pasture portion was overgrazed again this year, considering the number of cattle in each pasture and the resultant effect of below normal precipitation the previous 5 years. Precipitation for the year was slightly over 2 inches above station average. 1/ Precipitation data obtained from R-3 recording rain gage. 2/ Precipitation and runoff records began July 1951. 3/ Mean P based on 71-yr (1893-1963) U.S. Weather Bureau record period at Stillwater, Oklahoma.																
1967 SELECTED RUNOFF EVENTS				STILLWATER, OKLAHOMA WATERSHED W-3							37.2					
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 June 24 - 25, 1967																
	RG R-3			RG	R-3											
5-28	.03	.000	6-24	2155	.00	.00	6-24	2222	.0000	.000						
5-30	.10	.000		2200	.48	.04		2238	.0090	.001						
5-31	.04	.000		2208	.08	.05		2244	.0104	.002						
6- 7	.07	.000		2210	2.10	.12		2250	.0105	.003						
6-10	1.08	.000		2215	3.36	.40		2305	.0166	.005						
6-11	.37	.000		2218	3.20	.56		2310	.0429	.008						
6-16	.12	.000		2228	1.02	.73		2315	.0490	.012						
6-19	.17	.000		2241	.09	.75		2321	.102	.019						
6-20	1.41	.004		2245	1.95	.88		2323	.154	.024						
6-23	.33	.000		2250	1.56	1.01		2325	.233	.030						
				2255	2.16	1.19		2327	.319	.039						
				2300	1.32	1.30		2329	.429	.052						
				2305	1.20	1.40		2333	.568	.085						
				2310	2.16	1.58		2335	.630	.105						
				2315	.72	1.64		2337	.651	.126						
				2320	.96	1.72		2341	.691	.171						
				2330	.18	1.75		2343	.688	.194						
				2340	.18	1.78		2351	.591	.280						
				2355	.04	1.79		2356	.488	.325						
				2400	.12	1.80		2400	.439	.356						
			6-25	0030	.10	1.85	6-25	0014	.306	.444						
				0115	.03	1.87		0034	.203	.527						
				0130	.04	1.88		0059	.118	.593						
				0145	.12	1.91		0133	.0658	.643						
				0200	.44	2.02		0209	.0456	.675						
				0210	.54	2.11		0230	.0593	.692						
				0240	.16	2.19		0306	.101	.741						
				0310	.28	2.33		0348	.179	.840						
				0410	.29	2.62		0437	.222	1.010						
				0510	.15	2.77		0541	.154	1.213						
				0610	.12	2.89		0648	.0998	1.350						
				0710	.01	2.90		0741	.0563	1.417						
				0810	.05	2.95		0847	.0300	1.462						
				0850	.08	3.00		0959	.0195	1.490						
				0950	.06	3.06		1320	.0109	1.544						
				1015	.05	3.08		1519	.0063	1.560						
Watershed conditions: 100% of area in native grass; 32% used as hay meadow in excellent condition, 46% in pasture in fair condition and 22% in pasture in poor condition.																
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.																

1967 SELECTED RUNOFF EVENTS			STILLWATER, OKLAHOMA				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 June 24 - 25, 1967 -- continued										
							6-25	1830	.0029	1.574
								2400	.0012	1.584
							6-26	0600	.0007	1.590
								2400	.0003	1.599
							6-27	2400	.0000	1.605
Event of September 26, 1967										
	RG R-3			RG	R-3					
8-29	.01	.000	9-26	1330	.00	.00	9-26	1459	.0000	.000
8-30	T	.000		1430	.04	.04		1500	.0082	.000 T
9- 2	.47	.000		1435	2.16	.22		1503	.0127	.001
9- 3	.69	.000		1440	.12	.23		1508	.0065	.001
9- 4	.22	.000		1445	2.64	.45		1515	.0081	.002
9- 5	.10	.000		1450	2.04	.62		1527	.0044	.003
9- 6	.74	.004		1455	1.08	.71		1537	.0086	.004
9-12	.10	.000		1505	.42	.78		1540	.0149	.005
9-14	1.45	.101		1530	.00	.78		1544	.0204	.006
9-15	.00	.007		1535	1.44	.90		1548	.0450	.008
9-19	.03	.000		1540	3.60	1.20		1551	.0806	.011
9-20	.45	.000		1545	1.20	1.30		1554	.102	.016
				1550	2.16	1.48		1557	.136	.022
				1555	1.08	1.57		1603	.201	.038
				1605	1.08	1.75		1610	.311	.068
				1620	.40	1.85		1613	.413	.086
				1655	.17	1.95		1616	.518	.109
				1710	.20	2.00		1619	.641	.138
				1740	.26	2.13		1622	.713	.172
				1810	.30	2.28		1626	.730	.220
				1840	.22	2.39		1629	.689	.256
				1855	.08	2.41		1636	.592	.330
				1910	.04	2.42		1643	.497	.394
								1656	.374	.488
								1713	.257	.575
								1731	.193	.641
								1810	.145	.746
								1908	.148	.889
								2002	.0815	.991
								2028	.0538	1.020
								2108	.0302	1.047
								2205	.0150	1.067
								2300	.0085	1.078
								2400	.0058	1.085
							9-27	0119	.0035	1.091
								0315	.0021	1.096
								0810	.0010	1.103
								2400	.0005	1.114
							9-28	1200	.0003	1.119
								2400	.0004	1.123
							9-29	2400	.0004	1.134
							9-30	1200	.0003	1.138
								2400	.0000	1.141

Watershed conditions: 100% of area in native grass; 32% used as hay meadow in excellent condition, 46% in pasture in fair condition and 22% in pasture in poor condition.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 92.766 .



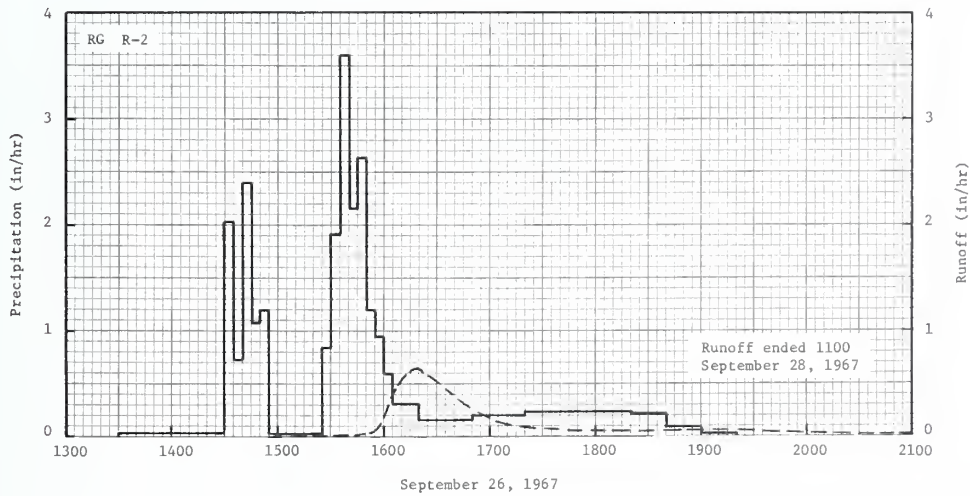
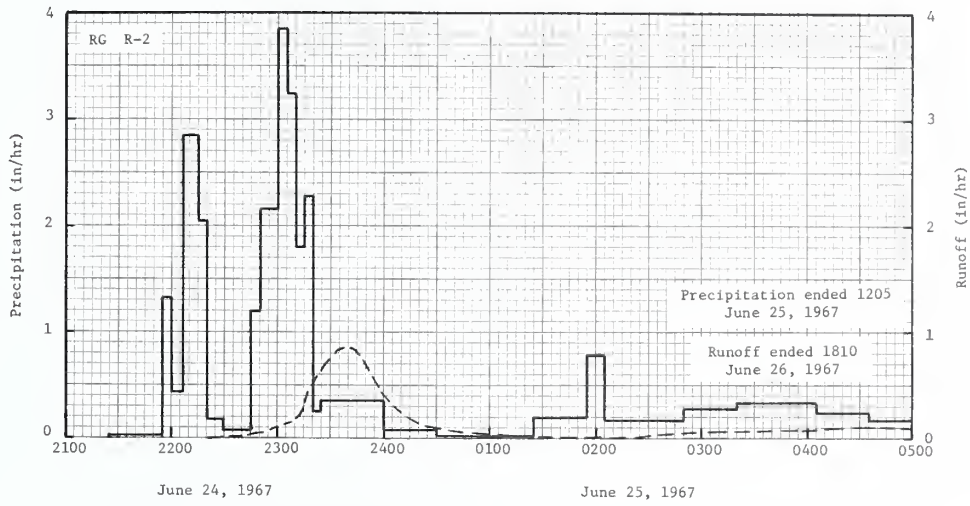
STILLWATER, OKLAHOMA WATERSHED W-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						STILLWATER, OKLAHOMA WATERSHED W-4 AREA - 206 ACRES								37.3		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ /Q	1.04	.40	1.04	2.53	3.69	7.77	4.14	1.22	6.68	2.43	.68	.82	32.44			
	.05	.00	.00	.08	.20	1.33	.29	.00	.83	.34	T	T	3.12			
STA AV ₂ /P (51-67) D	.51	1.00	1.83	2.09	4.81	3.73	4.24	2.82	3.51	2.43	1.34	1.03	29.34			
	.08	.09	.34	.31	1.19	.79	.57	.08	.38	.54	.13	.07	4.57			
MEAN P ₃ /71 YR	1.10	1.26	2.13	3.43	4.78	4.14	3.12	3.03	3.71	2.89	2.05	1.34	32.98			
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	
1967	6-24	.85	6-24	.58	6-24	.70	6-24	.93	6-24	1.13	6-24	1.17	6-24	1.18	6-20	1.23
MAXIMUMS FOR PERIOD OF RECORD																
19 51 TO 1967	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: Watershed conditions: All native grass cover, 17.3% of watershed area is in hay meadow and 82.7% in pasture. The meadow was cut for hay the latter part of August with a near normal crop yield. The pasture portion was heavily grazed again this year. The vegetative cover still shows the effect of drought and overgrazing for the previous 5 years. Precipitation for the year was 3.10 inches above station average. 1/ Precipitation data from R-2 recording rain gage. 2/ Precipitation and runoff records began July 1951. Station average precipitation data from R-4 recording rain gage record. 3/ Mean P based on 71-yr (1893-1963) U.S. Weather Bureau record period at Stillwater, Okla.																
1967 SELECTED RUNOFF EVENTS						STILLWATER, OKLAHOMA WATERSHED W-4								37.3		
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 24 - 25, 1967																
	RG R-2			RG	R-2											
5-28	.12	.0000	6-24	2125	.00	.00	6-24	2220	.0000	.0000						
5-30	.13	.0000		2155	.02	.01		2225	.0043	.0003						
5-31	.02	.0000		2200	1.32	.12		2230	.0094	.0008						
6- 7	.02	.0000		2207	.43	.17		2232	.0110	.0012						
6-10	1.24	.0014		2215	2.85	.55		2237	.0146	.0025						
6-11	.31	.0167		2220	2.04	.72		2243	.0319	.0047						
6-16	.20	.0000		2230	.18	.75		2245	.0480	.0063						
6-19	.17	.0000		2245	.08	.77		2248	.0575	.0093						
6-20	1.69	.0619		2250	1.20	.87		2253	.0635	.0148						
6-23	.37	.0000		2255	2.16	1.05		2258	.0960	.0222						
				2300	2.16	1.23		2307	.1505	.0430						
				2305	3.84	1.55		2314	.264	.0677						
				2310	3.24	1.82		2317	.420	.0866						
				2315	1.80	1.97		2321	.528	.1226						
				2320	2.28	2.16		2324	.610	.1542						
				2325	.24	2.18		2327	.679	.1903						
				2400	.36	2.21		2331	.773	.2456						
			6-25	0030	.08	2.25		2333	.818	.2753						
				0125	.01	2.26		2335	.835	.3061						
				0155	.20	2.36		2338	.849	.3533						
				0205	.78	2.49		2342	.847	.4167						
				0250	.16	2.61		2345	.811	.4632						
				0320	.28	2.75		2348	.759	.5072						
				0405	.33	3.00		2352	.669	.5604						
				0435	.24	3.12		2356	.551	.6063						
				0520	.17	3.25		2358	.433	.6249						
				0550	.16	3.33		2400	.427	.6408						
				0620	.06	3.36	6-25	0005	.336	.6729						
				0820	.02	3.40		0014	.204	.7127						
				0850	.02	3.41		0026	.121	.7446						
				0950	.05	3.46		0043	.0684	.7706						
				1020	.04	3.48		0105	.0360	.7888						
				1105	.01	3.49		0134	.0169	.8011						
				1205	.02	3.51		0205	.0125	.8081						
Watershed conditions: 100% of area in native grass, 17.3% used as hay meadow in excellent condition, 82.7% in pasture in fair to good condition.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72. FOR ORIGINAL MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 37.3-6. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194 P. 172.																

1967 SELECTED RUNOFF EVENTS			STILLWATER, OKLAHOMA			WATERSHED W-4			37.3	
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 24 - 25, 1967 -- continued										
							6-25	0231	.0248	.8158
								0248	.0488	.8256
								0306	.0626	.8431
								0354	.0876	.9002
								0433	.119	.9700
								0520	.0841	1.0514
								0631	.0523	1.1299
								0722	.0281	1.1634
								0834	.0129	1.1869
								1007	.0073	1.2014
								1115	.0071	1.2095
								1410	.0034	1.2243
								2040	.0013	1.2378
								2400	.0010	1.2417
							6-26	0720	.0004	1.2469
								1810	.0000	1.2494
Event of September 26, 1967										
	RG R-2			RG	R-2					
8-29	.01	.0000	9-26	1330	.00	.00	9-26	1454	.0000	.0000
8-30	T	.0000		1430	.03	.03		1459	.0016	.0001
9- 2	.47	.0000		1435	2.04	.20		1517	.0020	.0007
9- 3	.63	.0000		1440	.72	.26		1534	.0034	.0015
9- 4	.15	.0000		1445	2.40	.46		1541	.0080	.0022
9- 5	.08	.0000		1450	1.08	.55		1545	.0141	.0029
9- 6	.73	.0024		1455	1.20	.65		1550	.0270	.0047
9-12	.06	.0000		1525	.02	.66		1554	.0540	.0074
9-14	1.77	.0836		1530	.84	.73		1557	.0946	.0112
9-20	.36	.0000		1535	1.92	.89		1600	.197	.0183
				1540	3.60	1.19		1603	.340	.0322
				1545	2.16	1.37		1606	.463	.0538
				1550	2.64	1.59		1611	.556	.0980
				1555	1.20	1.69		1614	.606	.1288
				1600	.96	1.77		1617	.631	.1613
				1605	.60	1.82		1621	.632	.2055
				1620	.32	1.90		1624	.602	.2379
				1650	.16	1.98		1628	.556	.2784
				1720	.20	2.08		1633	.483	.3240
				1820	.24	2.32		1638	.423	.3638
				1840	.21	2.39		1647	.297	.4213
				1900	.09	2.42		1700	.174	.4729
				1920	.03	2.43		1719	.0970	.5166
								1747	.0590	.5526
								1806	.0548	.5713
								1845	.0621	.6113
								1901	.0615	.6286
								1934	.0464	.6603
								2013	.0227	.6836
								2101	.0101	.6964
								2220	.0052	.7062
								2400	.0032	.7134
							9-27	0414	.0017	.7245
								1123	.0008	.7340
								1558	.0004	.7367
							9-28	2400	.0001	.7389
								1100	.0000	.7396

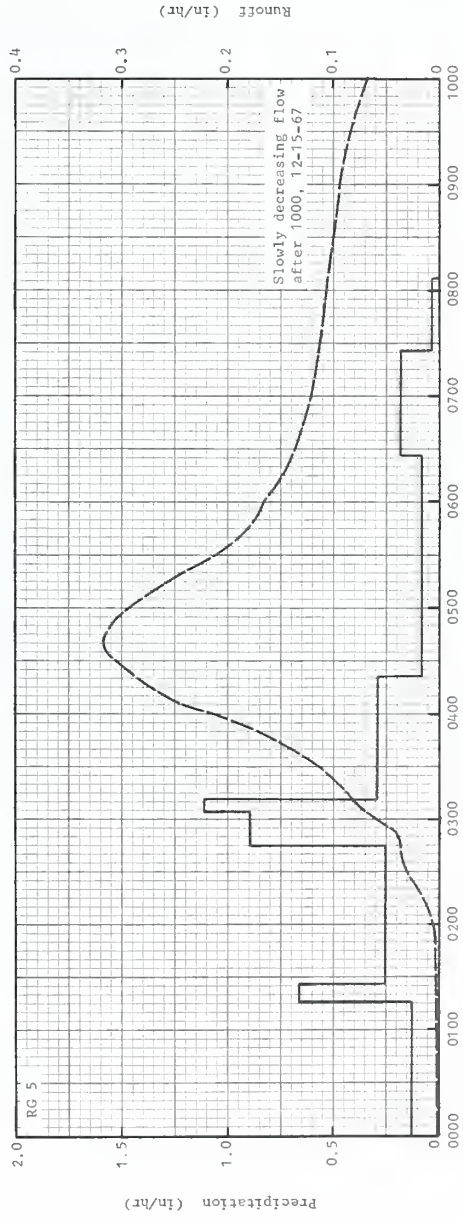
Watershed conditions: 100% of area in native grass, 17.3% used as hay meadow in good condition and 82.7% in pasture in fair to good condition.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 207.72 .



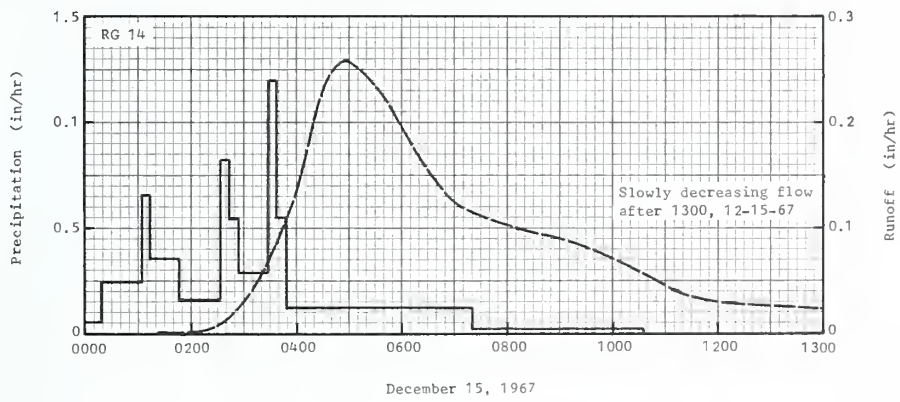
STILLWATER, OKLAHOMA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS WATERSHED C								42.02			
						AREA — 579 ACRES											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ¹ / _D	.41	.45	1.20	5.48	3.73	.94	4.04	6.41	4.67	6.16	3.46	4.01	40.96			
		.00	.00	.00	.45	.34	T	.04	.66	.83	1.78	1.64	1.75	7.49			
	STA AVG P	1.87	2.74	2.02	3.89	4.03	3.57	1.46	2.67	3.05	2.79	3.03	2.35	33.47			
	(39-67) _b	.36	.56	.44	.99	.92	.57	.15	.21	.40	.34	.45	.53	5.92			
	MEAN																
	79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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		
1967		12-15	.32	12-15	.30	12-15	.51	12-15	.99	12-15	1.23	12-15	1.32	12-15	1.38	12-15	1.71
MAXIMUMS FOR PERIOD OF RECORD																	
1938 TO	3-29	5/1.58	3-29	5/1.50	3-29	5/2.52	3-29	5/3.55	3-29	5/3.80	3-29	5/4.48	9-7	4.78	4-19	8.76E	
1967	1965		1965		1965		1965		1965		1965		1942		1957		
NOTES: Watershed land use: 71% pasture; 1% fall planted small grain, largely oats; 13% row grain crop, largely grain sorghum; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, but neither tilled nor grazed. ¹ / Precipitation data from Thiessen method using rain gages 5, 14, and 20. ² / Precipitation and runoff records began Feb. 1938; station not in operation July 1943 to Mar. 1, 1949; part-year amounts not included in averages. ³ / Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴ / No maximums 1938, 1944-1948; maximums for 1943 occurred before July, and for 1949 after Mar. 1. ⁵ / During storm of Mar. 29, 1965, some water normally draining through station crossed county road and was not measured.																	
SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS WATERSHED C								42.02			
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 December 15-16, 1967																	
11-15	3 RG 6/ .00	.0006		RG	5		12-15	0000	.0003	.0000							
11-16	.00	.0003	12-15	0000	.00	.00		0130	.0010	.0006							
11-17	.00	.0002		0116	.13	.17		0200	.0040	.0016							
11-18	.00	.0001		0126	.66	.28		0218	.0178	.0048							
11-19	.00	.0001		0245	.25	.61		0250	.0351	.0166							
11-20	.00	.0001		0304	.88	.89		0300	.0569	.0245							
11-21	.00	.0001		0311	1.11	1.02		0310	.0784	.0358							
11-22	.00	.0002		0421	.29	1.36		0320	.0949	.0504							
11-23	.00	.0002		0626	.08	1.52		0330	.1146	.0677							
11-24	.00	.0001		0726	.18	1.70		0340	.1413	.0891							
11-25	.00	.0001		0806	.03	1.72		0350	.1719	.1151							
11-26	.00	.0001		RG	14	1.80		0400	.2187	.1468							
11-27	.38	.0002		RG	20	1.72		0410	.2593	.1867							
11-28	.09	.0001		3 RG	AVG6/ 1.74			0420	.2873	.2323							
11-29	.08	.0001						0430	.3060	.2817							
11-30	.00	.0001						0438	.3187	.3231							
12-01	.00	.0001						0450	.3107	.3861							
12-02	.09	.0001						0500	.2913	.4362							
12-04	.00	.0001						0520	.2437	.5257							
12-05	.29	.0001						0540	.1883	.5980							
12-06	.00	.0002						0600	.1650	.6567							
12-07	.00	.0001						0630	.1368	.7313							
12-08	.00	.0001						0700	.1214	.7956							
12-09	.00	.0001						0800	.1064	.9081							
12-10	.11	.0001						0900	.0942	1.0090							
12-11	.00	.0001						1000	.0670	1.0900							
12-12	.00	.0001						1200	.0318	1.1839							
12-13	.29	.0002						1456	.0147	1.2483							
12-14	Z/.34	.0035						1856	.0074	1.2900							
								2400	.0041	1.3179							
							12-16	1956	5/.0013	1.3609							
Watershed conditions: 71% pasture, all classes; 1% fall planted small grain, mostly oats, 2 to 6 inches high; 13% bedded, no crop; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, neither tilled nor grazed.																	
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. ¹ / THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 14, AND 20. ² / RAINFALL ENDED AT 2306. ³ / NEXT EVENT BEGAN AT 2051 DEC. 16, 1967.																	



RIESEL (WACO), TEXAS WATERSHED C

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS						WATERSHED D		42.03		
						AREA — 1,110 ACRES (1.73 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.40	.43	1.28	5.09	3.67	.63	3.86	5.81	4.79	6.23	3.36	4.04	39.59			
	.00	.00	.00	.38	.25	T	.06	.52	.83	1.82	1.60	1.60	7.06			
STA AVG P (38-67)	1.96	2.73	2.12	3.85	3.94	3.62	1.49	2.54	2.97	2.65	2.93	2.36	33.16			
MEAN P 79 YR	.41	.56	.49	1.05	1.03	.57	.16	.23	.38	.34	.43	.50	6.15			
	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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	
1967	12-15	.26	12-15	.25	12-15	.45	12-15	.90	12-15	1.11	11-9	1.44	11-9	1.58	11-9	1.59
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	3-29 1965	2.11	3-29 1965	1.93	3-29 1965	3.15	3-29 1965	4.59	3-29 1965	4.88	3-29 1965	5.63	3-29 1965	5.69	4-19 1957	9.66E
NOTES: Watershed land use: 60% pasture; 6% fall planted small grain, largely oats; 3% corn; 7% cotton; 9% row grain crops, largely grain sorghum; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, but neither tilled nor grazed. $\frac{1}{2}$ Precipitation data from Thiessen method using rain gages 5, 14, 20, and 26A. $\frac{2}{3}$ Precipitation and runoff records began Dec. 1937; station not in operation July 1943 to Mar. 1, 1949; part-year amounts not included in averages. $\frac{3}{4}$ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. $\frac{5}{6}$ No maximums 1938, 1944-1948; maximums for 1943 occurred before July, and for 1949 after Mar. 1.																
1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS				WATERSHED D				42.03				
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)						
	4 RG $\frac{5}{6}$		Event of December 15-16, 1967													
11-15	.00	.0006		RG	14		12-15	0000	.0002	.0000						
11-16	.00	.0004	12-15	0000	.00	.00	0125	.0010	.0005							
11-17	.00	.0003		0019	.06	.02	0235	.0093	.0057							
11-18	.00	.0002		0104	.24	.20	0305	.0377	.0167							
11-19	.00	.0002		0114	.66	.31	0330	.0709	.0381							
11-20	.00	.0002		0147	.36	.51	0350	.1121	.0687							
11-21	.00	.0003		0233	.17	.64	0400	.1337	.0892							
11-22	.00	.0003		0244	.82	.79	0410	.1651	.1139							
11-23	.00	.0002		0254	.54	.88	0420	.2018	.1445							
11-24	.00	.0001		0329	.29	1.05	0435	.2404	.2005							
11-25	.00	.0001		0337	1.20	1.21	0450	.2575	.2632							
11-27	.37	.0000		0349	.55	1.32	0455	.2584	.2847							
11-28	.07	.0003		0719	.12	1.74	0500	.2575	.3062							
11-29	.08	.0004		1035	.02	1.81	0515	.2503	.3699							
11-30	.00	.0002		RG	5	1.72	0535	.2279	.4496							
12-01	.00	.0002		RG	20	1.72	0555	.2018	.5215							
12-02	.09	.0002		RG	26A	1.51	0625	.1579	.6111							
12-03	.00	.0001		4 RG	AVG $\frac{5}{6}$	1.75	0655	.1274	.6809							
12-05	.28	.0002					0725	.1139	.7410							
12-06	.00	.0003					0825	.0978	.8458							
12-07	.00	.0002					0925	.0834	.9373							
12-08	.00	.0001					1045	.0520	1.0274							
12-09	.00	.0001					1225	.0272	1.0911							
12-10	.10	.0001					1505	.0137	1.1428							
12-11	.00	.0001					1805	.0075	1.1729							
12-12	.00	.0002					2105	.0047	1.1907							
12-13	.28	.0002					2400	.0034	1.2024							
12-14	$\frac{5}{6}$.34	.0023					12-16 1905	$\frac{1}{2}$.0011	1.2383							
Watershed conditions: 60% pasture, all classes; 6% fall planted small grain, mostly oats, 2 to 6 inches high; 19% bedded, no crop; 2% gravel and paved roads; 13% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, neither tilled nor grazed.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1119.25. 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. $\frac{5}{6}$ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 14, 20, AND 26A. $\frac{2}{3}$ RAINFALL ENDED AT 2309. $\frac{3}{4}$ NEXT EVENT BEGAN AT 2020 DEC. 16, 1967.																



RIESEL (WACO), TEXAS WATERSHED D

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WAGO), TEXAS				WATERSHED G				42.04
						AREA — 4,380 ACRES (6.84 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	PL	.32	.42	1.20	4.69	3.42	.43	3.09	3.76	4.51	5.83	3.34	3.89	34.90
	O	.00	.00	.00	.37	.08	T	T	.03	.25	.93	1.13	1.21	4.00
	P	2.19	2.87	2.01	3.58	3.45	4.57	1.60	3.06	3.21	2.78	3.00	2.71	35.03
	D	.61	.74	.48	.66	.69	.90	.13	.22	.40	.22	.54	.55	6.14
79 YR	MEAN	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

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
1967	12-15	.10	12-15	.10	12-15	.19	12-15	.46	11-10	.77	11-10	1.03	11-10	1.10	12-15	1.13

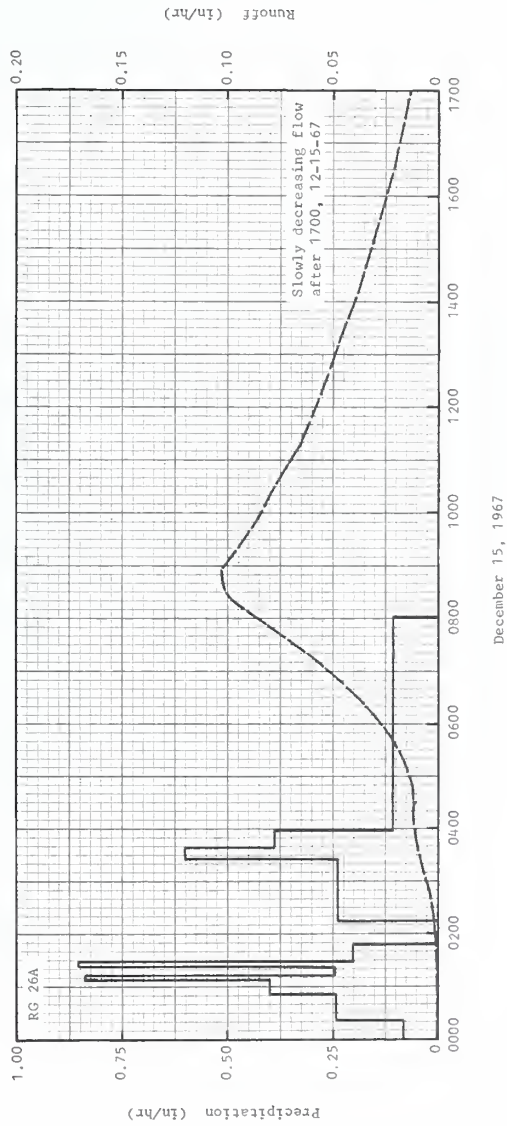
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	3-29	.95	3-29	.91	3-29	1.72	3-29	3.39	3-29	3.94	3-29	4.63	3-29	4.74	11-22	4.82
	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1940	

NOTES: Watershed land use: 38% pasture; 4% fall planted small grain, largely oats; 8% corn; 7% cotton; 6% row grain crops, largely grain sorghum; 2% gravel and paved roads; 35% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, but neither tilled nor grazed. 1/ Precipitation data from Thiessen method using rain gages 5, 14, 20, 26A, 30A, 43A, 48A, 56A, 65A, 70, 74A, 84A, and 89. 2/ Precipitation and runoff records began Jan. 1938; station not in operation July 1943 to July 1, 1957; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ No maximums 1944 through 1957; maximums for 1943 occurred before July 1.

1967 SELECTED RUNOFF EVENT				RIESEL (WAGO), TEXAS				WATERSHED G				42.04
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)		
	13 RG 5/		Event of December 15-16, 1967									
11-15	.00	.0007	RG	26A			12-15	0000	.0001	.0000		
11-16	.00	.0005	12-15	0000	.00	.00		0110	.0003	.0001		
11-17	.00	.0003		0023	.08	.03		0220	.0024	.0013		
11-18	.00	.0002		0053	.24	.15		0320	.0072	.0060		
11-19	.00	.0002		0108	.40	.25		0420	.0114	.0154		
11-20	.00	.0002		0113	.84	.32		0535	.0205	.0342		
11-21	.00	.0001		0123	.24	.36		0620	.0342	.0541		
11-22	.00	.0001		0130	.86	.46		0645	.0455	.0707		
11-27	.37	.0000		0148	.20	.52		0710	.0573	.0920		
11-28	.08	.0000		0214	.00	.52		0730	.0677	.1128		
11-29	.07	.0000		0326	.24	.81		0750	.0804	.1374		
12-02	.07	.0000		0338	.60	.93		0810	.0917	.1661		
12-05	.26	.0000		0358	.39	1.06		0820	.0988	.1819		
12-10	.14	.0000		0801	.11	1.51		0830	.1019	.1987		
12-13	.23	.0000		RG	5	1.72		0845	.1022	.2243		
12-14	2/ .34	.0003		RG	14	1.80		0855	.1022	.2413		
				RG	20	1.72		0915	.0960	.2745		
				RG	30A	1.49		0945	.0872	.3203		
				RG	43A	1.41		1015	.0802	.3622		
				RG	48A	1.41		1045	.0725	.4003		
				RG	56A	1.51		1115	.0666	.4352		
				RG	65A	1.34		1200	.0589	.4823		
				RG	70	1.35		1300	.0492	.5362		
				RG	74A	1.36		1400	.0394	.5805		
				RG	84A	1.33		1500	.0313	.6157		
				RG	89	1.36		1600	.0241	.6433		
				13 RG	AVG 5/	1.51		1800	.0136	.6796		
								2100	.0086	.7117		
								2400	.0050	.7315		
								0600	.0028	.7538		
								1200	.0020	.7677		
								1930	3/ .0015	.7802		

Watershed conditions: 38% pasture, all classes; 4% fall planted small grain, mostly oats, 2 to 6 inches high; 21% bedded, no crop; 2% gravel and paved roads; 35% other. Approx. 90% of "other" is Johnsongrass and weeds in conservation reserve, neither tilled nor grazed.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4416.48. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 42.4-6. 1/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 14, 20, 26A, 30A, 43A, 48A, 56A, 65A, 70, 74A, 84A, AND 89. 2/ RAINFALL ENDED AT 2317. 3/ NEXT EVENT BEGAN AT 2007 DEG. 16, 1967.



RIESEL (WACO), TEXAS WATERSHED G

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED W-1		42.06			
						AREA — 176 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.25	.41	1.12	4.45	3.55	.11	2.20	2.57	3.39	4.86	3.47	3.62	30.00
o	.01	T	T	.36	.04	T	.00	.00	.00	.01	.53	.41	1.36
2/ STA AVG P (38-67)	2.24	2.71	2.46	4.03	4.35	3.33	1.49	2.13	2.49	2.55	2.95	2.60	33.35
MEAN 79 YR	.46	.60	.61	1.06	1.25	.55	.09	.10	.15	.19	.41	.46	5.93
2/	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

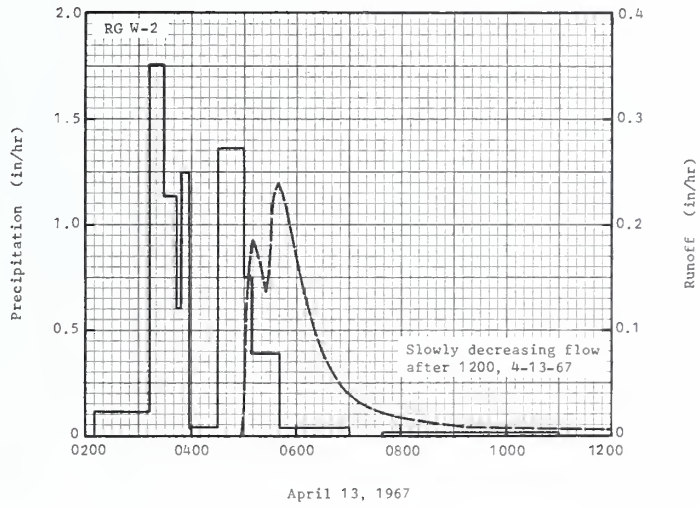
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	.24	4-13	.18	4-13	.27	4-13	.32	11-10	.38	11-9	.50	11-9	.52	11-9	.53

MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	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: Watershed land use: 31% cotton; 3% corn; 18% oats; 17% row grain sorghum; 21% pasture; 3% gravel roads; 7% other. Approx. 90% of "other" is Johnsongrass and weeds, but neither tilled nor grazed. Straight row cultivation without terraces. 2/ Precipitation data from Thiessen method using rain gages 75A, 89, W-2, W-2A, and W-5A. 3/ Precipitation and runoff records began July 1937; part-year amounts not included in averages. 4/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 5/ No maximums for 1937.

1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS		WATERSHED W-1		42.06		
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 (in/hr)	ACC. (inches)
5 RG 5/			Event of April 13-14, 1967							
3-20	.46	.0000	4-13	RG	W-2		4-13	0448	.0000	.0000
3-25	.14	.0000		0210	.00	.00		0456	.0015	.0001
3-26	.34	.0000		0314	.12	.13		0500	.0397	.0010
4-11	.70	.0000		0328	1.76	.54		0505	.1500	.0079
Watershed conditions: 31% cotton, 1 inch high; 3% corn, 12 to 18 inches high; 18% oats, beginning to head, 6 to 24 inches high; 17% row grain sorghum, 3 to 6 inches high; 21% pasture, bermudagrass, good cover, moderately grazed; 3% gravel roads; 7% Johnsongrass and weeds, not tilled or grazed. Straight row cultivation, not terraced.				0344	1.13	.84		0510	.1859	.0226
				0347	.60	.87		0516	.1776	.0407
				0358	1.25	1.10		0525	.1365	.0638
				0430	.04	1.12		0530	.1793	.0766
				0500	1.36	1.80		0535	.2320	.0942
				0508	.75	1.90		0539	.2392	.1099
			0540	.38	2.10	0544	.2249	.1293		
			0700	.04	2.15	0550	.2005	.1506		
			0736	.00	2.15	0556	.1737	.1693		
			1100	.02	2.22	0601	.1566	.1831		
RG	75A	2.32	0611	.1254	.2064					
RG	89	2.27	0621	.0996	.2251					
RG	W-2A	2.12	0638	.0661	.2484					
RG	W-5A	2.26	0702	.0367	.2681					
5 RG	AVG5/	2.20	0732	.0234	.2827					
						0812	.0147	.2952		
						0902	.0086	.3048		
						1102	.0034	.3158		
						1400	.0013	.3222		
						1800	.0004	.3251		
						2400	.0001	.3263		
						4-14	1000	.0000	.3269	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. FOR MAP OF THE WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 4.2.6-6 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 75A, 89, W-2, W-2A, AND W-5A.



RIESEL (WACO), TEXAS WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED W-2		42.07				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹	.28	.43	1.11	4.42	3.60	.02	2.20	2.70	3.22	4.86	3.57	3.61	30.02
	D	.01	.00	.00	.21	.12	.01	.00	.00	.00	.10	.67	.83	1.95
STA AVG P (38-67)		2.19	2.69	2.42	4.03	4.30	3.29	1.49	2.20	2.51	2.53	2.91	2.58	33.14
MEAN P ² 79 YR		2.13	2.37	2.74	4.06	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

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
1967	4-13	.09	12-15	.06	12-15	.12	12-15	.30	12-15	.39	11-10	.57	11-9	.61	12-15	.63

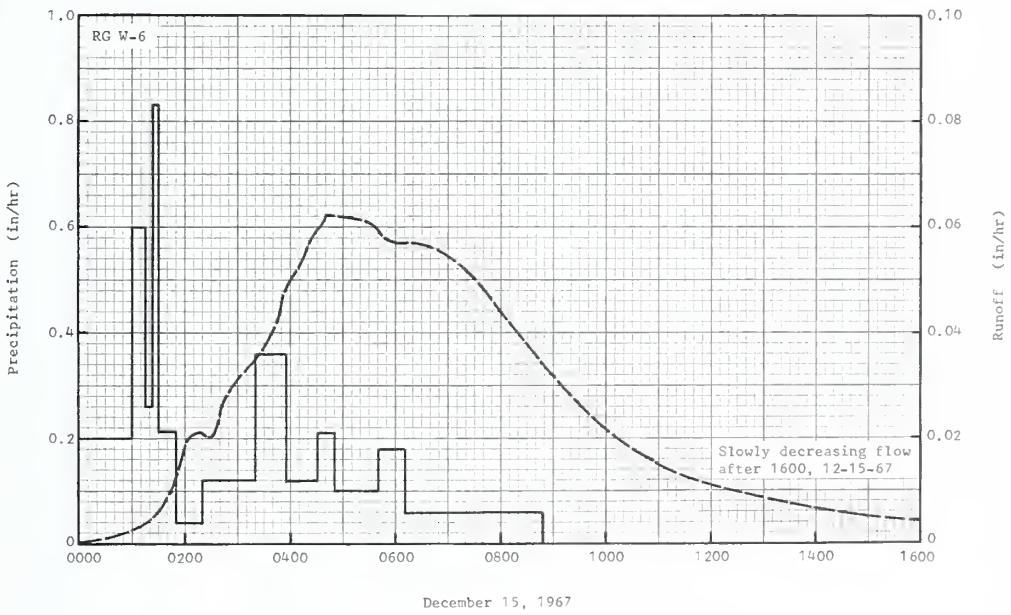
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	5-1 1944	4.83	5-1 1944	2.86	5-1 1944	5.40	5-1 1944	6.91	5-1 1944	6.97	5-1 1944	7.12	4-30 1944	9.26	4-29 1944	10.96

NOTES:
 Watershed land use: 18% oats-clover, 17% row grain sorghum; 56% pasture; 5% gravel roads; 4% Johnsongrass, not tilled or grazed. Cropland farmed on contour, not terraced. Modified conservation applied 1956. ¹/ Precipitation data from Thiessen method using rain gages W-2, W-4, W-5A, and W-6. ²/ Precipitation and runoff records began July 1937; part-year amounts not included in averages. ³/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴/ No maximums for 1937.

1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED W-2		42.07	
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 December 15-16, 1967											
	4 RG 5/				RG	W-6					
11-15	.00	.0022			RG	W-6	12-15	0000	.0004	.0000	
11-16	.00	.0025	12-15	0000	.00	.00		0125	.0045	.0015	
11-17	.00	.0031		0100	.20	.20		0140	.0084	.0030	
11-18	.00	.0028		0115	.60	.35		0150	.0129	.0048	
11-19	.00	.0028		0122	.26	.38		0200	.0193	.0075	
11-20	.00	.0032		0130	.83	.49		0210	.0208	.0109	
11-21	.00	.0032		0150	.21	.56		0220	.0211	.0144	
11-22	.00	.0030		0220	.04	.58		0232	.0203	.0186	
11-23	.00	.0029		0320	.12	.70		0240	.0249	.0215	
11-24	.00	.0021		0355	.36	.91		0300	.0309	.0309	
11-25	.00	.0025		0430	.12	.98		0340	.0399	.0534	
11-26	.00	.0026		0450	.21	1.05		0350	.0449	.0605	
11-27	.36	.0060		0540	.10	1.13		0400	.0496	.0684	
11-28	.03	.0052		0610	.18	1.22		0410	.0525	.0769	
11-29	.06	.0051		0848	.06	1.39		0420	.0566	.0860	
11-30	.00	.0040		RG	W-2	1.32		0430	.0587	.0956	
12-01	.00	.0041		RG	W-5A	1.40		0440	.0621	.1057	
12-02	.07	.0041		RG	W-4	1.34		0500	.0619	.1263	
12-03	.00	.0031		4 RG	AVG5/	1.37		0520	.0611	.1468	
12-04	.00	.0033						0600	.0570	.1858	
12-05	.20	.0055						0700	.0547	.2417	
12-06	.00	.0044						0800	.0440	.2917	
12-07	.00	.0037						0900	.0314	.3296	
12-08	.00	.0039						1100	.0153	.3739	
12-09	.00	.0039						1300	.0084	.3972	
12-10	.11	.0038						1600	.0040	.4147	
12-11	.00	.0033						2000	.0019	.4258	
12-12	.00	.0029						2400	.0012	.4318	
12-13	.25	.0049						2000	⁵ /.0006	.4467	
12-14	⁷ / .30	.0067									

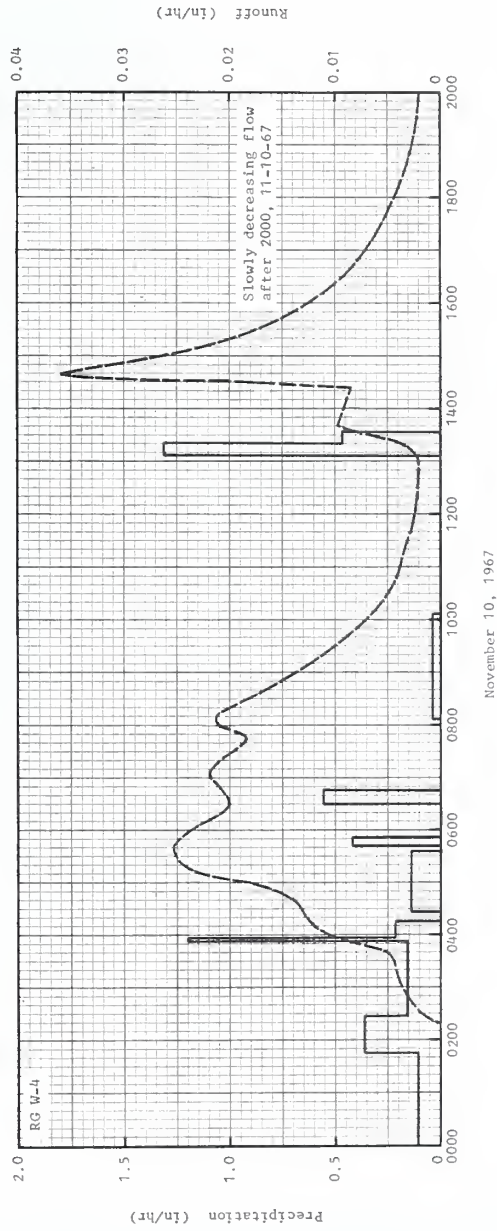
Watershed conditions: 18% oats-clover, 2 to 6 inches high; 17% bedded, no crop; 56% pasture, bermudagrass, good cover, dormant; 4% Johnsongrass, not tilled or grazed; 5% gravel roads. Cropland farmed on contour, not terraced.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 131.08. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.7-5 (REVISED). ⁵/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES W-2, W-4, W-5A, AND W-6. ⁶/ NEXT EVENT BEGAN AT 2020, DEC. 16, 1967. ⁷/ RAINFALL ENDED AT 2320.



RIESEL (WACO), TEXAS WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS						WATERSHED W-6		42.08		
AREA — 42.3 ACRES																
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P1/ .30 O .00	.44 .00	1.10 .00	4.46 .09	3.51 .00	.03 .00	2.33 .00	2.29 .00	3.10 .00	4.99 .00	3.53 .20	3.56 .22	29.64 .51			
STA AVG P (40-67)	2.02	2.62	2.26	4.10	4.01	3.45	1.39	2.28	2.65	2.71	2.93	2.41	32.83			
MEAN P 79 YR	.29	.38	.41	.77	.84	.44	.06	.03	.10	.12	.32	.34	4.10			
	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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
1967	4-13	.09	4-13	.06	4-13	.08	4-13	.08	11-10	.16	11-10	.20	11-10	.20	11-10	.21
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	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	3-29 1965	4.06	11-22 1940	5.09	4-19 1957	9.06
NOTES: Watershed land use: 41% oats-clover; 24% row grain sorghum; 15% pasture; 7% gravel roads; 11% Johnsongrass and weeds, not tilled or grazed; 2% native grass waterways. Modified conservation program since 1956. Cropland farmed on contour, no terraces. 2/ Precipitation data obtained from rain gages W-2, W-4, and W-5A. 3/ Precipitation and runoff records began May 1939; station not in operation July 1943 to Jan. 1, 1946; part-year amounts not included in averages. 4/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 5/ Maximums for 1939 occurred after May 1, and for 1943 before July; no maximums for 1944 and 1945.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS						WATERSHED W-6		42.08		
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)						
Watershed conditions: 41% oats-clover, 3 inches high; 24% bedded, no crop; 15% pasture, bermudagrass, good cover, moderately grazed; 11% Johnsongrass and weeds, not tilled or grazed; 2% native grass waterways, dense cover; 7% gravel roads. Cropland farmed on contour, not terraced.			Event of November 10-11, 1967													
			10-14	3 RG 5/ .52	.0000	11-10	RG	W-4		11-10	0220	.0000	.0000			
			10-15	1.53	.0000		0000	.00	.00	0230	.0017	.0001				
			10-29	1.57	.0000		0146	.10	.17	0300	.0034	.0016				
			10-30	.63	.0000		0228	.36	.42	0330	.0044	.0035				
			10-31	.05	.0000		0351	.15	.63	0400	.0104	.0068				
			11-08	.13	.0000		0356	1.20	.73	0430	.0133	.0131				
			11-09	5/1.31	.0000		0416	.21	.80	0500	.0179	.0205				
							0426	.00	.80	0520	.0245	.0277				
							0536	.13	.95	0540	.0253	.0360				
							0541	.00	.95	0600	.0237	.0442				
						0551	.42	1.02	0630	.0200	.0551					
						0631	.00	1.02	0700	.0218	.0656					
						0646	.56	1.16	0740	.0184	.0790					
						0806	.00	1.16	0800	.0214	.0856					
						1006	.03	1.22	0810	.0214	.0892					
						1305	.00	1.22	0900	.0138	.1041					
						1320	1.32	1.55	1000	.0069	.1142					
						1334	.47	1.66	1103	.0039	.1197					
						RG	W-2	1.34	1303	.0020	.1255					
			RG	W-5A	1.60	1313	.0025	.1258								
			3 RG	AVG 5/	1.63	1338	.0099	.1281								
						1423	.0086	.1349								
						1428	.0184	.1358								
						1433	.0299	.1380								
						1439	.0358	.1414								
						1453	.0295	.1489								
						1523	.0187	.1609								
						1633	.0088	.1758								
						1803	.0043	.1851								
						2003	.0018	.1909								
						2400	.0006	.1955								
						0903	.0000	.1978								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 42.652. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USOA MISC. PUB. 1164, P. 42.7-5, (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES W-2, W-4, AND W-5A. 6/ RAINFALL ENDED AT 2336.																



RIESEL (WACO), TEXAS WATERSHED W-6

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED W-10		42.10			
						AREA — 19.7 ACRES							
MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.26	.41	1.12	4.33	3.71	.01	2.10	3.20	3.35	4.74	3.66	3.64	30.53
o	.00	.00	.00	.65	.33	T	.00	.00	.00	.72	1.58	1.32	4.60
2/ STA AVG P (39-67)	2.04	2.65	2.16	4.03	3.91	3.39	1.36	2.38	2.57	2.73	2.89	2.40	32.51
o	.42	.46	.41	.94	.90	.52	.07	.10	.21	.27	.46	.44	5.20
MEAN P 79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

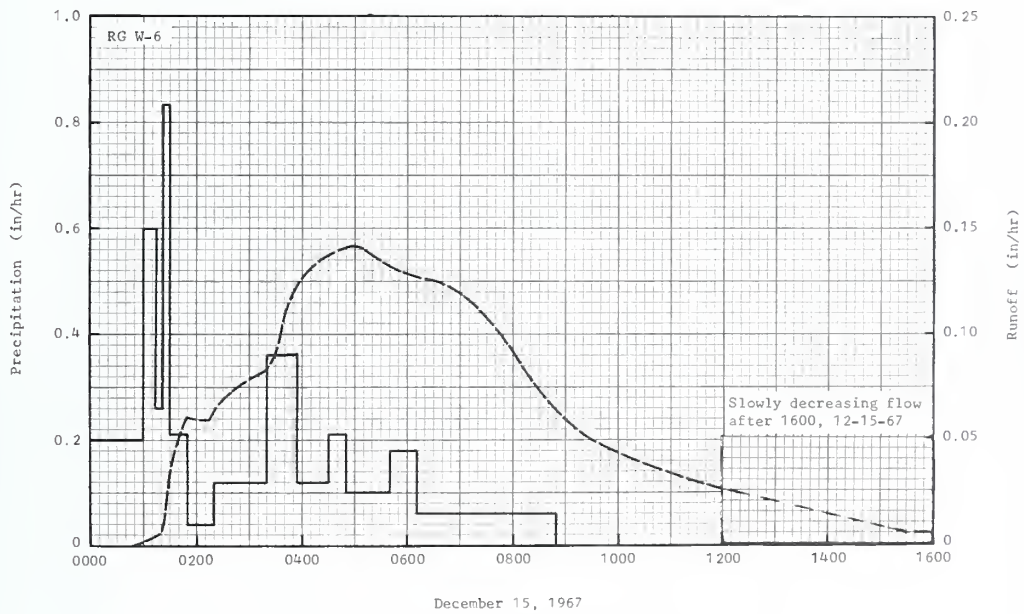
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	4-13	.31	4-13	.25	4-13	.40	11-10	.73	11-10	.99	11-9	1.54	11-9	1.58	11-9	1.58

MAXIMUMS FOR PERIOD OF RECORD																
1938 to	6-10	5.01	4-19	2.31	4-19	2.55	5-11	3.00	11-22	3.33E	11-22	3.53E	4-24	5.16	5-19	8.29
19 67 1/2	1941		1957		1957		1957		1940		1940		1966		1957	

NOTES: Watershed land use: 100% Coastal Bermudagrass for pasture. Good cover, moderately grazed, terraced. 2/ Precipitation data obtained from rain gage W-6. 3/ Precipitation and runoff records began Aug. 1938; station not in operation July 1943 to May 3, 1946; part-year amounts not included in averages. 4/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 5/ Maximums for 1943 occurred before July, and for 1946 after May 3; no maximums for 1938, 1944, and 1945.

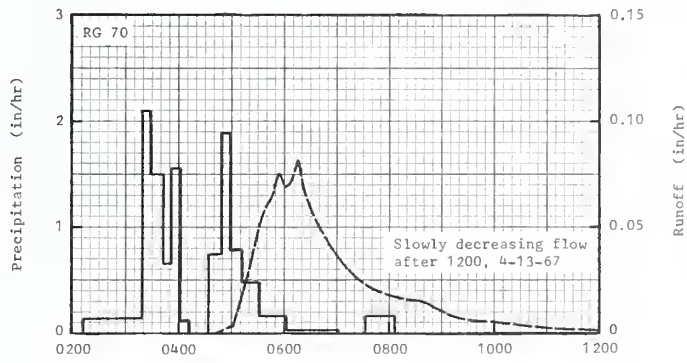
1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS		WATERSHED W-10		42.10		
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of December 15-16, 1967										
	RG W-6			RG	W-6		12-15	0050	.0000	.0000
11-27	.37	.0000	12-15	0000	.00	.00		0110	.0034	.0002
11-28	.02	.0000		0100	.20	.20		0120	.0052	.0009
11-29	.06	.0000		0115	.60	.35		0130	.0292	.0037
12-02	.05	.0000		0122	.26	.38		0140	.0502	.0101
12-05	.21	.0000		0130	.83	.49		0150	.0604	.0195
12-10	.10	.0000		0150	.21	.56		0200	.0595	.0295
12-13	.25	.0000		0220	.04	.58		0215	.0581	.0442
12-14	5/.27	.0000		0320	.12	.70		0245	.0753	.0781
				0355	.36	.91		0315	.0820	.1182
Watershed conditions: 100% Coastal Bermudagrass pasture, dormant, 2 to 4 inches high, good cover.										
				0430	.12	.98		0335	.0987	.1473
				0450	.21	1.05		0345	.1145	.1650
				0540	.10	1.13		0400	.1265	.1952
				0610	.18	1.22		0430	.1368	.2610
				0848	.06	1.39		0500	.1417	.3306
								0530	.1352	.3998
								0600	.1280	.4656
								0700	.1189	.5906
								0800	.0910	.6968
								0900	.0595	.7702
								1000	.0441	.8229
								1152	.0263	.8853
								1252	.0203	.9079
								1422	.0117	.9313
								1652	.0063	.9531
								1952	.0035	.9674
								2400	.0018	.9776
								12-16	5/.0002	.9864

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.864. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.7-5 (REVISED). 5/ RAINFALL ENDED AT 2320. 6/ NEXT EVENT BEGAN AT 2020 DEC. 16, 1967.



RIESEL (WACO), TEXAS WATERSHED W-10

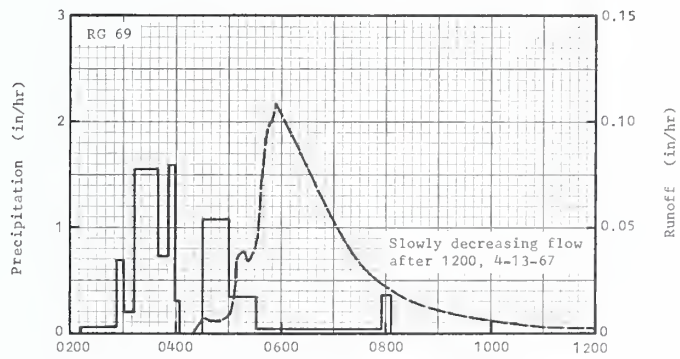
MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS						WATERSHED Y		42.11		
						AREA — 309 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.26	.37	1.18	4.43	3.50	.34	2.06	2.60	3.51	5.06	3.47	3.63	30.41			
	T	T	T	.20	.02	T	.00	.00	.00	.00	.32	.48	1.02			
STA AVG P (38-67)	2.15	2.60	2.19	3.95	3.91	3.50	1.38	2.12	2.46	2.57	2.75	2.39	31.97			
MEAN P	.44	.50	.41	.77	.72	.46	.07	.05	.11	.10	.33	.32	4.28			
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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
1967	4-13	.08	4-13	.07	4-13	.11	4-13	.16	12-15	.24	11-9	.31	11-9	.32	12-15	.42
MAXIMUMS FOR PERIOD OF RECORD																
1937 TO 1967	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	3-29 1965	3.98	11-22 1940	4.77	4-19 1957	9.36E
NOTES:																
Watershed land use: 42% pasture; 15% oats-clover; 14% cotton; 17% row grain sorghum; 3% corn; 8% Johnsongrass and weeds, not tilled or grazed; 1% gravel roads. Cropland terraced, contour cultivation. No change in conservation practices. 1/ Precipitation data from Thiessen method using rain gages 69, 69B, 70, 75A, 84A, 89, and W-2A. 2/ Precipitation and runoff records began May 1937; station not in operation July 1943 to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July, and for 1946 after May 1; no maximums for 1937, 1944, and 1945.																
1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS				WATERSHED Y				42.11				
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)						
7 RG 5/			Event of April 13-14, 1967													
3-20	.48	.0000		RG	70		4-13	0443	.0000	.0000						
3-25	.18	.0000	4-13	0213	.00	.00		0503	.0035	.0005						
3-26	.33	.0000		0319	.15	.16		0510	.0157	.0015						
4-11	.67	.0000		0327	2.10	.44		0520	.0282	.0050						
Watershed conditions: 42% pasture, bermudagrass and native grass, good cover, moderately grazed; 15% oats-clover, beginning to head, 6 to 24 inches high; 14% cotton, 1 inch high; 17% row grain sorghum, 3 to 6 inches high; 3% corn, 12 to 18 inches high; 8% Johnsongrass and weeds, not tilled or grazed; 1% gravel roads. Cropland terraced, cultivated on contour.				0343	1.50	.84		0530	.0472	.0114						
				0353	.66	.95		0540	.0611	.0207						
				0403	1.56	1.21		0545	.0619	.0258						
				0413	.12	1.23		0550	.0723	.0314						
				0433	.00	1.23		0555	.0752	.0375						
				0449	.75	1.43		0600	.0690	.0436						
				0457	1.88	1.68		0605	.0699	.0493						
				0513	.79	1.89		0610	.0736	.0553						
				0533	.48	2.05		0615	.0826	.0618						
				0603	.16	2.13		0620	.0736	.0683						
				0703	.01	2.14		0630	.0599	.0795						
				0733	.00	2.14		0640	.0495	.0886						
				0805	.15	2.22		0650	.0431	.0963						
				RG	69	2.18		0710	.0329	1.088						
				RG	69B	2.02		0740	.0229	1.229						
				RG	75A	2.32		0820	.0158	1.354						
				RG	84A	2.25		0900	.0109	1.443						
				RG	89	2.27		1000	.0063	1.526						
				RG	W-2A	2.12		1058	.0041	1.575						
				7 RG	AVG 5/	2.23		1258	.0019	1.632						
								1558	.0008	1.671						
								2000	.0003	1.690						
								2400	.0001	1.698						
								4-14 1200	.0000	1.708						
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, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69, 69B, 70, 75A, 84A, 89, AND W-2A.																



April 13, 1967

RIESEL (WACO), TEXAS WATERSHED Y

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS WATERSHED Y-2										
						AREA — 132 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ₁ O	.26 .00	.37 .00	1.17 .00	4.34 .24	3.50 T	.31 .00	2.18 .00	2.40 .00	3.49 .00	5.20 T	3.44 .34	3.65 .41	30.31 .99		
STA AVG	P	2.16	2.64	2.47	4.00	4.45	3.41	1.46	2.14	2.58	2.56	2.94	2.55	33.36		
(39-67)	O	.40	.57	.61	.93	1.13	.47	.07	.05	.10	.12	.35	.45	5.25		
MEAN	P ₃															
79 YR	O	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
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
1967	4-13	.11	4-13	.09	4-13	.14	4-13	.20	12-15	.25	11-9	.34	11-9	.34	12-15	.38
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	5-1	4.07	5-1	3.11	5-1	5.47	5-1	7.08	5-1	7.28	5-1	7.46	4-30	9.64	4-29	10.60
19 67	1944		1944		1944		1944		1944		1944		1944		1944	
NOTES: Watershed land use: 33% pasture; 26% row grain sorghum; 19% cotton; 21% oats-clover; 1% gravel roads. Cropland terraced; contour cultivation; conservation treatment since 1942. <u>1</u> / Precipitation data from Thiessen method using rain gages 69, 69B, 70, 75A, and 84A. <u>2</u> / Precipitation and runoff records began Jan. 1, 1939. <u>3</u> / Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS WATERSHED Y-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)						
5 RG <u>4</u> / .48			Event of April 13, 1967						4-13							
3-20	.18	.0000	4-13	RG	.69		4-13	0422	.0000	.0000						
3-25	.31	.0000		0212	.00	.00		0425	.0035	.0000						
3-26	.64	.0000		0254	.07	.05		0431	.0074	.0007						
4-11				0300	.70	.12		0435	.0070	.0012						
Watershed conditions: 33% pasture, bermudagrass and native grass, good cover, moderately grazed; 26% row grain sorghum, 3 to 6 inches high; 19% cotton, 1 inch high; 21% oats-clover, beginning to head, 6 to 24 inches high; 1% gravel roads. Cropland terraced, cultivated on contour.				0312	.20	.16		0439	.0062	.0016						
				0338	1.55	.83		0448	.0065	.0026						
				0352	.73	1.00		0504	.0083	.0046						
				0358	1.60	1.16		0508	.0358	.0060						
				0404	.30	1.19		0517	.0378	.0115						
				0430	.00	1.19		0525	.0328	.0161						
				0500	1.08	1.73		0530	.0404	.0193						
				0534	.34	2.02		0535	.0465	.0229						
				0754	.04	2.12		0540	.0860	.0286						
				0804	.36	2.18		0545	.0976	.0363						
				RG	69B	2.02		0551	.1001	.0462						
				RG	70	2.22		0554	.1088	.0514						
				RG	75A	2.32		0557	.1051	.0567						
				RG	84A	2.25		0602	.1021	.0654						
				5 RG	AVG <u>4</u> / 2.19		0612	.0937	.0816							
				0622	.0851	.0965										
				0632	.0763	.1101										
				0642	.0677	.1220										
				0702	.0504	.1418										
				0727	.0340	.1589										
				0747	.0252	.1687										
				0817	.0170	.1790										
				0847	.0111	.1859										
				0927	.0075	.1919										
				1031	.0043	.1980										
				1201	.0023	.2027										
				1601	.0006	.2078										
				2400	.0000	.2094										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 133.10. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USOA MISC. PUB. 1194, P. 42.11-5 (REVISED). <u>4</u> / THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69, 69B, 70, 75A, AND 84A.																



April 13, 1967

RIESEL (WACO), TEXAS WATERSHED Y-2

MONTHLY PRECIPITATION AND RUNDFF (inches)						RIESEL (WACO), TEXAS		WATERSHED Y-4		42.13				
						AREA — 79.9 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹ / _Q	.26	.36	1.15	4.21	3.46	.28	2.30	2.29	3.51	5.27	3.42	3.79	30.30
		.00	.00	.00	.27	T	.00	.00	.00	.00	T	.44	.53	1.24
	Σ/ STA AVG P (39-67) O	2.10	2.60	2.23	3.92	4.15	3.50	1.36	2.15	2.64	2.62	2.91	2.38	32.56
		.34	.45	.41	.76	.90	.50	.08	.07	.12	.13	.35	.31	4.42
	MEAN P ² / _{PS} / 79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

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
1967	4-13	.17	4-13	.13	4-13	.18	4-13	.23	11-10	.32	11-10	.43	11-10	.44	12-15	.49

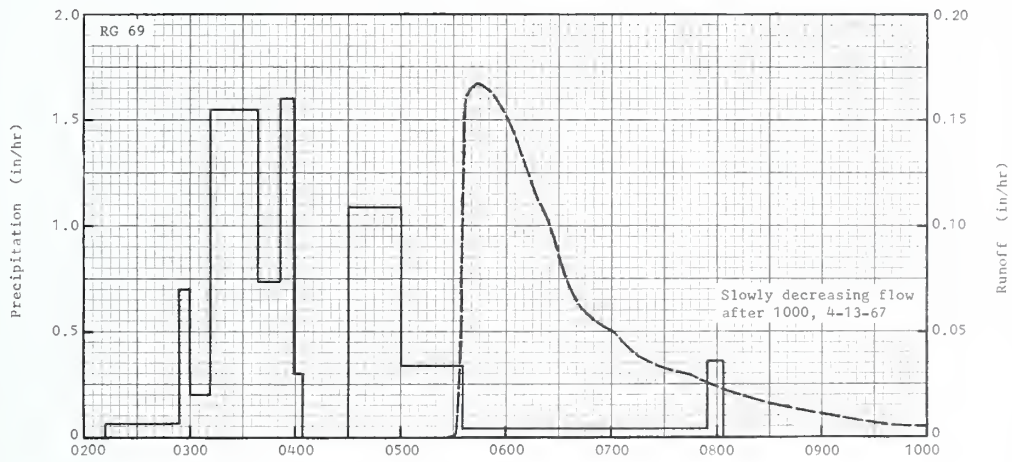
MAXIMUMS FOR PERIOD OF RECORD															
1939 TO	6-10	3.12	4-19	2.16	4-19	2.85	3-29	3.34	3-29	3.96	4-23	5.12	4-19	9.46	
1967 TO	1941		1957		1957		1965		1965		1965		1957		

NOTES: Watershed land use: 29% cotton; 9% oats-clover; 30% row grain sorghum; 31% pasture; 1% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. ¹/ Precipitation data from Thiessen method using rain gages 69, 69B, 75A, and 84A. ²/ Precipitation and runoff records began Jan. 1, 1939; station not in operation July 1943 to Jan. 1, 1946; part-year amounts not included in averages. ³/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴/ Maximums for 1943 occurred before July; no maximums for 1944 and 1945.

1967 SELECTED RUNOFF EVENT RIESEL (WACO), TEXAS WATERSHED Y-4 42.13

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)		
Watershed conditions: 29% cotton, 1 inch high; 9% oats-clover, beginning to head, 6 to 24 inches high; 30% row grain sorghum, 3 to 6 inches high; 31% pasture, bermuda-grass and native grass, good cover, moderately grazed; 1% gravel roads. Cropland terraced, cultivated on contour.			Event of April 13, 1967									
			3-20	4 RG5/ .47	.0000				4-13	0526	.0000	.0000
			3-25	.18	.0000	4-13	0212	.00	.00	0530	.0003	.0000
			3-26	.30	.0000		0254	.07	.05	0533	.0678	.0006
			4-11	.60	.0000		0300	.70	.12	0537	.1591	.0101
							0312	.20	.16	0539	.1660	.0155
							0338	1.55	.83	0547	.1660	.0376
							0352	.73	1.00	0551	.1638	.0486
							0358	1.60	1.16	0554	.1586	.0567
							0404	.30	1.19	0559	.1518	.0696
							0430	.00	1.19	0604	.1406	.0818
							0500	1.08	1.73	0609	.1302	.0931
							0534	.34	2.02	0614	.1178	.1034
							0754	.04	2.12	0619	.1090	.1129
							0804	.36	2.18	0629	.0867	.1292
							RG	69B	2.02	0639	.0656	.1418
							RG	75A	2.32	0649	.0546	.1515
							RG	84A	2.25	0659	.0504	.1602
							4 RG	AVG ⁵ / ₅	2.12	0709	.0428	.1680
										0721	.0366	.1759
							0741	.0303	.1871			
							0821	.0175	.2030			
							0901	.0116	.2126			
							1001	.0063	.2213			
							1103	.0033	.2261			
							1303	.0016	.2307			
							1603	.0003	.2333			
							2003	.0001	.2339			
							2203	.0000	.2340			

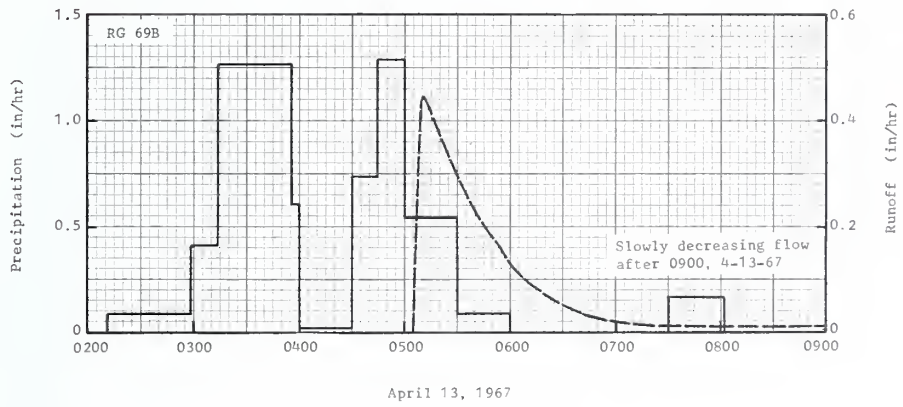
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 80.565. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). ⁵/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69, 69B, 75A, AND 84A.



April 13, 1967

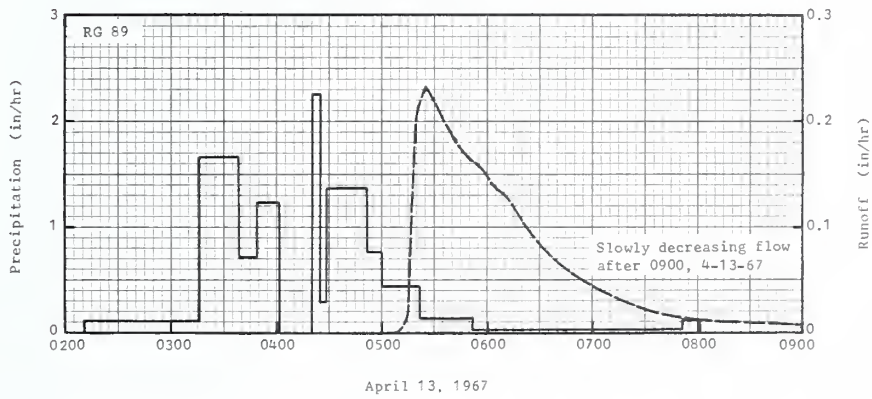
RIESEL (WACO), TEXAS WATERSHED Y-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED Y-6		42.14						
						AREA — 16.3 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.24	.36	1.13	4.24	3.51	.28	2.22	2.28	3.49	5.26	3.43	3.68	30.12			
Q	.00	.00	.00	.35	.00	.00	.00	.00	.00	.00	.15	.16	.66			
STA AVG P (39-67) P ₂	2.00	2.68	2.08	3.99	3.93	3.67	1.40	2.19	2.59	2.77	2.89	2.34	32.53			
MEAN (39-67) O	.25	.35	.28	.69	.78	.51	.08	.05	.11	.23	.36	.29	3.98			
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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
1967	4-13	.44	4-13	.26	4-13	.31	4-13	.33	4-13	.33	4-13	.33	4-13	.33	4-13	.35
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967 P ₃	6-10	3.79	3-29	1.90	3-29	2.34	3-29	2.95	3-29	3.13	3-29	3.67	11-22	4.87	4-19	8.49
	1941		1965		1965		1965		1965		1965		1940		1957	
NOTES: Watershed land use: 93% cotton; 5% pasture; 2% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. P ₁ / Precipitation data from Thiessen method using rain gages 69B and 75A. P ₂ / Precipitation and runoff records began Jan. 1939; station not in operation July 1943 to May 1, 1947; part-year amounts not included in averages. P ₃ / Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. P ₄ / Maximums for 1943 occurred before July; no maximums 1944 through 1947.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED Y-6		42.14						
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 April 13, 1967													
3-20	2 RG5/ .46	.0000		RG	69B		4-13	0504	.0000	.0000						
3-25	.18	.0000	4-13	0212	.00	.00		0505	.0001	.0000						
3-26	.29	.0000		0258	.08	.06		0506	.1178	.0010						
4-11	.64	.0000		0314	.41	.17		0507	.3158	.0046						
				0356	1.27	1.06		0508	.4094	.0106						
Watershed conditions: 93% cotton, 1 inch high; 5% pasture, bermudagrass, good cover, moderately grazed; 2% gravel roads. Cropland terraced, cultivated on contour.				0400	.60	1.10		0509	.4310	.0176						
				0430	.02	1.11		0510	.4420	.0249						
				0444	.73	1.28		0515	.4064	.0603						
				0500	1.28	1.62		0520	.3713	.0927						
				0530	.54	1.89		0525	.3288	.1218						
				0600	.08	1.93		0530	.2969	.1479						
				0730	.00	1.93		0535	.2648	.1713						
				0802	.17	2.02		0540	.2286	.1919						
				RG	75A	2.32		0545	.2044	.2099						
				2 RC	AVC ₅ /	2.10		0550	.1828	.2261						
										0555	.1577	.2402				
										0600	.1298	.2522				
										0605	.1097	.2622				
										0610	.0947	.2707				
							0615	.0805	.2780							
							0625	.0560	.2894							
							0635	.0423	.2976							
							0645	.0312	.3037							
							0700	.0195	.3101							
							0715	.0140	.3143							
							0730	.0099	.3173							
							0745	.0086	.3196							
							0800	.0070	.3215							
							0830	.0042	.3243							
							0900	.0032	.3262							
							1000	.0016	.3285							
							1159	.0005	.3304							
							1359	.0001	.3311							
							1801	.0000	.3313							
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 16.436. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). P ₅ / THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69B AND 75A.																



RIESEL (WACO), TEXAS WATERSHED Y-6

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS						WATERSHED Y-7		42.15		
						AREA — 40.0 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.24	.37	1.16	4.54	3.60	.24	2.06	2.74	3.49	4.95	3.38	3.62	30.39			
1967	.00	.00	.00	.28	.09	.00	.00	.00	.00	T	.53	.36	1.26			
STA AVG P (39-67)	2.02	2.72	2.12	4.07	3.96	3.61	1.39	2.23	2.55	2.79	2.94	2.36	32.76			
MEAN 79 YR	.27	.45	.40	.87	.93	.57	.07	.12	.17	.21	.46	.37	4.89			
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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
1967	4-13	.23	4-13	.17	4-13	.24	4-13	.27	11-10	.43	11-10	.53	11-10	.53	11-10	.53
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-10 1941	3.59	4-19 1957	2.34	3-29 1965	2.96	3-29 1965	3.58	3-29 1965	3.84	3-29 1965	4.66	11-22 1940	5.37	4-19 1957	8.89
NOTES: Watershed land use: 52% pasture; 48% Johnsongrass and weeds, not tilled or grazed. Cropland terraced. 1/ Precipitation data from Thiessen method using rain gages 89 and W-2A. 2/ Precipitation and runoff records began Jan. 1939; station not in operation from July 1943 to May 1, 1947; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; no maximums for 1944 through 1947.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS						WATERSHED Y-7		42.15		
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 April 13, 1967													
3-20	2 RGS/.47	.0000	4-13	RC	.89		4-13	0505	.0000	.0000						
3-25	.11	.0000		0211	.00	.00		0510	.0027	.0000						
3-26	.38	.0000		0316	.12	.13		0515	.0257	.0011						
4-11	.68	.0000		0338	1.66	.74		0520	.2057	.0140						
Watershed conditions: 52% pasture, bermudagrass, fair cover, moderately grazed; 48% Johnsongrass and weeds, not tilled or grazed. Cropland terraced.				0348	.72	.86		0524	.2315	.0287						
				0402	1.24	1.15		0526	.2315	.0364						
				0420	.00	1.15		0533	.2103	.0623						
				0424	2.25	1.30		0543	.1765	.0944						
				0428	.30	1.32		0555	.1598	.1282						
				0452	1.38	1.87		0611	.1306	.1672						
			0500	.75	1.97	0631	.0522	.2025								
			0522	.44	2.13	0701	.0431	.2330								
			0552	.14	2.20	0726	.0234	.2471								
			0752	.03	2.25	0801	.0130	.2573								
			0802	.12	2.27	0901	.0058	.2659								
			RC	W-2A	2.12	1031	.0025	.2718								
			2 RC	AVG5/	2.26	1302	.0007	.2753								
						1602	.0001	.2762								
						1947	.0000	.2763								
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 40.333. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 89 AND W-2A.																



RIESEL (WACO), TEXAS WATERSHED Y-7

MONTHLY PRECIPITATION AND RUNOFF (inches)							RIESEL (WACO), TEXAS							WATERSHED Y-8		42.16
AREA — 20.8 ACRES																
YEAR	MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / _o	.25	.37	1.22	4.60	3.64	.31	2.00	2.49	3.39	5.15	3.40	3.24	30.06		
	o	.00	.00	.00	.01	T	.00	.00	.00	.00	.00	.04	.06	.11		
STA AVG	P	1.90	2.69	2.18	4.09	3.84	3.80	1.44	2.24	2.70	2.89	2.97	2.38	33.12		
	(40-67) o	.27	.39	.34	.81	.82	.51	.07	.07	.15	.14	.42	.32	4.31		
79 YR	MEAN P ² / _o	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		

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
1967	4-13	.02	4-13	.01	4-13	.01	11-10	.02	11-10	.03	11-10	.04	11-10	.04	12-15	.06

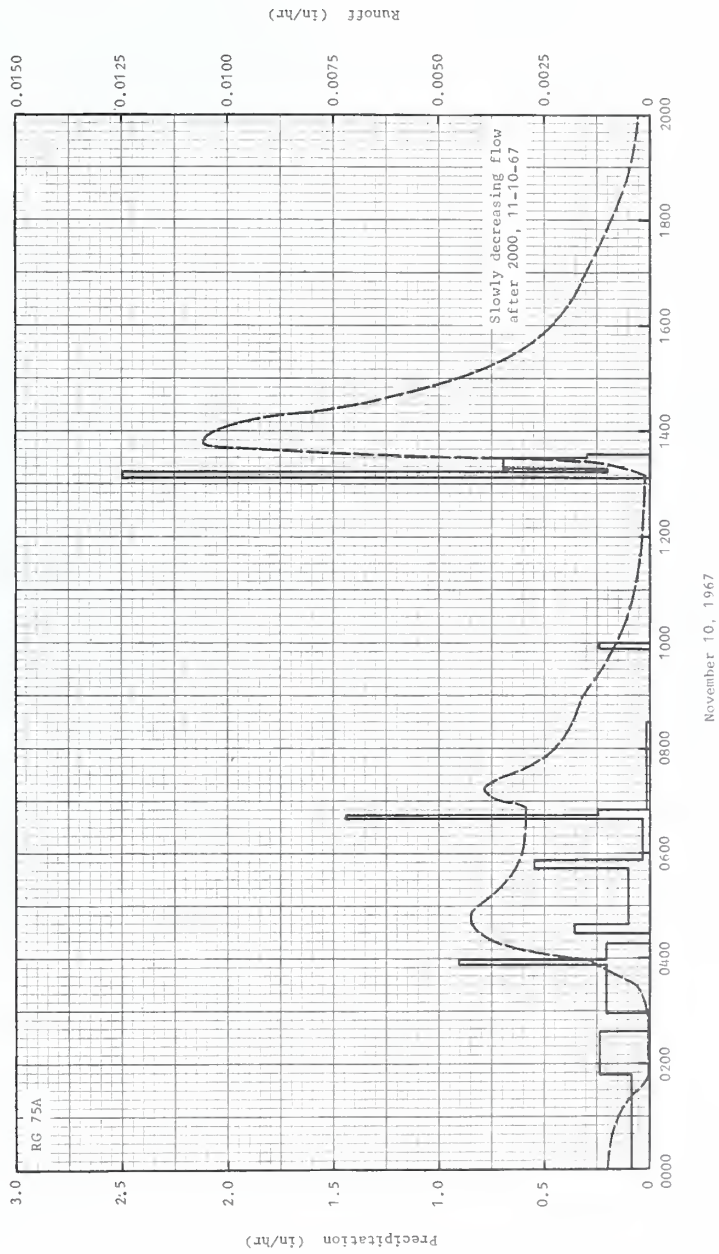
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-10	3.29	4-19	2.41	4-19	2.80	4-23	3.32	4-23	3.37	3-29	3.59	11-22	5.64	4-19	9.10
1967	1941		1957		1957		1957		1957		1965		1940		1957	

NOTES:
 Watershed land use: 95% oats-clover; 3% pasture; 2% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. ¹/ Precipitation data obtained from rain gage 75A. ²/ Precipitation and runoff records began Mar. 1, 1939; station not in operation July 1943 to Jan. 1, 1949; part-year amounts not included in averages. ³/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴/ Maximums for 1939 occurred after Mar. 1; maximums for 1943 occurred before July; no maximums 1944 through 1948.

1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS				WATERSHED Y-8				42.16
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 November 10-11, 1967												
10-14	RG 75A .48	.0000	11-10	RG	75A	.00	11-10	0000	.0010	.0000		
10-15	1.60	.0000		0146	.0000	.0006						
10-29	1.60	.0000		0336	.0004	.0011						
10-30	.65	.0000		0346	.0009	.0012						
				0356	.0013	.0014						
10-31	.07	.0000		0401	.0018	.0015						
11-08	.10	.0000		0416	.0034	.0021						
11-09	⁵ /1.26	.0008		0418	.21	.67		0431	.0041	.0031		
				0428	.00	.67		0501	.0041	.0051		
				0438	.36	.73		0601	.0030	.0085		
			0543	.10	.84	0651	.0028	.0109				
			0553	.54	.93	0701	.0037	.0115				
			0638	.03	.95	0721	.0037	.0127				
			0643	1.44	1.07	0801	.0022	.0147				
			0648	.24	1.09	0901	.0016	.0166				
			0828	.02	1.12	1030	.0005	.0180				
			0953	.00	1.12	1307	.0001	.0189				
			0958	.24	1.14	1315	.0004	.0189				
			1306	.00	1.14	1320	.0010	.0190				
			1312	2.50	1.39	1325	.0018	.0191				
			1315	.20	1.40	1330	.0042	.0193				
			1328	.69	1.55	1335	.0071	.0198				
			1334	.30	1.58	1340	.0093	.0205				
						1345	.0106	.0213				
						1400	.0102	.0239				
						1420	.0082	.0270				
						1500	.0045	.0311				
						1600	.0023	.0343				
						1700	.0015	.0362				
						1900	.0004	.0381				
						2400	.0001	.0392				
						1800	.0000	.0397				

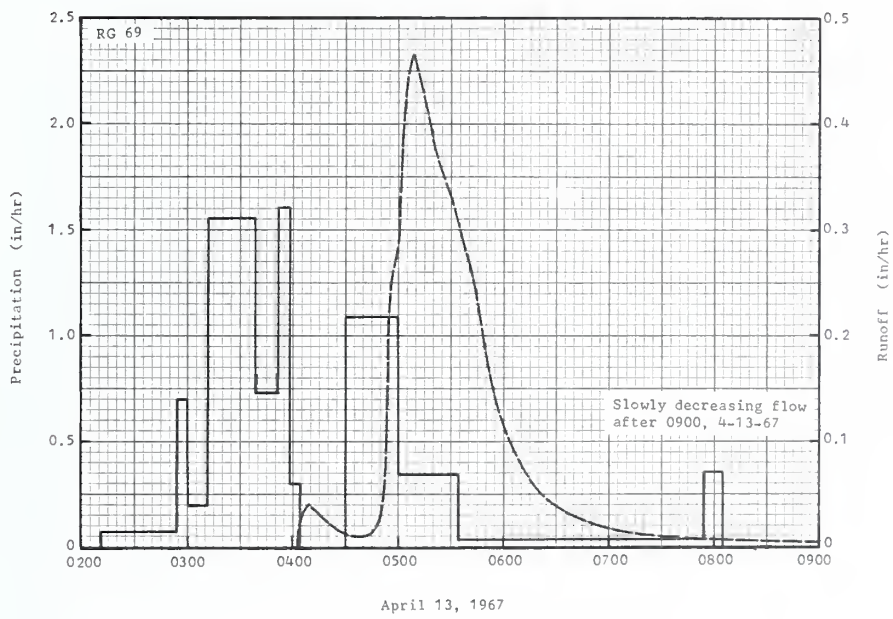
Watershed conditions: 95% plowed, bare; 3% pasture, bermudagrass, good cover, moderately grazed; 2% gravel roads. Cropland terraced, contour cultivation.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 20,973. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USOA MISC. PUB. 1194, P. 42.11-5 (REVISED). ⁵/ RAINFALL ENDED AT 2340.



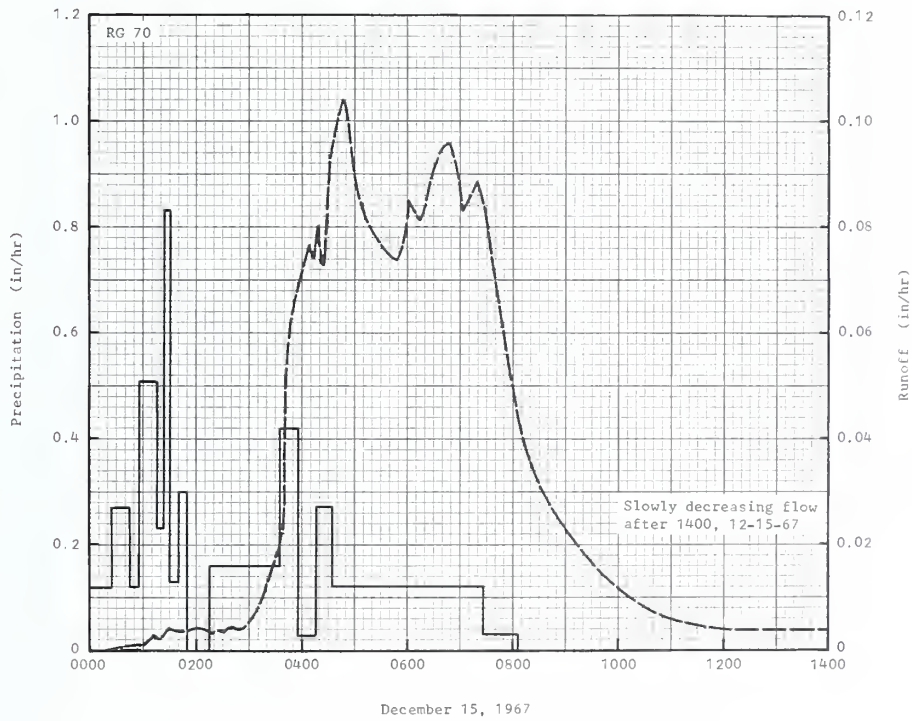
RIESEL (WACO), TEXAS WATERSHED Y-8

MONTHLY PRECIPITATION AND RUNOFF (inches)													RIESEL (WAGO), TEXAS		WATERSHED Y-10		42.17			
													AREA — 18.6 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL							
1967	P1/0	.26	.36	1.13	4.22	3.43	.27	2.36	2.24	3.52	5.30	3.42	3.89	30.40						
	Q	.00	.00	.00	.51	T	.00	.00	.00	.00	.16	1.15	.65	2.47						
	2/	2.07	2.58	2.13	3.97	3.95	3.55	1.36	2.18	2.58	2.66	2.83	2.38	32.24						
	STA AVG P (39-67)	.34	.39	.39	.92	.76	.54	.08	.09	.21	.19	.42	.34	4.67						
	MEAN P2/	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68						
	79 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				
1967	4-13	.46	4-13	.32	4-13	.38	11-10	.63	11-10	.89	11-9	1.13	11-9	1.15	11-9	1.15				
MAXIMUMS FOR PERIOD OF RECORD																				
1938 TO	4-19	3.73	4-19	2.90	4-19	3.48	3-29	4.13	3-29	4.27	3-29	4.62	4-23	5.34	4-19	10.57				
1967	4-19		1957		1957		1965		1965		1965		1957		1957					
NOTES: Watershed land use: 93% row grain sorghum; 4% pasture; 3% gravel roads. Cropland terraced and contour tilled; no change in conservation practices. 1/ Precipitation data from Thiessen method using rain gages 69 and 69B. 2/ Precipitation and runoff records began July 1, 1938; station not in operation July 1943 to May 1, 1946; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1943 occurred before July; maximums for 1946 occurred after May 1; no maximums 1938, 1944, and 1945.																				
1967 SELECTED RUNOFF EVENT													RIESEL (WAGO), TEXAS		WATERSHED Y-10		42.17			
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 (in/hr)	ACC. (inches)										
2 RG5/			Event of April 13, 1967																	
3-20	.47	.0000	4-13	RG	.69		4-13	0403	.0000	.0000										
3-25	.18	.0000		0212	.00	.00		0405	.0289	.0003										
3-26	.28	.0000		0254	.07	.05		0408	.0388	.0021										
4-11	.58	.0000		0300	.70	.12		0414	.0317	.0056										
Watershed conditions: 93% row grain sorghum, 3 to 6 inches high; 4% pasture, bermudagrass, good cover, moderately grazed; 3% gravel roads. Cropland terraced, contour cultivation.				0312	.20	.16		0424	.0185	.0098										
				0338	1.55	.83		0434	.0095	.0121										
				0352	.73	1.00		0440	.0089	.0131										
				0358	1.60	1.16		0450	.0236	.0152										
				0404	.30	1.19		0454	.1318	.0192										
				0430	.00	1.19		0457	.2585	.0293										
			0500	1.08	1.73	0501	.2969	.0478												
			0534	.34	2.02	0504	.4235	.0658												
			0754	.04	2.12	0508	.4650	.0954												
			0804	.36	2.18	0514	.4305	.1405												
RG	69B	2.02	0519	.3878	.1746															
	2 RG	AVG5/	2.07	0529	.3344	.2346														
				0539	.2701	.2860														
				0549	.1806	.3231														
				0559	.1177	.3474														
				0609	.0803	.3637														
				0619	.0544	.3748														
				0629	.0388	.3825														
				0644	.0257	.3904														
				0659	.0178	.3959														
				0729	.0103	.4028														
				0759	.0083	.4074														
				0920	.0045	.4170														
				1100	.0022	.4225														
				1400	.0006	.4264														
				1600	.0001	.4270														
				2400	.0000	.4272														
NOTES: TO CONVERT RUNOFF IN IN/HR TO GFS, MULTIPLY BY 18.755. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, USDA MISC. PUB. 1194, P. 42.11-5 (REVISED). 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 69 AND 69B.																				



RIESEL (WACO), TEXAS WATERSHED Y-10

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED SW-12		42.24						
						AREA — 2.97 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ¹ / _o	.29 .00	.40 .00	1.19 .00	4.30 .02	3.31 .00	.41 .00	2.14 .00	2.49 .00	3.51 .00	5.16 .01	3.58 .07	3.93 .70	30.71 .80		
	STA AVG P (38-67) _o	2.08	2.65	2.10	3.98	3.90	3.65	1.39	2.15	2.56	2.66	2.82	2.34	32.28		
	MEAN 79 YR P ² / _o	.34	.52	.34	.60	.55	.26	T	.02	.04	.01	.16	.28	3.12		
	79 YR P ³ / _o	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68		
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
1967	12-15	.10	12-15	.09	12-15	.17	12-15	.39	12-15	.43	12-15	.45	12-15	.48	12-15	.67
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967 ⁴ / _o	3-29	4.00	3-29	3.07	3-29	3.83	3-29	4.62	3-29	4.80	3-29	5.34	3-29	5.39	4-19	8.53E
	1965		1965		1965		1965		1965		1965		1965		1957	
NOTES:																
Watershed land use: 100% native grass meadow mowed annually for hay. ¹ / _o Precipitation data obtained from rain gage 70. ² / _o Precipitation and runoff records began Jan. 1, 1938; station not in operation July 1943 to June 1, 1947; part-year amounts not included in averages. ³ / _o Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴ / _o Maximums for 1943 occurred before July; no maximums for 1944 through 1947.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED SW-12		42.24						
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 December 15, 1967																
	RG 70			RG	70		12-15	0016	.0000	.0000						
11-27	.38	.0000	12-15	0000	.00	.00		0041	.0011	.0024						
11-28	.05	.0000		0025	.12	.05		0051	.0007	.0025						
11-29	.09	.0000		0045	.27	.14		0111	.0034	.0031						
12-02	.04	.0000		0055	.12	.16		0119	.0025	.0035						
12-05	.24	.0000		0115	.51	.33		0127	.0045	.0039						
12-10	.19	.0000		0123	.23	.36		0141	.0031	.0048						
12-13	.21	.0000		0131	.83	.47		0146	.0038	.0051						
12-14	⁵ / _o .38	.0000		0140	.13	.49		0216	.0031	.0067						
				0150	.30	.54		0224	.0038	.0072						
				0215	.00	.54		0226	.0035	.0073						
				0335	.16	.75		0236	.0042	.0080						
				0355	.42	.89		0241	.0041	.0083						
				0415	.03	.90		0316	.0101	.0122						
				0435	.27	.99		0334	.0225	.0165						
				0725	.12	1.33		0343	.0459	.0214						
				0805	.03	1.35		0356	.0694	.0340						
								0406	.0760	.0463						
								0411	.0742	.0525						
								0416	.0804	.0590						
								0420	.0733	.0640						
								0430	.0936	.0781						
								0435	.0963	.0862						
								0441	.1014	.0960						
								0446	.1042	.1046						
								0456	.0941	.1212						
								0506	.0835	.1360						
								0546	.0737	.1887						
								0601	.0851	.2054						
								0611	.0815	.2224						
								0646	.0958	.2754						
								0701	.0835	.2978						
								0718	.0882	.3219						
								0746	.0609	.3574						
								0811	.0389	.3778						
								0901	.0220	.4017						
								1001	.0113	.4179						
								1201	.0043	.4319						
								2012	.0012	.4520						
								2400	⁵ / _o .0011	.4563						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2.9947. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. 945, P. 42.24-4. ⁵ / _o RAINFALL ENDED AT 2335. ⁶ / _o NEXT EVENT BEGAN AT 1955 DEC. 16, 1967.																



RIESEL (WACO), TEXAS WATERSHED SW-12

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS				WATERSHED SW-17				42.28
						AREA — 2.99 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹	.25	.43	1.09	4.47	3.39	.06	2.44	2.22	3.22	5.04	3.49	3.58	29.68
	Q	.00	.00	.00	.14	T	.00	.00	.00	.00	.04	.58	.70	1.46
STA AVG P		1.94	2.72	2.12	4.17	3.86	3.58	1.48	2.26	2.71	2.92	2.98	2.41	33.15
(40-67) D		.33	.57	.47	.94	.79	.68	.11	.08	.20	.18	.50	.50	5.35
MEAN P ²														
79 YR		2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68

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		
1967		4-13	.22	12-15	.11	12-15	.19	12-15	.44	12-15	.56	12-15	.57	11-9	.58	12-15	.68

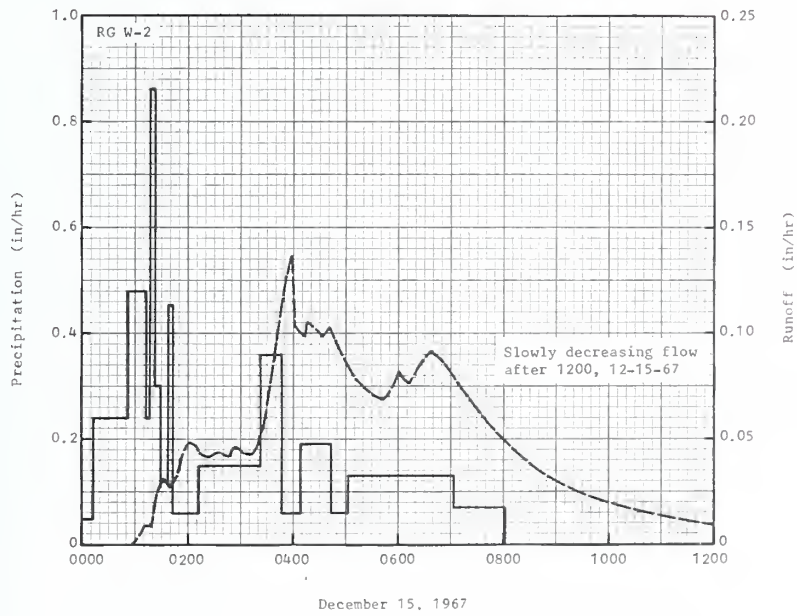
MAXIMUMS FOR PERIOD OF RECORD																
19 39 TO	10-31	7.06	4-19	2.54	4-19	2.96	4-23	3.31	3-29	3.52	3-29	4.25	11-22	5.37	4-19	9.42
19 67	1940		1957		1957		1957		1965		1965		1940		1957	

NOTES:
 Watershed land use: 100% bermudagrass pasture. 1/ Precipitation data obtained from rain gage W-2. 2/ Precipitation and runoff records began Feb. 1, 1939; station not in operation July 1943 to Jan. 1, 1948; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Maximums for 1939 occurred after Feb.; maximums for 1943 occurred before July; no maximums 1944 through 1947.

1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS				WATERSHED SW-17				42.28
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)		
Event of December 15-16, 1967												
11-27	RG W-2		12-15	RG	W-2		12-15	0047	.0000	.0000		
	.37	.0000		0000	.00	.00		0057	.0011	.0001		
11-28	.05	.0000		0011	.05	.01		0112	.0094	.0014		
11-29	.07	.0000		0051	.24	.17		0118	.0091	.0023		
12-05	.22	.0000		0111	.48	.33		0123	.0172	.0035		
12-10	.13	.0000		0116	.24	.35		0128	.0273	.0054		
12-13	.26	.0000		0123	.86	.45		0136	.0273	.0091		
12-14	E/.33	.0000		0127	.30	.47		0151	.0418	.0182		
				0137	.12	.49		0201	.0485	.0256		
				0141	.45	.52		0211	.0435	.0333		
			0211	.06	.55	0226	.0414	.0439				
			0321	.15	.72	0231	.0428	.0474				
			0346	.36	.87	0241	.0418	.0545				
			0406	.06	.89	0251	.0452	.0617				
			0441	.19	1.00	0301	.0425	.0690				
			0501	.06	1.02	0326	.0544	.0881				
			0631	.13	1.22	0341	.0968	.1061				
			0801	.07	1.32	0351	.1250	.1247				
						0356	.1371	.1355				
						0401	.1046	.1449				
						0411	.0984	.1617				
						0415	.1052	.1685				
						0431	.0990	.1958				
						0441	.1024	.2125				
						0501	.0834	.2436				
						0541	.0693	.2937				
						0601	.0819	.3189				
						0606	.0794	.3256				
						0616	.0794	.3388				
						0636	.0913	.3684				
						0701	.0784	.4043				
						0806	.0463	.4763				
						0901	.0279	.5091				
						1100	.0140	.5460				
						1430	.0025	.5676				
						2400	.0001	.5745				
						1030	.0000	.5755				

Watershed conditions: 100% pasture, bermudagrass, good cover, dormant, moderately grazed.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.0149. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, USDA MISC. PUB. 1164, P. 42.6-6 (REVISED). 5/ RAINFALL ENOEO AT 2331.

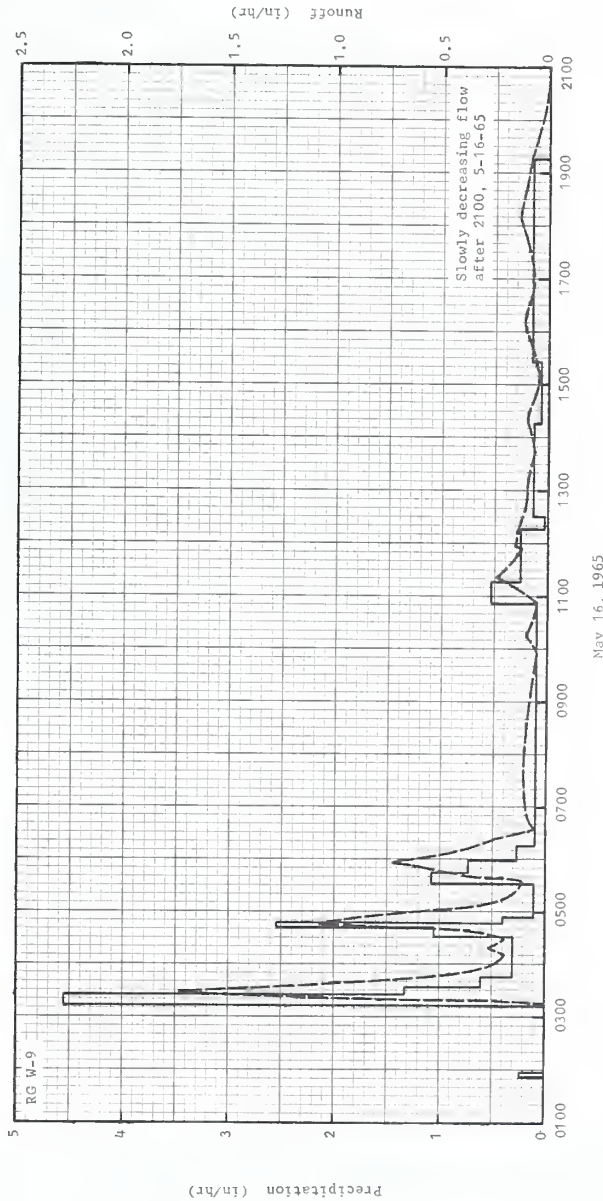


RIESEL (WACO), TEXAS WATERSHED SW-17

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED P-1		42.31						
						AREA — 0.243 ACRE										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.23	.48	1.17	4.30	3.88	.01	1.71	3.64	3.46	4.70	3.49	3.74	30.81			
O	.00	.00	.00	T	.00	.00	.00	.00	.00	.00	.04	.13	.17			
STA AVG P	2.37	2.86	2.15	3.77	3.53	4.22	1.21	2.63	2.88	2.66	3.39	2.82	34.49			
(38-67) O	.38	.49	.46	.64	.59	.69	.03	.10	.12	.01	.36	.30	4.17			
MEAN P ₅₀	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
79 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
1967	12-15	.03	12-15	.02	12-15	4/05	12-15	.10	12-15	.10	12-15	.10	12-15	.12	12-15	.13
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO	6-10	7.18	3-29	2.16	3-29	2.93	3-29	3.42	3-29	3.64	3-29	4.63	4-24	5.62	4-24	7.36
1967 TO	1941		1965		1965		1965		1965		1965		1966		1966	
NOTES: Watershed land use: 100% bermudagrass and buffalograss pasture, heavily grazed. 1/ Precipitation data obtained from rain gage W-9. 2/ Precipitation and runoff records began Jan. 1, 1938; station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. 3/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. 4/ Runoff for 1 hr was 0.0233 in. and for 2 hr was 0.0458 in. Rounding caused 2-hr volume to be more than twice the 1-hr volume. 5/ Maximums for 1943 occurred before July; no maximums 1944 through 1959.																
1965 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS				WATERSHED P-1				42.31				
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)						
Event of May 16-17, 1965																
	RG W-9			RG	W-9		5-16	0316	.0000	.0000						
4-25	.08	.0000	5-16	0151	.00	.00		0319	.2263	.0036						
4-26	.58	.0000		0156	.24	.02		0321	.8750	.0210						
5-05	.02	.0000		0313	.00	.02		0326	1.3624	.1168						
5-09	1.27	.0000		0325	4.55	.93		0329	1.7317	.1961						
5-10	2.03	.1445		0335	1.32	1.15		0332	1.4871	.2778						
5-11	.00	.0005		0345	.60	1.25		0336	1.1192	.3655						
5-14	.75	.0000		0431	.30	1.48		0342	.7414	.4537						
				0443	1.05	1.69		0348	.4977	.5166						
				0447	2.55	1.86		0356	.2792	.5663						
				0455	.38	1.91		0412	.1986	.6314						
				0531	.10	1.97		0419	.2635	.6589						
				0545	1.07	2.22		0430	.1964	.7017						
				0559	.73	2.39		0438	.3710	.7372						
				0615	.26	2.46		0443	.7326	.7805						
				1051	.10	2.92		0445	.9485	.8086						
				1115	.53	3.13		0447	1.0714	.8424						
				1215	.25	3.38		0451	.9687	.9121						
				1231	.04	3.39		0455	.7816	.9709						
				1415	.15	3.65		0501	.4941	1.0351						
				1525	.07	3.73		0506	.3321	1.0686						
				1915	.16	4.35		0517	.1606	1.1114						
								0532	.1017	1.1440						
								0539	.3009	1.1652						
								0548	.5305	1.2275						
								0556	.7282	1.3133						
								0607	.4625	1.4246						
								0622	.2409	1.5142						
								0732	.0683	1.6290						
								0752	.0804	1.6755						
								0952	.0447	1.7775						
								1012	.0921	1.8003						
								1052	.0517	1.8456						
								1120	.2409	1.9199						
								1152	.1267	2.0121						
								1157	.1528	2.0236						
								1207	.1489	2.0476						
								1227	.1251	2.0978						
								1302	.1003	2.1645						
								1342	.0603	2.2154						
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.																

1965 SELECTED RUNOFF EVENT			RIESEL (WACO), TEXAS			WATERSHED P-1		42.31		
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)
			Event of May 16-17, 1965 - Continued							
						5-16				
						1417				
						1512				
						1612				
						1702				
						1802				
						2032				
						2400				
						5-17				
						0447				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 0.245.



RIESEL (WACO), TEXAS WATERSHED P-1

MONTHLY PRECIPITATION AND RUNOFF (inches)							RIESEL (WACO), TEXAS							WATERSHED P-2		42.32
							AREA — 0.243 ACRE									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ¹ / ₀	.23	.48	1.17	4.30	3.88	.01	1.71	3.64	3.46	4.70	3.49	3.74	30.81			
	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.02	.01	.05			
STA AVG ² / _P	2.24	2.84	2.23	3.97	3.42	4.39	1.28	2.62	3.09	2.71	3.47	2.96	35.22			
(38-67) O	.45	.63	.68	.71	.64	.95	.07	.16	.20	.04	.57	.47	5.57			
MEAN ³ / _P																
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			

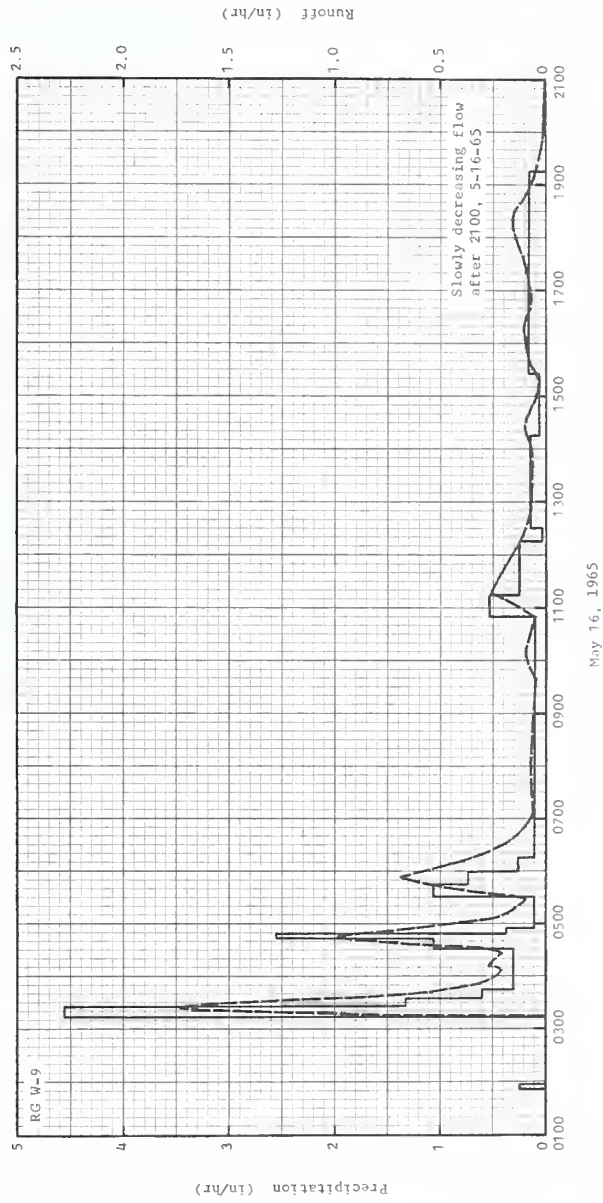
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-13	T	4-13	T	4-13	.01	4-13	.02	4-13	.02	4-13	.02	4-13	.02	4-13	.02

MAXIMUMS FOR PERIOD OF RECORD																
1938 TO	6-10	6.65	3-29	2.24	3-29	3.11	3-29	3.94	3-29	4.50	3-29	6.22	3-29	6.22	3-29	6.24
1967	1941		1965		1965		1965		1965		1965		1965		1965	

NOTES: Watershed land use: 100% bermudagrass and buffalograss pasture, heavily grazed. ¹/ Precipitation data obtained from rain gage W-9. ²/ Precipitation and runoff records began Jan. 1, 1938; runoff record lost May 16-20, 1939, which was only runoff that year; station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. ³/ Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴/ Maximums for 1943 occurred before July; no maximums for 1939 and 1944 through 1959.

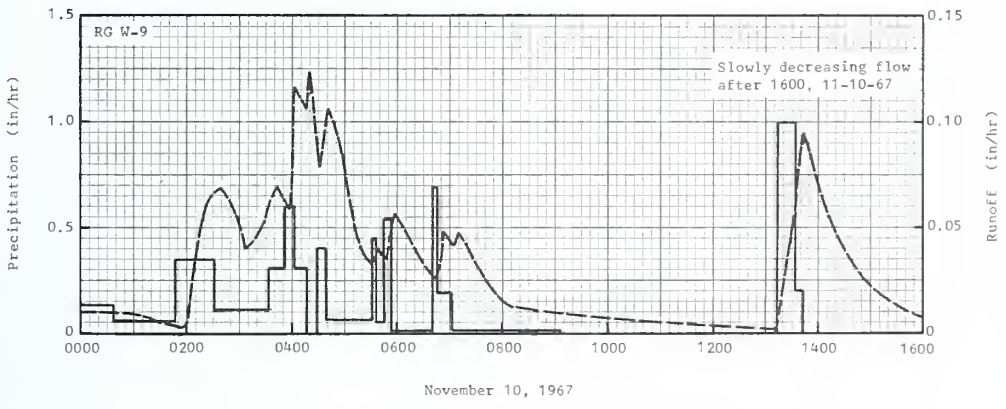
1965 SELECTED RUNOFF EVENT							RIESEL (WACO), TEXAS							WATERSHED P-2		42.32
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
Event of May 16-17, 1965																
4-25	RG W-9	.0000	5-16	RG	W-9	.00	5-16	0312	.0000	.0000						
4-26	.08	.0000		0151	.00	.00		0315	.2982	.0039						
5-05	.02	.0000		0156	.24	.02		0318	.9586	.0380						
5-09	1.27	.0000		0313	.00	.02		0321	1.4309	.0982						
				0325	4.55	.93		0325	1.7395	.2063						
5-10	2.03	.2828		0335	1.32	1.15		0328	1.5736	.2889						
5-11	.00	.0218		0345	.60	1.25		0331	1.2374	.3592						
5-12	.00	.0003		0431	.30	1.48		0335	.8559	.4283						
5-14	.75	.0000		0443	1.05	1.69		0345	.4834	.5411						
				0447	2.55	1.86		0352	.3037	.5860						
Watershed conditions: 100% pasture, bermudagrass and buffalograss, 2 to 6 inches high, dense cover, grazed.				0455	.38	1.91		0407	.2146	.6534						
				0531	.10	1.97		0412	.2740	.6730						
				0545	1.07	2.22		0426	.2192	.7317						
				0559	.73	2.39		0437	.5158	.7920						
				0615	.26	2.46		0441	.8750	.8369						
				1051	.10	2.92		0445	.9849	.9007						
				1115	.53	3.13		0455	.5721	1.0325						
				1215	.25	3.38		0505	.2610	1.0985						
				1231	.04	3.39		0527	.1031	1.1550						
				1415	.15	3.65		0537	.3350	1.1867						
				1525	.07	3.73		0551	.6810	1.3056						
				1915	.16	4.35		0610	.3803	1.4750						
								0712	.0581	1.6125						
								0812	.0767	1.6793						
								0937	.0438	1.7534						
					1007	.0908	1.7816									
					1047	.0538	1.8297									
					1117	.2584	1.9117									
					1343	.0614	2.2066									
					1427	.0934	2.2665									
					1515	.0364	2.3151									
					1612	.1073	2.3879									
					1652	.0779	2.4477									
					1812	.1586	2.5946									
					1902	.0718	2.6867									
					2002	.0133	2.7268									
					2400	.0001	2.7382									
					5-17	0127	.0000	2.7383								

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.



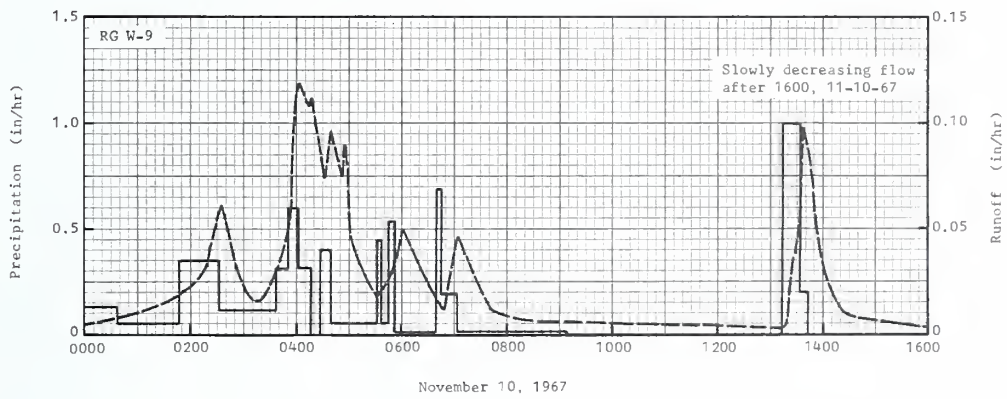
RIESEL (WACO), TEXAS WATERSHED P-2

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED P-3		42.33						
						AREA — 0.243 ACRE										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	.23	.48	1.17	4.30	3.88	.01	1.71	3.64	3.46	4.70	3.49	3.74	30.81			
¹ / _D	.00	.00	.00	.06	.00	.00	.00	.00	.00	.03	.46	.37	.92			
STA AVG P (38-67)	2.37	2.86	2.15	3.77	3.53	4.22	1.21	2.63	2.88	2.66	3.39	2.82	34.49			
MEAN P (38-67)	.46	.67	.50	.75	.85	.88	.06	.12	.22	.08	.53	.42	5.54			
79 YR	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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
1967	11-10	.12	11-10	.10	11-10	.15	11-10	.31	11-10	.34	11-9	.46	11-9	.46	11-9	.46
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967	6-10 1941	7.63	6-10 1941	2.13	3-29 1965	2.69	3-29 1965	3.20	3-29 1965	3.43	3-29 1965	4.27	4-24 1966	5.86	4-23 1966	6.96
NOTES: Watershed land use: 100% bermudagrass and buffalograss pasture, lightly grazed. ¹ / _D Precipitation data obtained from rain gage W-9. ² / _D Precipitation and runoff records began Jan. 1, 1938; station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. ³ / _D Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴ / _D Maximums for 1943 occurred before July; no maximums 1944 through 1959.																
1967 SELECTED RUNOFF EVENT				RIESEL (WACO), TEXAS		WATERSHED P-3		42.33								
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 November 10, 1967																
	RG W-9		11-10	RG	W-9		11-10	0000	.0101	.0000						
10-14	.41	.0000		0000	.00	.00		0153	.0030	.0114						
10-15	1.50	.0000		0037	.13	.08		0238	.0683	.0339						
10-29	1.42	.0100		0147	.06	.15		0308	.0409	.0602						
10-30	.63	.0158		0233	.35	.42		0343	.0683	.0882						
10-31	.06	.0000		0337	.12	.55		0355	.0603	.1006						
11-08	.12	.0000		0352	.32	.63		0403	.1161	.1122						
11-09	² / _D 1.25	.0140		0402	.60	.73		0416	.1073	.1366						
				0417	.32	.81		0420	.1236	.1443						
				0427	.00	.81		0433	.0779	.1658						
				0439	.40	.89		0441	.1073	.1777						
				0531	.07	.95		0533	.0347	.2300						
				0535	.45	.98		0538	.0382	.2331						
				0545	.06	.99		0549	.0347	.2398						
				0553	.53	1.06		0557	.0570	.2462						
				0637	.01	1.07		0643	.0258	.2774						
				0645	.68	1.16		0653	.0487	.2839						
				0701	.19	1.21		0701	.0419	.2899						
				0907	.01	1.23		0709	.0477	.2961						
				1313	.00	1.23		0803	.0138	.3213						
				1334	1.00	1.58		1311	.0009	.3447						
				1343	.20	1.61		1332	.0559	.3480						
								1341	.0934	.3602						
								1401	.0625	.3865						
								1501	.0214	.4236						
								1801	.0008	.4457						
								2030	.0000	.4467						
Watershed conditions: 100% pasture, bermudagrass and buffalograss, 6 to 36 inches high, dense cover, lightly grazed.																
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. ² / _D RAINFALL ENDED AT 2327.																



RIESEL (WACO), TEXAS WATERSHED P-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						RIESEL (WACO), TEXAS		WATERSHED P-4		42.34						
						AREA — 0.243 ACRE										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ¹ / _o	.23	.48	1.17	4.30	3.88	.01	1.71	3.64	3.46	4.70	3.49	3.74	30.81			
o	.00	.00	.00	.04	.00	.00	.00	.00	.00	.06	.36	.31	.77			
STA AVG P ² / _P	2.37	2.86	2.15	3.77	3.53	4.22	1.21	2.63	2.88	2.66	3.39	2.82	34.49			
(38-67) o	.52	.66	.45	.72	.63	.87	.06	.09	.18	.04	.60	.59	5.41			
MEAN P ³ / _{79 YR}	2.13	2.37	2.74	4.23	4.61	3.24	1.89	1.93	2.89	2.59	2.50	2.56	33.68			
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
1967	11-10	.12	11-10	.10	11-10	.13	11-10	.24	11-10	.27	11-9	.35	11-9	.36	11-9	.36
MAXIMUMS FOR PERIOD OF RECORD																
1938 TO 1967 ⁴ / ₁₉₄₁	6-10	7.79	11-22	2.15	3-29	2.43	3-29	2.86	3-29	3.01	3-29	3.70	4-24	6.28	4-23	6.96
			1940		1965		1965		1965		1965		1966		1966	
NOTES: Watershed land use: 100% bermudagrass and buffalograss pasture, lightly grazed. ¹ / Precipitation data obtained from rain gage W-9. ² / Precipitation and runoff records began Jan. 1, 1938; station not in operation July 1943 to Jan. 1, 1960; part-year amounts not included in averages. ³ / Mean P based on 79-yr (1889-1967) U. S. Weather Bureau record period at Waco, Texas. ⁴ / Maximums for 1943 occurred before July; no maximums 1944 through 1959.																
1967 SELECTED RUNOFF EVENT						RIESEL (WACO), TEXAS		WATERSHED P-4		42.34						
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 November 10-11, 1967																
10-14	RG W-9 .41	.0000	11-10	RG 0000	W-9 .00	.00	11-10	0000	.0053	.0000						
10-15	1.50	.0000		0037	.13	.08		0220	.0330	.0160						
10-29	1.42	.0119		0147	.06	.15		0235	.0614	.0269						
10-30	.63	.0482		0233	.35	.42		0250	.0364	.0397						
				0233				0315	.0156	.0488						
10-31	.06	.0000		0337	.12	.55		0355	.0603	.0687						
11-08	.12	.0000		0352	.32	.63		0405	.1176	.0846						
11-09	⁵ /1.25	.0152		0402	.60	.73		0414	.1073	.1018						
				0417	.32	.81		0417	.1117	.1072						
				0427	.00	.81		0432	.0742	.1317						
				0439	.40	.89		0440	.0961	.1425						
				0531	.07	.95		0451	.0754	.1591						
				0535	.45	.98		0453	.0881	.1618						
				0545	.06	.99		0500	.0507	.1692						
				0553	.53	1.06		0530	.0194	.1849						
				0637	.01	1.07		0550	.0289	.1921						
				0645	.68	1.16		0600	.0487	.1989						
				0701	.19	1.21		0644	.0122	.2178						
				0907	.01	1.23		0703	.0457	.2286						
				1313	.00	1.23		0740	.0122	.2463						
				1334	1.00	1.58		1314	.0030	.2720						
				1343	.20	1.61		1331	.0517	.2755						
								1338	.0975	.2852						
								1349	.0581	.2995						
								1419	.0127	.3149						
								2400	.0005	.3461						
								0129	.0000	.3465						
Watershed conditions: 100% pasture, bermudagrass and buffalograss, 6 to 36 inches high, dense cover, lightly grazed.																
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. ⁵ / RAINFALL ENDED AT 2327.																



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		
1967 P/Q	2/.12 .00	2/.15 .00	2/.13 .00	1.72 .00	4.66 .08	6.05 .80	2.70 .17	.46 .27	4.56 .27	1.26 .08	2/.10 .00	2/.50 .00	22.41 1.40		
STA AVG P (39-67) Q	.30 .01	.52 .06	1.09 .17	1.93 .09	3.60 .65	4.92 1.13	2.89 .48	2.61 .22	2.67 .38	1.10 .10	.57 .03	.38 T	22.58 3.32		
MEAN P 3/72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		

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
1967	9-19	.13	9-20	.10	9-19	.16	6-11	.27	6-11	.28	6-10	.39	6-9	.42	6-5	.48

MAXIMUMS FOR PERIOD OF RECORD

1940 TO 1967	7-3 1959	2.00	7-3 1959	1.32	5-21 1965	1.74	5-21 1965	2.49	5-21 1965	4.43	5-21 1965	4.82	5-21 1965	4.82	5-21 1965	5.55
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Notes: Watershed conditions: Crops including wheat, corn, sorghum, alfalfa and meadow were in good condition. Fallow fields had no cover. Pastures good to excellent. 1/ Arithmetic average of rain gages A-12-R, B-10-R, B-31-R, and B-36-R. 2/ Based on meteorological station records. 3/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.

1967 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	1	47	31	66	30	65	33	65	32	53	46	88	59	92	67	70	51	80	45	55	31	37	30
2	33	20	35	13	79	28	61	32	48	24	52	47	85	53	88	64	59	51	81	53	59	30	41	25
3	30	10	34	14	65	24	60	32	57	28	65	49	78	53	89	61	70	53	84	52	39	25	42	16
4	31	15	55	21	47	26	61	42	34	28	76	58	76	50	86	57	61	54	86	57	34	20	54	24
5	36	19	55	39	36	25	79	53	49	33	81	60	69	55	84	62	74	48	77	52	31	14	51	25
6	33	21	40	7	40	12	87	49	45	37	75	59	74	53	85	66	77	52	61	48	40	21	54	23
7	25	11	25	10	48	4	68	29	52	38	84	62	76	57	90	65	79	51	59	46	43	20	52	26
8	15	-10	26	11	16	-4	59	40	73	42	80	53	83	66	81	66	81	54	57	39	57	23	44	25
9	24	-8	47	19	48	13	82	50	72	44	78	58	81	67	86	56	86	50	58	39	63	28	41	30
10	36	15	52	28	64	30	66	32	80	58	78	56	90	67	76	53	80	51	67	32	62	41	32	25
11	27	11	48	19	77	27	59	35	89	41	78	58	90	69	76	50	80	53	53	34	54	31	33	17
12	40	21	47	14	53	22	63	44	55	39	73	53	86	65	78	49	80	60	67	43	69	39	43	25
13	38	22	55	20	59	26	65	50	48	37	80	57	89	56	80	51	85	51	78	45	56	31	32	18
14	43	26	70	31	40	27	66	39	54	41	83	65	78	50	84	57	72	47	69	43	51	29	30	16
15	36	9	73	2	41	16	73	44	59	37	89	64	78	55	89	55	70	48	75	45	63	23	25	16
16	41	16	18	4	39	19	78	44	68	44	84	60	68	55	89	56	77	53	62	32	51	30	30	20
17	42	0	27	11	57	16	82	37	67	43	71	55	72	55	89	62	72	55	63	37	66	33	35	29
18	11	0	47	0	25	17	63	32	81	49	77	58	75	57	88	62	78	56	70	32	64	25	43	23
19	11	-3	30	5	40	22	66	43	91	44	81	62	75	62	77	53	78	57	59	33	50	27	41	22
20	37	3	28	13	46	29	63	55	73	45	80	62	76	63	78	52	74	59	67	32	57	25	46	30
21	43	25	27	8	54	26	71	41	66	44	78	60	85	64	87	55	79	51	62	38	48	29	56	9
22	52	29	61	12	53	31	62	28	77	46	74	55	89	67	89	55	74	49	70	36	50	20	50	5
23	52	3	30	9	72	35	54	29	84	58	80	55	95	68	88	60	77	52	76	43	42	24	31	8
24	35	26	22	6	86	53	40	27	93	63	64	49	95	70	89	62	69	44	73	41	54	25	57	26
25	29	21	35	10	83	45	54	37	98	68	65	48	91	64	88	61	71	46	55	27	54	27	55	15
26	25	13	47	28	47	35	43	35	97	63	72	53	89	65	91	56	87	53	55	28	47	25	31	15
27	22	6	55	29	59	34	45	28	85	51	74	59	93	61	74	52	63	35	51	30	38	15	38	7
28	29	14	53	23	67	37	61	46	60	51	85	59	83	63	80	52	57	32	52	30	40	13	20	2
29	52	25	---	---	71	52	73	57	68	53	82	62	84	65	93	61	61	39	64	40	36	24	22	10
30	47	25	---	---	82	68	88	64	58	52	80	60	94	63	91	54	70	42	43	31	35	31	20	13
31	47	28	---	---	82	34	---	---	57	47	---	---	93	66	72	46	---	---	52	24	---	---	24	-11
AV.	34	13	42	16	56	28	65	40	68	45	76	57	83	61	85	57	74	50	65	39	50	26	38	18
MEAN	23.7		29.0		42.0		52.7		56.2		66.2		72.0		71.0		61.8		52.1		38.1		28.3	

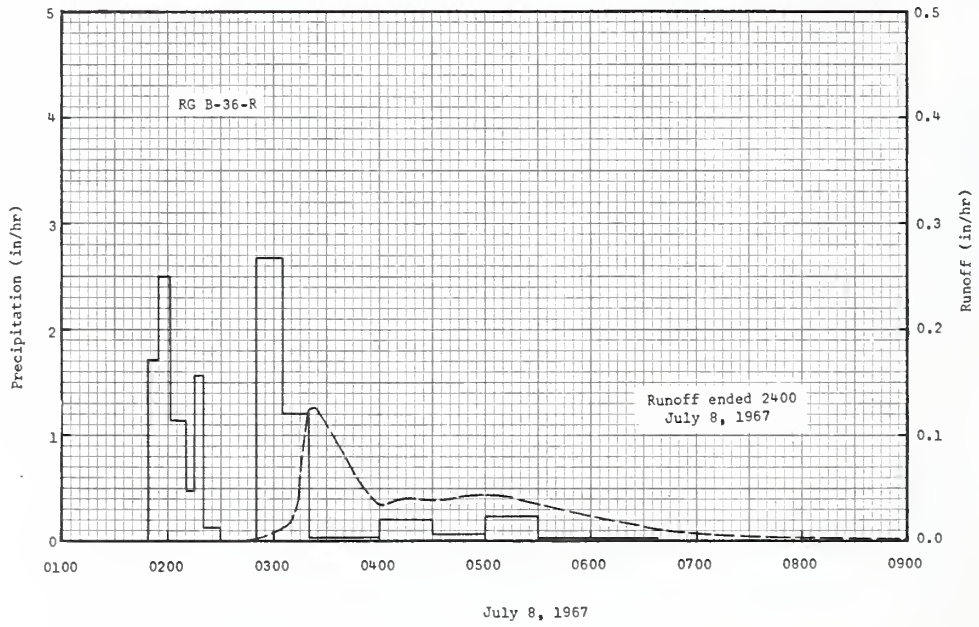
NOTES: TEMPERATURE DATA FROM METEOROLOGICAL STATION FOR 24 HOURS ENDING 0800.

1967 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	.12	.00	.31	.00	.04	.00	.12	.00	.00	.00	T
2	T	.00	.00	.00	T	.00	.00	.00	T	.00	.10	.10
3	.00	.00	.00	.00	.12	.00	.00	.00	.12	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00
5	.00	.00	.00	.00	.44	.59	.08	.00	T	.76	.00	.00
6	.09	.00	.00	.00	.43	.12	.00	.00	.00	.35	.00	.00
7	.03	.00	.00	.00	.00	.72	.00	.06	.00	.00	.00	.00
8	.00	.03	.00	.24	.00	.00	2.05	.00	.00	.00	.00	.05
9	.00	.00	.00	.00	.00	.53	.00	.00	.00	.00	.00	.05
10	.00	.00	.00	.00	.00	1.04	.12	.00	.00	.00	.00	T
11	.00	.00	.00	.25	.00	1.02	.00	.00	.16	.00	.00	.00
12	.00	.00	.00	.02	.00	.00	.00	.00	.33	.00	.00	.00
13	.00	.00	.00	.39	.00	.00	T	.00	.54	.00	.00	.00
14	.00	.00	.00	.05	.19	.00	.00	.06	.00	.00	.00	.00
15	.00	T	.00	.00	T	.22	.00	.00	.00	.12	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.26
17	.00	.00	.00	.00	.00	.00	.02	.07	.55	.00	.00	.00
18	T	T	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00
19	T	.00	T	.47	.00	.00	.00	.00	1.72	.00	.00	.00
20	.00	.00	.00	.00	.15	.42	.00	.00	.27	.00	.00	.00
21	.00	.00	.13	.00	.00	1.16	.00	.00	.00	.00	.00	.00
22	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	T	.00	.21	.00	.00	.00	.00	.00	.00
24	T	.00	.00	.00	.00	.53	.00	.00	.00	T	.00	.00
25	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00	.00	T
26	T	.00	T	.03	.81	.00	.31	.13	.91	.00	.00	.00
27	.00	.00	.00	.00	.21	.00	.49	.00	.00	.00	.00	.04
28	.00	.00	.00	.00	.00	.17	.14	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.10	.00	.00	.00	.00	.21	T	.00
30	.00	.00	.00	.00	1.33	.00	.00	.00	.00	.00	.00	.00
31	.00	.00	.00	.00	1.76	.00	.00	.00	.00	.00	.00	T
TOTAL	.12	.15	.13	1.88	5.54	6.79	3.27	.44	4.77	1.44	.10	.50
STAAV	.35	.58	1.19	1.89	3.98	5.08	3.36	2.75	2.76	1.15	.57	.38

NOTES: STATION AVERAGE IS BASED ON METEOROLOGICAL STATION RECORDS FROM 1943 TO 1967.

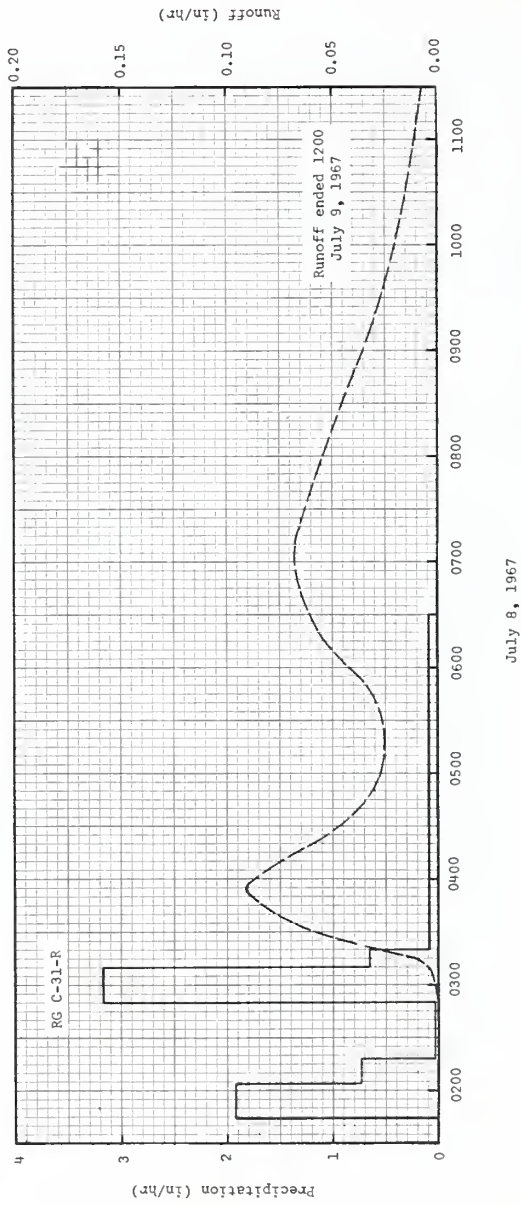
1967 SELECTED RUNOFF EVENT			HASTINGS, NEBRASKA WATERSHED W-3 44.1							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of July 8, 1967										
6- 9	4 RG ₁ / .43	.0178	7-8	RG 0148	B-36-R .00	.00	7-8	0143	.0000	.0000
6-10	1.11	.0433		0155	1.71	.20		0242	.0007	.0002
6-11	.90	.3731		0201	2.50	.45		0308	.0177	.0036
6-15	.18	.0093		0210	1.13	.62		0314	.0501	.0070
6-20	.35	.0000		0215	.48	.66		0321	.1240	.0179
6-21	1.11	.2050		0220	1.56	.79		0324	.1250	.0241
6-23	.15	.0086		0230	.12	.81		0330	.1110	.0359
6-24	.55	.1007		0250	.00	.81		0340	.0817	.0519
6-28	.16	.0000		0305	2.68	1.48		0400	.0361	.0707
7- 4	.04	.0000		0320	1.20	1.78		0420	.0420	.0832
7- 5	.06	.0000		0400	.03	1.80		0435	.0394	.0931
				0430	.20	1.90		0500	.0435	.1108
				0500	.06	1.93		0515	.0410	.1213
				0530	.24	2.05		0540	.0313	.1364
				0640	.02	2.07		0630	.0145	.1555
				RG	A-12-R			0730	.0045	.1650
				0154	.00	.00		0830	.0021	.1683
				0212	.47	.14		1000	.0009	.1705
				0220	1.35	.32		1200	.0003	.1717
				0250	.02	.33		1600	.0001	.1725
				0310	1.14	.71				
								2400	.0000	.1729
				0320	.42	.78				
				0400	.03	.80				
				0420	.33	.91				
				0520	.15	1.06				
				0640	.02	1.08				
				RG	B-10-R	1.08				
				RG	B-31-R	1.99				

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 RAIN GAGES A-12-R, B-10-R, B-31-R, AND B-36-R.



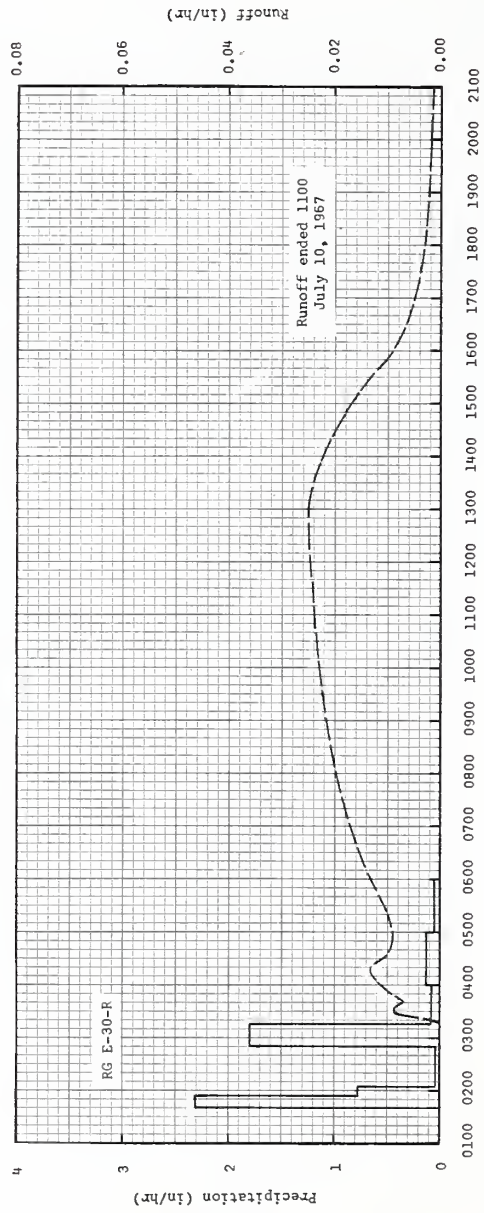
HASTINGS, NEBRASKA WATERSHED W-3

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			
1967	P 1/	2/ .13	2/ .14	2/ .26	1.68	4.89	6.26	2.89	.41	4.51	1.34	2/ .12	2/ .44	23.07			
	Q	.00	.00	.00	.00	.08	1.04	.36	.00	.15	.06	.00	.00	1.69			
	STA AVG P (39-67)	.31	.53	1.15	1.91	3.53	4.98	2.92	2.64	2.68	1.10	.59	.38	22.72			
	Q	.02	.03	.13	.07	.49	1.07	.39	.22	.27	.07	.01	.00	2.77			
	MEAN P 3/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
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		
1967		7-8	.09	7-8	.07	6-11	.13	6-11	.32	6-11	.37	6-10	.53	6-9	.59	6-5	.77
MAXIMUMS FOR PERIOD OF RECORD																	
1939 TO 1967	5-22 1965	.52	5-22 1965	.43	5-22 1965	.78	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: Watershed conditions: Crops including wheat, corn, sorghum, alfalfa and meadow were in good condition. Fallow fields had no cover. Pastures good to excellent. 1/ Arithmetic average of rain gages A-12-R, B-31-R, C-31-R and D-31-R. 2/ Arithmetic average of rain gage D-31-R and meteorological station. 3/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																	
1967 SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA							WATERSHED W-8 44.3						
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 July 8, 1967																	
	4 RG 4/			RG	C-31-R												
6- 9	.46	.0204	7-8	0144	.00	.00	7-8	0155	.0003	.0000							
6-10	1.04	.0542		0204	1.92	.64		0250	.0009	.0005							
6-11	.82	.5330		0218	.73	.81		0310	.0041	.0013							
6-12	.01	.0564		0250	.02	.82		0330	.0571	.0115							
6-13	.00	.0012		0310	3.18	1.88		0355	.0907	.0440							
6-15	.15	.0000		0320	.66	1.99		0410	.0746	.0646							
6-20	.46	.0000		0630	.09	2.27		0450	.0300	.0995							
6-21	1.07	.1607						0510	.0256	.1087							
6-22	T	.0015		RG	A-12-R			0540	.0287	.1223							
6-23	.23	.0076		0154	.00	.00		0620	.0565	.1498							
6-24	.49	.0875		0212	.47	.14											
6-25	.00	.0024		0220	1.35	.32		0650	.0679	.1809							
6-28	.13	.0000		0250	.02	.33		0710	.0679	.2035							
7- 4	.07	.0000		0310	1.14	.71		0750	.0571	.2452							
7- 5	.07	.0000		0320	.42	.78		0850	.0382	.2928							
				0400	.03	.80		1010	.0180	.3303							
				0420	.33	.91											
				0520	.15	1.06		1140	.0068	.3489							
				0640	.02	1.08		1310	.0025	.3559							
								1440	.0015	.3589							
				RG	D-31-R			1610	.0009	.3607							
				0140	.00	.00		1910	.0004	.3626							
				0146	.60	.06											
				0156	4.92	.88		2400	.0001	.3638							
				0216	.69	1.11											
				0248	.00	1.11		7-9 1200	.0000	.3644							
				0318	1.40	1.81											
				0630	.08	2.08											
				RG	B-31-R	1.99											
				4 RG	AVG4/	1.86											
Watershed conditions: The land use in percentage of the watershed area was as follows: Percent																	
Corn	28	T															
Sorghum	21																
Wheat	14																
Fallow	8																
Alfalfa	21																
Pasture	5																
Meadow	1																
Farm Yard	2																
Roads	2																
Total	100																
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. 4/ ARITHMETIC AVERAGE OF RAIN GAGES C-31-R, A-12-R, D-31-R AND B-31-R.																	



HASTINGS, NEBRASKA WATERSHED W-8

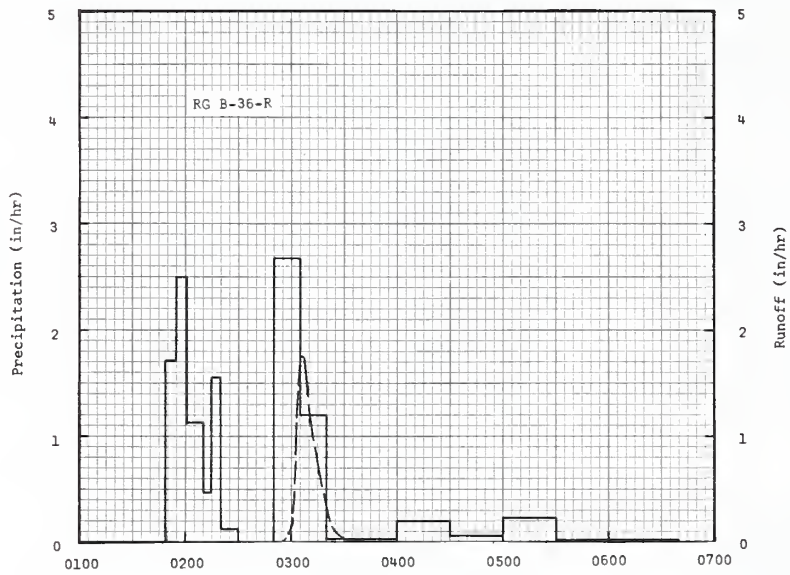
MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA						WATERSHED W-11		44.4		
						AREA-3490 ACRES (5.45						SQ. MILES)				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/	2/.09	2/.13	2/.29	1.60	4.81	6.13	2.75	.39	4.47	1.18	.14	2/.45	22.43			
Q	.00	.00	.00	.00	.06	.96	.26	.00	.15	.04	.00	.00	1.47			
STA AVG P (39-67) Q	.32	.55	1.18	1.91	3.50	4.97	2.91	2.65	2.67	1.11	.61	.40	22.78			
MEAN P 3/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
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		
1967	6-10	.04	6-10	.04	6-10	.07	6-10	.16	6-11	.27	6-10	.36	6-10	.56	6-5	.72
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	5-22 1965	.42	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: Watershed conditions: Crops including wheat, corn, sorghum, alfalfa and meadow were in good condition. Fallow fields had no cover. Pastures good to excellent. 1/ Arithmetic average of rain gages A-12-R, B-31-R, C-31-R, D-31-R, E-30-R and G-42-R. Months of Jan., Feb., Mar. and Dec. may include snow and snow melt. 2/ Arithmetic average of rain gages D-31-R, G-42-R and meteorological station records. 3/ Mean P based on 72-yr (1893-1964) U. S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT				HASTINGS, NEBRASKA				WATERSHED W-11				44.4				
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 July 8, 1967																
6-9	.46	.0133	7-8	RG	E-30-R	.00	7-8	0140	.0000	.0000						
6-10	1.15	.0712		0140	.00	.54		0315	.0001	.0001						
6-11	.79	.3562		0154	2.31	.67		0330	.0092	.0012						
6-12	.01	.1689		0204	.78	.70		0340	.0072	.0026						
6-13	.00	.0031		0250	.04	1.45		0400	.0120	.0058						
6-15	.14	.0000		0315	1.80											
6-20	.41	.0000		0400	.08	1.51		0415	.0132	.0090						
6-21	1.02	.1279		0500	.13	1.64		0455	.0090	.0164						
6-22	.02	.0052		0600	.06	1.70		0600	.0135	.0285						
6-23	.16	.0027		RG	C-31-R			0800	.0198	.0618						
6-24	.49	.0670		0144	.00	.00		0930	.0225	.0936						
6-25	.00	.0049		0204	1.92	.64										
6-28	.09	.0000		0218	.73	.81		1130	.0245	.1406						
7-4	.08	.0000	0250	.02	.82	1300	.0250	.1777								
7-5	.08	.0000	0310	3.18	1.88	1340	.0235	.1939								
			0320	.66	1.99	1440	.0195	.2154								
			0630	.09	2.27	1540	.0117	.2310								
			RG	D-31-R		1640	.0061	.2399								
			0140	.00	.00	1800	.0031	.2460								
			0146	.60	.06	2000	.0015	.2506								
			0156	4.92	.88	2400	.0006	.2548								
			0216	.69	1.11	7-9	1200	.0001	.2590							
			0248	.00	1.11	7-10	2400	.0001	.2602							
			0318	1.40	1.81											
			0630	.08	2.08											
			RG	A-12-R	1.08											
			RG	B-31-R	1.99											
			RG	G-42-R	1.26											
			6 RG	AVG 4/	1.73											
Watershed conditions: The land use in percentage of the watershed area was as follows: Percent Corn 27 Sorghum 21 Wheat 13 Fallow 8 Alfalfa 22 Pasture 5 Meadow 1 Sudan 1 Farm Yard 2 Roads 100 Total 100																
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 MISC. PUB. 994, P. 44.1-4. 4/ ARITHMETIC AVERAGE OF 6 RAIN GAGES A-12-R, B-31-R, C-31-R, D-31-R, E-30-R AND G-42-R.																



July 8, 1967

HASTINGS, NEBRASKA WATERSHED W-11

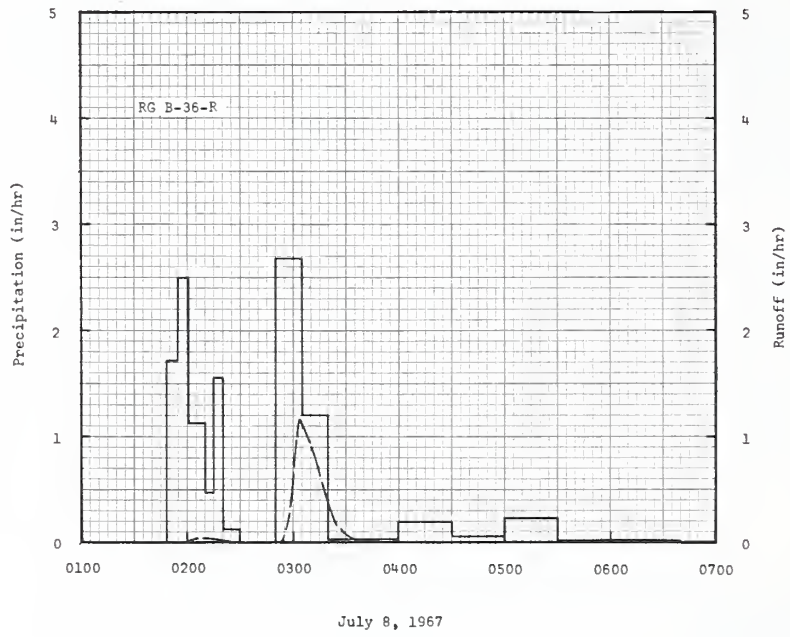
MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA-3.62 ACRES WATERSHED 1-R										
YEAR	MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/2/	.12	.15	.13	1.62	4.77	6.39	3.12	.33	4.37	1.17	2/ .10	2/ .50	22.77		
	Q	T	.00	.00	.00	.00	.81	.34	.00	.00	.00	.00	.00	1.15		
STA AV ³ /P		.30	.52	1.09	1.87	3.64	4.99	2.97	2.66	2.69	1.13	.58	.37	22.81		
(40-62) Q		.01	.01	.04	.00	.17	.15	.09	.05	.01	.01	.00	.00	.54		
MEAN P 4/72 YR		.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		
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
1967	7-8	1.76	7-8	.34	6-11	.35E	6-11	.35E	6-11	.35E	6-10	.62E	6-10	.62E	6-7	.65
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO	6-12	2.35	5-21	1.35	5-21	1.78	5-21	2.00	5-21	3.69	5-21	3.69	5-21	3.69	5-21	4.27
1967	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965
NOTES: Watershed conditions: Cultivated, planted to wheat in Sept. 1966. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began 1939, part year records for 1939 not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA				WATERSHED 1-R			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)						
<u>Event of July 8, 1967</u>																
	RG B-36-R			RG	B-36-R											
6-9	.43	.00	7-8	0148	.00	.00	7-8	0255	.00	.00						
6-10	1.11	.27E		0155	1.71	.20		0301	.18	.01						
6-11	.90	.35E		0201	2.50	.45		0307	1.76	.11						
6-15	.18	.00		0210	1.13	.62		0312	1.01	.23						
6-20	.35	.00		0215	.48	.66		0317	.54	.30						
6-21	1.11	.16E		0220	1.56	.79		0322	.18	.33						
6-23	.15	.00		0230	.12	.81		0332	.01	.34						
6-24	.55	.00		0250	.00	.81		0340	.00	.34						
6-28	.16	.00		0305	2.68	1.48										
7-4	.04	.00		0320	1.20	1.78										
7-5	.06	.00		0400	.03	1.80										
				0430	.20	1.90										
				0500	.06	1.93										
				0530	.24	2.05										
				0640	.02	2.07										
Watershed conditions: In wheat, nearly ripe. 24" to 48" high, in good condition with ground cover 75%.																
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.																



July 8, 1967

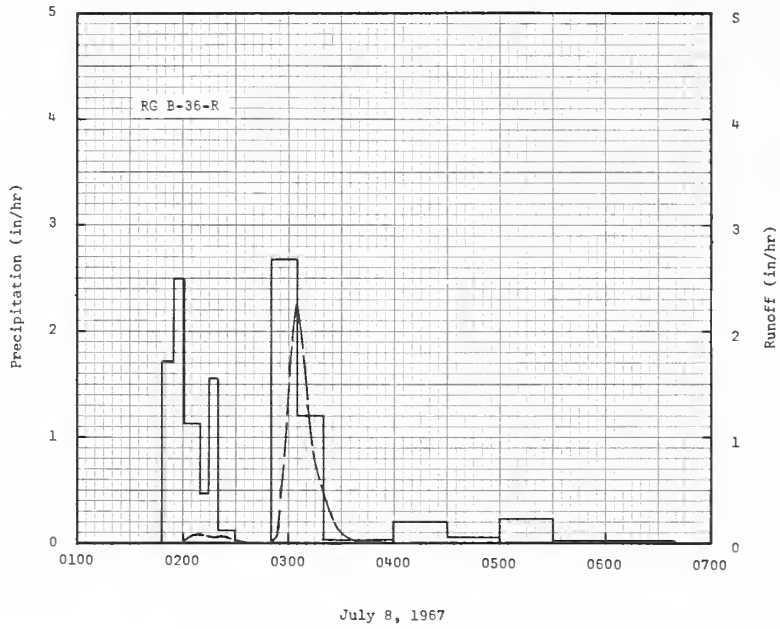
HASTINGS, NEBRASKA WATERSHED 1-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA-3.40 ACRES WATERSHED 2-R											
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967 P 1/	.12	.15	.13	1.61	4.74	6.42	3.16	.35	4.37	1.22	.10	.50	22.87				
Q	.00	.00	.00	.00	.00	.21	.33	.00	T	.00	.00	.00	.54				
STA AV 3/P	.31	.57	1.13	1.87	3.68	4.86	3.21	2.70	2.74	1.18	.64	.41	23.30				
(40-67) Q	.03	.03	.22	.19	.91	1.38	.72	.37	.45	.21	.04	.00	4.55				
MEAN P 4/																	
72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75				
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	
1967	7-8	1.17	7-8	.33	7-8	.33	7-8	.33	7-8	.33	7-8	.33	7-8	.33	7-8	.33	
MAXIMUMS FOR PERIOD OF RECORD																	
1939 TO 1967	6-12 1965	3.47	5-21 1965	2.38	5-21 1965	2.40	5-21 1965	2.58	5-21 1965	5.21	5-21 1965	5.30	5-21 1965	5.30	5-21 1965	5.49	
NOTES: Watershed conditions: Native grass pasture, good stand moderately grazed (one-half of top growth consumed). 1/ Arithmetic average precipitation from rain gages B-34-R and B-36-R. 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 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																	
1967 SELECTED RUNOFF EVENT						HASTINGS, NEBRASKA						WATERSHED 2-R		44.6			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF										
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)							
Event of July 8, 1967																	
	RG B-36-R			RG	B-36-R												
6-9	.43	.00	7-8	0148	.00	.00	7-8	0201	.00	.00							
6-10	1.11	.03		0155	1.71	.20		0207	.02	.00							
6-11	.90	.18		0201	2.50	.45		0221	.00	.00							
6-15	.18	.00		0210	1.13	.62		0243	.00	.01							
6-20	.35	.00		0215	.48	.66		0253	.00	.01							
6-21	1.11	T		0220	1.56	.79		0259	.28	.02							
6-23	.15	.00		0230	.12	.81		0304	1.17	.08							
6-24	.55	.00		0250	.00	.81		0310	.90	.18							
6-28	.16	.00		0305	2.68	1.48		0315	.63	.25							
7-4	.04	.00		0320	1.20	1.78		0325	.17	.31							
7-5	.06	.00		0400	.03	1.80		0336	.03	.33							
				0430	.20	1.90		0413	.00	.33							
				0500	.06	1.93											
				0530	.24	2.05											
				0640	.02	2.07											
Watershed conditions: 100% native grass pasture. Grass 4" to 10" high with moderate grazing. Grass in good condition. Ground cover 90%.																	
RG B-34-R 2.10																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.428. FOR MAP OF AREA, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.6-3.																	



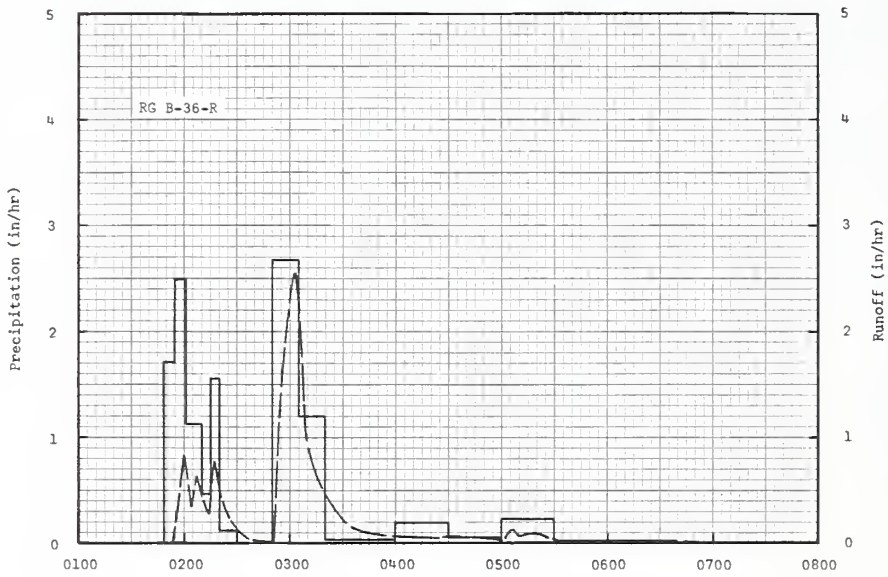
HASTINGS, NEBRASKA WATERSHED 2-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA						WATERSHED 3-H		44.7		
						AREA-3.77 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	2/.12 .04	2/.15 .10	2/.13 .00	1.60 .00	4.72 .05	6.45 1.31	3.19 .62	.37 .00	4.37 .01	1.27 .00	2/.10 .00	2/.50 .00	22.97 2.13		
	STA AV3/P (40-67) Q	.31 .03	.57 .06	1.13 .25	1.87 .20	3.68 .94	4.86 1.44	3.22 .77	2.70 .37	2.74 .45	1.19 .21	.64 .04	.41 .00	23.32 4.76		
	MEAN P 4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		
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	
1967	7-8	2.27	7-8	.58	7-8	.62	7-8	.62	7-8	.62	6-10	.82	6-10	.82	6-5	1.03
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 19 67	7-3 1959	6.45	7-3 1959	2.34	7-3 1959	2.35	6-1 1951	3.36	5-21 1965	4.48	5-21 1965	4.80	5-21 1965	4.80	5-21 1965	5.38
NOTES: Watershed conditions: Cultivated, planted to wheat in Sept. 1966. General crop rotation of wheat-sorghum-fallow, using minimum tillage practices. 1/ Precipitation from rain gage B-34-R. 2/ Based on meteorological station records. 3/ Station records began Mar. 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 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 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 DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)						
Event of July 8, 1967																
	2 RG5/ .42	.01	7-8	RG 0148	B-36-R .00	.00	7-8	0200	.00	.00						
6-9	1.10	.36		0155	1.71	.20		0206	.09	.00						
6-11	.91	.46		0201	2.50	.45		0212	.09	.01						
6-15	.12	.00		0210	1.13	.62		0218	.05	.02						
6-20	.44	.00		0215	.48	.66		0222	.07	.02						
6-21	1.04	.17		0220	1.56	.79		0230	.02	.03						
6-23	.23	.01		0230	.12	.81		0238	.00	.03						
6-24	.52	.06		0250	.00	.81		0246	.00	.03						
6-28	.20	.00		0305	2.68	1.48		0253	.06	.03						
7-4	.06	.00		0320	1.20	1.78		0258	.93	.07						
7-5	.08	.00		0400	.03	1.80		0305	2.27	.28						
				0430	.20	1.90		0313	.88	.49						
				0500	.06	1.93		0325	.22	.59						
				0530	.24	2.05		0337	.03	.61						
				0640	.02	2.07		0400	.00	.62						
				RG	B-34-R	2.10										
				2 RG	AVG5/	2.04										
Watershed conditions: In wheat, ripe, 24" to 48" high in good condition with ground cover 75%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.802. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.7-4. 5/ ARITHMETIC AVERAGE OF 2 RAIN GAGES B-36-R AND B-34-R.																



HASTINGS, NEBRASKA WATERSHED 3-H

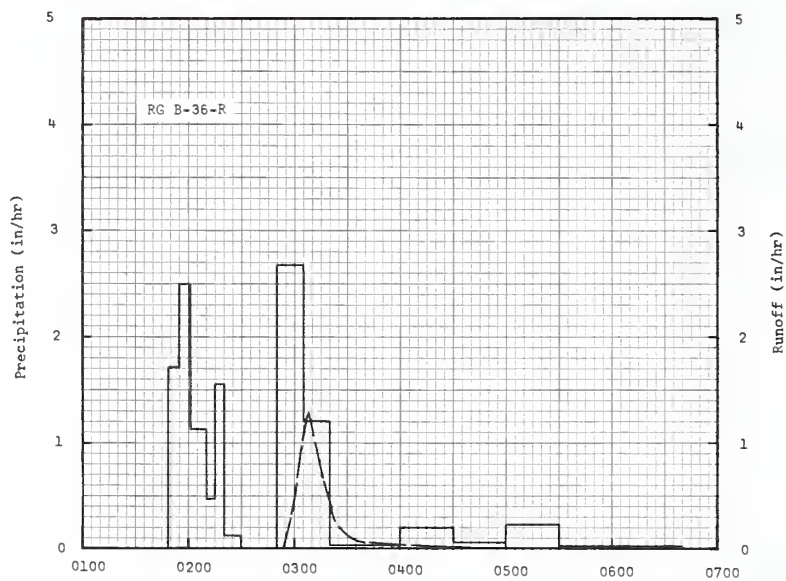
MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA WATERSHED 4-H AREA-3.64 ACRES							44.8			
YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ^{1/} Q	2/.12	2/.15	2/.13	1.61	4.74	6.42	3.16	.35	4.37	1.22	2/.10	2/.50	22.87			
STA AV ^{3/} P (40-67) Q	.31	.57	1.13	1.91	3.66	4.82	3.19	2.68	2.76	1.17	.63	.40	23.23			
MEAN P ^{4/} 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
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	
1967	7-8	2.54	7-8	.71	7-8	.99	7-8	1.09	7-8	1.09	7-8	1.09	7-8	1.09	7-8	1.09
MAXIMUMS FOR PERIOD OF RECORD																
1940 TO 1965	6-26 1952	7.67	7-3 1959	2.13E	5-21 1965	2.57	6-1 1951	3.19	5-21 1965	5.94	5-21 1965	6.37	5-21 1965	6.37	5-21 1965	7.21
NOTES: Watershed conditions: Cultivated, planted to sorghum. General crop rotation of sorghum-fallow-wheat, using minimum tillage practices. 1/ Arithmetic average precipitation from rain gages B-34-R and B-36-R. 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 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 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)						
Event of July 8, 1967																
6-9	2 RG ^{5/} .43	.00	7-8	RG 0148	B-36-R .00	.00	7-8	0153	.00	.00						
6-10	1.11	.00		0155	1.71	.20		0200	.83	.05						
6-11	.90	.00		0201	2.50	.45		0204	.36	.09						
6-15	.18	.00		0210	1.13	.62		0207	.61	.12						
6-20	.35	.00		0215	.48	.66		0213	.29	.16						
6-21	1.11	.00		0220	1.56	.79		0217	.79	.20						
6-23	.15	.00		0230	.12	.81		0227	.18	.26						
6-24	.55	.00		0250	.00	.81		0237	.03	.28						
6-28	.16	.00		0305	2.68	1.48		0249	.01	.28						
7-4	.04	.00		0320	1.20	1.78		0254	1.15	.31						
7-5	.06	.00		0400	.03	1.80		0303	2.54	.56						
				0430	.20	1.90		0308	1.36	.72						
				0500	.06	1.93		0319	.46	.89						
				0530	.24	2.05		0334	.17	.95						
				0640	.02	2.07		0344	.12	.98						
								0354	.08	.99						
								0415	.05	1.01						
								0424	.04	1.02						
								0429	.08	1.02						
								0502	.02	1.05						
								0507	.13	1.05						
								0512	.08	1.06						
								0516	.10	1.07						
								0526	.07	1.08						
								0536	.02	1.09						
								0706	.00	1.09						
Watershed conditions: In sorghum, 2" to 10" high and in good condition. Ground cover of 5%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.670. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.8-3. 5/ ARITHMETIC AVERAGE OF 2 RG B-36-R AND B-34-R.																



July 8, 1967

HASTINGS, NEBRASKA WATERSHED 4-H

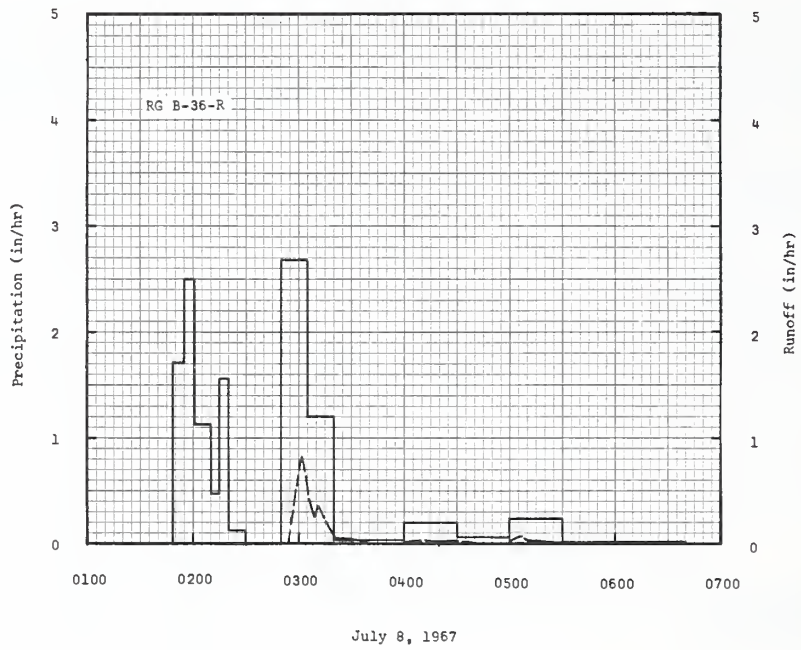
MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA										
						AREA 4.02 ACRES				WATERSHED 5-H						
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / ₂	.12	.15	.13	1.61	4.74	6.42	3.16	.35	4.37	1.22	.10	.50	22.87			
Q	.00	.01	.00	.00	.07	.47	.37	.00	.66	.29	.00	.00	1.87			
STA AV ₃ /P	.30	.54	1.07	1.83	3.53	4.76	3.08	2.56	2.78	1.12	.59	.38	22.54			
(40-67) Q	.03	.03	.15	.09	.72	1.02	.48	.28	.26	.11	.02	.00	3.19			
MEAN P ₄ /																
72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
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
1967	9-19	1.64	7-8	.36	7-8	.37	7-8	.37	7-8	.37	6-10	.42	6-10	.42	9-19	.66
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	6-14 1960	4.24	7-3 1959	1.75	5-21 1965	2.26	5-21 1965	2.78	5-21 1965	5.41	5-21 1965	5.77	5-21 1965	5.77	5-21 1965	6.37
NOTES: Watershed conditions: Cultivated, fallowed, planted to wheat in September. General crop rotation of fallow-wheat-sorghum, using tillage practices. 1/ Precipitation from rsin gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no record, 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
1967 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 July 8, 1967																
	2 RG ₅ /			RG	B-36-R											
6- 9	.43	.01	7-8	0148	.00	.00	7-8	0253	.00	.00						
6-10	1.11	.17		0155	1.71	.20		0301	.61	.03						
6-11	.90	.25		0201	2.50	.45		0308	1.27	.16						
6-15	.18	.00		0210	1.13	.62		0313	.78	.23						
6-20	.35	.00		0215	.48	.66		0320	.43	.30						
6-21	1.11	T		0220	1.56	.79		0330	.11	.34						
6-23	.15	.00		0230	.12	.81		0340	.06	.35						
6-24	.55	T		0250	.00	.81		0355	.03	.36						
6-28	.16	.00		0305	2.68	1.48		0415	.01	.37						
7- 4	.04	.00		0320	1.20	1.78		0445	.00	.37						
7- 5	.06	.00		0400	.03	1.80										
				0430	.20	1.90										
				0500	.06	1.93										
				0530	.24	2.05										
				0640	.02	2.07										
				RG	B-34-R	2.10										
				2 RG	AVG ₅ /	2.04										
Watershed conditions: In fallow, using minimum tillage practices. Estimated ground cover 10%.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.054. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.9-4. 5/ ARITHMETIC AVERAGE OF 2 RG B-36-R AND B-34-R.																



July 8, 1967

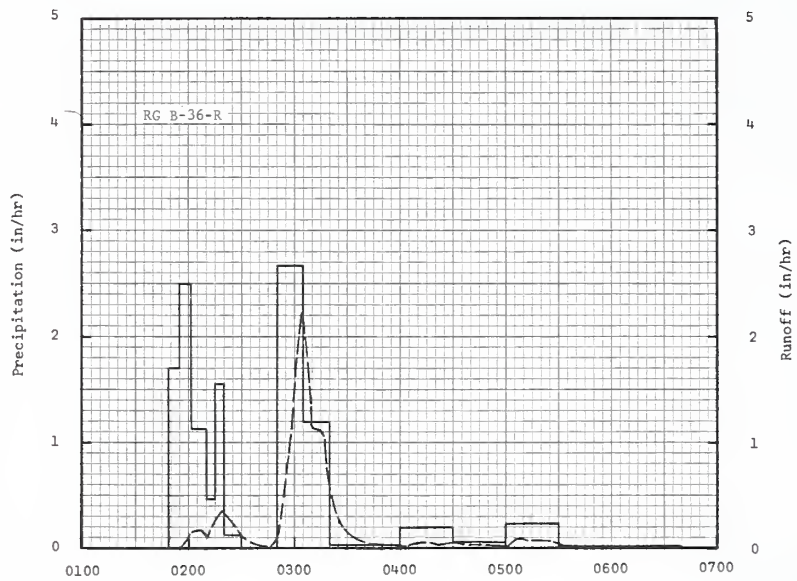
HASTINGS, NEBRASKA WATERSHED 5-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA-4.01 ACRES WATERSHED 6-H											
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL				
1967 P1/2/	.12	.15	.13	1.62	4.77	6.39	3.12	.33	4.37	1.17	.10	.50	22.77				
Q	.00	.00	.00	.00	.08	.41	.20	.00	.69	.27	.00	.00	1.65				
STA AV 3/P (40-67) Q	.30	.54	1.07	1.83	3.53	4.76	3.08	2.56	2.78	1.12	.59	.38	22.54				
MEAN P 4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75				
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		
1967		9-19	1.87	9-19	.37	9-19	.37	9-19	.45	9-19	.45	9-19	.51	9-19	.51	9-19	.76
MAXIMUMS FOR PERIOD OF RECORD																	
1939 TO 1967	5-22 1954	5.70	7-10 1951	1.66	5-21 1965	2.26E	5-21 1965	2.78E	5-21 1965	5.41E	5-21 1965	5.77E	5-21 1965	5.77E	5-21 1965	6.37E	
NOTES: Watershed conditions: Cultivated, fallow, planted to wheat in September. General crop rotation of fallow-wheat-sorghum, using minimum tillage practices. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no record 1957, not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																	
1967 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 July 8, 1967																	
	RG B-36-R			RG	B-36-R												
6- 9	.43	.02	7-8	0148	.00	.00	7-8	0253	.00	.00							
6-10	1.11	.13		0155	1.71	.20		0257	.24	.00							
6-11	.90	.19		0201	2.50	.45		0302	.81	.05							
6-15	.18	.00		0210	1.13	.62		0305	.48	.09							
6-20	.35	.00		0215	.48	.66		0308	.25	.11							
6-21	1.11	.01		0220	1.56	.79		0311	.37	.12							
6-23	.15	.00		0230	.12	.81		0315	.24	.14							
6-24	.55	T		0250	.00	.81		0321	.07	.15							
6-28	.16	.00		0305	2.68	1.48		0328	.04	.16							
7- 4	.04	.00		0320	1.20	1.78		0338	.02	.17							
7- 5	.06	.00		0400	.03	1.80		0406	.01	.17							
				0430	.20	1.90		0411	.04	.17							
				0500	.06	1.93		0422	.01	.18							
				0530	.24	2.05		0426	.02	.18							
				0640	.02	2.07		0439	.00	.18							
								0459	.00	.18							
								0504	.07	.18							
								0510	.03	.19							
								0517	.03	.19							
								0529	.00	.20							
								0703	.00	.20							
Watershed conditions: In fallow, using minimum tillage practices. Estimated ground cover 10%.																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.044. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.10-1.																	



HASTINGS, NEBRASKA WATERSHED 6-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA-4.26 ACRES WATERSHED 7-H								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P ₁ / Q	2/.12 .00	2/.15 .00	2/.13 .00	1.62 .00	4.77 .08	6.39 .91	3.12 .83	.33 .00	4.37 .21	1.17 .17	2/.10 .00	2/.50 .00	22.77 2.20	
STA AV ₂ /P (40-67) Q	.30	.54	1.07	1.83	3.53	4.76	3.08	2.56	2.78	1.12	.59	.38	22.54	
MEAN P <u>4</u> / 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75	
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
1967	7-8	2.22	7-8	.66	7-8	.77	7-8	.83	7-8	.83	7-8	.83	7-8	.83
MAXIMUMS FOR PERIOD OF RECORD														
1939 TO 1967	5-22 1954	4.76	7-3 1959	2.04	7-3 1959	2.06	5-22 1965	3.13	5-21 1965	4.76	5-21 1965	5.06	5-21 1965	5.35
NOTES: Watershed conditions: Cultivated, planted to sorghum. General crop rotation of sorghum-fallow-wheat, using minimum tillage practices. 1/ Precipitation from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began Apr. 1, 1939; part year records for 1939 and period of no record for 1957 not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.														
1967 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 July 8, 1967														
	RG B-36-R		7-8	RG	B-36-R		7-8							
6- 9	.43	.02		0148	.00	.00		0157	.00	.00				
6-10	1.11	.18		0155	1.71	.20		0204	.18	.01				
6-11	.90	.28		0201	2.50	.45		0212	.10	.03				
6-15	.18	.00		0210	1.13	.62		0220	.34	.06				
6-20	.35	.00		0215	.48	.66		0228	.11	.09				
6-21	1.11	.30E		0220	1.56	.79		0233	.05	.10				
6-23	.15	T		0230	.12	.81		0243	.02	.10				
6-24	.55	.11		0250	.00	.81		0250	.13	.10				
6-28	.16	.00		0305	2.68	1.48		0254	.58	.13				
7- 4	.04	.00		0320	1.20	1.78		0258	1.11	.18				
7- 5	.06	.00		0400	.03	1.80		0304	2.22	.37				
				0430	.20	1.90		0310	1.13	.55				
				0500	.06	1.93		0318	.61	.68				
				0530	.24	2.05		0323	.32	.72				
				0640	.02	2.07		0333	.10	.75				
								0338	.05	.76				
								0353	.01	.77				
								0403	.01	.77				
								0412	.05	.77				
								0425	.02	.78				
								0428	.04	.78				
								0438	.03	.79				
								0448	.01	.79				
								0501	.01	.79				
								0506	.10	.80				
								0513	.08	.81				
								0523	.07	.82				
								0533	.02	.83				
								0543	.01	.83				
								0643	.00	.83				
Watershed conditions: In sorghum, 6" to 12" high in good condition. Ground cover 5%.														
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.296. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.11-4.														

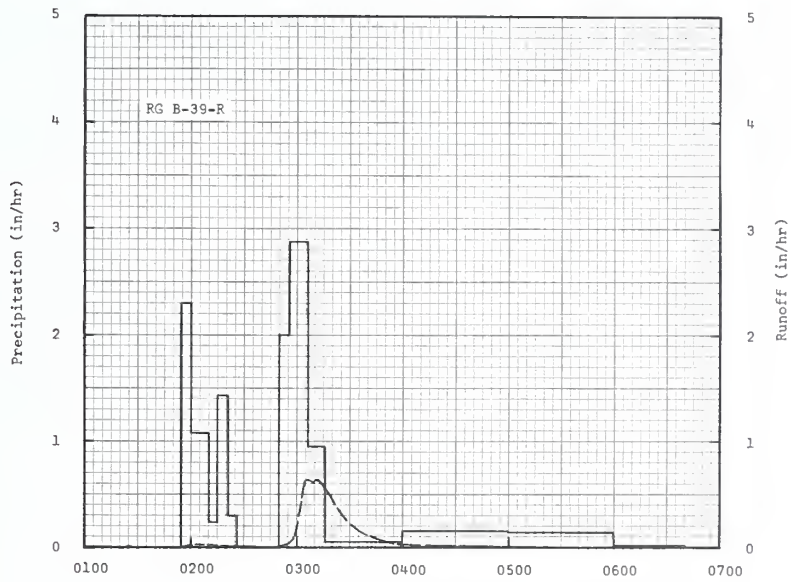


July 8, 1967

HASTINGS, NEBRASKA WATERSHED 7-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA							WATERSHED 8-H			
						AREA 3.97 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ^{1/}	2/ .12	2/ .15	2/ .13	1.62	4.77	6.39	3.12	.33	4.37	1.17	2/ .10	2/ .50	22.77			
Q	.00	.00	.00	.00	.00	.30	.25	.00	.01	.00	.00	.00	.56			
STA AV ^{3/} P	.31	.57	1.13	1.91	3.67	4.82	3.19	2.68	2.76	1.17	.63	.40	23.24			
(40-67) Q	.01	.02	.09	.04	.51	.63	.33	.10	.19	.04	.00	.00	1.96			
MEAN P ^{4/}																
72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
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
1967	6-11	.45	6-11	.19	6-11	.19	7-8	.25E	7-8	.25E	6-10	.26	6-10	.26	6-5	.27
MAXIMUMS FOR PERIOD OF RECORD																
19 39 TO	6-10	3.66	7-3	1.67	5-22	1.85	6-1	2.35	5-21	4.19	5-21	4.35	5-21	4.35	5-21	4.68
19 65	1943		1959		1965		1951		1965		1965		1965		1965	
Notes: Watershed conditions: Cultivated, planted to wheat in Sept. 1966. General crop rotation of wheat-sorghum-fallow, using minimum tillage practices. ^{1/} Precipitation from rain gage B-36-R. ^{2/} Based on meteorological station records. ^{3/} Station records began Mar. 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 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.12-4.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA 3.74 ACRES WATERSHED 18-H											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ^{1/}	.12	.15	.13	1.59	4.80	6.45	2.82	.33	4.43	1.35	.10	.50	22.77			
	Q	.00	.00	.00	.00	.04	.89	.30	.00	.22	.04	.00	.01	1.50			
STA AV ^{3/}	P	.29	.55	1.16	2.01	3.93	5.14	3.15	2.90	2.80	1.20	.65	.41	24.19			
(40-67)	Q	.02	.02	.04	.07	.56	.89	.34	.15	.15	.05	.02	.00	2.31			
MEAN P ^{4/}																	
72 YR		.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
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	
1967	7-8	.64	6-11	.32	6-11	.36	6-11	.37	6-11	.37	6-10	.66	6-10	.66	6-5	.70	
MAXIMUMS FOR PERIOD OF RECORD																	
1939 TO 1967	5-21 1965	2.89	7-3 1959	2.01E	5-21 1965	2.32	5-21 1965	2.86	5-21 1965	5.30	5-21 1965	5.58	5-21 1965	5.58	5-21 1965	6.02	
Notes: Watershed conditions: Native grass pasture, heavily grazed, fair cover condition. 1/ Precipitation from rain gage B-39-R. 2/ Based on meteorological station records. 3/ Station records began August 1, 1939; part year records for 1939 and period of no record for 1956 not included in station averages. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																	
1967 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 July 8, 1967																	
	RG B-39-R				RG	B-39-R											
6-9	.39	T	7-8	0154	.00	.00	7-8	0154	.00	.00							
6-10	.93	.30		0200	2.30	.23		0200	.01	T							
6-11	.99	.37		0210	1.08	.41		0208	.02	T							
6-12	.03	.00		0215	.24	.43		0213	.01	T							
6-15	.18	.00		0220	1.44	.55		0250	.00	.01							
6-20	.24	.00		0226	.30	.58		0257	.02	.01							
6-21	1.58	.16		0250	.00	.58		0304	.56	.04							
6-23	.17	T		0256	2.00	.78		0306	.63	.06							
6-24	.57	.04		0306	2.88	1.26		0309	.61	.09							
6-28	.07	.00		0316	.96	1.42		0312	.64	.12							
7-4	.04	.00		0400	.05	1.46		0320	.44	.19							
7-5	.04	.00		0500	.14	1.60		0330	.21	.24							
				0600	.13	1.73		0340	.11	.27							
				0640	.01	1.74		0355	.03	.29							
								0410	.01	.29							
								0610	.00	.30							
Watershed conditions: In permanent pasture. Heavy grazing began in April. Grass 4" to 10" high. Ground cover estimated at 90%.																	
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3.771. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 44.22-4.																	



July 8, 1967

HASTINGS, NEBRASKA WATERSHED 18-H

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA 3.83 ACRES								WATERSHED 22-H		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/	2/ .08	2/ .14	2/ .24	1.55	5.43	7.07	3.79	.43	4.55	1.21	2/ .15	2/ .49	25.13		
	Q	.00	.00	.00	.00	.00	.07	.12	.00	.00	.00	.00	.00	.19		
	STA AV3/P (62-67) Q	.25	.53	.85	1.08	3.31	5.52	4.08	2.91	3.96	1.04	.22	.30	24.05		
	MEAN P 4/	.00	.04	.00	.00	.42	.07	.09	.20	.04	.02	.00	.00	.88		
72	YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		
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
1967	7-8	.56	7-8	.11	7-8	.11	7-8	.11	7-8	.11	7-8	.11	7-8	.11	7-8	.11
MAXIMUMS FOR PERIOD OF RECORD																
1962 TO 19 67	8-23 1962	3.18	5-22 1965	1.17	5-22 1965	1.68	5-22 1965	1.72	5-21 1965	2.60	5-21 1965	2.62	5-21 1965	2.62	5-21 1965	2.70
NOTES: Watershed conditions: Reseeded to native grasses in 1962. Excellent cover condition. 1/ Precipitation from rain gage C-40-R. 2/ Based on meteorological station records. 3/ Precipitation and runoff records under grass cover began June 1, 1962; for comparative data under cultivation (1941-1954) see p. 44-26-1 of 1962 volume. 4/ Mean P based on 72-yr (1893-1964) U. S. Weather Bureau record period at Red Cloud, Nebr.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1962, USDA MISC. PUB. 1070, P. 44.26-3.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA AREA-4,20 ACRES WATERSHED 23-H											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P <u>1/</u>	<u>2/</u> .08	<u>2/</u> .14	<u>2/</u> .24	1.55	5.43	7.07	3.79	.43	4.55	1.21	<u>2/</u> .15	<u>2/</u> .49	25.13			
	Q	.00	.00	.00	.00	.00	.07	.10	.00	.00	.00	.00	.00	.17			
STA AV ^{2/}	P	.25	.53	.85	1.08	3.31	5.52	4.08	2.91	3.96	1.04	.22	.30	24.05			
(62-67)	Q	.00	.04	.00	.00	.42	.09	.13	.21	.04	.01	.00	.00	.94			
MEAN P <u>4/</u>																	
72 YR		.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75			
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	
1967	7-8	.43	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	
MAXIMUMS FOR PERIOD OF RECORD																	
19 62 TO	8-23	3.24	5-22	1.17E	5-22	1.68E	5-22	1.72E	5-22	2.60E	5-21	2.62E	5-21	2.62E	5-21	2.70E	
19 67	1962		1965		1965		1965		1965		1965		1965		1965		
NOTES: Watershed conditions: Reseeded to native grasses in 1962. Excellent cover conditions. <u>1/</u> Precipitation from rain gage C-40-R. <u>2/</u> Based on average of rain gages D-45-R and meteorological station records. <u>3/</u> Precipitation and runoff records under grass cover began June 1, 1962; for comparative data under cultivation (1941-1954) see p. 44.27-1 of 1962 volume. <u>4/</u> Mean P based on 72-yr (1893-1964) U. S. Weather Bureau record period at Red Cloud, Nebr.																	
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1962, USDA MISC. PUB. 1070, P. 44.27-3.																	

MONTHLY PRECIPITATION AND RUNOFF (inches)						HASTINGS, NEBRASKA								WATERSHED 25-H		
						AREA—2.24 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1/ Q	2/ .12 .00	2/ .15 .00	2/ .13 .00	1.62 .00	4.77 .00	6.39 .07	3.12 .10	.33 .00	4.37 .00	1.17 .00	2/ .10 .00	2/ .50 .00	22.77 .17		
	STA AV3/P (62-67) Q	.24 .00	.63 .00	.70 .01	1.08 .00	3.60 .53	5.44 .13	3.63 .03	2.34 .00	3.88 .00	.79 .00	.21 .00	.29 .00	22.83 .70		
	MEAN P 4/ 72 YR	.47	.78	1.19	2.27	3.32	4.28	3.18	2.71	2.67	1.39	.87	.62	23.75		
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	
1967	7-8	.32	7-8	.09	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10	7-8	.10
MAXIMUMS FOR PERIOD OF RECORD																
19 63 TO 19 67	5-21 1965	1.75	5-21 1965	.90	5-21 1965	1.53	5-21 1965	2.64	5-21 1965	2.64	5-21 1965	2.64	5-21 1965	2.64	5-21 1965	2.81
Notes: Watershed conditions: native grass meadow, good cover condition. 1/ Precipitation data obtained from rain gage B-36-R. 2/ Based on meteorological station records. 3/ Station records began April 26, 1963. 4/ Mean P based on 72-yr (1893-1964) U.S. Weather Bureau record period at Red Cloud, Nebr.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1963, USDA MISC. PUB. 1164, P. 44.29-2.																

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						SAFFORD, ARIZONA WATERSHED 45.001 AREA—519.3 ACRES								45.01
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
P														
Q														
STA AVG P														
MEAN P														
69 YR ^{2/}		.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	9.20

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
1967	8-23	.24	8-23	.15	8-23	.17	8-23	.17	8-23	.17	8-23	.17	8-23	.17	8-23	.17

MAXIMUMS FOR PERIOD OF RECORD 1/

19 TO 19

NOTES: 1/ Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. 2/ Mean P based on 69-yr (1899-67) U.S. Weather Bureau record period at Safford, Ariz.

1967 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA WATERSHED 45.001								
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, 1967											
	RG R-2		8-23	RG	R-2		8-23				
8-2	.07	.0000		1600	.00	.00		1621E	.000	.0000	
8-4	.54	.0373E		1607	.34	.04		1622	.007	.0001	
8-5	.27	.0000		1617	3.78	.67		1623	.015	.0002	
8-9	.89	.0536E		1620	1.80	.76		1625	.021	.0009	
8-11	.85	.0187E		1623	.80	.80		1626	.027	.0013	
				1625	2.10	.87		1627	.037	.0018	
				1632	1.12	1.00		1628	.044	.0025	
				1642	.48	1.08		1630	.050	.0040	
				1645	.60	1.11		1632	.060	.0059	
				1657	.10	1.13		1633	.069	.0070	
								1634	.085	.0082	
								1635	.103	.0098	
								1637	.131	.0137	
								1638	.146	.0160	
								1639	.158	.0186	
								1641	.179	.0242	
								1643	.199	.0305	
								1645	.218	.0374	
								1647	.225	.0448	
								1650	.233	.0563	
								1652	.225	.0639	
								1655	.218	.0750	
								1700	.193	.0921	
								1704	.173	.1043	
								1706	.160	.1098	
								1709	.142	.1174	
								1712	.125	.1241	
								1715	.111	.1300	
								1719	.097	.1369	
								1722	.085	.1415	
								1725	.069	.1453	
								1730	.056	.1506	
								1732	.051	.1524	
								1735	.042E	.1547E	
								1740	.032E	.1578E	
								1745	.024E	.1602E	
								1750	.019E	.1620E	
								1755	.014E	.1634E	
								1800	.011E	.1644E	

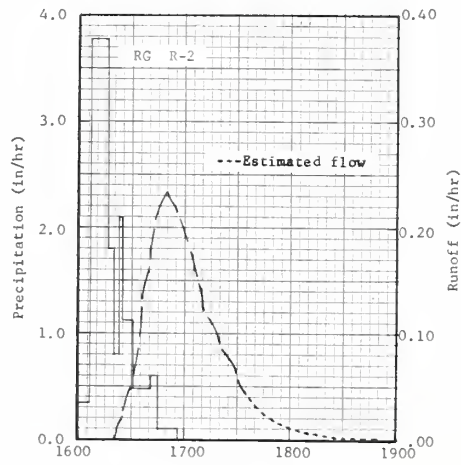
Watershed conditions: Area is 85 percent bare. Sparse vegetation is predominantly shrubs (creosote bush, snakeweed, and catclaw), with some short grasses (tobosa, three-awn, and curly mesquite).

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 523.63. FOR TOPOGRAPHIC MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, FOR 1960-61, USDA MISC. PUB. 994, P. 45.1-4 (REPRINTED). SELECTED EVENT IS FROM RE-EVALUATED DATA.

1967 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA WATERSHED 45.001								
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 August 23, 1967 continued</u>								
							8-23	1805	.008E	.1651E	
								1810	.006E	.1657E	
								1815	.004E	.1661E	
								1825	.002E	.1666E	
								1835	.001E	.1669E	
								1850	.000E	.1671E	
								1905	.000E	.1672E	
								1945	.000E	.1672E	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 523.63.



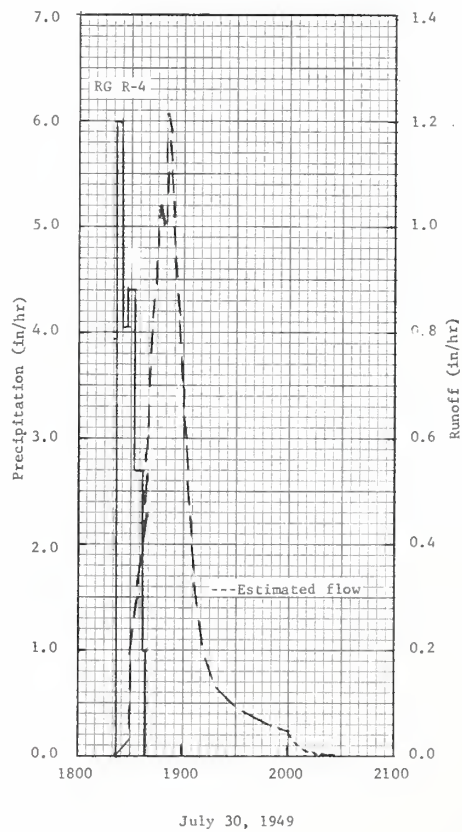
August 23, 1967

SAFFORD, ARIZONA WATERSHED 45.001

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/							SAFFORD, ARIZONA WATERSHED 45.002 AREA—682.4 ACRES (1.07 SQ. MILES)							45.02		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
YEAR																
STA AVG P																
MEAN P 2/																
69 YR	.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	9.20			
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
1967		NR		NR		NR		NR		NR		NR		NR		NR
MAXIMUMS FOR PERIOD OF RECORD 1/																
19	TO															
19																
NOTES: 1/ Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. 2/ Mean P based on 69-yr (1899-67) U. S. Weather Bureau record period at Safford, Ariz.																
1949 SELECTED RUNOFF EVENT							SAFFORD, ARIZONA WATERSHED 45.002									
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 30, 1949																
	RG R-4		7-30	RG	R-4		7-30									
	7-3 .09	.0660E		1823	.00	.00		1823	.000E	.0000						
	7-4 .20	.0000		1825	6.00	.20		1825	.001	.0000						
	7-9 .85	NR		1829	4.05	.47		1826	.001	.0000						
	7-11 1.62	.1931E		1832	4.40	.69		1827	.002	.0001						
	7-12 .07	.0000		1836	2.70	.87		1828	.002	.0001						
	7-18 .04	.0000		1839	1.00	.92		1829	.032	.0004						
	7-19 .35	.0203E						1830	.057	.0011						
	7-20 .20	.0000						1831	.097	.0024						
	7-22 .60	.0612E						1832	.127	.0043						
	7-23 .05	.0000						1833	.244	.0074						
								1834	.304	.0119						
								1835	.361	.0175						
								1837	.413E	.0304E						
								1839	.504E	.0457E						
								1840	.618	.0550						
								1841	.755	.0665						
								1844	.900	.1078						
								1847	1.094E	.1577E						
								1848	1.181	.1766						
								1850	.945	.2121						
								1851	1.024	.2285						
								1852	1.218	.2472						
								1853	1.082	.2663						
								1854	1.024	.2839						
								1856	.922	.3163						
								1857	.868	.3312						
								1858	.816	.3452						
								1859	.755	.3583						
								1900	.708	.3705						
								1902	.600	.3923						
								1907	.348	.4318						
								1912	.225	.4557						
								1917	.157	.4716						
								1922	.122	.4833						
								1927	.103	.4927						
								1937	.080	.5080						
								1947	.062	.5198						
								1957	.048	.5290						
								2002	.043	.5328						
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 688.08. FOR TOPOGRAPHIC MAP OF WATERSHED SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHED IN THE UNITED STATES. USDA, ARS, JAN. 1960, P. 45.205. SELECTED EVENT OBTAINED FROM RE-EVALUATED DATA.																

1949 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA				WATERSHED 45,002			
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 30, 1949 continued							
							7-30	2003	.031E	.5335E
								2005	.020E	.5343E
								2007	.013E	.5348E
								2009	.008E	.5352E
								2011	.006E	.5354E
								2016	.002E	.5358E
								2021	.001E	.5359E
								2026	.000E	.5359E
								2055	.000E	.5359E

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 688.08.



SAFFORD, ARIZONA WATERSHED 45,002

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						SAFFORD, ARIZONA WATERSHED 45.004 AREA 764 ACRES (1.19 SQ. MILES)							45.03
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
YEAR													
P													
Q													
STA AVG P													
D													
MEAN P ^{2/}	.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	9.20
69 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
1967	8-11	.11	8-11	.06	8-11	.07	8-11	.07	8-11	.07	8-11	.07	8-11	.07	8-11	.07

MAXIMUMS FOR PERIOD OF RECORD ^{1/}															
19	TD														
19															

NOTES: ^{1/} Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. ^{2/} Mean P based on 69-yr (1899-67) U.S. Weather Bureau record period at Safford, Ariz.

1967 SELECTED RUNOFF EVENT SAFFORD, ARIZONA WATERSHED 45.004

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)	
<u>Event of August 11, 1967</u>											
	RG R-9		8-11	RG R-9			8-11				
7-11	.03	.0000		2020	.00	.00		2158E	.000	.0000	
7-13	.17	.0000		2027	.26	.03		2159	.000	.0000	
7-16	.42	.0000		2134	.00	.03		2200	.001	.0000	
7-20	.06	.0000		2149	.16	.07		2201	.002	.0000	
7-24	1.19	NR		2152	1.40	.14		2202	.004	.0001	
8-3	.30	.0000		2155	1.40	.21		2203	.008	.0002	
8-4	.53	.0045E		2201	1.10	.32		2204	.012	.0004	
8-5	.25	.0000		2205	1.95	.45		2205	.015	.0006	
8-10	.33	.0001E		2207	3.00	.55		2206	.022	.0009	
				2215	1.58	.76		2207	.030	.0013	
				2225	.78	.89		2208	.028	.0018	
				2228	1.20	.95		2209	.030	.0023	
				2300	.13	1.02		2210	.034	.0028	
				2339	.03	1.04		2211	.040	.0035	
			8-12	0004	.05	1.06		2212	.043	.0041	
								2214	.052	.0057	
								2215	.050	.0066	
								2216	.053	.0074	
								2217	.062	.0084	
								2220	.070	.0117	
								2223	.085	.0156	
								2225	.100	.0186	
								2226	.106	.0203	
								2227	.101	.0221	
								2230	.088	.0268	
								2235	.071	.0334	
								2240	.063	.0390	
								2245	.053	.0438	
								2247	.045	.0455	
								2250	.039	.0476	
								2255	.037	.0507	
								2257	.047	.0521	
								2259	.053	.0538	
								2300	.049	.0546	
								2305	.047	.0586	
								2310	.036	.0620	
								2312	.030E	.0631E	
								2314	.025E	.0640E	
								2316	.021E	.0648E	

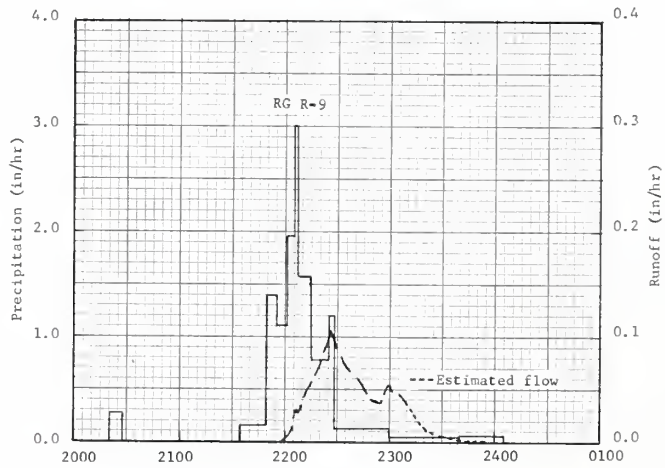
Watershed conditions: 80% of area is bare. Sparse vegetation is composed entirely of shrubs (creosotebush, snakeweed, cactus, and mesquite) except for trace of short grasses.

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 770.36. FOR TOPOGRAPHIC MAP OF WATERSHED (REPRINTED), SEE HYDROGRAPHIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA, MISC. PUB. 994, P. 45.3-4. SELECTED EVENT IS FROM RE-EVALUATED DATA.

1967 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA				WATERSHED 45.004				
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 August 11, 1967 continued</u>											
							8-11	2318	.017E	.0654E	
								2320	.014E	.0659E	
								2323	.010E	.0665E	
								2326	.008E	.0670E	
								2329	.006E	.0673E	
								2332	.004E	.0675E	
								2335	.003E	.0677E	
								2338	.002E	.0678E	
								2343	.001E	.0680E	
								2348	.001E	.0681E	
								2353	.000E	.0681E	
								2358	.000E	.0682E	
							8-12	0103	.000E	.0682E	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 770.36.



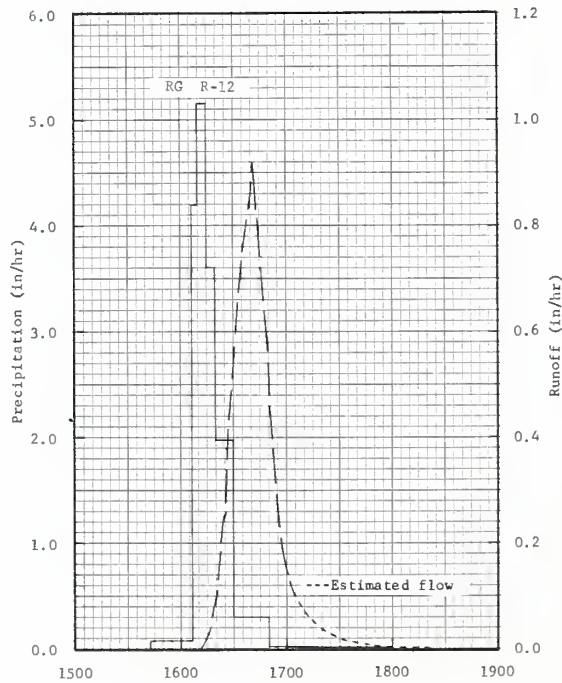
August 11, 1967

SAFFORD, ARIZONA WATERSHED 45.004

MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						SAFFORD, ARIZONA WATERSHED 45.005 AREA—723 ACRES (1.13 SQ. MILES)						45.04				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
YEAR																
P																
Q																
STA AVG P																
O																
MEAN P 2/	.65	.66	.62	.29	.14	.27	1.82	1.74	1.04	.63	.57	.77	9.20			
69 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
1967	9-25	.007	9-25	.003	9-25	.003	9-25	.003	9-25	.003	9-25	.003	9-25	.003	9-25	.003
MAXIMUMS FOR PERIOD OF RECORD 1/																
19	TO															
19																
NOTES: 1/ Not calculated. Data are being reevaluated. As soon as retabulation is completed, revised data will be reported for these two sections. 2/ Mean P based on 69-yr (1899-67) U.S. Weather Bureau record period at Safford, Ariz.																
1955 SELECTED RUNOFF EVENT				SAFFORD, ARIZONA				WATERSHED 45.005								
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 22, 1955																
	RG R-12		7-22	RG	R-12		7-22									
7-10	.31	.00		1543	.00	.00		1612	.000	.0000						
7-13	.05	.00		1607	.08	.03		1613	.001	.0000						
7-17	.16	.00		1610	4.20	.24		1614	.022	.0002						
7-21	.05	.00		1615	5.16	.67		1617	.025	.0014						
7-22	.02	.00		1620	3.60	.97		1618	.066	.0021						
				1630	1.98	1.30		1619	.082	.0034						
				1650	.30	1.40		1620	.095	.0048						
				1800	.02	1.42		1621	.119	.0066						
								1622	.167	.0090						
								1623	.193	.0120						
								1624	.255	.0157						
								1625	.299	.0204						
								1626	.342	.0257						
								1627	.392	.0318						
								1628	.451	.0388						
								1629	.495	.0467						
								1630	.532	.0553						
								1631	.564	.0644						
								1632	.613	.0742						
								1633	.656	.0848						
								1634	.700	.0961						
								1635	.724	.1080						
								1637	.780	.1330						
								1639	.841	.1601						
								1641	.868	.1886						
								1642	.926	.2035						
								1643	.830	.2181						
								1644	.790	.2316						
								1645	.761	.2446						
								1646	.728	.2570						
								1647	.660	.2685						
								1648	.595	.2790						
								1649	.540	.2885						
								1650	.458	.2968						
								1651	.444	.3043						
								1652	.378	.3112						
								1653	.336	.3171						
								1654	.288	.3223						
								1655	.266	.3269						
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 729.02. FOR TOPOGRAPHIC MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA, MISC. PUB. 945, P. 45.4-4. SELECTED EVENT IS FROM RE-EVALUATED DATA.																

1955 SELECTED RUNOFF EVENT			SAFFORD, ARIZONA WATERSHED 45.005							
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)
			<u>Event of July 22, 1955 continued</u>							
							7-22	1656	.232	.3311
								1657	.189	.3346
								1659	.165	.3405
								1701	.141	.3456
								1703	.120	.3500
								1705	.100E	.3536E
								1710	.075E	.3609E
								1715	.056E	.3664E
								1716	.054E	.3673E
								1718	.044E	.3689E
								1721	.036E	.3710E
								1724	.030E	.3726E
								1727	.024E	.3740E
								1731	.018E	.3753E
								1734	.014E	.3762E
								1739	.010E	.3772E
								1744	.007E	.3779E
								1750	.005E	.3785E
								1756	.003E	.3789E
								1804	.002E	.3792E
								1812	.001E	.3794E
								1822	.000E	.3795E
								1829	.000E	.3796E
								2001	.000E	.3796E

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 729.02.



July 22, 1955

SAFFORD, ARIZONA WATERSHED 45.005

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						ALBUQUERQUE, NEW MEXICO WATERSHED 47.001 AREA - 246 ACRES							47.01	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1939	P									1.63	.91	.87	.26	PARTIAL
	Q									.10	.04	NR	NR	PARTIAL
1940	P	.20	1.05	.15	.21	.86	1.00	.90	2.07	1.81	.35	1.62	NR	PARTIAL
	Q	.00	.00	.00	.00	.00	T	T	.07	.04	.00	.01	.00	.12
1941	P	.82	.21	1.76	1.37	2.69	.31	.98	1.75	2.68	1.68	.26	.44	14.95
	Q	.00	.00	.00	.00	.01	.00	.01	.04	.12	.06	.00	.00	.24
1942	P	.00	.26	.00	1.17	.00	1.48	.47	1.96	1.19	.47	.00	.68	7.68
	Q	.00	.00	.00	T	.00	.07	.00	.02	.01	.00	.00	.00	.10
1943	P	.24	.32	.09	.17	1.13	1.89	.49	2.73	.72	.25	.25	1.30	9.58
	Q	.00	.00	.00	.00	.00	.04	.00	.07	.03	.00	.00	.00	.14
1944	P	.20	.22	.46	.21	.52	.33	2.91	1.24	.54	1.42	.70	.82	9.57
	Q	.00	.00	.00	.00	.00	.00	.04	.05	.00	.03	.00	.00	.12
1945	P	.69	.40	.44	.49	.00	.04	.89	.99	.43	.43	.00	.20	5.00
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1946	P	.31	.02	.82	.26	.29	.06	.85	2.10	.59	.89	.61	.00	6.80
	Q	.00	.00	.00	.00	.00	.00	T	.07	T	.06	.00	.00	.13
1947	P	.28	.10	.08	.14	.51	.11	.26	1.39	2.90	.20	.21	.76	6.94
	Q	.00	.00	.00	.00	.00	.00	.00	.02	.33	.00	.00	.00	.35
1948	P	.29	1.57	.08	.32	1.26	1.15	.42	1.92	.75	1.52	.08	.21	9.57
	Q	.00	.00	.00	.00	.03	.02	.00	.11	.01	.03	.00	.00	.20
1949	P	.52	.13	.27	.43	1.45	.93	2.81	.50	1.00	.23	.00	.18	8.45
	Q	.00	.00	.00	.00	.00	.01	.10	.00	T	.00	.00	.00	.11
1950	P	.00	.32	.00	.41	.08	.27	1.42	.57	.88	.00	.00	.04	3.99
	Q	.00	.00	.00	.00	.00	T	.02	.02	.00	.00	.00	.00	.04
1951	P	.49	.25	.05	.45	.19	.94	.57	1.46	.24	.15	.14	.31	5.24
	Q	.00	.00	.00	.00	.00	.02	.01	.05	.00	.00	.00	.00	.08
1952	P	.39	.00	.34	.59	.13	1.71	1.22	.72	.46	.00	.52	.17	6.25
	Q	.00	.00	.00	.00	.00	.03	.04	.01	.00	.00	.00	.00	.08
1953	P	.00	.55	1.09	.24	.18	.81	.72	.47	.08	.16	.49	.20	4.99
	Q	.00	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00	.03
1954	P	.17	.06	.27	.00	.55	1.73	1.58	1.47	1.78	.52	.02	.24	8.39
	Q	.00	.00	.00	.00	.00	.14	.03	.10	.22	.03	.00	.00	.52
1955	P	.26	.14	.00	.13	.70	.23	1.36	.76	.32	.03	.00	.10	4.03
	Q	.00	.00	.00	.00	.00	.00	.09	.02	.01	.00	.00	.00	.12
1956	P	.32	.27	.00	.00	.00	.59	.99	.91	.00	.27	.00	.00	3.35
	Q	.00	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.08
1957	P	.25	.88	.92	.17	.42	.36	1.53	3.15	.00	1.55	.63	.08	9.94
	Q	.00	.00	.00	.00	.00	.00	.00	.38	.00	.14	.00	.00	.52
1958	P	.48	.10	.99	.77	.08	.34	.04	2.15	1.20	1.24	.06	.38	7.83
	Q	.00	.00	.00	.00	.00	.00	.00	.15	.07	.00	.00	.00	.22
1959	P	.00	.12	.22	.76	.41	.87	1.31	2.12	.00	1.34	.00	.80	7.95
	Q	.00	.00	.00	.00	.00	.01	.05	.04	.00	.02	.00	.00	.12
1960	P	.20	.23	.14	.05	.67	.39	.71	.36	.18	2.33	.00	.70	5.96
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05	.00	.00	.05
1961	P	.00	.14	.59	.56	.00	1.39	1.00	.57	.35	.97	.49	.40	6.46
	Q	.00	.00	.00	.00	.00	.05	.01	.00	.00	T	.00	.00	.06
1962	P	.65	.00	.00	.00	.00	.17	1.30	.12	1.83	.81	.49	.46	5.83
	Q	.00	.00	.00	.00	.00	.00	.03	.00	.10	.03	.00	.00	.16
1963	P	.09	.27	.25	.00	.00	.13	.67	2.43	.91	.59	.29	.00	5.63
	Q	.00	.00	.00	.00	.00	.00	.00	.03	.03	T	.00	.00	.06
1964	P	.00	.95	.20	.69	.75	.00	1.95	2.16	.53	.00	.10	.37	7.70
	Q	.00	.00	.00	.00	T	.00	.00	.13	.02	.00	.00	.00	.15
1965	P	.36	.40	.29	.86	.46	1.01	2.05	1.53	2.62	.31	.07	1.44	11.40
	Q	.00	.00	.00	.00	.00	.00	.11	.04	.32	.00	.00	.00	.47
1966	P	.42	.30	.00	.03	.04	1.61	.94	2.21	1.92	.00	.00	.07	7.54
	Q	.00	.00	.00	.00	.00	.12	.02	.18	.14	.00	.00	.00	.46

Continued on next page

^{1/} Tables show results or reevaluation of previously published data.

Cooperative Research Project of USDA and New Mexico Agricultural Experiment Station

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						ALBUQUERQUE, NEW MEXICO WATERSHED 47.001 AREA - 246 ACRES							47.01	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P	.00	.10	.06	.00	.08	1.19	2.25	4.08	1.56	NR	NR	NR	PARTIAL
	Q	.00	.00	.00	.00	.00	.07	.20	.53	.07	NR	NR	NR	PARTIAL
STA AV2/ (39-67)	P	.27	.33	.34	.37	.48	.75	1.16	1.57	1.00	.66	.28	.39	3/7.60
	Q	.00	.00	.00	T	T	.02	.02	.08	.06	.02	T	.00	.20
MEAN P 4/ 76 YR		.36	.34	.39	.55	.63	.60	1.41	1.29	.89	.78	.42	.46	8.12

REEVALUATION OF PREVIOUSLY PUBLISHED 1/
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 5/

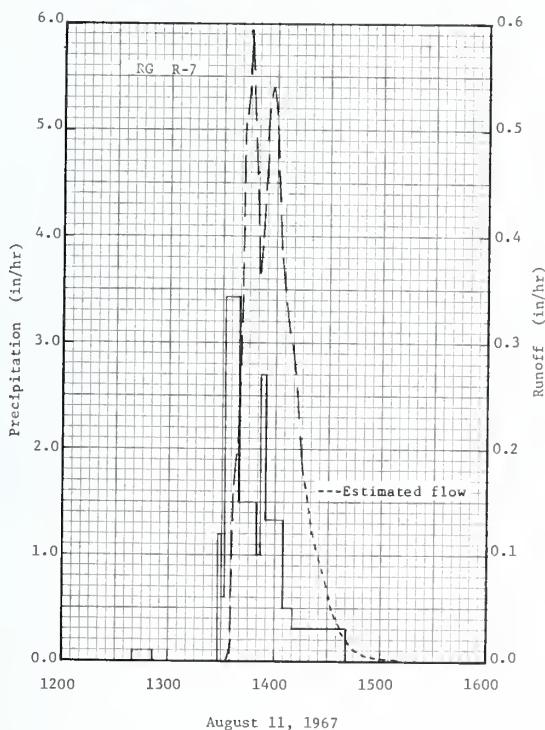
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1939	9-14	.18	9-14	.09	9-14	.10	9-14	.10	9-14	.10	9-14	.10	9-14	.10	9-14	.10
1940	8-20	.19	8-20	.06	8-20	.06	8-20	.06	8-20	.06	8-20	.06	8-20	.06	8-20	.06
1941	9-20	.22	9-20	.05	9-20	.05	10-3	.06	10-3	.06	10-3	.06	9-20	.07	9-29	.09
1942	6-30	.29E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E	6-30	.07E
1943	8-4	.09	6-28	.03	6-28	.03	6-28	.04	6-28	.04	6-28	.04	6-28	.04	6-28	.07
1944	8-17	.12	8-17	.04	8-17	.04	8-17	.04	8-17	.04	8-17	.04	8-17	.04	8-17	.04
1945		.00		.00		.00		.00		.00		.00		.00		.00
1946	10-4	.26	10-4	.05	10-4	.05	10-4	.05	10-4	.05	10-4	.04	10-4	.04	10-4	.04
1947	9-8	.62	9-8	.18	9-8	.18	9-8	.18	9-8	.18	9-8	.18	9-8	.18	9-4	.28
1948	8-4	.26	8-4	.06	8-4	.06	8-4	.11	8-4	.11	8-4	.11	8-4	.11	8-4	.11
1949	7-23	.24	7-23	.07	7-23	.09	7-23	.09	7-23	.09	7-23	.09	7-23	.09	7-23	.09
1950	8-15	.07	8-15	.02	8-15	.02	8-15	.02	8-15	.02	8-15	.02	8-15	.02	8-15	.02
1951	8-28	.14	8-28	.02	8-28	.02	8-28	.02	8-28	.02	8-28	.02	8-28	.02	8-28	.05
1952	7-23	.09	6-2	.02	6-2	.03	6-2	.03	6-2	.03	6-2	.03	6-2	.03	6-2	.03
1953	7-30	.06	7-30	.02	7-30	.02	7-30	.02	7-30	.02	7-30	.02	7-30	.02	7-30	.02
1954	8-10	.43	6-30	.10	6-30	.11	6-30	.11	6-30	.11	9-11	.16	9-11	.16	9-11	.16
1955	7-22	.26	7-22	.07	7-22	.07	7-22	.07	7-22	.07	7-22	.07	7-22	.07	7-22	.07
1956	8-19	.39	8-19	.06	8-19	.06	8-19	.06	8-19	.06	8-19	.06	8-19	.06	8-19	.06
1957	8-24	.92	8-24	.22	8-24	.22	8-24	.22	8-24	.22	8-24	.22	8-24	.22	8-24	.28
1958	8-21	.28	8-21	.08	8-21	.13	8-21	.13	8-21	.13	8-21	.13	8-21	.13	8-21	.13
1959	8-14	.13	8-14	.04	8-14	.04	8-14	.04	8-14	.04	8-14	.04	8-14	.04	8-14	.04
1960	10-17	.02	10-17	.01	10-17	.01	10-17	.03	10-17	.03	10-17	.03	10-15	.05	10-15	.05
1961	6-15	.13	6-15	.05	6-15	.05	6-15	.05	6-15	.05	6-15	.05	6-15	.05	6-15	.05
1962	9-26	.25	9-26	.10	9-26	.10	9-26	.10	9-26	.10	9-26	.10	9-26	.10	9-26	.10
1963	9-5	.09	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	8-29	.04
1964	8-3	.15	8-3	.09	8-3	.10	8-3	.10	8-3	.10	8-3	.10	8-3	.10	8-3	.10
1965	7-31	.49	9-12	.15	9-12	.15	9-12	.15	9-12	.15	9-12	.15	9-11	.21	9-11	.21
1966	6-10	.77	6-10	.12	6-10	.12	6-10	.12	6-10	.12	6-10	.12	6-10	.12	6-10	.12
1967	8-11	.59	8-11	.29	8-11	.29	8-11	.29	8-11	.29	8-11	.29	8-11	.29	8-11	.53

MAXIMUMS FOR PERIOD OF RECORD																
19 39 TO	8-24		8-11		8-11		8-11		8-11		8-11		8-11		8-11	
19 67	1957	.92	1967	.29	1967	.29	1967	.29	1967	.29	1967	.29	1967	.29	1967	.53

Notes: 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 piñon trees. 1/ Table shows results or reevaluation of previously data, Thiessen weighted using 2 rain gages. 2/ Precipitation and runoff records began August 1939. Station closed October 1967. 3/ Average yearly total are the sums of the average monthly totals. 4/ Mean P based on 76-yr (1892-1967) U.S. Weather Bureau record period at Albuquerque, N. Mex. 5/ Runoff measuring structure has silted approach and is being re-rated. Runoff rates and volumes are underestimated by a significant amount.

1967 SELECTED RUNOFF EVENT			ALBUQUERQUE, NEW MEXICO WATERSHED 47.001							
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 11, 1967										
7-12	RG R-7 .33	.0000	8-11	RG	R-7		8-11	1333	.000	.0000
7-16	.35	.0543E		1240	.00	.00		1334	.000	.0000
7-17	.78	.1025E		1252	.10	.02		1335	.013	.0001
7-25	.20	.0000		1328	.00	.02		1336	.094	.0010
				1330	1.20	.06				
7-28	.15	.0000		1332	.60	.08		1337	.128	.0029
7-29	.12	.0000		1339	3.43	.48		1338	.168	.0053
8-1	.42	.0023E		1349	1.50	.73		1339	.194	.0084
8-6	.10	.0000		1352	1.00	.78		1340	.228	.0119
8-8	.10	.0000		1354	2.70	.87		1341	.296	.0162
8-9	.09	.0000		1404	1.32	1.09		1342	.407	.0221
				1410	.50	1.14		1343	.504	.0297
				1441	.31	1.30		1344	.536	.0384
								1346	.593	.0572
								1347	.556	.0668
								1348	.516	.0757
								1349	.460	.0838
								1350	.419	.0911
								1351	.366	.0977
								1352	.390	.1040
								1353	.443	.1109
								1354	.468	.1185
								1355	.508	.1267
								1358	.540	.1529
								1401	.500	.1789
								1402	.447	.1868
								1403	.390	.1937
								1405	.351	.2061
								1408	.320	.2229
								1411	.280	.2379
								1412	.252	.2423
								1414	.210	.2500
								1416	.172	.2564
								1417	.164E	.2592E
								1418	.146E	.2617E
								1421	.121E	.2684E
								1423	.108E	.2722E
								1427	.085E	.2787E
								1429	.070E	.2813E
								1432	.050E	.2843E
								1435	.038E	.2865E
								1438	.025E	.2880E
								1441	.018E	.2891E
								1444	.011E	.2898E
								1449	.006E	.2905E
								1454	.003E	.2909E
								1459	.001E	.2911E
								1504	.001E	.2912E
								1552	.000E	.2912E

Watershed conditions: Sparse vegetation consists of short grasses (blue and black grama), shrubs, and a few small juniper and pinion trees.



ALBUQUERQUE, NEW MEXICO WATERSHED 47.001

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 248.05. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE SELECTED RUNOFF EVENTS FOR SMALL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, USDA, ARS, JAN. 1960, P. 47.1-4. REVISED TOPOGRAPHIC MAP NOT AVAILABLE.

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						ALBUQUERQUE, NEW MEXICO WATERSHED 47.002 AREA - 40.1 ACRES						47.02	
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1939 P	NR	NR	NR	NR	NR	NR	.91	1.63	1.58	.95	.13	.00	PARTIAL
1939 Q	NR	NR	NR	NR	NR	NR	.10	.21	.31	.12	.00	.00	PARTIAL
1940 P	NR	NR	NR	NR	.89	1.27	1.36	1.91	1.91	.35	1.73	1.34	PARTIAL
1940 Q	NR	NR	NR	NR	.00	T	.06	.13	.10	.00	.02	.00	PARTIAL
1941 P	.88	.31	1.67	1.49	2.80	.69	1.06	1.99	3.16	1.69	.24	.43	16.41
1941 Q	.00	.00	.00	.00	.00	T	T	.01	.21	.14	.00	.00	.36
1942 P	.00	.22	.00	1.17	.00	1.16	.29	1.93	1.50	.49	.00	.72	7.48
1942 Q	.00	.00	.00	.00	.00	.15	T	.00	.16	.00	.00	.00	.31
1943 P	.21	.34	.16	.12	.85	2.06	.51	2.35	.86	.24	.25	1.26	9.21
1943 Q	.00	.00	.00	.00	.00	.06	.00	.12	.15	.00	.00	.00	.33
1944 P	.20	.17	.49	.12	.59	.16	3.49	1.38	.56	1.48	.67	.86	10.17
1944 Q	.00	.00	.00	.00	.00	.00	.25	.22	.00	.42	.00	.00	.89
1945 P	.58	.29	.40	.37	.00	.02	.79	1.16	.44	.46	.00	.19	4.70
1945 Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1946 P	.32	.02	.74	.16	.30	.15	1.00	2.41	.57	.92	1.11	.00	7.70
1946 Q	.00	.00	.00	.00	.00	.00	.00	.14	.00	.22	.00	.00	.36
1947 P	.26	.14	.09	.09	.62	.16	.23	1.42	3.06	.15	.20	.74	7.16
1947 Q	.00	.00	.00	.00	.00	.00	.00	.01	1.09	.00	.00	.00	1.10
1948 P	.33	1.38	.05	.20	.89	1.06	.37	2.06	.76	1.54	.08	.23	8.95
1948 Q	.00	.00	.00	.00	.05	.03	.00	.47	.00	.14	.00	.00	.69
1949 P	.54	.20	.25	.53	1.58	1.04	2.77	.69	1.24	.26	.00	.15	9.25
1949 Q	.00	.00	.00	.00	.03	.03	.16	.04	.09	.00	.00	.00	.35
1950 P	.00	.24	.00	.49	.08	.29	1.70	.78	.91	.00	.00	.05	4.54
1950 Q	.00	.00	.00	.00	.00	.05	.00	.13	.01	.00	.00	.00	.19
1951 P	.53	.28	.08	.28	.26	.90	.32	1.37	.19	.12	.10	.16	4.59
1951 Q	.00	.00	.00	.00	.00	.22	T	.37	.00	.00	.00	.00	.59
1952 P	.37	.03	.46	.54	.22	1.67	1.36	.67	.00	.00	.44	.13	5.89
1952 Q	.00	.00	.00	.01	.00	.16	.23	.10	.00	.00	.00	.00	.50
1953 P	.00	.52	1.03	.28	.22	.71	.59	1.13	.02	.15	.38	.05	5.08
1953 Q	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00	.40
1954 P	.12	.04	.27	.00	.61	1.73	1.85	1.34	1.15	.44	.03	.19	7.77
1954 Q	.00	.00	.00	.00	.02	.53	.78	.58	.52	.31	.00	.00	2.74
1955 P	.10	.10	.00	.12	.61	.21	1.00	1.40	.34	.04	.00	.08	4.00
1955 Q	.00	.00	.00	.00	.00	.00	.20	.57	.21	.00	.00	.00	.98
1956 P	.22	.22	.00	.00	.00	.20	.90	.99	.00	.29	.00	.00	2.82
1956 Q	.00	.00	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	.54
1957 P	.19	.68	.99	.20	.53	.44	1.29	2.70	.00	1.82	.68	.06	9.58
1957 Q	.00	.00	.00	.00	.00	.04	.15	.92	.00	.28	.00	.00	1.39
1958 P	.39	.10	.92	.88	.00	.42	.11	2.32	1.23	1.25	.08	.30	8.00
1958 Q	.00	.00	.00	.00	.00	.00	.00	.57	.01	.10	.00	.00	.68
1959 P	.00	.11	.09	.90	.71	1.12	1.13	2.06	.00	1.38	.00	.75	8.25
1959 Q	.00	.00	.00	.00	.12	.39	.14	.29	.00	T	.00	.00	.94
1960 P	.22	.15	.10	.00	.56	.50	.78	.24	.19	3.01	.00	.76	6.51
1960 Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.01
1961 P	.00	.10	.72	.62	.00	.75	1.08	.52	.30	1.05	.62	.43	6.19
1961 Q	.00	.00	.00	.00	.00	.01	.01	.01	.00	.00	.00	.00	.03
1962 P	.82	.00	.00	.00	.00	.05	.90	.03	1.91	.76	.50	.47	5.44
1962 Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1963 P	.00	.15	.12	.00	.00	.19	.38	1.68	.47	.71	.28	.00	3.98
1963 Q	.00	.00	.00	.00	.00	.00	.00	.00	.03	.01	T	.00	.04
1964 P	.00	.82	.16	.66	.65	.00	1.98	2.12	.50	.00	.09	.38	7.36
1964 Q	.00	.00	.00	.00	.00	.00	.32	.70	.08	.00	.00	.00	1.10
1965 P	.28	.39	.29	.83	.66	1.10	2.10	1.71	2.36	.28	.09	1.36	11.45
1965 Q	.00	.00	.00	.00	T	T	.09	.30	.39	.00	.00	.00	.78

Continued on next page

^{1/} Table shows results of reevaluation of previously published data.

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						ALBUQUERQUE, NEW MEXICO WATERSHED 47.002 AREA - 40.1 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1966	P	.31	.29	.00	.05	.00	1.72	.77	2.10	1.94	.00	.00	.06	7.24
	Q	.00	.00	.00	.00	.00	.39	.01	.20	.43	.00	.00	.00	1.03
1967	P	.00	.08	.07	.04	.00	1.36	1.94	3.50	1.63	NR	NR	NR	PARTIAL
	Q	.00	.00	.00	.00	.00	.26	.41	1.24	.14	NR	NR	NR	PARTIAL
STA AV ² / (39-67)	P	.25	.27	.34	.38	.49	.75	1.14	1.57	.99	.71	.28	.41	3/7.58
	Q	.00	.00	.00	T	.01	.08	.10	.29	.14	.06	T	.00	.68
MEAN P ⁴ / 76 YR		.36	.34	.39	.55	.63	.60	1.41	1.29	.89	.78	.42	.46	8.12

REEVALUATION OF PREVIOUSLY PUBLISHED

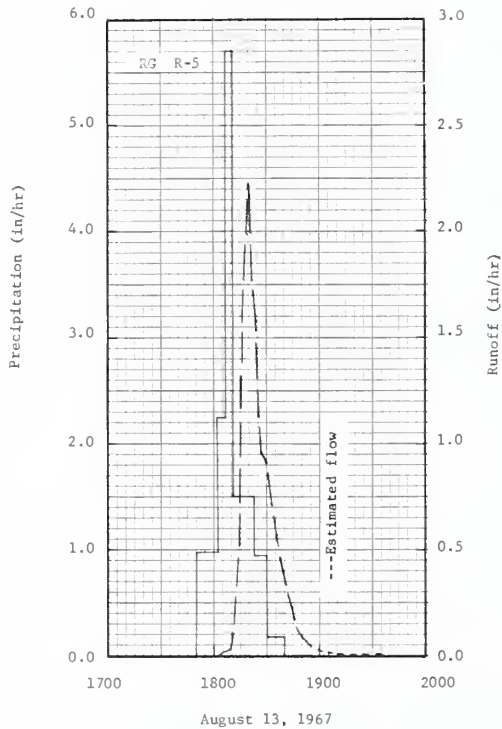
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS ⁵/

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	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1939	9-14	.47	9-14	.26	9-14	.27	9-14	.27	9-14	.27	9-14	.27	9-13	.29	7-28	.31
1940	8-20	.30	8-20	.12	8-20	.12	8-20	.12	8-20	.12	8-20	.12	8-20	.12	8-20	.13
1941	9-20	.49	9-20	.18	9-20	.18	9-20	.18	9-20	.18	9-20	.18	9-20	.18	9-20	.21
1942	6-30	.41	6-30	.15	6-30	.15	6-30	.15	6-30	.15	6-30	.15	9-3	.16	9-3	.16
1943	8-14	.32	9-14	.15	9-14	.15	9-14	.15	9-14	.15	9-14	.15	9-14	.15	9-14	.15
1944	10-16	1.25	10-16	.42	10-16	.42	10-16	.42	10-16	.42	10-16	.42	10-16	.42	10-16	.42
1945		.00		.00		.00		.00		.00		.00		.00		.00
1946	10-4	.70	10-4	.22	10-4	.22	10-4	.22	10-4	.22	10-4	.22	10-4	.22	10-4	.22
1947	9-4	2.42	9-4	.49	9-4	.53	9-4	.53	9-4	.53	9-4	.53	9-4	.53	9-4	.99
1948	8-4	.93	8-4	.28	8-4	.28	8-4	.28	8-4	.28	8-4	.46	8-4	.46	8-4	.47
1949	7-23	.27	7-23	.09	7-23	.10	7-23	.10	7-23	.10	7-23	.10	7-23	.10	7-23	.11
1950	8-15	.38	8-15	.13	8-15	.13	8-15	.13	8-15	.13	8-15	.13	8-15	.13	8-15	.13
1951	8-21	.69	6-4	.21	6-4	.22	6-4	.22	6-4	.22	6-4	.22	6-4	.22	8-21	.37
1952	7-7	.55	7-7	.18	7-7	.18	7-7	.18	7-7	.18	7-7	.18	7-7	.18	7-7	.18
1953	8-15	1.99	8-15	.39	8-15	.39	8-15	.39	8-15	.39	8-15	.39	8-15	.39	8-12	.40
1954	7-21	1.12	7-21	.42	7-21	.43	7-21	.43	7-21	.43	7-21	.43	7-21	.46	7-17	.78
1955	8-19	.83	8-19	.30	8-19	.31	8-19	.31	8-19	.31	8-19	.31	8-19	.31	8-15	.57
1956	8-19	1.99E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E	8-19	.45E
1957	8-24	2.93	8-24	.75	8-24	.77	8-24	.77	8-24	.77	8-24	.77	8-24	.77	8-24	.77
1958	8-21	1.20	8-21	.35	8-21	.55	8-21	.57	8-21	.57	8-21	.57	8-21	.57	8-21	.57
1959	6-19	1.12	6-19	.38	6-19	.38	6-19	.38	6-19	.38	6-19	.38	6-19	.38	6-18	.39
1960	10-17	.02	10-17	.01	10-17	.01	10-17	.01	10-17	.01	10-17	.01	10-17	.01	10-17	.01
1961	8-15	.03	7-9	.008	7-9	.008	7-9	.008	7-9	.008	7-9	.008	7-9	.008	7-9	.008
1962		.00		.00		.00		.00		.00		.00		.00		.00
1963	9-5	.11	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03	9-5	.03
1964	8-3	1.15	8-3	.40	8-3	.40	8-3	.40	8-3	.40	8-3	.40	8-3	.40	8-3	.42
1965	9-2	.97	9-2	.33	9-2	.33	9-2	.33	9-2	.33	9-2	.33	9-2	.39	8-29	.40
1966	6-10	1.91	6-10	.39	6-10	.39	6-10	.39	6-10	.39	6-10	.39	6-10	.39	6-10	.39
1967	8-13	2.25	8-13	.55	8-13	.55	8-13	.55	8-13	.55	8-13	.55	8-13	.60	8-11	1.24
MAXIMUMS FOR PERIOD OF RECORD																
1939 TO 1967	8-24	2.93	8-24	.75	8-24	.77	8-24	.77	8-24	.77	8-24	.77	8-24	.77	8-11	1.24

Notes: Watershed conditions: Sparsley vegetated rangeland; about 80% of the 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/ Table shows results of reevaluation of previously data. Thiessen weighted using 2 rain gages. 2/ Precipitation and runoff records began July 1939; re-opened April 1940; station closed October 1967. 3/ Average yearly total are the sums of the average monthly totals. 4/ Mean P based on 76-yr (1892-1967) U.S. Weather Bureau record period at Albuquerque, N. Mex. 5/ Runoff measuring structure has silted approach and is being re-rated. Runoff rates and volumes may be underestimated by a significant amount.

1967 SELECTED RUNOFF EVENT			ALBUQUERQUE, NEW MEXICO				WATERSHED 47.002			
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 13, 1967							
	RG R-5		8-13	RG	R-5		8-13			
7-16	.43	.0976E		1750	.00	.00		1802	.000	.0000
7-17	.53	.1926E		1803	.97	.21		1803	.000	.0000
7-28	.08	.0000		1807	2.25	.36		1804	.002	.0000
7-29	.05	.0000		1811	5.70	.74		1805	.010	.0001
8-1	.05	.0000		1823	1.50	1.04		1806	.010	.0003
8-8	.08	.0000		1830	.94	1.15		1807	.012	.0005
8-9	.10	.0000		1840	.18	1.18		1809	.020	.0010
8-11	1.28	.3940E						1810	.054	.0016
								1811	.120	.0031
								1812	.204	.0058
								1813	.324	.0102
								1814	.559	.0175
								1815	.767	.0285
								1816	1.041	.0435
								1817	1.424	.0640
								1818	1.766	.0906
								1819	1.988	.1219
								1820	2.246	.1572
								1822	1.988	.2277
								1823	1.788	.2592
								1824	1.580	.2873
								1825	1.373	.3119
								1826	1.214	.3335
								1828	1.026	.3708
								1830	.905	.4030
								1833	.737	.4440
								1836	.559	.4764
								1838	.462	.4935
								1840	.359	.5072
								1842	.277	.5177
								1844	.220	.5260
								1846	.166	.5325
								1848	.120	.5372
								1850	.083	.5406
								1852	.061	.5430
								1855	.041E	.5456E
								1900	.024E	.5483E
								1905	.014E	.5500E
								1910	.008E	.5509E
								1915	.004E	.5514E
								1921	.002E	.5517E
								1928	.001E	.5518E
								1936	.000E	.5519E
								1942	.000E	.5519E
								1948	.000E	.5519E

Watershed conditions: Sparsely vegetated rangeland; about 80% of the 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.



ALBUQUERQUE, NEW MEXICO WATERSHED 47.002

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 40.43. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, MISC. PUB. NO. 945, P. 47.2-4.

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						ALBUQUERQUE, NEW MEXICO WATERSHED 47.003 AREA - 176 ACRES							47.03	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1939	P	NR	NR	NR	NR	NR	NR	.90	1.59	1.47	.92	NR	NR	PARTIAL
	Q	NR	NR	NR	NR	NR	NR	.00	.00	.00	T	NR	NR	PARTIAL
1940	P					.90	1.27	1.35	1.89	1.94	.36	1.76	1.37	PARTIAL
	Q					.00	.00	.00	.00	.00	.00	.00	.00	PARTIAL
1941	P	.91	.30	1.62	1.47	2.80	.70	1.11	2.00	3.26	1.69	.24	.41	16.51
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.01	.02	.00	.00	.03
1942	P	.00	.22	.00	1.16	.00	1.10	.28	1.92	1.46	.50	.00	.73	7.37
	Q	.00	.00	.00	.00	.00	.00	.00	.00	T	.00	.00	.00	T
1943	P	.23	.35	.18	.13	.83	2.05	.50	2.38	.81	.24	.25	1.21	9.16
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1944	P	.20	.18	.50	.11	.59	.19	3.46	1.33	.53	1.46	.68	.82	10.05
	Q	.00	.00	.00	.00	.00	.00	.01	T	.00	.07	.00	.00	.08
1945	P	.57	.27	.41	.32	.00	.02	.84	1.17	.44	.46	.00	.18	4.68
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1946	P	.32	.02	.71	.17	.31	.16	1.06	2.45	.54	.93	1.00	.00	7.67
	Q	.00	.00	.00	.00	.00	.00	.00	T	.00	.03	.00	.00	.03
1947	P	.29	.14	.09	.08	.63	.14	.24	1.47	3.04	.16	.20	.65	7.13
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.86	.00	.00	.00	.86
1948	P	.31	1.31	.04	.20	.86	1.03	.38	2.06	.78	1.54	.08	.25	8.84
	Q	.00	.00	.00	.00	T	T	.00	.14	.00	.01	.00	.00	.15
1949	P	.53	.23	.27	.54	1.63	1.03	2.86	.68	1.25	.29	.00	.14	9.45
	Q	.00	.00	.00	.00	.01	T	.07	T	.01	.00	.00	.00	.09
1950	P	.00	.24	.00	.47	.09	.27	1.74	.81	.93	.00	.00	.05	4.60
	Q	.00	.00	.00	.00	.00	.00	.15	.06	.00	.00	.00	.00	.21
1951	P	.45	.28	.09	.31	.25	.85	.29	1.40	.21	.13	.11	.21	4.58
	Q	.00	.00	.00	.00	.00	.13	.38	.00	.00	.00	.00	.00	.51
1952	P	.36	.03	.49	.57	.24	1.66	1.35	.68	.13	.00	.46	.13	6.10
	Q	.00	.00	.00	.00	.00	.13	.16	.05	.00	.00	.00	.00	.34
1953	P	.00	.54	1.02	.28	.22	.71	.61	1.07	.01	.20	.39	.05	5.10
	Q	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.00	.00	.47
1954	P	.07	.03	.27	.00	.59	1.67	1.96	1.36	1.15	.42	.04	.20	7.76
	Q	.00	.00	.00	.00	.04	.37	.31	.49	.11	.00	.00	.00	1.32
1955	P	.10	.10	.00	.12	.63	.22	.99	1.35	.42	.04	.00	.08	4.05
	Q	.00	.00	.00	.00	.00	.00	.08	.42	.15	.00	.00	.00	.65
1956	P	.22	.21	.00	.00	.00	.20	.96	.98	.00	.29	.00	.00	2.86
	Q	.00	.00	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.20
1957	P	.18	.68	.99	.20	.60	.45	1.27	2.62	.00	1.87	.68	.07	9.61
	Q	.00	.00	.00	.00	.02	.03	.08	.59	.00	.42	.00	.00	1.14
1958	P	.36	.10	.91	.91	.00	.44	.07	2.30	1.20	1.28	.06	.30	7.93
	Q	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.15
1959	P	.00	.10	.12	.91	.75	1.11	1.14	1.99	.00	1.35	.00	.68	8.15
	Q	.00	.00	.00	.00	.11	.00	.05	.10	.00	T	.00	.00	.26
1960	P	.26	.18	.11	.00	.55	.53	.77	.32	.21	2.97	.00	.69	6.59
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1961	P	.00	.11	.73	.56	.00	.67	1.14	.58	.29	1.02	.62	.43	6.15
	Q	.00	.00	.00	.00	.00	.00	T	.01	.00	.00	.00	.00	.01
1962	P	.76	.00	.00	.00	.00	.05	.85	.00	1.98	.77	.50	.47	5.38
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1963	P	.00	.19	.13	.00	.00	.17	.34	1.63	.41	.69	.34	.00	3.90
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	T	.00	.00	T
1964	P	.00	.81	.19	.68	.64	.00	1.89	2.02	.47	.00	.09	.41	7.20
	Q	.00	.00	.00	.00	T	.00	.17	.26	.02	.00	.00	.00	.45
1965	P	.28	.37	.28	.79	.66	1.11	2.12	1.71	2.31	.27	.07	1.35	11.32
	Q	.00	.00	.00	.00	T	.00	.06	.06	.23	.00	.00	.00	.35

Continued on next page

1/ Table shows results of reevaluation of previously published data.

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						ALBUQUERQUE, NEW MEXICO WATERSHED 47.003 AREA - 176 ACRES							47.03	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1966	P	.29	.28	.00	.05	.00	1.75	.73	2.14	2.02	.00	.00	.05	7.31
	Q	.00	.00	.00	.00	.00	.33	T	.07	.21	.00	.00	.00	.61
1967	P	.00	.09	.07	.04	.00	1.34	2.05	3.49	1.61	NR	NR	NR	PARTIAL
	Q	.00	.00	.00	.00	.00	.03	.33	.45	.06	NR	NR	NR	PARTIAL
STA AV ^{2/} (39-67) Q	P	.25	.27	.34	.37	.49	.75	1.15	1.48	1.00	.71	.28	.40	3/7.49
	Q	.00	.00	.00	.00	.01	.04	.06	.12	.06	.02	.00	.00	.31
MEAN P ^{4/} 76 YR		.36	.34	.39	.55	.63	.60	1.41	1.29	.89	.78	.42	.46	8.12

REEVALUATION OF PREVIOUSLY PUBLISHED
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS^{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	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1939	10-7	.001	10-7	.001	10-7	.001	10-7	.003	10-7	.003	10-7	.003	10-7	.003	10-7	.003
1940	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T	6-28	T
1941	9-20	.02	10-3	.01	10-3	.02	10-3	.02	10-3	.02	10-3	.02	10-3	.02	10-3	.02
1942	9-4	.004	9-4	.001	9-4	.001	9-4	.001	9-4	.001	9-4	.001	9-4	.001	9-4	.001
1943	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T
1944	10-16	.12	10-16	.06	10-16	.07	10-16	.07	10-16	.07	10-16	.07	10-16	.07	10-16	.07
1945		.00		.00		.00		.00		.00		.00		.00		.00
1946	10-4	.05	10-4	.03	10-4	.03	10-4	.03	10-4	.03	10-4	.03	10-4	.03	10-4	.03
1947	9-4	.89	9-4	.42	9-4	.50	9-4	.51	9-4	.51	9-4	.51	9-4	.51	9-4	.51
1948	8-4	.17	8-4	.09	8-4	.11	8-4	.14	8-4	.14	8-4	.14	8-4	.14	8-4	.14
1949	7-23	.07	7-23	.04	7-23	.05	7-23	.05	7-23	.05	7-23	.05	7-23	.05	7-23	.05
1950	7-15	.22	7-15	.13	7-15	.15	7-15	.15	7-15	.15	7-15	.15	7-15	.15	7-15	.15
1951	8-21	.35	8-21	.21	8-21	.23	8-21	.24	8-21	.24	8-21	.24	8-21	.24	8-21	.24
1952	7-7	.17	7-7	.13	7-7	.16	7-7	.16	7-7	.16	7-7	.16	7-7	.16	7-7	.16
1953	8-15	1.05E	8-15	.44E	8-15	.47E	8-15	.47E	8-15	.47E	8-15	.47E	8-15	.47E	8-15	.47E
1954	7-23	.41	7-23	.23	7-23	.27	7-23	.27	7-23	.27	7-23	.27	7-23	.27	7-23	.27
1955	8-15	.41	8-15	.19	8-15	.22	8-15	.22	8-15	.22	8-15	.22	8-15	.22	8-15	.22
1956	8-19	.46	8-19	.19	8-19	.20	8-19	.20	8-19	.20	8-19	.20	8-19	.20	8-19	.20
1957	8-24	.55	8-24	.28	8-24	.33	8-24	.34	8-24	.34	8-24	.34	8-24	.34	8-24	.34
1958	8-21	.13	8-21	.08	8-21	.12	8-21	.15	8-21	.15	8-21	.15	8-21	.15	8-21	.15
1959	5-23	.15	5-23	.08	5-23	.11	5-23	.11	5-23	.11	5-23	.11	5-23	.11	5-23	.11
1960		.00		.00		.00		.00		.00		.00		.00		.00
1961	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01	8-15	.01
1962		.00		.00		.00		.00		.00		.00		.00		.00
1963	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T	10-19	T
1964	8-3	.24	8-3	.15	8-3	.17	8-3	.18	8-3	.18	8-3	.19	8-3	.19	8-3	.19
1965	9-2	.17	9-2	.14	9-2	.19	9-2	.20	9-2	.20	9-2	.20	9-2	.23	9-2	.23
1966	6-10	.44	6-10	.28	6-10	.33	6-10	.33	6-10	.33	6-10	.33	6-10	.33	6-10	.33
1967	8-11	.20	8-11	.17	8-11	.23	8-11	.24	8-11	.24	8-11	.24	7-16	.26	8-11	.44

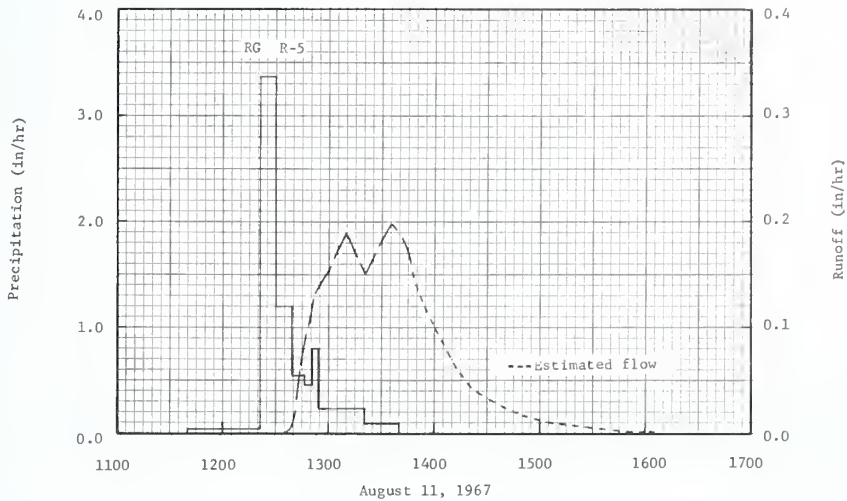
MAXIMUMS FOR PERIOD OF RECORD 1/																
1939 TO	8-15		8-15		9-4		9-4		9-4		9-4		9-4		9-4	
1967	1953	1.05E	1953	.44E	1947	.50	1947	.51	1947	.51	1947	.51	1947	.51	1947	.77

Notes: Watershed conditions: Sparsely vegetated rangeland; about 75% of the area is bare. Vegetation consists of short grasses (blue and black grama and galleta), and shrubs (sagebrush, and snakeweed). Vegetation is comparatively heavy in a narrow strip along the principal waterway. 1/ Table shows results or reevaluation of previously published data. Thiessen weighted using 2 rain gages. 2/ Precipitation and runoff records began July 1939; station closed November 1939; re-opened April 1940; station closed October 1967. 3/ Average yearly total are the sums of the average monthly totals. 4/ Mean P based on 76-yr (1892-1967) U.S. Weather Bureau record period at Albuquerque, N. Mex. 5/ Runoff measuring structure has silted approach and is being re-rated. Runoff rates and volumes may be underestimated by a significant amount.

1967 SELECTED RUNOFF EVENT			ALBUQUERQUE, NEW MEXICO WATERSHED 47.003							
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 11, 1967										
	RG R-5		8-11	RG	R-5		8-11			
7-12	.27	.0000		1140	.00	.00		1236	.000	.0000
7-16	.43	.0697E		1222	.04	.03		1237	.000	.0000
7-17	.53	.1934E		1230	3.37	.48		1239	.006E	.0001E
7-28	.08	.0000		1239	1.20	.66		1242	.028	.0010
7-29	.05	.0000		1247	.53	.73		1243	.048	.0016
8-1	.05	.0000		1251	.45	.76		1244	.065	.0025
8-8	.08	.0000		1254	.80	.80		1245	.077	.0037
8-9	.10	.0000		1321	.22	.90		1248	.094	.0080
				1340	.09	.93		1250	.111	.0114
								1252	.128	.0154
								1300	.154	.0342
								1306	.178	.0508
								1310	.189	.0630
								1312	.183	.0692
								1315	.170	.0780
								1321	.152	.0941
								1325	.164	.1046
								1330	.183	.1191
								1335	.198	.1350
								1340	.189	.1511
								1348	.152E	.1738E
								1357	.113E	.1937E
								1405	.085	.2069
								1410	.069	.2133
								1415	.055	.2185
								1420	.045	.2227
								1430	.033	.2292
								1440	.024	.2339
								1450	.017	.2374
								1500	.011	.2397
								1515	.007	.2420
								1530	.003	.2432
								1545	.001E	.2437E
								1605	.000E	.2440E
								1630	.000E	.2440E
								1647	.000E	.2440E

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.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 177.47. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 47.3-4.



ALBUQUERQUE, NEW MEXICO WATERSHED 47.003

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI						WATERSHED W-4A ^{1/}		62.01
						AREA—1,580 ACRES (2.47 SQ. MILES) ^{2/}								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	^{3/} _Q 1.59 .03	2.90 .03	3.99 .50	3.98 .05	7.55 .87	2.17 .00	6.46 1.06	6.00 1.06	1.22 .00	2.13 .00	1.87 .00	8.37 .94	48.23 4.54	
STA AV ^{4/} P ₁ (57-67) Q	3.53 .57	4.99 .97	4.79 .87	4.50 .55	3.89 .28	2.95 .10	4.25 .24	3.46 .21	4.65 .32	2.11 .05	4.04 .37	5.09 .65	48.25 5.18	
MEAN 48 YR	^{5/} 5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99	

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
1967	7-9	.61	7-9	.53	7-9	.79	7-9	.96	7-9	.97	7-9	.97	7-8	.97	7-2	1.06

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	2-23	.84	2-23	.72	2-23	1.13	3-4	1.56	3-4	1.62	1-31	2.38	1-30	3.34	1-27	3.90
19 67	1962		1962		1962		1964		1964		1957		1957		1957	

NOTES: Watershed conditions: About 13% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 39% in pasture and idle land, good cover April to October with fair cover remainder of year; 47% in woods, good cover; 1% bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1968. ^{1/} Reported as Watershed W-4 prior to 1965. About 29% of drainage area above small desilting and retention dams. ^{2/} Gaging station relocated upstream Jan. 1, 1965. Drainage area reduced from 2000 to 1580 acres. ^{3/} Monthly precipitation Thiessen weighted from rain gages 7, 8 and 18. ^{4/} Precipitation and runoff records began Jan. 1957. ^{5/} Mean P based on 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 DAILY AIR TEMPERATURE (degrees F)												OXFORD, MISSISSIPPI				WATERSHED W-4A		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	44	28	69	58	57	26	79	54	73	63	78	63	87	69	85	74	74	52	81	49	63	45	59	31	
2	49	24	62	34	68	40	80	55	64	46	68	56	80	67	75	68	76	49	82	49	57	44	61	40	
3	40	22	44	26	58	48	80	50	68	46	75	54	82	62	87	68	70	60	84	52	48	30	47	25	
4	45	19	54	28	74	55	81	46	70	56	78	51	84	62	82	68	68	60	84	50	46	25	59	21	
5	52	30	64	38	72	44	83	61	67	52	81	60	76	66	84	64	80	69	86	53	45	22	59	31	
6	58	36	50	23	47	30	80	64	72	62	83	63	71	62	86	60	80	61	85	55	50	21	58	52	
7	59	33	31	17	48	22	77	59	66	56	82	60	82	60	88	64	77	65	83	52	54	22	66	40	
8	37	25	39	15	56	26	82	55	73	60	86	65	86	64	90	76	82	66	65	43	58	24	66	36	
9	40	23	48	16	70	35	82	63	75	44	85	67	82	69	88	75	80	62	64	43	66	26	64	52	
10	41	26	55	28	72	52	71	59	70	50	86	64	88	72	80	83	73	64	61	37	70	44	59	54	
11	40	20	50	36	78	64	70	53	86	70	88	66	88	71	74	58	82	60	62	31	62	49	59	39	
12	53	20	50	26	79	66	81	52	81	67	88	67	82	71	78	53	72	66	73	36	73	44	61	38	
13	44	35	62	26	81	63	81	63	86	68	91	64	84	63	80	49	79	64	81	47	74	38	70	47	
14	56	32	64	36	79	62	74	63	82	66	91	64	72	54	83	52	80	62	83	58	57	31	58	40	
15	41	20	67	41	73	47	82	64	65	48	88	68	80	52	85	58	79	61	84	57	60	29	38	33	
16	45	20	39	29	60	32	83	64	72	42	88	63	79	55	84	64	84	63	64	54	61	26	48	29	
17	36	22	34	29	46	29	80	47	78	54	92	64	94	64	80	66	86	60	54	50	68	43	58	42	
18	29	16	37	26	47	24	67	43	81	49	94	66	86	60	86	66	88	59	62	36	59	26	66	38	
19	43	19	59	26	48	35	71	47	82	64	89	67	86	65	82	68	87	62	64	32	61	23	71	35	
20	51	16	46	31	58	46	79	53	76	58	86	69	83	64	83	64	86	63	74	36	64	34	68	50	
21	67	41	44	26	60	38	79	64	60	56	89	70	84	65	85	62	86	62	74	40	58	48	72	43	
21	70	53	50	31	66	33	78	52	72	53	84	71	85	71	84	64	78	51	78	43	60	39	42	26	
23	70	62	50	21	75	37	76	44	73	46	90	70	88	68	85	62	76	45	76	40	50	34	37	21	
24	72	56	33	11	80	44	60	46	80	45	89	70	89	70	84	66	80	48	76	50	65	35	54	26	
25	68	58	30	11	74	53	60	45	85	58	84	68	88	72	82	67	82	42	63	36	64	32	51	22	
26	65	32	42	19	67	57	75	52	86	58	80	66	86	71	76	70	83	50	69	37	69	35	36	24	
27	40	28	51	30	70	58	62	41	86	59	85	62	89	71	79	65	66	50	60	34	46	21	32	23	
28	47	23	48	29	79	56	70	38	86	62	85	70	88	70	68	60	54	39	68	30	42	19	33	22	
29	58	27	---	---	82	53	72	44	84	64	88	70	84	67	83	52	62	33	72	50	56	34	38	22	
30	67	37	---	---	78	61	79	62	81	67	89	70	90	64	86	55	73	37	64	54	59	41	37	21	
31	67	52	---	---	79	60	---	---	76	65	---	---	89	70	68	58	---	---	62	49	---	---	37	23	
AV.	51	31	49	27	67	45	76	53	76	57	85	65	84	66	82	64	77	56	72	45	59	33	54	34	
MEAN	41.1	38.2	56.1	64.6	66.3	75.3	74.9	72.9	66.8	58.4	65.8	61.7	66.8	61.7	64.8	61.7	64.8	61.7	64.8	61.7	64.8	61.7	64.8	61.7	64.8
STA AV	48	28	53	32	60	38	72	50	81	58	86	64	89	68	89	67	83	61	74	48	63	38	51	30	

NOTES: TEMPERATURE DATA FROM U. S. WEATHER BUREAU STATION AT HOLLY SPRINGS 2N, MISS. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-4A		62.01
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	1.52	.00	.11	.20	.00	.00	.21	.00			
2	.00	.25	.00	.00	.06	.00	.59	2.63	.00	.00	.00	1.45			
3	.00	.00	.00	.00	.00	.00	.00	1.04	.00	.00	.16	.00			
4	.00	.00	.00	.00	.00	.00	.00	.44	.00	.00	.00	.00			
5	.00	.00	.35	.00	.00	.00	1.41	.00	.00	.00	.00	.00			
6	.00	.00	2.14	.00	2.54	.00	.00	.00	.00	.00	.00	.19			
7	.05	.00	.00	.00	.00	.00	.00	.11	.24	.00	.00	.00			
8	.00	.00	.00	.00	.00	.00	.00	.00	.29	.03	.00	.00			
9	.00	.00	.00	.00	.00	.08	2.82	.01	.00	.00	.00	1.92			
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.16			
11	.00	.00	.00	.00	.00	.00	.04	.00	.01	.00	.35	.42			
12	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00			
13	.56	.00	.00	.53	.00	.00	.21	.00	.00	.00	.00	.00			
14	.07	.00	.00	.80	.25	.00	.00	.00	.00	.00	.00	.45			
15	.00	.01	.00	.00	.17	.00	.00	.00	.00	.00	.00	.20			
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	1.62	.00	.00			
17	.00	.31	.00	.00	.00	.00	.00	.10	.00	.10	.00	.87			
18	.00	.00	.00	.00	.00	.23	.00	.31	.00	.00	.00	.00			
19	.00	.36	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00			
20	.00	.76	.23	.00	.43	.02	.04	.00	.00	.00	.04	1.30			
21	.00	.00	.00	.00	.99	.52	.01	.00	.47	.00	.19	.81			
22	.00	.00	.00	.09	.00	.30	.28	.00	.00	.00	.09	.00			
23	.00	.00	.00	1.01	.00	.17	.00	.00	.00	.00	.03	.00			
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.07	.00	.00			
25	.00	.00	.00	.72	.00	.00	.00	.00	.00	.00	.00	.00			
26	.91	.00	.97	.48	.00	.00	.44	1.11	.00	.00	.00	.00			
27	.00	1.05	.25	.00	.00	.00	.00	.04	.21	.00	.00	.085			
28	.00	.00	.00	.00	.00	.02	.31	.00	.00	.00	.00	.00			
29	.00	-----	.00	.00	.00	.01	.19	.00	.00	.00	.58	.00			
30	.00	-----	.00	.28	.23	.82	.00	.00	.00	.23	.22	.11			
31	.00	-----	.00	-----	1.36	-----	.00	.00	-----	.08	-----	.41			
TOTAL	1.59	2.90	3.94	3.98	7.55	2.17	6.46	6.00	1.22	2.13	1.87	8.37			
STAAV	3.53	4.99	4.79	4.50	3.89	2.95	4.25	3.46	4.65	2.11	4.04	5.09			

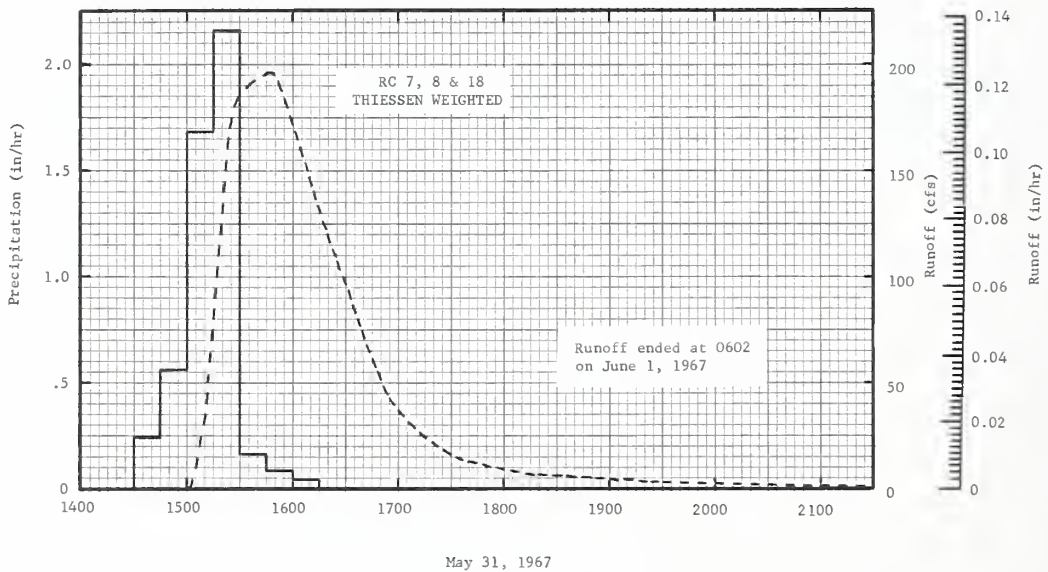
NOTES: DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 7, 8, AND 18.

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI							WATERSHED W-4A		62.01
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	5.79	.09	.00	.00	.00	.00	.00	.00			
2	.00	.00	.00	.00	.29	.00	.46	23.29	.00	.00	.00	6.77			
3	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00			
4	.00	.00	.00	.00	.00	.00	.00	39.37	.00	.00	.00	.00			
5	.00	.00	.00	.00	.00	.00	5.19	.00	.00	.00	.00	.00			
6	.00	.00	29.52	.00	29.76	.00	.04	.00	.00	.00	.00	.00			
7	.00	.00	1.70	.00	9.78	.00	.00	.00	.00	.00	.00	.00			
8	.00	.00	.68	.00	.48	.00	.00	.00	.00	.00	.00	.00			
9	.00	.00	.48	.00	.21	.00	64.25	.00	.00	.00	.00	13.82			
10	.00	.00	.15	.00	.13	.00	.17	.00	.00	.00	.00	.96			
11	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.41			
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	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00			
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00	.00			
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00	4.45			
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.62			
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
20	.00	.64	.00	.00	.00	.00	.00	.00	.00	.00	.00	17.73			
21	.00	.00	.00	.00	.24	.00	.00	.00	.06	.00	.00	13.22			
22	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00	1.37			
23	.00	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00	.79			
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.79			
25	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00	.44			
26	1.75	.00	.12	1.88	.00	.00	.09	7.35	.00	.00	.00	.00			
27	.01	1.31	.55	.00	.00	.00	.00	.00	.00	.00	.00	.00			
28	.00	.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00			
29	.00	-----	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00			
30	.00	-----	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00			
31	.00	-----	.00	-----	11.31	-----	.00	.00	-----	.00	-----	.46			
MEAN	.06	.08	1.07	.12	1.87	.61	2.27	2.26	.00	.61	.00	2.01			
INCHES	.03	.03	.50	.05	.87	.00	1.06	1.06	.00	.00	.00	.94			

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.01506. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-4A 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)
			Event of May 31 - June 1, 1967 ^{1/}							
5-31	<u>2/</u> .11	.0000	5-31	3 RG	AVG <u>3/</u>		5-31	1502	.00	.0000
				1430	.00	.00		1510	35.61	.0015
				1445	.24	.06		1520	130.70	.0102
				1500	.56	.20		1528	184.72	.0234
				1515	1.68	.62		1548	196.70	.0633
Watershed conditions: 13% of area in cultivation, chiefly cotton and corn, generally poor cover; 28% in pasture and 11% idle, fair to good cover; 47% in woods, good cover; 1% in bare gullies.				1530	2.16	1.16		1608	150.30	.0996
				1545	.16	1.20	1632	93.16	.1302	
				1600	.08	1.22	1654	44.54	.1461	
				1615	.04	1.23	1726	18.37	.1566	
							1758	9.55	.1613	
							1836	5.98	.1643	
							1928	3.16	.1668	
							2030	1.73	.1684	
							2218	.68	.1698	
							2400	.68	.1705	
							6-1	0602	.00	.1718

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000628. 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/} ISOHYETAL MAP ON P. 62.11-4. DAILY TOTALS FOR INDIVIDUAL RAIN CAGES LISTED ON PP. 62.11-2 AND 62.11-3. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON PREVIOUS PAGE. ^{2/} RAINFALL PRIOR TO 1430 ON 5-31-67. ^{3/} THIESSEN WEICHTED STORM RAINFALL, RAIN CAGES 7, 8, AND 18.



OXFORD, MISSISSIPPI WATERSHED W-4A

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-5 ^{1/}							62.02
						AREA—1,130 ACRES (1.76 SQ. MILES)							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ^{2/} Q	1.59 .10	2.87 .24	4.21 1.28	3.87 .10	8.06 2.67	2.58 .06	7.04 2.12	6.52 1.85	1.28 .00	2.18 .00	2.09 .00	7.92 1.80	50.21 10.22
STA AV ^{3/} (57-67) Q	3.62 1.23	4.98 1.86	4.94 1.83	4.54 1.16	4.06 .70	2.99 .30	4.19 .39	3.91 .45	4.43 .43	2.09 .12	4.07 .66	5.15 1.45	48.97 10.58
MEAN P ^{4/} 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	7-9	1.06	7-9	.93	7-9	1.37	7-9	1.65	7-9	1.84	7-9	1.86	7-8	1.86	7-5	2.12

MAXIMUMS FOR PERIOD OF RECORD

1957 TO 1967	3-4 1964	1.19	3-4 1964	.99	3-4 1964	1.63	3-4 1964	2.12	2-9 1966	2.80	2-9 1966	3.10	1-30 1957	3.72	1-27 1957	5.25
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NOTES: Watershed conditions: About 11% in cultivation (cotton and corn), fair cover November to March, poor cover 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; 30% in woods, good cover; 1% bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1967. ^{1/} About 21% of drainage area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from rain gages 8 and 33. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 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	1.53	.00	.20	.28	.00	.00	.26	.00
2	.00	.24	.00	.00	.06	.00	.37	2.37	.00	.00	.00	1.43
3	.00	.00	.00	.00	.00	.00	.00	1.20	.00	.00	.19	.00
4	.00	.00	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00
5	.00	.00	.35	.00	.00	.00	1.84	.00	.00	.00	.00	.00
6	.01	.00	2.32	.00	2.82	.00	.00	.00	.00	.00	.00	.19
7	.04	.00	.00	.00	.00	.00	.00	.15	.23	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.44	.04	.00	.00
9	.00	.00	.00	.00	.00	.00	2.94	.00	.00	.00	.00	1.25
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.16
11	.00	.00	.00	.00	.00	.00	.10	.00	.13	.00	.35	.47
12	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
13	.52	.00	.00	.44	.00	.00	.55	.00	.00	.00	.00	.00
14	.07	.00	.00	.74	.25	.00	.00	.00	.00	.00	.00	.39
15	.00	.03	.00	.00	.21	.00	.00	.00	.00	.00	.00	.24
16	.00	.11	.00	.00	.00	.00	.00	.00	.00	1.65	.00	.00
17	.00	.30	.00	.00	.00	.00	.00	.10	.00	.11	.00	.81
18	.00	.02	.00	.00	.00	.18	.00	.17	.00	.00	.00	.00
19	.00	.38	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.75	.21	.00	.46	.02	.00	.00	.00	.00	.02	1.53
21	.00	.00	.00	.00	.84	.70	.00	.00	.24	.00	.25	.85
22	.00	.00	.00	.14	.00	.31	.13	.00	.00	.00	.18	.00
23	.00	.00	.00	.96	.00	.16	.00	.00	.00	.00	.04	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	.00	.00
25	.00	.00	.00	.70	.00	.00	.00	.00	.00	.00	.00	.00
26	.95	.00	1.01	.48	.00	.00	.22	1.63	.00	.00	.00	.00
27	.00	1.04	.28	.00	.00	.00	.00	.07	.24	.00	.00	.055
28	.00	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	.02	.24	.00	.00	.00	.55	.00
30	.00	-----	.00	.34	.27	1.19	.00	.00	.00	.25	.25	.11
31	.00	-----	.00	-----	1.62	-----	.00	.00	-----	.07	-----	.44
TOTAL	1.59	2.87	4.21	3.87	8.06	2.58	7.04	6.52	1.28	2.18	2.09	7.92
STAAV	3.62	4.98	4.94	4.54	4.06	2.99	4.19	3.91	4.43	2.09	4.07	5.15

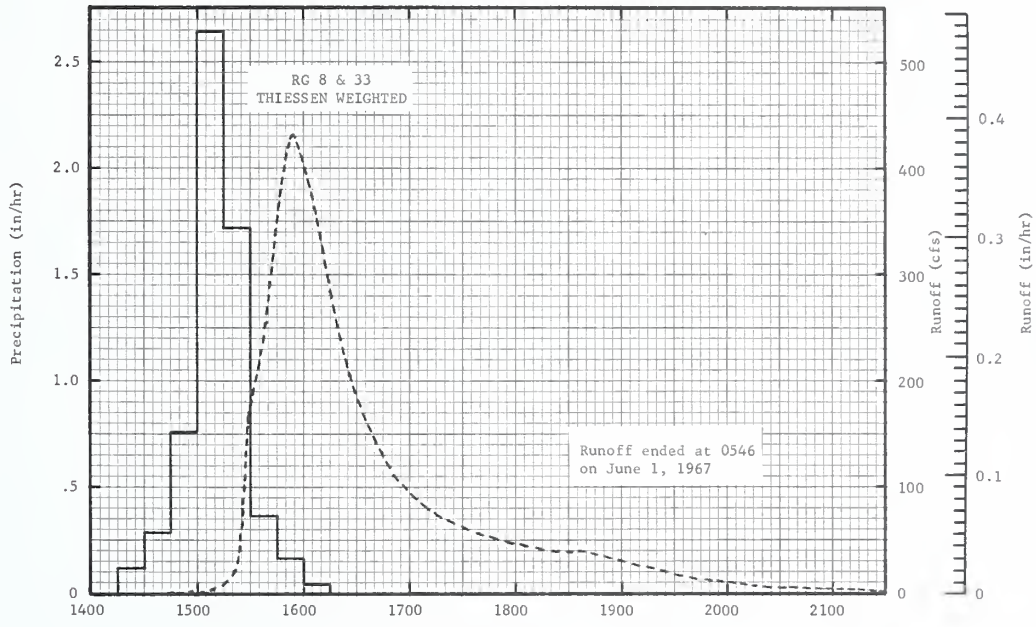
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 8 AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 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	.00	.00	.26	.00	17.44	.03	.00	.00	.00	.00	.00	.00	
2	.00	.00	.05	.00	1.38	.00	.00	19.54	.00	.00	.00	8.30	
3	.00	.00	.00	.00	.15	.00	.00	.23	.00	.00	.00	.00	
4	.00	.00	.00	.00	.00	.00	.00	62.21	.00	.00	.00	.00	
5	.00	.00	.00	.00	.00	.00	12.15	.29	.00	.00	.00	.00	
6	.00	.00	56.74	.00	62.68	.00	.04	.08	.00	.00	.00	.00	
7	.00	.00	2.03	.00	21.50	.00	.00	.00	.00	.00	.00	.00	
8	.00	.00	.98	.00	1.00	.00	.00	.00	.00	.00	.00	.00	
9	.00	.00	.06	.00	.25	.00	88.06	.00	.00	.00	.00	10.54	
10	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00	4.89	
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.72	
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.09	
13	.00	.00	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00	
14	.00	.00	.00	.41	.00	.00	.00	.00	.00	.00	.00	.00	
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.20	
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06	
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	7.49	
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51	
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	2.69	.00	.00	.00	.00	.00	.00	.00	.00	.00	34.84	
21	.00	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	17.59	
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	
23	.00	.00	.00	1.87	.00	.00	.00	.00	.00	.00	.00	.00	
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
25	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	
26	4.65	.00	.24	2.48	.00	.00	.00	5.39	.00	.00	.00	.00	
27	.11	7.99	.49	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.80	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
29	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
30	.00	-----	.00	.00	.00	2.81	.00	.00	.00	.00	.00	.00	
31	.00	-----	.00	-----	22.17	-----	.00	.00	-----	.00	-----	.19	
MEAN	.15	.41	1.96	.16	4.08	.09	3.25	2.83	.00	.00	.00	2.76	
INCHES	.10	.24	1.28	.10	2.67	.06	2.12	1.85	.00	.00	.00	1.80	

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.02106. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 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 May 31 - June 1, 1967 <u>1/</u>								
5-31	27.08	.0000	5-31	2 RG	AVG <u>2/</u>		5-31	1444	.00	.0000	
				1415	.00	.00		1506	.07	.0001	
				1430	.12	.03		1522	22.64	.0027	
				1445	.28	.10		1528	160.50	.0108	
				1500	.76	.29		1536	228.68	.0335	
				1515	2.64	.95		1546	360.00	.0766	
				1530	1.72	1.38		1554	432.34	.1230	
				1545	.36	1.47		1606	365.00	.1929	
				1600	.16	1.51		1624	218.64	.2698	
				1615	.04	1.52		1643	118.68	.3290	
								1712	77.90	.3635	
								1744	54.00	.3944	
								1816	40.61	.4165	
								1842	39.41	.4318	
								1930	18.35	.4522	
								2020	5.76	.4610	
								2138	1.50	.4652	
								2246	.84	.4663	
								2400	.36	.4670	
								0246	.09	.4675	
								0546	.00	.4677	

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/ ISOHYETAL MAP ON P. 62.11-4. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 2/ RAINFALL PRIOR TO 1415 ON 5-31-67. 3/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 8 AND 33. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



May 31, 1967

OXFORD, MISSISSIPPI WATERSHED W-5

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-10 ^{1/} AREA—5,530 ACRES (8.64 SQ. MILES)							62.03
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ^{2/}	1.65	3.11	5.03	4.34	8.66	2.01	8.63	5.78	1.38	2.29	2.34	7.92	53.14
O	.07	.08	1.35	.16	2.34	.01	2.44	1.63	.00	.00	.00	.76	8.84
STA AV ^{3/} P	3.69	5.18	4.91	4.67	4.58	3.06	4.43	3.76	4.49	2.11	4.19	5.30	50.37
(57-67) Q	1.02	1.37	1.50	1.04	.75	.20	.50	.43	.48	.12	.58	1.28	9.27
MEAN P ^{4/}	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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		4 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
1967	7-9	1.18	7-9	1.06	7-9	1.65	7-9	1.94	7-9	2.00	7-9	2.05	7-9	2.05	7-5	2.41

MAXIMUM PERIOD OF RECORD																
1957 TO	7-9	1.18	7-9	1.06	7-9	1.65	2-23	2.13	2-23	2.39	12-3	2.66	1-30	2.98	3-24	4.17
1967	1967		1967		1967		1962		1962		1964		1957		1965	

NOTES: Watershed conditions: About 23% in cultivation (cotton, corn and soybeans), 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; 40% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1967. 1/ About 19% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 13, 14, 20, 24 and 26. 3/ Precipitation and runoff records began Jan. 1957. Station average P is for 11-yr (1957-67) record period. Station average Q is for 10-yr (Jan. 57-Sept. 65 -- Oct. 66-Dec. 67) record period. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 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	1.30	.00	.39	.02	.00	.00	.24	.00	
2	.00	.32	.00	.00	.02	.00	.63	3.92	.00	.00	.02	1.42	
3	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.19	.00	
4	.00	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.00	
5	.00	.00	.63	.00	.00	.00	1.74	.00	.00	.00	.00	.00	
6	.00	.00	2.58	.00	3.42	.00	.01	.00	.00	.00	.00	.17	
7	.00	.00	.00	.00	.00	.00	.00	.04	.33	.00	.00	.00	
8	.00	.00	.00	.00	.00	.00	.00	.00	.45	.06	.00	.00	
9	.00	.00	.00	.00	.00	.00	3.78	.00	.00	.00	.00	1.37	
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.11	
11	.00	.00	.00	.00	.00	.00	.09	.00	.05	.00	.34	.36	
12	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00	
13	.59	.00	.00	.55	.00	.00	.67	.00	.00	.00	.00	.00	
14	.07	.00	.00	.81	.40	.00	.00	.00	.00	.00	.00	.48	
15	.00	.02	.00	.00	.26	.00	.00	.00	.00	.00	.00	.23	
16	.00	.14	.00	.00	.00	.00	.00	.00	.00	1.56	.00	.00	
17	.00	.30	.00	.00	.00	.00	.00	.06	.00	.09	.00	.84	
18	.00	.00	.00	.00	.00	.00	.00	.42	.00	.00	.00	.00	
19	.00	.43	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.73	.18	.00	.47	.02	.00	.03	.00	.00	.03	1.57	
21	.00	.00	.00	.08	.86	.56	.01	.00	.27	.00	.30	.71	
22	.00	.00	.00	.16	.00	.22	.11	.00	.00	.00	.33	.00	
23	.00	.00	.00	1.04	.00	.20	.00	.00	.00	.00	.04	.00	
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.13	.00	.00	
25	.00	.00	.00	.78	.00	.00	.00	.02	.00	.00	.00	.00	
26	.99	.00	1.33	.39	.00	.00	.08	.51	.00	.00	.00	.00	
27	.00	1.17	.29	.00	.00	.00	.00	.07	.28	.00	.00	.065	
28	.00	.00	.00	.00	.00	.02	.57	.00	.00	.00	.00	.00	
29	.00	-----	.00	.00	.00	.08	.51	.00	.00	.00	.65	.00	
30	.00	-----	.00	.45	.48	.91	.00	.00	.00	.34	.20	.13	
31	.00	-----	.00	-----	1.45	-----	.00	.00	-----	.11	-----	.47	
TOTAL	1.65	3.11	5.03	4.34	8.66	2.01	8.63	5.78	1.38	2.29	2.34	7.92	
STA AV	3.69	5.18	4.91	4.67	4.58	3.06	4.43	3.76	4.49	2.11	4.19	5.30	

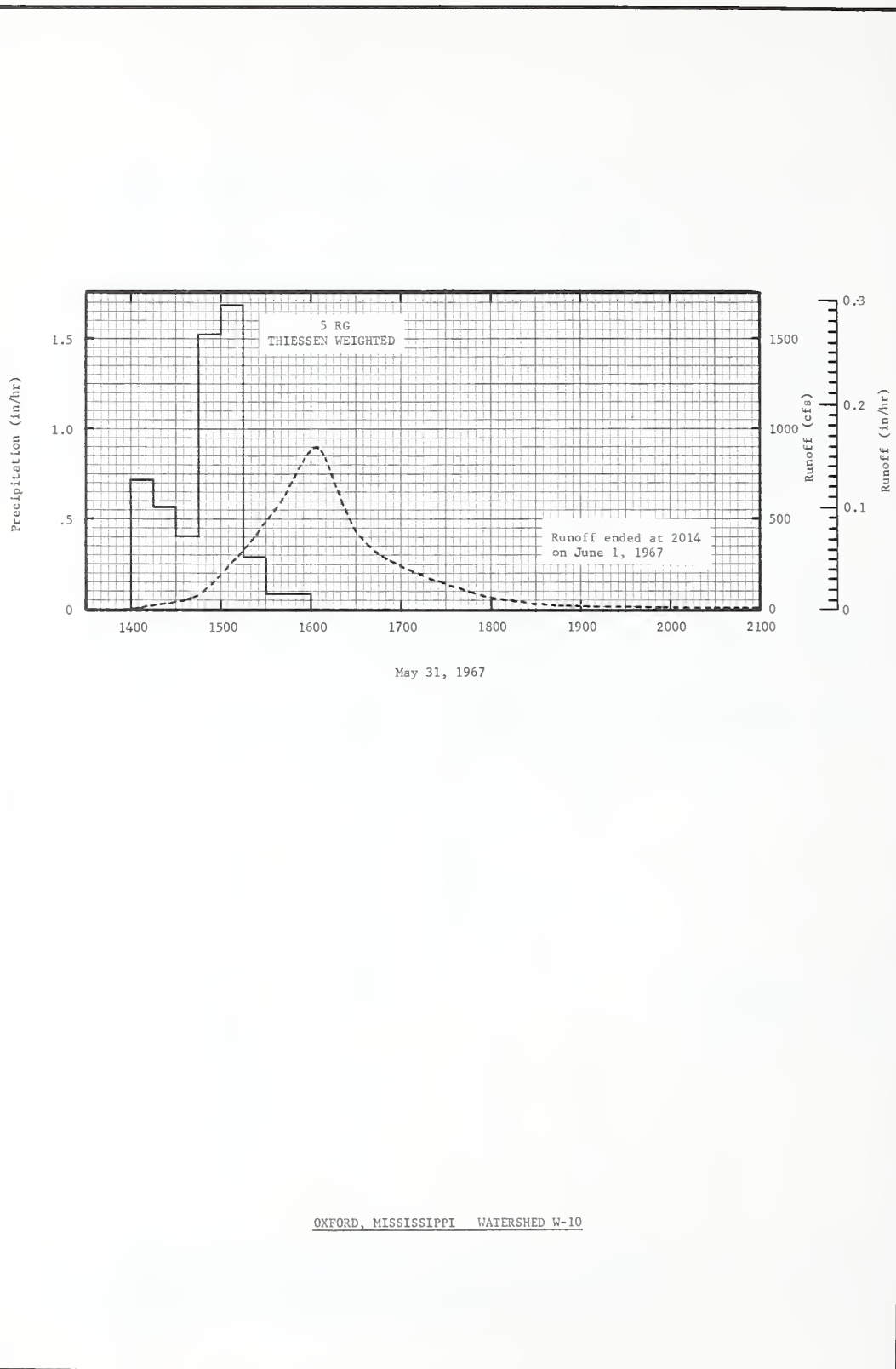
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 13, 14, 20, 24, AND 26. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI WATERSHED 4-10 62.03						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.11	.00	53.36	.17	.06	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	3.56	.00	3.94	332.05	.00	.00	.00	31.39
3	.00	.00	.00	.00	2.41	.00	.00	4.45	.00	.00	.00	.00
4	.00	.00	.00	.00	.18	.00	.00	37.66	.00	.00	.00	.00
5	.00	.00	.34	.00	.00	.00	18.67	.08	.00	.00	.00	.00
6	.00	.00	304.31	.00	264.12	.00	.07	.00	.00	.00	.00	.00
7	.00	.00	5.77	.00	153.45	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	1.98	.00	10.13	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.16	.00	1.29	.00	468.52	.00	.00	.00	.00	1.62
10	.00	.00	.00	.00	.16	.00	8.61	.00	.00	.00	.00	.45
11	.00	.00	.00	.00	.00	.00	.95	.00	.00	.00	.00	.00
12	.00	.00	.00	.00	.00	.00	.58	.00	.00	.00	.00	.00
13	.00	.00	.00	.01	.04	.00	63.36	.00	.00	.00	.00	.00
14	.00	.00	.00	1.47	.38	.00	.03	.00	.00	.00	.00	.00
15	.00	.00	.00	.00	.37	.00	.00	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	9.55
18	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.35
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	3.80	.00	.00	.01	.00	.00	.01	.00	.00	.00	99.91
21	.00	.12	.00	.00	1.09	.00	.00	.00	.00	.00	.00	33.34
22	.00	.00	.00	.00	.16	.00	.00	.00	.00	.00	.00	.72
23	.00	.00	.00	21.10	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	1.13	.00	.00	.00	.00	.00	.00	.00	.00
26	17.19	.00	.41	12.51	.00	.00	.00	4.74	.00	.00	.00	.00
27	.22	12.58	1.51	.61	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	1.90	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	.00	1.72	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.05	3.05	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	53.38	-----	.00	.00	-----	.00	-----	.00
MEAN	.56	.66	10.15	1.23	17.55	.11	18.27	12.23	.00	.00	.00	5.70
INCHES	.07	.08	1.35	.16	2.34	.01	2.44	1.63	.00	.00	.00	.76

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0043041. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED 4-10 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)
<u>Event of May 31 - June 1, 1967 1/</u>										
5-31	2/.12	.0000	5-31	5 RG	AVG 2/		5-31	1350	.00	.0000
				1400	.00	.00		1402	.65	.0001
				1415	.72	.18		1420	25.72	.0008
				1430	.56	.32		1446	82.90	.0050
				1445	.40	.42		1506	227.00	.0133
				1500	1.52	.80		1516	333.76	.0234
				1515	1.66	1.22		1532	519.36	.0652
				1530	.28	1.29		1538	570.00	.0836
				1545	.08	1.31		1550	745.00	.0971
				1600	.08	1.33		1604	906.00	.1117
								1611	650.00	.1442
								1630	430.00	.1536
								1648	248.40	.1829
								1715	185.00	.2027
								1804	62.06	.2205
								1904	12.00	.2271
								2030	2.50	.2290
								2210	1.11	.2295
								2400	.58	.2298
							6-1	1142	.07	.2305
								2014	.00	.505

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/ ISOHYETAL MAP ON P. 62.11-4. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 2/ RAINFALL PRIOR TO 1400 ON 5-31-67. 3/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 13, 14, 20, 24 AND 26. DAILY TOTALS FOR INDIVIDUAL GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-12 ^{1/} AREA—22,800 ACRES (35.6 SQ. MILES)							62.04
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₂ / Q	1.57 .04	2.99 .13	4.52 1.00	4.45 .17	7.83 1.42	2.38 .03	7.19 1.24	7.09 1.44	1.14 .04	2.12 .03	1.95 .03	7.73 .74	50.96 6.31
STA AV ₃ /P (57-67) Q	3.57 .68	4.97 1.09	4.81 1.15	4.50 .62	4.16 .51	3.10 .18	4.28 .27	3.74 .25	4.28 .24	2.07 .06	4.07 .31	5.05 .73	48.60 6.09
MEAN P ₄ / 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	7-9	.30	7-9	.29	7-9	.56	7-9	.99	7-9	1.06	7-9	1.09	8-2	1.29	8-2	1.37

MAXIMUMS FOR PERIOD OF RECORD

1957 to 1967	2-23 1962	.35	2-23 1962	.35	2-23 1962	.68	2-23 1962	1.38	2-23 1962	1.62	2-23 1962	1.84	1-30 1957	2.28	3-24 1965	4.36
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NOTES: Watershed conditions: About 18% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 44% in pasture and idle land, good cover April to October with fair cover remainder of year; 33% in woods, good cover; 1% in bare gullies; 4% urban. Percentages of total area in various land use categories are based on the latest survey completed in 1963. 1/ About 23% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from 16 rain gages. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 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	1.54	.00	.15	.23	.00	.00	.23	.00
2	.00	.42	.00	.00	.03	.00	.68	3.53	.00	.00	.00	1.50
3	.00	.00	.00	.00	.00	.00	.00	.65	.00	.00	.18	.00
4	.00	.00	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00
5	.00	.00	.57	.00	.00	.00	1.35	.00	.00	.00	.00	.00
6	.00	.00	2.51	.00	2.68	.00	.00	.00	.00	.00	.00	.14
7	.04	.00	.00	.00	.00	.00	.00	.16	.21	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.50	.06	.00	.00
9	.00	.00	.00	.00	.00	.01	3.03	.01	.00	.00	.00	1.25
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.15
11	.00	.00	.00	.00	.00	.00	.09	.00	.05	.00	.34	.42
12	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00
13	.54	.00	.00	.50	.00	.00	.44	.00	.00	.00	.00	.00
14	.07	.00	.00	.76	.32	.00	.00	.00	.00	.00	.00	.46
15	.00	.01	.00	.00	.22	.00	.00	.00	.00	.00	.00	.22
16	.00	.13	.00	.00	.00	.00	.00	.00	.00	1.54	.00	.00
17	.00	.29	.00	.00	.00	.00	.00	.08	.00	.11	.00	.80
18	.00	.01	.00	.00	.00	.15	.00	.38	.00	.00	.00	.00
19	.00	.36	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.71	.19	.00	.35	.05	.08	.00	.00	.00	.05	1.39
21	.00	.00	.00	.07	.87	.56	.01	.00	.11	.00	.21	.80
22	.00	.00	.00	.10	.00	.35	.20	.00	.00	.00	.13	.00
23	.00	.00	.00	1.35	.00	.35	.00	.00	.00	.00	.03	.00
24	.00	.00	.00	.00	.00	.00	.00	.27	.00	.08	.00	.00
25	.00	.00	.00	.70	.00	.00	.13	.00	.00	.00	.00	.00
26	.92	.00	.97	.52	.00	.02	.21	1.16	.00	.00	.00	.00
27	.00	1.06	.23	.00	.00	.00	.00	.06	.27	.00	.00	.055
28	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	.07	.32	.00	.00	.00	.55	.00
30	.00	-----	.00	.37	.35	.82	.00	.00	.00	.25	.23	.11
31	.00	-----	.00	-----	1.47	-----	.00	.00	-----	.08	-----	.44
TOTAL	1.57	2.99	4.52	4.45	7.83	2.38	7.19	7.09	1.14	2.12	1.95	7.73
STAV	3.57	4.97	4.81	4.50	4.16	3.10	4.28	3.74	4.28	2.07	4.07	5.05

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 4-9, 13, 15, 18-20, 25, 29-31, AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 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	.82	.31	2.68	.38	308.59	9.07	3.83	.24	2.29	1.00	1.33	1.00	
2	.82	10.75	2.28	.71	26.56	1.75	12.44	830.50	2.29	.93	1.26	82.19	
3	.82	1.68	2.11	.71	4.64	1.00	1.99	29.84	2.21	.82	1.06	2.29	
4	.82	1.00	2.02	.71	3.45	.87	.39	444.49	1.78	.76	1.00	1.14	
5	.76	1.00	2.51	.71	3.09	.82	64.60	3.85	1.48	.76	1.00	1.00	
6	.71	.88	847.90	.65	599.20	.61	6.82	1.35	1.26	.82	1.00	1.00	
7	.71	.82	35.06	.60	246.39	.51	3.83	.88	1.26	.82	1.00	.87	
8	.60	.93	12.53	.51	10.72	.43	3.09	.71	1.71	.88	1.00	.87	
9	.60	1.00	7.36	.56	1.35	.28	1028.43	.60	1.12	.93	1.00	31.48	
10	.65	1.00	4.80	.82	.93	.22	19.92	.51	1.00	.93	.93	27.49	
11	.56	.82	3.56	.82	.82	.18	3.68	.42	.87	.93	.87	4.16	
12	.47	.52	2.98	.65	.61	.23	4.19	.42	.87	.93	.93	1.91	
13	.56	.38	2.66	.69	.39	.31	24.38	.47	.93	1.13	1.00	1.07	
14	.65	.35	2.29	2.04	.49	.28	1.84	.42	.93	1.26	1.00	1.45	
15	.65	.25	1.71	.56	1.37	.28	.56	.35	.87	1.26	1.06	2.20	
16	.60	.20	1.26	.51	.27	.25	.00	.31	.87	1.40	1.00	1.96	
17	.56	.18	.89	.42	.14	.25	.38	.25	.87	1.15	.93	51.08	
18	.51	.16	.71	.42	.14	.31	.82	.96	.87	.76	1.06	25.44	
19	.51	.22	.82	.47	.13	.31	.76	.35	.87	.76	1.06	3.12	
20	.56	17.36	.76	.51	.18	.35	1.63	.35	.87	.82	1.00	277.69	
21	.56	4.43	.71	.60	1.84	.46	1.47	.32	.87	.82	1.06	159.61	
22	.56	2.98	.66	.61	1.15	.73	.76	.28	.87	.82	1.06	20.82	
23	.56	2.77	.84	80.50	.23	.82	.71	.28	.87	.93	1.00	1.04	
24	.56	2.77	1.19	3.22	.14	.35	.71	.36	.87	.93	1.00	.60	
25	.51	2.66	1.26	1.65	.13	.39	.71	1.03	.87	.87	1.00	.56	
26	18.49	2.66	1.85	50.35	.19	.33	.86	45.29	.87	1.00	.88	.60	
27	3.52	56.18	9.62	3.93	.20	.25	.61	4.69	.87	1.06	.76	.71	
28	.42	12.04	2.23	2.56	.13	.25	.59	3.09	.87	.93	.76	.66	
29	.38	-----	1.14	2.66	.15	.40	1.10	2.87	.93	1.00	.88	.43	
30	.35	-----	.87	2.26	.22	6.20	1.05	2.66	.93	1.19	1.00	.35	
31	.31	-----	.76	-----	150.65	-----	.36	2.56	-----	1.26	-----	1.39	
MEAN	1.26	4.50	30.90	5.39	44.01	.94	38.46	44.53	1.13	.96	.99	22.77	
INCHES	.04	.13	1.00	.17	1.42	.03	1.24	1.44	.04	.03	.03	.74	

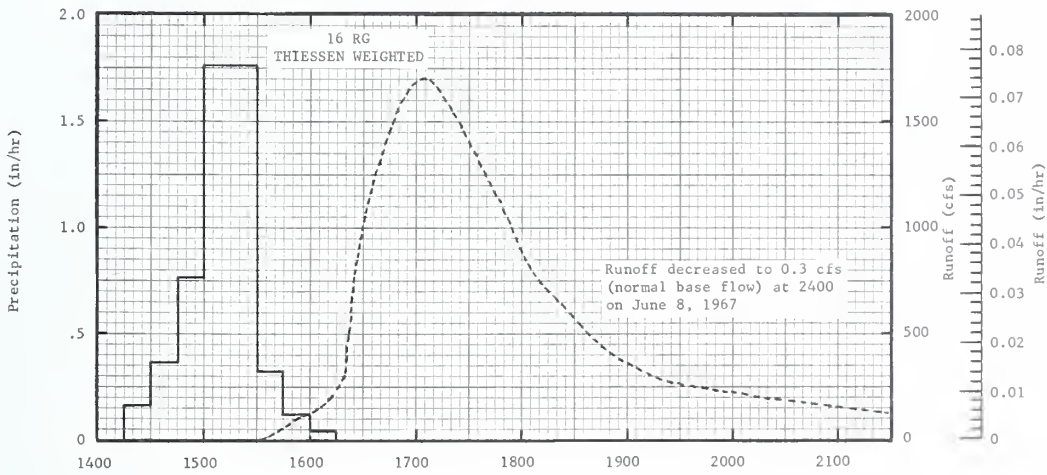
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0010439. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-12 62.04				
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)	
<u>Event of May 31 - June 3, 1967 1/</u>											
5-31	2/.14	3/.0002	5-31	16 RG	AVG 4/		5-31	1420	.20	.0000	
				1415	.00	.00		1438	.76	.0001	
				1430	.16	.04		1454	.87	.0001	
				1445	.36	.13		1512	2.56	.0001	
				1500	.76	.32		1536	15.99	.0002	
				1515	1.76	.76		1554	101.81	.0010	
				1530	1.76	1.20		1612	196.10	.0029	
				1545	.32	1.28		1620	321.49	.0044	
				1600	.12	1.31		1624	699.52	.0059	
				1615	.04	1.32		1632	1090.00	.0111	
								1646	1477.28	.0241	
								1704	1702.00	.0449	
								1726	1470.26	.0702	
								1748	1172.00	.0907	
								1812	735.59	.1067	
								1828	580.00	.1143	
								1850	412.19	.1222	
								1920	278.73	.1297	
								2010	209.70	.1386	
								2058	155.00	.1449	
								2206	101.81	.1513	
								2254	73.35	.1543	
								2328	59.00	.1559	
								2400	47.58	.1572	
							0-1	0130	28.81	.1597	

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/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1415 ON 5-31-67. 3/ RUNOFF PRIOR TO 1420 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 4-9, 13, 15, 18-20, 25, 29-31 AND 33. DAILY TOTALS FOR INDIVIDUAL GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

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 (cfs)	ACC. (inches)	
Event of May 31 - June 3, 1967 - Continued											
							6-1	0300	18.19	.1612	
								0600	9.51	.1630	
								1200	4.46	.1641	
								2400	2.37	.1666	
							6-2	2400	1.17	.1585	
							6-3	2400	1.87	.1695	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0000435. 1/ RUNOFF DECREASED TO 0.3 CFS (NORMAL BASE FLOW) AT 2400 ON JUNE 8, 1967.



May 31, 1967

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
1967 P ^{2/}	1.58	3.06	4.70	4.65	7.87	2.33	7.56	7.07	1.18	2.16	1.91	7.87	51.94
O	.24	.32	1.34	.44	1.89	.25	1.65	1.77	.21	.22	.22	1.20	9.75
STA AV ^{3/} P	3.62	5.01	4.80	4.56	4.19	3.14	4.34	3.92	4.14	2.08	4.05	5.13	48.98
(57-67) Q	.95	1.40	1.52	.92	.83	.35	.49	.52	.42	.25	.57	1.05	9.27
MEAN P ^{4/}													
48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	7-9	.20	7-9	.19	7-9	.39	7-9	.98	7-9	1.20	7-9	1.26	8-2	1.39	8-2	1.55

MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	2-23 1962	.21	2-23 1962	.21	2-23 1962	.41	2-23 1962	1.12	2-23 1962	1.50	12-3 1964	2.01	3-24 1965	2.39	3-24 1965	4.68

NOTES: Watershed conditions: About 19% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 38% in pasture and idle land, good cover April to October with fair cover remainder of year; 38% in woods, good cover; 2% in bare gullies; 3% urban. Percentages of total area in various land use categories are based on the latest survey completed in 1965. ^{1/} About 22% of drainage area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from 21 rain gages. ^{3/} Precipitation and runoff records began Jan. 1957. ^{4/} Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 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	1.48	.00	.13	.20	.00	.00	.22	.00	
2	.00	.49	.00	.00	.02	.00	.69	3.62	.00	.00	.00	1.63	
3	.00	.00	.00	.00	.00	.00	.00	.64	.00	.00	.19	.00	
4	.00	.00	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00	
5	.00	.00	.64	.00	.00	.00	1.35	.00	.00	.00	.00	.00	
6	.00	.00	2.63	.00	2.77	.00	.00	.00	.00	.00	.00	.13	
7	.03	.00	.00	.00	.00	.00	.00	.20	.20	.00	.00	.00	
8	.00	.00	.00	.00	.00	.00	.00	.00	.53	.06	.00	.00	
9	.00	.00	.00	.00	.00	.01	3.23	.02	.00	.00	.00	1.19	
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.14	
11	.00	.00	.00	.00	.00	.00	.08	.00	.05	.00	.33	.43	
12	.00	.00	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	
13	.54	.00	.00	.52	.00	.00	.48	.00	.00	.00	.00	.00	
14	.07	.00	.00	.76	.36	.00	.00	.00	.00	.00	.00	.50	
15	.00	.01	.00	.00	.23	.00	.00	.00	.00	.00	.00	.23	
16	.00	.12	.00	.00	.00	.00	.00	.00	.00	1.50	.00	.00	
17	.00	.28	.00	.00	.00	.00	.00	.06	.00	.11	.00	.81	
18	.00	.01	.00	.00	.00	.12	.00	.47	.00	.00	.00	.00	
19	.00	.35	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.72	.17	.00	.32	.06	.07	.01	.00	.00	.06	1.46	
21	.00	.00	.00	.11	.85	.51	.01	.00	.08	.00	.19	.75	
22	.00	.00	.00	.10	.00	.35	.19	.00	.00	.00	.12	.00	
23	.00	.00	.00	1.42	.00	.29	.00	.00	.00	.00	.03	.00	
24	.00	.00	.00	.00	.00	.00	.00	.27	.00	.14	.00	.00	
25	.00	.00	.00	.69	.00	.00	.11	.00	.00	.00	.00	.00	
26	.94	.00	1.00	.56	.00	.02	.20	.94	.00	.00	.00	.00	
27	.00	1.08	.22	.00	.00	.00	.00	.08	.32	.00	.00	.055	
28	.00	.00	.00	.00	.00	.01	.44	.00	.00	.00	.00	.00	
29	.00	-----	.00	.00	.00	.11	.44	.00	.00	.00	.53	.00	
30	.00	-----	.00	.41	.38	.85	.00	.00	.00	.26	.24	.11	
31	.00	-----	.00	-----	1.46	-----	.00	.00	-----	.09	-----	.44	
TOTAL	1.58	3.06	4.70	4.65	7.87	2.33	7.56	7.07	1.18	2.16	1.91	7.87	
STA AV	3.62	5.01	4.80	4.56	4.19	3.14	4.34	3.92	4.14	2.08	4.05	5.13	

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, 28-31, AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 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	7.22	7.40	12.89	4.36	383.46	31.00	11.42	11.80	9.68	9.29	9.29	11.13	
2	7.22	29.82	10.25	8.72	71.27	14.09	30.67	1318.14	9.29	9.68	9.10	216.46	
3	7.41	13.78	9.76	8.54	17.28	12.91	14.69	47.22	9.10	9.68	9.29	12.49	
4	8.20	10.78	9.28	8.54	14.07	11.57	14.26	655.15	9.10	9.68	9.10	8.75	
5	8.83	9.76	9.42	8.91	12.92	10.09	78.89	20.72	9.49	9.68	8.72	8.18	
6	8.62	9.51	1375.36	9.29	961.75	9.68	16.57	14.82	9.68	9.88	8.91	8.00	
7	8.40	9.28	69.13	9.48	471.95	9.49	9.49	16.08	9.88	9.68	9.29	7.60	
8	8.61	9.05	22.32	9.10	27.80	9.29	8.38	12.03	11.25	9.68	9.48	7.31	
9	8.83	9.05	15.68	8.72	23.48	9.68	1656.99	10.70	9.48	9.68	9.68	31.32	
10	8.83	9.05	13.93	9.10	19.22	9.68	63.22	10.09	9.48	9.68	9.88	60.24	
11	8.61	9.05	12.70	9.10	17.94	9.68	19.60	9.29	9.48	10.08	10.08	18.50	
12	8.61	8.62	11.06	8.72	16.43	10.08	18.07	8.75	9.29	9.88	9.88	13.05	
13	10.08	7.99	10.00	8.72	15.59	10.08	61.53	8.73	9.10	9.48	9.48	8.55	
14	11.84	7.79	10.00	20.51	15.48	9.88	13.37	9.10	8.72	9.48	9.88	11.75	
15	10.58	8.89	10.00	11.59	23.33	9.88	12.23	9.10	8.91	9.48	10.08	17.82	
16	8.83	10.00	10.00	9.88	16.16	9.88	11.56	9.29	8.91	10.97	9.88	13.63	
17	9.06	10.51	10.25	9.48	14.82	9.88	11.56	9.88	8.72	11.16	9.68	87.56	
18	9.28	10.51	10.25	9.48	14.31	10.50	11.13	14.11	8.54	9.30	9.68	50.71	
19	9.05	10.78	10.25	9.29	14.31	11.34	10.49	14.50	8.54	8.91	10.08	16.94	
20	9.05	40.13	10.76	8.91	14.82	10.92	11.37	11.34	8.72	9.10	10.49	557.25	
21	9.05	17.06	10.76	8.91	21.90	10.70	11.16	10.91	8.72	9.10	10.70	264.84	
22	8.83	11.84	10.51	8.91	21.28	10.70	9.88	10.49	8.72	8.73	10.70	66.96	
23	8.61	11.56	10.01	173.72	15.08	10.49	9.12	10.49	8.91	8.36	10.70	16.51	
24	8.61	10.78	9.76	15.22	13.84	10.29	8.36	10.70	9.10	9.34	10.70	14.54	
25	8.61	10.00	9.76	13.50	13.13	10.08	8.18	12.27	9.10	8.92	10.70	12.68	
26	37.76	10.25	17.87	133.83	13.13	9.88	8.00	61.93	9.49	8.54	10.70	12.23	
27	22.23	84.41	40.87	17.93	13.13	9.48	8.00	14.14	10.08	8.91	10.70	12.45	
28	10.78	36.45	16.01	12.93	12.68	9.68	7.83	10.28	10.08	9.10	10.70	12.45	
29	9.53	-----	12.12	11.56	12.00	10.50	41.69	10.08	9.88	8.73	11.13	12.23	
30	8.42	-----	10.78	11.18	12.69	15.97	17.76	9.68	9.88	8.92	11.56	12.23	
31	7.60	-----	9.76	-----	235.99	-----	10.91	9.68	-----	9.48	-----	17.48	
MEAN	10.22	15.50	58.43	19.93	82.29	11.24	71.81	77.14	9.29	9.41	10.00	52.38	
INCHES	.24	.32	1.34	.44	1.89	.25	1.65	1.77	.21	.22	.22	1.20	

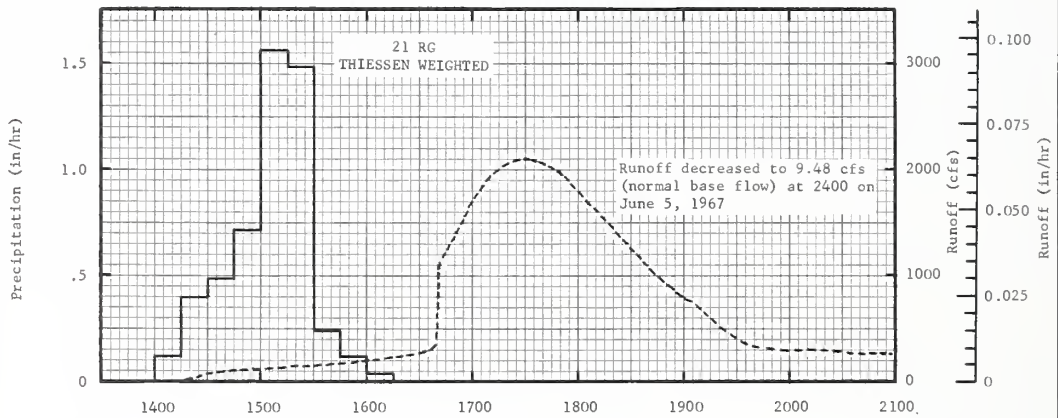
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0007415. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI			WATERSHED W-17				62.05
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 May 31 - June 5, 1967 1/											
5-31	2/.16	3/.0058	5-31	21 RG	AVG 4/		5-31	1402	12.90	.0000	
					.00	.00		1416	16.41	.0002	
					.12	.03		1432	87.27	.0006	
					.40	.13		1446	104.34	.0013	
					.48	.25		1458	104.34	.0019	
					.72	.43		1528	157.82	.0039	
					1.56	.82		1600	199.62	.0069	
					1.43	1.19		1628	272.31	.0103	
					.74	1.25		1638	320.32	.0118	
					.12	1.28		1642	1122.00	.0133	
					.04	1.29		1652	1410.00	.0192	
								1704	1812.00	.0296	
								1710	1950.00	.0356	
								1728	2106.00	.0544	
								1750	1980.00	.0775	
								1805	1698.00	.0927	
								1826	1336.00	.1083	
								1850	921.00	.1223	
								1906	756.00	.1292	
								1928	414.00	.1358	
								1948	312.05	.1395	
								2020	300.31	.1446	
								2100	275.01	.1505	
								2214	217.26	.1599	
								2316	164.46	.1660	

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/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1400 ON 5-31-67. 3/ RUNOFF PRIOR TO 1402 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 2, 4-9, 13-15, 17-20, 22, 25, 28-31, AND 33. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-17 62.15				
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)	
<u>Event of May 31 - June 5, 1967 - Continued</u>											
							5-31	2400	121.94	.1692	
							6-1	0130	79.29	.1739	
								0300	58.57	.1771	
								0600	35.95	.1714	
								0900	24.71	.1841	
								1128	18.24	.1861	
								2400	14.81	.1922	
							6-2	2400	13.56	.2027	
							6-3	2400	12.45	.2122	
							6-4	2400	10.70	.2208	
							6-5	2400	1/9.48	.2283	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.000309. 1/ NORMAL BASE FLOW.



May 31, 1967

OXFORD, MISSISSIPPI WATERSHED W-17

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-24 ^{1/}								62.07
						AREA—512 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ^{2/} Q	1.62 .06	3.36 .45	4.90 1.50	5.31 .58	8.19 1.49	1.83 .04	8.05 1.07	7.79 2.44	1.06 .02	2.01 .03	1.72 .00	7.10 .84	52.94 8.52
	STA AV ^{3/} (57-67) Q	3.66 .97	5.11 1.60	4.89 1.44	4.51 1.07	4.34 .64	3.06 .12	4.36 .24	3.69 .32	3.95 .18	2.06 .06	4.04 .41	5.05 .89	48.72 7.94
	MEAN P ^{4/} 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	8-2	.97	8-2	.90	8-2	1.36	8-2	1.54	8-2	1.75	8-2	1.87	8-2	2.18	8-2	2.33

MAXIMUMS FOR PERIOD OF RECORD																
1957 to 1967	2-23 1962	1.04	2-23 1962	.90	2-23 1962	1.36	2-23 1962	1.64	2-23 1962	1.86	3-28 1965	2.39	1-30 1957	3.16	3-24 1965	5.32

NOTES: Watershed conditions: About 4% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 13% in pasture and idle land, good cover April to October with fair cover remainder of year; 81% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1968. 1/ About 7% of drainage area above small desilting and retention dams. 2/ Monthly precipitation Thiessen weighted from rain gages 4 and 30. 3/ Precipitation and runoff records began Jan. 1957. 4/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-24								62.07
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	1.81	.00	.02	.27	.00	.00	.21	.00		
2	.00	.80	.00	.00	.01	.00	1.16	4.34	.00	.00	.00	1.70		
3	.00	.00	.00	.00	.00	.00	.00	.63	.00	.00	.19	.00		
4	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00		
5	.00	.00	.80	.00	.00	.00	1.09	.00	.00	.00	.00	.00		
6	.00	.00	2.92	.00	2.70	.00	.00	.00	.00	.00	.00	.09		
7	.05	.00	.00	.00	.00	.00	.00	.09	.14	.00	.00	.00		
8	.00	.00	.00	.00	.00	.00	.00	.00	.55	.07	.00	.00		
9	.00	.00	.00	.00	.00	.00	3.15	.00	.00	.00	.00	.86		
10	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00	.00	.15		
11	.00	.00	.00	.00	.00	.00	.09	.00	.01	.00	.34	.40		
12	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00		
13	.58	.00	.00	.46	.00	.00	.40	.00	.00	.00	.00	.00		
14	.07	.00	.00	.79	.39	.00	.00	.00	.00	.00	.00	.54		
15	.00	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.23		
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	1.44	.00	.00		
17	.00	.25	.00	.00	.00	.00	.00	.07	.00	.12	.00	.72		
18	.00	.02	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00		
19	.00	.34	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.69	.17	.00	.23	.09	.37	.00	.00	.00	.07	1.15		
21	.00	.00	.00	.22	.84	.48	.01	.00	.03	.00	.11	.66		
22	.00	.00	.00	.08	.00	.19	.23	.00	.00	.00	.05	.00		
23	.00	.00	.00	1.97	.00	.18	.00	.00	.00	.00	.02	.00		
24	.00	.00	.00	.00	.00	.00	.00	1.02	.00	.07	.00	.00		
25	.00	.00	.00	.69	.00	.00	.57	.00	.00	.00	.00	.00		
26	.92	.00	.82	.62	.00	.02	.13	.46	.00	.00	.00	.00		
27	.00	1.10	.13	.00	.00	.00	.00	.06	.33	.00	.00	.05S		
28	.00	.00	.00	.00	.00	.00	.41	.00	.00	.00	.00	.00		
29	.00	---	.00	.00	.00	.04	.25	.00	.00	.00	.52	.00		
30	.00	---	.00	.38	.55	.83	.00	.00	.00	.22	.21	.11		
31	.00	---	.00	---	1.43	---	.00	---	---	.09	---	.44		
TOTAL	1.62	3.36	4.90	5.31	8.19	1.83	8.05	7.79	1.06	2.01	1.72	7.10		
STA AV	3.66	5.11	4.89	4.51	4.34	3.06	4.36	3.69	3.95	2.06	4.04	5.05		

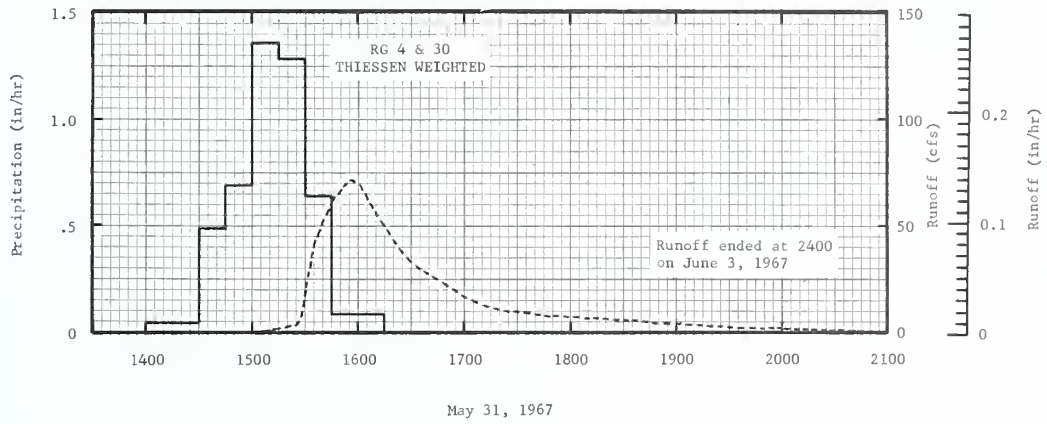
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 4 AND 30. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI						WATERSHED U-24		62.07
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.03	.00	10.55	.23	.12	.00	.00	.00	.00	.00		
2	.00	2.49	.00	.00	1.83	.18	.86	39.76	.00	.00	.00	3.85		
3	.00	.00	.03	.00	.18	.07	.00	1.41	.00	.00	.00	.00		
4	.00	.00	.03	.00	.18	.00	.00	8.00	.00	.00	.00	.00		
5	.00	.00	.02	.00	.18	.00	.37	.66	.00	.00	.00	.00		
6	.00	.00	31.15	.00	11.91	.00	.09	.24	.00	.00	.00	.00		
7	.00	.00	.91	.00	3.19	.00	.00	.10	.00	.00	.00	.00		
8	.00	.00	.09	.00	.10	.00	.00	.02	.39	.00	.00	.00		
9	.00	.00	.00	.00	.10	.00	20.53	.03	.00	.00	.00	.60		
10	.00	.00	.00	.00	.05	.00	.15	.00	.00	.00	.00	.68		
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.51		
12	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.73	.00	.00	.00	.00	.00		
14	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00	.22		
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.15		
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00	.00		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.49	.00	2.25		
18	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.53		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	2.39	.00	.00	.00	.00	.00	.00	.00	.00	.00	6.30		
21	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.44		
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.50		
23	.00	.00	.00	6.83	.00	.00	.00	.00	.00	.00	.00	.05		
24	.00	.00	.00	.18	.00	.00	.00	.33	.00	.00	.00	.00		
25	.00	.00	.00	.26	.00	.00	.22	1.55	.00	.00	.00	.00		
26	1.20	.00	.02	4.39	.00	.00	.01	.04	.00	.00	.00	.00		
27	.02	3.93	.01	.22	.00	.00	.00	.00	.00	.00	.00	.00		
28	.00	.82	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00		
29	.00	-----	.00	.13	.00	.00	.00	.00	.00	.00	.00	.00		
30	.00	-----	.00	.15	.00	.44	.00	.00	.00	.00	.00	.00		
31	.00	-----	.00	-----	3.92	-----	.00	.00	-----	.00	-----	.08		
MEAN	.04	.35	1.04	.41	1.04	.03	.74	1.69	.01	.02	.00	.58		
INCHES	.06	.45	1.50	.58	1.49	.04	1.07	2.44	.02	.03	.00	.84		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.046488. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI			WATERSHED U-24		62.07		
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 3, 1967 1/							
5-31	2/.25	3/.0090	5-31	2 00	AVG 4/		5-31	1506	.13	.0000
				1400	.00	.01		1526	4.62	.0016
				1415	.06	.11		1554	50.94	.0072
				1450	.04	.02		1546	62.76	.126
				1445	.48	.14		1528	71.80	.1454
				1500	.50	.31		1610	56.00	.1773
				1515	1.36	.65		1628	54.80	.1887
				1530	1.28	.97		1644	25.14	.1192
				1545	.54	1.13		1706	14.00	.1331
				1600	.08	1.15		1736	8.78	.1441
				1615	.08	1.17		1806	7.19	.1514
								1930	2.67	.1652
								2100	.02	.1704
								2248	.39	.1727
								2400	.23	.1734
								6-1	2400	.23
								6-2	2400	.13
								6-3	2400	.00

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.001937. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.7-4. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1400 ON 5-31-67. 3/ RUNOFF PRIOR TO 1506 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 4 AND 30. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



OXFORD, MISSISSIPPI WATERSHED W-24

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-28 ^{1/}							62.08	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ^{2/}	1.58	2.91	4.04	4.38	6.96	2.32	6.05	8.52	0.80	2.16	1.95	8.44	50.11
	O	.00	.00	.06	.02	.48	.03	.50	1.94	.00	.00	.00	1.06	4.09
STA AV ^{3/}	P	3.55	5.02	4.76	4.38	3.95	3.15	4.28	3.44	4.27	2.13	4.05	5.08	48.06
(57-67)	Q	.34	.50	.45	.26	.17	.05	.13	.22	.13	.04	.13	.33	2.75
MEAN	P ^{4/}													
48 YR	A	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	8-2	.63	8-2	.57	8-2	.90	8-2	1.22	8-2	1.39	8-2	1.43	8-2	1.62	8-2	1.66

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO	8-2	.63	8-2	.57	8-2	.90	8-2	1.22	8-2	1.39	1-31	1.45	1-30	2.02	1-27	2.68
19 67	1967	1967	1967	1967	1967	1967	1967	1967	1967	1957	1957	1957	1957	1957	1957	1957

NOTES: Watershed conditions: About 12% in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 29% in pasture and idle land, good cover April to October with fair cover remainder of year; 58% in woods, good cover; 1% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1967. ^{1/} About 61% of drainage 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 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 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	1.50	.00	.17	.32	.00	.00	.20	.00	
2	.00	.32	.00	.00	.05	.00	.66	4.59	.00	.00	.00	1.52	
3	.00	.00	.00	.00	.00	.00	.00	.58	.00	.00	.17	.00	
4	.00	.00	.00	.00	.00	.00	.00	.29	.00	.00	.00	.00	
5	.00	.00	.44	.00	.00	.00	1.29	.00	.00	.00	.00	.00	
6	.00	.00	2.22	.00	2.20	.00	.00	.00	.00	.00	.00	.15	
7	.09	.00	.00	.00	.00	.00	.00	.05	.19	.00	.00	.00	
8	.00	.00	.00	.00	.00	.00	.00	.00	.26	.03	.00	.00	
9	.00	.00	.00	.00	.00	.02	2.44	.08	.00	.00	.00	1.73	
10	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.17	
11	.00	.00	.00	.00	.00	.00	.06	.00	.00	.00	.36	.40	
12	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	
13	.55	.00	.00	.52	.00	.00	.23	.00	.00	.00	.00	.00	
14	.06	.00	.00	.84	.22	.00	.00	.00	.00	.00	.00	.42	
15	.00	.01	.00	.00	.22	.00	.00	.00	.00	.00	.00	.20	
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	1.62	.00	.00	
17	.00	.28	.00	.00	.00	.00	.00	.09	.00	.11	.00	.89	
18	.00	.00	.00	.00	.00	.01	.00	.23	.00	.00	.00	.00	
19	.00	.36	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.70	.22	.00	.39	.04	.09	.00	.00	.00	.08	1.35	
21	.00	.00	.00	.00	.84	.33	.00	.00	.11	.00	.20	1.00	
22	.00	.00	.00	.09	.00	.58	.22	.00	.00	.00	.09	.00	
23	.00	.00	.00	1.37	.00	.67	.00	.00	.00	.00	.02	.00	
24	.00	.00	.00	.00	.00	.00	.00	.28	.00	.08	.00	.00	
25	.00	.00	.00	.72	.00	.00	.06	.00	.00	.00	.00	.00	
26	.88	.00	.93	.48	.00	.02	.14	1.93	.00	.00	.00	.00	
27	.00	1.08	.17	.00	.00	.00	.00	.08	.24	.00	.00	.065	
28	.00	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00	
29	.00	-----	.00	.00	.00	.07	.23	.00	.00	.00	.56	.00	
30	.00	-----	.00	.30	.20	.58	.00	.00	.00	.24	.27	.12	
31	.00	-----	.00	-----	1.34	-----	.00	-----	-----	.08	-----	.43	
TOTAL	1.58	2.91	4.04	4.38	6.96	2.32	6.05	8.52	.80	2.16	1.95	8.44	
STA AV	3.55	5.02	4.76	4.38	3.95	3.15	4.28	3.44	4.27	2.13	4.05	5.08	

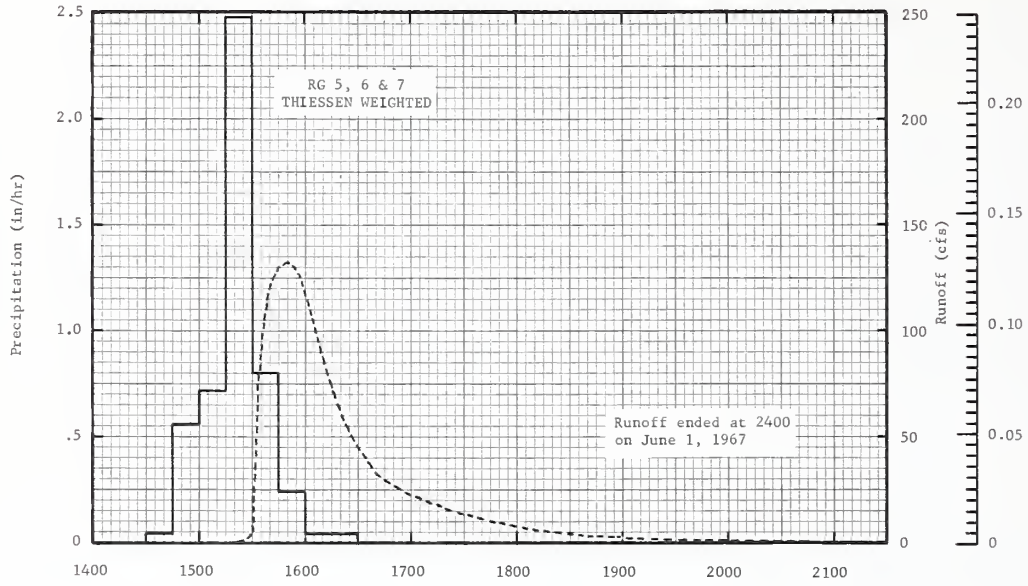
NOTES. FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 5, 6 AND 7. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI						WATERSHED 1-28		62.08
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.00	.00	.00	.00	1.30	.03	.00	.00	.00	.00	.00	.00		
2	.00	.00	.00	.00	.06	.00	.59	64.81	.00	.00	.00	6.32		
3	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00		
4	.00	.00	.00	.00	.00	.00	.00	10.24	.00	.00	.00	.00		
5	.00	.00	.00	.00	.00	.00	3.99	.08	.00	.00	.00	.00		
6	.00	.00	2.90	.00	11.79	.00	.00	.00	.00	.00	.00	.00		
7	.00	.00	.00	.00	2.44	.00	.00	.00	.00	.00	.00	.00		
8	.00	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00		
9	.00	.00	.00	.00	.00	.00	18.34	.00	.00	.00	.00	7.91		
10	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	1.29		
11	.00	.00	.00	.00	.18	.00	.00	.00	.00	.00	.00	.00		
12	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00		
13	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
14	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00	.00		
15	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00		
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.72		
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.11		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00		
20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	11.26		
21	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	11.71		
22	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.79		
23	.00	.00	.00	.77	.00	1.12	.00	.00	.00	.00	.00	.32		
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.70		
25	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.85		
26	.00	.00	.00	.00	.00	.00	.00	12.69	.00	.00	.00	.39		
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.26		
28	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.58		
29	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.01		
30	.00	-----	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05		
31	.00	-----	.00	-----	5.56	-----	.00	.00	-----	.00	-----	.33		
MEAN	.00	.00	.09	.03	.70	.04	.74	2.84	.00	.00	.00	1.55		
INCHES	.00	.00	.06	.02	.48	.03	.50	1.94	.00	.00	.00	1.05		

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0220387. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED 1-28				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)			
<u>Event of May 31 - June 1, 1967 1/</u>													
5-31	2/.10	.0000	5-31	3 36G	AVG 3/		5-31	1522	.00	.0000			
				1430	.30	.00		1528	3.31	.0002			
				1445	.64	.01		1534	80.40	.0041			
				1500	.56	.15		1540	121.20	.0133			
				1515	.72	.33		1550	133.10	.0322			
				1530	2.48	.95		1555	121.20	.0494			
				1545	.80	1.15		1615	64.81	.0751			
				1600	.24	1.21		1640	32.36	.0833			
				1615	.04	1.22		1712	15.20	.0859			
				1630	.04	1.23		1742	11.82	.0826			
											1826	4.20	.1182
											1912	1.96	.1204
											2026	.56	.1218
											2206	.19	.1224
						2456	.07	.1225					
							7400	.07	.1225				
							6-1 2400	.00	.1232				

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/ ISOTHERMAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1430 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 5, 6 AND 7. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



May 31, 1967

OXFORD, MISSISSIPPI WATERSHED W-28

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-32 ^{1/} 62.10 AREA—20,000 ACRES (31.3 SQ. MILES)							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P _{2/} Q	1.59 .07	3.00 .17	4.79 1.96	4.29 .12	8.85 2.86	1.63 .01	8.39 2.19	5.62 1.84	1.33 .00	2.20 .00	2.30 .00	7.64 1.08	51.63 10.30
STA AV3/P (57-67) Q	3.64 1.04	5.10 1.75	4.87 1.81	4.64 1.04	4.61 1.01	2.98 .15	4.37 .42	3.57 .37	4.58 .46	2.04 .08	4.12 .55	5.20 1.33	49.72 10.01
MEAN P _{4/} 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	7-9	.51	7-9	.50	7-9	.96	7-9	1.76	5-6	2.00	5-6	2.23	5-6	2.26	4-30	2.52

MAXIMUMS FOR PERIOD OF RECORD																
19 57 TO 19 67	2-23 1962	.57	2-23 1962	.56	7-9 1967	.96	12-3 1964	1.94	12-3 1964	2.45	12-3 1964	3.48	12-3 1964	3.72	3-24 1965	6.13

NOTES: Watershed conditions: About 29% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 39% in pasture and idle land, good cover April to October with fair cover remainder of year; 30% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1964. 1/ About 14% of drainage 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 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 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	1.21	.00	.42	.02	.00	.00	.24	.00
2	.00	.35	.00	.00	.02	.00	.58	3.82	.00	.00	.01	1.36
3	.00	.00	.00	.00	.00	.00	.00	.21	.00	.00	.20	.00
4	.00	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00
5	.00	.00	.62	.00	.00	.00	1.75	.00	.00	.00	.00	.00
6	.00	.00	2.43	.00	3.68	.00	.01	.00	.00	.00	.00	.16
7	.00	.00	.00	.00	.00	.00	.00	.04	.27	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.40	.07	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	3.64	.00	.00	.00	.00	1.27
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.09
11	.00	.00	.00	.00	.00	.00	.04	.00	.10	.00	.32	.39
12	.00	.00	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00
13	.55	.00	.00	.54	.00	.00	.36	.00	.00	.00	.00	.00
14	.07	.00	.00	.84	.41	.00	.00	.00	.00	.00	.00	.52
15	.00	.02	.00	.00	.26	.00	.00	.00	.00	.10	.00	.21
16	.00	.14	.00	.00	.00	.00	.00	.00	.00	1.41	.00	.00
17	.00	.30	.00	.00	.00	.00	.00	.05	.00	.08	.00	.83
18	.00	.00	.00	.00	.00	.00	.00	.39	.00	.00	.00	.00
19	.00	.40	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.70	.17	.00	.48	.02	.01	.08	.00	.00	.04	1.52
21	.00	.00	.00	.11	.85	.44	.01	.00	.29	.00	.26	.68
22	.00	.00	.00	.15	.00	.23	.10	.00	.00	.00	.41	.00
23	.00	.00	.00	1.03	.00	.09	.00	.00	.00	.00	.04	.00
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.11	.00	.00
25	.00	.00	.00	.76	.00	.00	.02	.01	.00	.00	.00	.00
26	.97	.00	1.30	.32	.00	.00	.16	.54	.00	.00	.00	.00
27	.00	1.09	.25	.00	.00	.00	.00	.06	.27	.00	.00	.065
28	.00	.00	.00	.00	.00	.03	.66	.00	.00	.00	.00	.00
29	.00	.00	.00	.00	.00	.09	.58	.00	.00	.00	.59	.00
30	.00	.00	.00	.47	.59	.73	.00	.00	.00	.32	.19	.13
31	.00	.00	.00	.00	1.35	.00	.00	.00	.11	.00	.42	.00
TOTAL	1.59	3.00	4.79	4.29	8.85	1.63	8.39	5.62	1.33	2.20	2.30	7.64
STA AV	3.64	5.10	4.87	4.64	4.61	2.98	4.37	3.57	4.58	2.04	4.12	5.20

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 3, 10-14, 20, 21, 24 AND 26. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 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	.00	.00	2.53	.00	185.99	4.62	.06	.00	.00	.00	.00	.00		
2	.00	.00	.80	.00	27.70	.00	13.89	1416.21	.00	.00	.00	147.23		
3	.00	.00	.36	.00	.72	.00	.14	11.59	.00	.00	.00	.21		
4	.00	.00	.18	.00	.05	.00	.00	112.76	.00	.00	.00	.00		
5	.00	.00	.06	.00	.00	.00	137.90	.27	.00	.00	.00	.00		
6	.00	.00	1549.83	.00	1349.95	.00	10.49	.04	.00	.00	.00	.00		
7	.00	.00	47.52	.00	545.66	.00	.10	.00	.00	.00	.00	.00		
8	.00	.00	3.29	.00	8.96	.00	.00	.00	.00	.00	.00	.00		
9	.00	.00	.04	.00	1.20	.00	1574.81	.00	.00	.00	.00	15.59		
10	.00	.00	.00	.00	.30	.00	18.59	.00	.00	.00	.00	38.59		
11	.00	.00	.00	.00	.15	.00	.02	.00	.00	.00	.00	.36		
12	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.01		
13	.00	.00	.00	.00	.00	.00	78.34	.00	.00	.00	.00	.00		
14	.00	.00	.00	10.00	.11	.00	.30	.00	.00	.00	.00	.00		
15	.00	.00	.00	.04	3.46	.00	.00	.00	.00	.00	.00	.94		
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.05		
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	79.03		
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	29.93		
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.33		
20	.00	39.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	446.12		
21	.00	6.05	.00	.00	6.93	.00	.00	.00	.00	.00	.00	123.60		
22	.00	.63	.00	.00	3.76	.00	.00	.00	.00	.00	.00	18.57		
23	.00	.07	.00	49.35	.00	.00	.00	.00	.00	.00	.00	.07		
24	.00	.00	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00		
25	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.00		
26	46.10	.00	1.65	43.81	.00	.00	.00	8.44	.00	.00	.00	.00		
27	9.39	78.53	37.10	.45	.00	.00	.00	.02	.00	.00	.00	.00		
28	.04	20.98	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00		
29	.00	-----	.00	.00	.00	.00	7.69	.00	.00	.00	.00	.00		
30	.00	-----	.00	.01	2.10	3.47	2.02	.00	.00	.00	.00	.00		
31	.00	-----	.00	-----	263.86	.00	.00	.00	-----	.00	-----	6.07		
MEAN	1.79	5.19	53.05	3.46	77.45	.27	59.49	49.98	.00	.00	.00	29.32		
INCHES	.07	.17	1.96	.12	2.86	.01	2.19	1.84	.00	.00	.00	1.08		

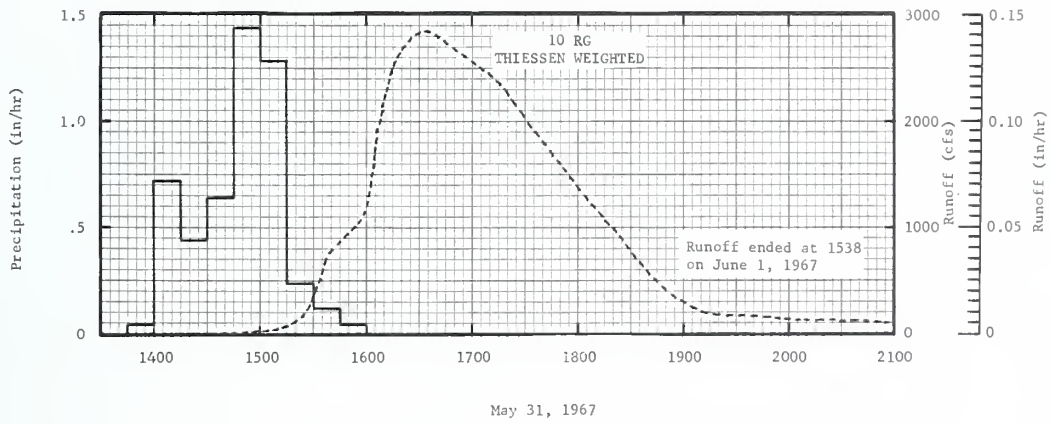
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0011901. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL.

1967 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED W-32				62.10
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 May 31 - June 1, 1967 ^{1/}												
5-31	2/.11	3/.0002	5-31	10 06	AVG. ^{4/}		5-31	1358	.11	.0000		
						.00		1444	5.10	.0001		
						.04		1512	54.13	.0008		
						.72		1524	157.15	.0010		
						.44		1538	782.03	.0073		
						.64	.46	1558	1122.56	.0230		
						1.44	.82	1606	1910.00	.0330		
						1.28	1.14	1614	2440.00	.0474		
						.74	1.20	1634	2850.00	.0911		
						.12	1.23	1650	2690.00	.1277		
								1716	2360.00	.1820		
						.44	1.24	1758	1409.00	.2474		
								1846	478.73	.2849		
								1906	741.96	.2906		
								1916	195.47	.2926		
								1934	160.26	.2954		
								1948	163.00	.2974		
								2002	154.00	.2991		
								2042	115.49	.3032		
								2122	76.49	.3064		
								2234	58.03	.3105		
								2400	55.74	.3130		
							6-1	0044	75.82	.3149		
								0124	21.75	.3157		
								0244	17.81	.3170		

NOTES: TO CONVERT RUNOFF IN CFS 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/} ISOHYETAL MAP ON P. 62.11-4. ^{2/} RAINFALL PRIOR TO 1345 ON 5-31-67. ^{3/} RUNOFF PRIOR TO 1358 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. ^{4/} THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 3, 10-14, 20, 21, 24 AND 26. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED W-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 (cfs)	ACC. (inches)	
Event of May 31 - June 1, 1967 - Continued											
							6-1	1544	4.93	.3187	
								1545	.93	.3192	
								1538	.07	.3193	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000496.



OXFORD, MISSISSIPPI WATERSHED W-32

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI								WATERSHED W-34 ^{1/}		62.11
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{2/}	1.55	2.98	4.71	4.78	8.38	1.82	8.56	6.46	1.13	2.27	1.94	8.15	52.73		
	o ^{3/}	.41	.52	1.90	.72	2.82	.44	2.62	2.45	.32	.33	.34	1.87	14.74		
STA AV ^{4/} /P		3.59	5.01	4.83	4.64	4.33	3.09	4.39	3.97	4.30	2.02	3.96	5.20	49.33		
(57-67) Q		1.28	1.85	1.95	1.29	1.17	.49	.77	.71	.38	.38	.80	1.52	12.94		
MEAN P ^{5/}		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		
48 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
1967	7-9	.15	7-9	.15	7-9	.29	7-9	.80	7-9	1.41	7-9	1.75	8-2	1.88	4-30	2.18

MAXIMUMS FOR PERIOD OF RECORD																
1957 TO 1967	7-9 1967	.15	7-9 1967	.15	7-9 1967	.29	7-9 1967	.80	7-9 1967	1.41	12-3 1964	2.23	12-3 1964	2.72	3-24 1965	4.77

NOTES: Watershed conditions: About 24% in cultivation (cotton, corn and soybeans), 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; 39% in woods, good cover; 1% in bare gullies; 1% urban. Percentages of total area in various land use categories are based on the latest survey completed in 1965. ^{1/} About 18% of area, principally in upper reaches, above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from 32 rain gages. ^{3/} Monthly values of runoff include small amounts of flow through auxiliary Station 34-A. ^{4/} Precipitation and runoff records began Jan. 1957. ^{5/} Mean P based on 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 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	1.37	.00	.20	.13	.00	.00	.21	.00				
2	.00	.47	.00	.00	.03	.00	.77	3.94	.00	.00	.01	1.76				
3	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.20	.00				
4	.00	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.00				
5	.00	.00	.60	.00	.00	.00	1.60	.00	.00	.00	.00	.00				
6	.00	.00	2.59	.00	3.20	.00	.00	.00	.00	.00	.00	.13				
7	.01	.00	.00	.00	.00	.00	.00	.12	.21	.00	.00	.00				
8	.00	.00	.00	.00	.00	.00	.00	.00	.45	.08	.00	.00				
9	.00	.00	.00	.00	.00	.00	3.56	.01	.00	.00	.00	1.24				
10	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00	.00	.11				
11	.00	.00	.00	.00	.00	.00	.10	.00	.06	.00	.30	.41				
12	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00				
13	.54	.00	.00	.53	.00	.00	.45	.00	.00	.00	.00	.00				
14	.07	.00	.00	.83	.43	.00	.00	.00	.00	.00	.00	.56				
15	.00	.02	.00	.00	.26	.00	.00	.00	.00	.03	.00	.22				
16	.00	.11	.00	.00	.00	.00	.00	.00	.00	1.46	.00	.00				
17	.00	.27	.00	.00	.00	.00	.00	.04	.00	.10	.00	.86				
18	.00	.01	.00	.00	.00	.05	.00	.36	.00	.00	.00	.00				
19	.00	.34	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00				
20	.00	.70	.15	.00	.34	.07	.04	.03	.00	.00	.05	1.50				
21	.00	.00	.00	.15	.84	.37	.01	.00	.12	.00	.21	.75				
22	.00	.00	.00	.12	.00	.29	.16	.00	.00	.00	.17	.00				
23	.00	.00	.00	1.33	.00	.16	.00	.00	.00	.00	.03	.00				
24	.00	.00	.00	.00	.00	.00	.00	.17	.00	.22	.00	.00				
25	.00	.00	.00	.71	.00	.00	.07	.02	.00	.00	.00	.00				
26	.93	.00	1.15	.52	.00	.02	.15	.66	.00	.00	.00	.00				
27	.00	1.06	.19	.00	.00	.00	.00	.08	.29	.00	.00	.04S				
28	.00	.00	.00	.00	.00	.02	.55	.00	.00	.00	.00	.00				
29	.00	-----	.00	.00	.00	.09	.60	.00	.00	.00	.55	.00				
30	.00	-----	.00	.51	.46	.75	.00	.00	.29	.21	.13	.13				
31	.00	-----	.00	-----	1.45	-----	.00	.00	-----	.09	-----	.44				
TOTAL	1.55	2.98	4.71	4.78	8.38	1.82	8.56	6.46	1.13	2.27	1.94	8.15				
STA AV	3.59	5.01	4.83	4.64	4.33	3.09	4.39	3.97	4.30	2.02	3.96	5.20				

NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 1-31 AND 33. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.

1967 MEAN DAILY DISCHARGE (cfs)					OXFORD, MISSISSIPPI					WATERSHED 1-34			62.11
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	38.34	33.18	71.25	18.02	1131.31	233.30	58.17	45.20	33.87	31.12	36.67	37.69	
2	35.74	102.26	46.28	36.49	282.35	53.45	122.18	5062.94	34.22	31.48	36.55	34.4	
3	34.94	52.16	39.76	36.94	45.54	42.56	56.46	448.68	34.56	31.4	36.70	156.4	
4	34.21	38.26	39.75	36.09	39.24	42.49	36.07	1079.36	35.78	31.48	36.73	52.26	
5	33.86	36.55	41.95	35.24	37.48	42.46	323.55	88.04	35.43	31.48	36.29	31.99	
6	33.52	36.99	4009.99	35.23	2754.00	41.12	186.70	38.38	34.20	31.48	36.26	28.84	
7	33.52	36.53	318.68	35.23	2920.46	36.78	44.94	35.19	35.77	31.14	35.45	30.6	
8	33.86	35.67	96.94	35.23	164.13	37.41	35.03	35.40	36.58	31.51	35.05	36.4	
9	34.21	36.11	79.41	35.23	52.52	40.32	5046.84	33.56	34.26	31.7	35.42	112.42	
10	35.77	36.51	71.33	36.58	45.68	39.12	865.26	53.55	32.88	31.47	35.42	338.21	
11	36.99	36.51	62.58	36.98	41.38	37.92	60.63	34.22	32.20	32.21	35.42	76.79	
12	37.49	36.95	54.30	36.48	37.43	37.90	51.70	33.54	32.21	32.57	35.42	56.10	
13	40.61	36.10	47.32	38.62	35.72	37.87	480.15	32.52	32.20	32.57	35.42	38.51	
14	42.49	36.11	45.59	153.44	37.09	37.07	84.77	32.16	31.45	32.57	35.42	67.7	
15	38.93	38.02	45.58	57.10	105.90	40.26	41.87	32.16	31.96	32.57	35.42	98.24	
16	36.10	39.09	44.76	44.89	44.51	40.95	36.63	32.51	31.76	36.47	35.42	53.58	
17	36.09	43.59	44.76	39.32	39.12	39.75	36.12	32.34	32.20	38.24	35.42	29.8	
18	36.08	43.03	44.76	37.43	38.06	37.87	36.07	33.52	32.53	34.64	35.42	252.20	
19	36.08	43.03	44.76	37.42	36.54	37.87	35.29	37.89	32.52	33.19	35.42	47.1	
20	35.68	162.81	44.76	37.42	37.59	39.07	34.50	31.83	32.52	33.19	35.42	1619.94	
21	36.91	81.21	42.54	39.81	67.11	40.26	35.27	31.47	32.19	33.53	35.42	66.8	
22	34.54	50.90	40.33	39.78	110.71	39.66	36.98	29.66	31.45	33.87	35.42	326.28	
23	34.91	41.97	41.02	559.35	54.35	39.02	36.98	28.92	31.85	33.57	35.42	71.74	
24	34.91	37.20	41.71	74.36	43.62	37.94	36.04	30.74	32.20	37.56	35.42	51.06	
25	33.86	35.28	39.82	43.92	37.60	36.87	36.48	36.45	32.54	37.91	36.67	46.56	
26	105.13	36.62	75.93	500.83	36.53	37.37	36.48	93.65	32.19	33.97	36.27	46.5	
27	139.78	212.03	216.99	64.39	36.98	37.87	36.48	87.14	33.97	34.33	35.42	44.68	
28	48.86	168.58	65.53	27.16	36.12	37.90	37.97	39.67	34.65	35.05	36.26	42.88	
29	39.39	-----	48.25	23.17	35.27	36.98	124.65	35.70	32.52	34.37	35.88	41.11	
30	35.43	-----	44.10	24.48	42.10	42.84	119.48	34.59	32.19	34.77	35.88	41.11	
31	33.53	-----	42.46	-----	864.00	-----	46.50	-----	33.87	-----	36.27	-----	
MEAN	41.91	57.96	193.31	75.21	266.78	46.13	266.31	247.81	33.15	33.80	35.1	186.62	
INCHES	.41	.52	1.90	.72	2.82	.44	2.62	2.45	.32	.33	.34	1.7	

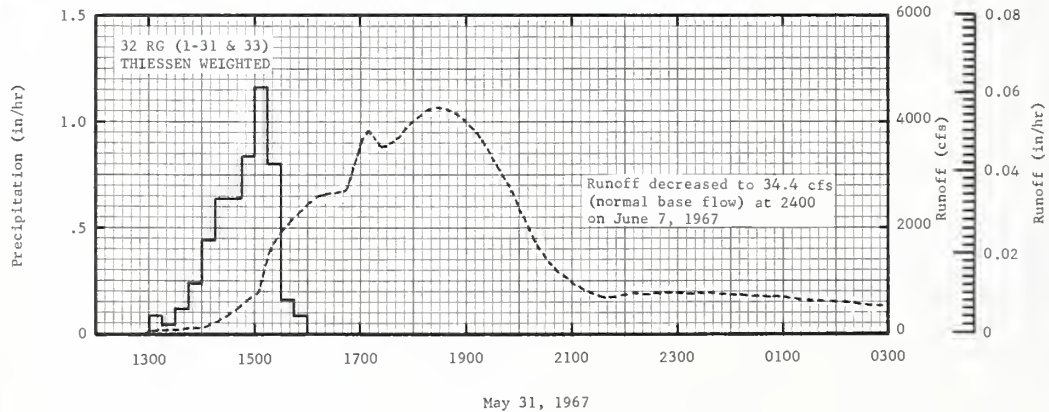
NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.00031736. QUALITY OF RECORDS: GOOD, ESTIMATED TO BE WITHIN 10% OF ACTUAL. DAILY DISCHARGE VALUES INCLUDE RELATIVELY INSIGNIFICANT FLOW THROUGH AUXILIARY STATION 34-A.

1-67 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED 1-34				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)		
<u>Event of May 31 - June 2, 1967 1/</u>												
5-31	2/.13	3/.0096	5-31	32 RG	AVG 4/		5-31	1300	49.30	.0006		
					.00	.00		1312	59.58	.0002		
					.08	.02		1326	65.46	.0004		
					.04	.03		1358	105.56	.0010		
					.12	.06		1400	118.35	.0016		
					.24	.12		1422	256.70	.0019		
					.44	.23		1438	417.83	.0031		
					.54	.39		1454	655.34	.0050		
					.64	.55		1500	733.43	.0065		
					.84	.76		1507	759.84	.0083		
					1.16	1.05		1518	1594.14	.0104		
					.80	1.25		1526	1895.81	.0134		
					.16	1.29		1542	2157.00	.0164		
					.08	1.31		1604	2492.72	.0317		
								1618	2637.11	.0396		
								1644	2699.26	.0448		
								1654	3393.32	.0628		
								1700	3535.69	.0651		
								1707	2421.06	.0723		
								1724	3521.41	.0853		
					.67	1.21		1742	3704.13	.0996		
					1.19	1.56		1800	4020.60	.1149		
					1.27	1.79		1802	4052.43	.1167		
					1.25	.87		1818	4204.08	.1313		
					1.14	1.93		1830	4263.07	.1425		

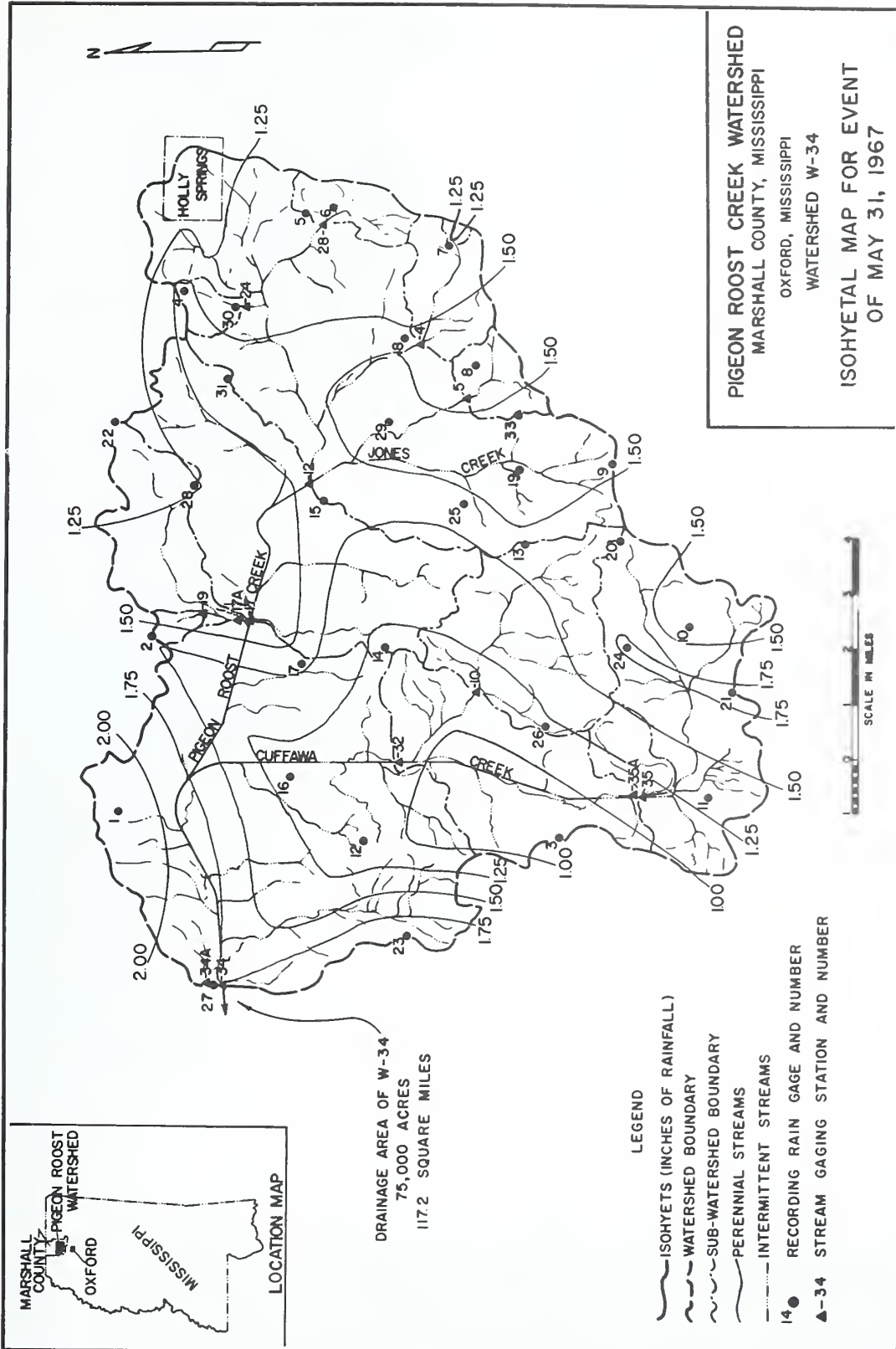
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001322. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 62.11-4. 1/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1300 ON 5-31-67. 3/ RUNOFF PRIOR TO 1300 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 4/ THIESEN WEIGHTED STORM RAINFALL, RAIN GAGES 1-31 AND 33. DAILY TOTALS FOR INDIVIDUAL GAGES LISTED ON PP. 62.11-2 AND 62.11-3.

1967		SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI		WATERSHED W-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 (cfs)	ACC. (inches)	
Event of May 31 - June 2, 1967 - Continued											
			RG 8	1.64	RG 24	1.60	5-31	1850	4181.38	.1611	
			RG 9	1.38	RG 25	1.48		1914	3739.37	.1820	
			RG 10	1.36	RG 26	1.06		1934	3192.69	.1973	
			RG 11	1.12	RG 27	1.69		1952	2687.17	.2090	
			RG 12	1.04	RG 28	1.04		2000	2324.10	.2134	
			RG 13	1.47	RG 29	1.30		2002	2233.25	.2144	
			RG 14	1.03	RG 30	1.15		2016	1847.48	.2207	
			RG 15	1.39	RG 31	1.27		2034	1369.22	.2271	
			RG 16	1.03	RG 33	1.35		2048	1136.45	.2309	
								2112	833.35	.2361	
								2142	715.37	.2413	
								2200	751.62	.2442	
								2214	780.54	.2465	
								2326	782.78	.2589	
								2400	753.66	.2647	
							6-1	0114	662.93	.2762	
								0244	527.86	.2881	
								0400	435.08	.2961	
								0414	418.13	.2974	
								0544	338.17	.3049	
								0714	271.11	.3110	
								0800	244.29	.3136	
								0844	218.89	.3158	
								1014	178.06	.3198	
								1144	153.29	.3231	
								1200	149.47	.3256	
								1444	110.65	.3283	
								1600	90.62	.3326	
								1914	83.18	.3341	
								2400	65.13	.3387	
							6-2	1200	53.38	.3481	
								2400	1/41.90	.3557	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001322. 1/ RUNOFF DECREASED TO 34.4 CFS (NORMAL BASE FLOW) AT 2400 ON JUNE 7, 1967.



OXFORD, MISSISSIPPI WATERSHED W-34



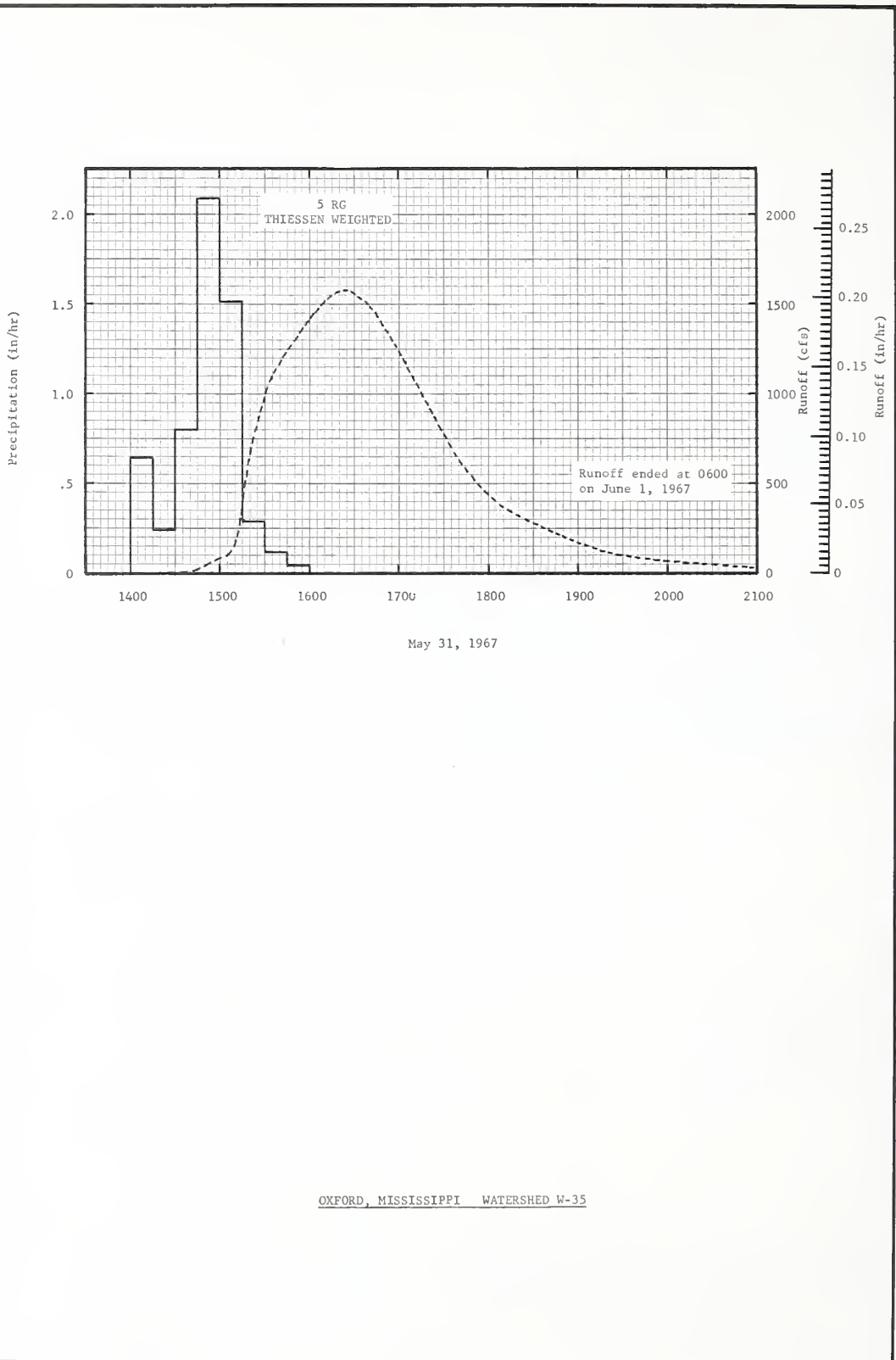
MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-35 ^{1/}							62.12				
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ^{2/}	1.56	3.02	4.42	3.86	9.45	1.26	7.71	5.49	1.40	2.01	2.49	7.31	49.98			
	Q	.06	.20	1.83	.08	3.83	.00	2.05	1.61	.00	.00	.00	1.07	10.73			
	STA AV ^{3/} P	3.58	5.05	4.86	4.58	4.78	2.93	4.31	3.33	4.77	1.97	4.05	5.11	49.32			
	(57-67) Q	1.26	1.87	1.86	1.08	1.09	.13	.39	.32	.45	.04	.51	1.30	10.30			
	MEAN P ^{4/}	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99			
	48 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		
1967		7-9	.82	7-9	.78	5-6	1.40	5-6	2.02	5-6	2.71	5-6	3.00	5-6	3.03	4-30	3.33
MAXIMUMS FOR PERIOD OF RECORD																	
19 57 TO	5-26	.88	5-26	.84	5-26	1.48	2-23	2.19	5-6	2.71	12-3	3.09	1-30	3.46	3-24	5.69	
19 67	1963		1963		1963		1962		1967		1964		1957		1965		
NOTES: Watershed conditions: About 27% in cultivation (cotton, corn and soybeans), fair cover November to March, poor cover April and May improving to good by mid-July; 47% in pasture and idle land; good cover April to October with fair cover remainder of year; 24% in woods, good cover; 2% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1964. 1/ About 12% of drainage 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 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.																	
1967 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	1.32	.00	.49	.02	.00	.00	.24	.00					
2	.00	.37	.00	.00	.02	.00	.29	3.67	.00	.00	.00	1.27					
3	.00	.00	.00	.00	.00	.00	.00	.22	.00	.00	.19	.00					
4	.00	.00	.00	.00	.00	.00	.00	.47	.00	.00	.00	.00					
5	.00	.00	.47	.00	.00	.00	1.89	.00	.00	.00	.00	.00					
6	.00	.00	2.23	.00	3.99	.00	.03	.00	.00	.00	.00	.18					
7	.01	.00	.00	.00	.00	.00	.00	.04	.26	.00	.00	.00					
8	.00	.00	.00	.00	.00	.00	.00	.00	.43	.06	.00	.00					
9	.00	.00	.00	.00	.00	.00	3.17	.00	.00	.00	.00	1.29					
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.09					
11	.00	.00	.00	.00	.00	.00	.01	.00	.14	.00	.35	.39					
12	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00					
13	.54	.00	.00	.51	.00	.00	.20	.00	.00	.00	.00	.00					
14	.08	.00	.00	.77	.34	.00	.00	.00	.00	.00	.00	.56					
15	.00	.04	.00	.00	.23	.00	.00	.00	.00	.26	.00	.19					
16	.00	.14	.00	.00	.00	.00	.00	.00	.00	1.19	.00	.00					
17	.00	.31	.00	.00	.00	.00	.00	.09	.00	.07	.00	.81					
18	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00					
19	.00	.39	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
20	.00	.70	.18	.00	.57	.02	.00	.00	.00	.00	.05	1.27					
21	.00	.00	.00	.00	.83	.49	.00	.00	.34	.00	.30	.69					
22	.00	.00	.00	.12	.00	.24	.06	.00	.00	.00	.56	.00					
23	.00	.00	.00	.91	.00	.04	.00	.00	.00	.00	.04	.00					
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.05	.00	.00					
25	.00	.00	.00	.77	.00	.00	.01	.00	.00	.00	.00	.00					
26	.93	.00	1.24	.23	.00	.00	.29	.70	.00	.00	.00	.00					
27	.00	1.07	.30	.00	.00	.00	.00	.03	.23	.00	.00	.065					
28	.00	.00	.00	.00	.00	.02	.66	.00	.00	.00	.00	.00					
29	.00	-----	.00	.00	.00	.04	.59	.00	.00	.00	.56	.00					
30	.00	-----	.00	.48	.61	.41	.00	.00	.00	.27	.20	.13					
31	.00	-----	.00	-----	1.54	-----	.00	.00	.11	.00	.38	.00					
TOTAL	1.56	3.02	4.42	3.86	9.45	1.26	7.71	5.49	1.40	2.01	2.49	7.31					
STA AV	3.58	5.05	4.86	4.58	4.78	2.93	4.31	3.33	4.77	1.97	4.05	5.11					
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 10, 11, 20, 21 AND 24. STATION AVERAGE IS FOR 11-YR (1957-67) RECORD PERIOD.																	

1967 MEAN DAILY DISCHARGE (cfs)					OXFORD, MISSISSIPPI WATERSHED 0-35 2.11							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.00	.05	.00	84.35	.21	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	11.17	.00	.00	467.11	.00	.00	.00	51.15
3	.00	.00	.00	.00	.00	.00	.00	.30	.00	.00	.00	.00
4	.00	.00	.00	.00	.00	.00	.00	47.45	.00	.00	.00	.00
5	.00	.00	.00	.00	.00	.00	41.42	.00	.00	.00	.00	.00
6	.00	.00	542.20	.00	675.33	.00	.32	.00	.00	.00	.00	.00
7	.00	.00	11.93	.00	286.71	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	.03	.00	.38	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.00	.00	.00	607.88	.00	.00	.00	.00	14.11
10	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	8.02
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	.00	.00	.00	.00	.00
14	.00	.00	.00	4.76	.00	.00	.00	.00	.00	.00	.00	.01
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	2.35
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	31.00
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.50
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	22.43	.00	.00	.00	.00	.00	.00	.00	.00	.00	15.32
21	.00	1.57	.00	.00	3.29	.00	.00	.00	.00	.00	.00	61.62
22	.00	.00	.00	.00	.30	.00	.00	.00	.00	.00	.00	6.34
23	.00	.00	.00	3.96	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.00	3.05	.00	.00	.00	.00	.00	.00	.00	.00
26	17.93	.00	7.76	15.02	.00	.00	.00	.00	.00	.00	.00	.00
27	2.14	33.43	19.07	.09	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	7.24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
29	.00	-----	.00	.00	.00	.00	2.18	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	2.29	.00	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	151.99	-----	.00	-----	-----	-----	-----	.00
MEAN	.65	2.31	18.74	.90	39.22	.01	21.03	16.45	.00	.00	.00	10.96
INCHES	.06	.20	1.83	.08	3.83	.00	2.05	1.61	.00	.00	.00	1.37

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0031526. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

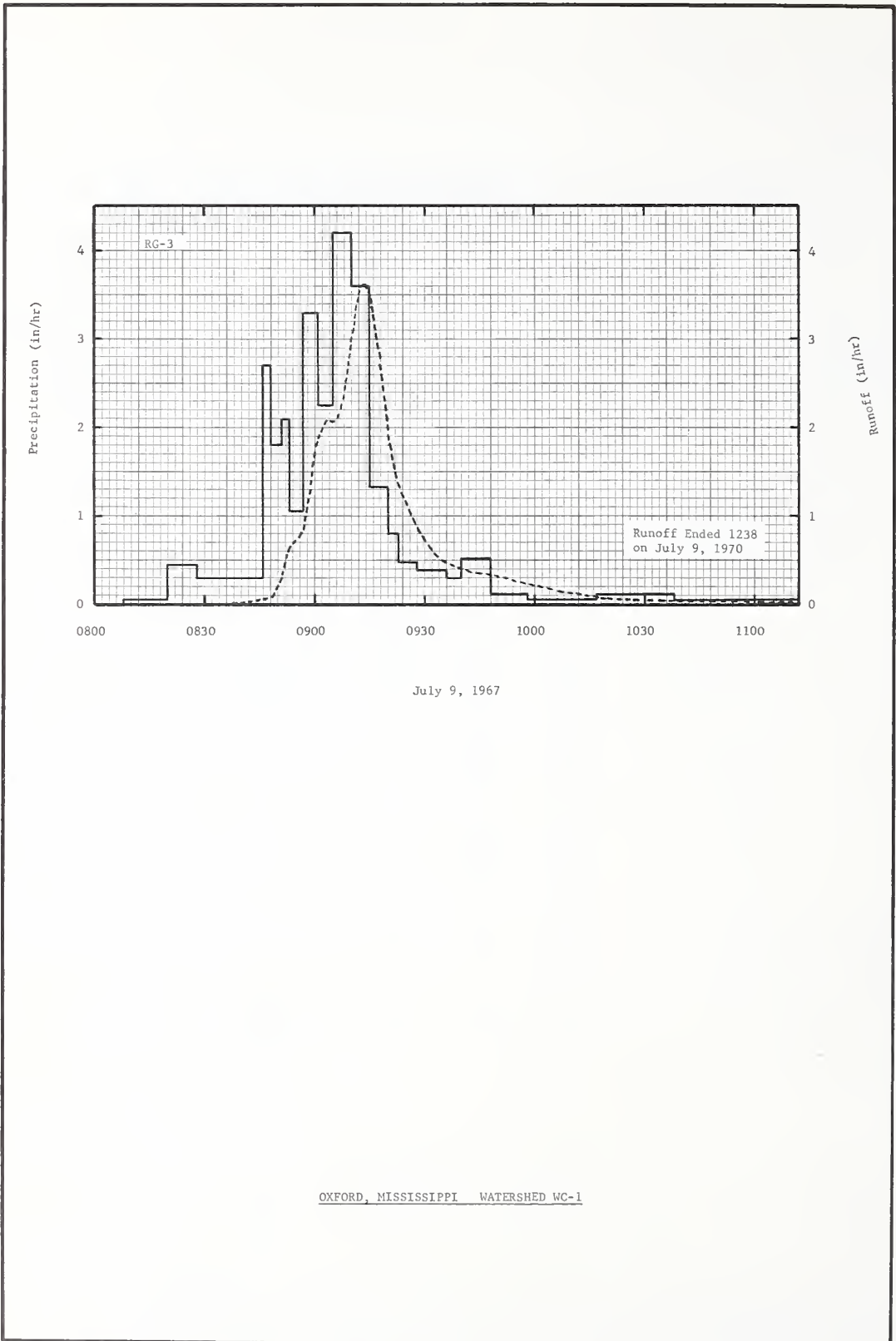
1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI WATERSHED 0-35 2.12							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			<u>Event of May 31 - June 1, 1967 1/</u>							
5-31	2/10	.0000	5-31	5 00	AVG 3/		5-31	1416	.00	.0000
				1400	.00	.00		1426	.30	.0001
				1415	.64	.16		1440	2.73	.0001
				1430	.24	.22		1502	90.32	.0025
				1445	.80	.42		1510	154.70	.0045
				1500	2.08	.94		1518	630.00	.116
				1515	1.52	1.52		1534	1090.24	.6416
				1530	.28	1.55		1552	1324.00	1.87
				1545	.12	1.42		1610	1522.00	14.54
				1600	.04	1.45		1624	1580.00	18.90
								1646	1632.00	.2657
								1704	1186.00	.3173
								1724	875.00	.3324
								1742	616.00	.2917
								1802	568.00	.2160
								184	249.75	.0412
								1854	95.00	.0117
								2012	51.00	.0072
								2056	35.94	.0429
								2156	20.20	.0265
								2216	0.29	.0077
								2400	2.70	.0732
							6-1	0135	1.18	.4786
								0327	.33	.478
								0600	.00	.4788

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0001314. 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/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1400 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ THIESSEN WEIGHTED STORM RAINFALL, RAIN GAGES 10, 11, 20, 21 AND 24. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED WC-1 AREA--3.88 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ^{1/}	1.58	2.97	4.69	5.29	9.18	2.09	9.18	5.26	1.26	2.90	2.06	7.70	54.16			
Q	.15	.28	2.65	1.72	5.22	.22	4.09	2.21	.00	.32	.13	3.47	20.46			
STA AV2/P (58-67) Q	3.34	4.85	5.36	4.58	4.80	3.25	4.44	4.32	3.42	2.10	3.46	5.19	49.11			
MEAN P ^{3/} 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99			
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
1967	8-3	4.60	7-9	1.36	7-9	1.49	7-9	2.04	3-5	2.19	3-5	2.65	3-5	2.65	4-30	4.17
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
19 58 TO 19 67	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	12-3 1964	2.93	3-28 1965	3.67 ^{5/}	3-24 1965	5.39 ^{5/}
NOTES: Watershed conditions: Watershed strip-cropped on the contour. 50% of area cultivated in corn on the contour with 0.2 to 0.4% row slope, high plant population, low crop yield, fair to good cover provided by vegetation except during planting and early growing season. 25% of area in second year alfalfa, fair cover. 25% of area in first year alfalfa, poor cover. 1/ Precipitation data from rain gage 3. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss. 4/ Maximum discharge and volumes listed were, most likely, exceeded on March 28-29, 1965 when the stage recorder was inoperative. 5/ Estimated.																
1967 SELECTED RUNOFF EVENT				OXFORD, MISSISSIPPI				WATERSHED WC-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 July 9, 1967																
	RG	3	7-9	RG	3		7-9									
6-20	.15	.000		0808	.00	.00		0832	.000	.000						
6-21	1.08	.188		0820	.05	.01		0840	.023	.002						
6-22	.13	.000		0828	.45	.07		0843	.044	.003						
6-28	.05	.000		0838	.30	.12		0848	.082	.008						
6-29	.11	.000		0846	.30	.16		0851	.296	.018						
6-30	.57	.030		0848	2.70	.25		0853	.645	.034						
7-1	.10	.000		0851	1.80	.34		0857	.826	.083						
7-2	.70	.034		0853	2.10	.41		0900	1.744	.147						
7-5	1.80	.591		0857	1.05	.48		0903	2.085	.243						
7-6	.02	.015		0901	3.30	.70		0906	2.079	.347						
7-9	6/1.06	7/.533		0905	2.25	.85		0909	2.658	.465						
				0910	4.20	1.20		0911	3.283	.564						
				0915	3.60	1.50		0913	3.617	.679						
				0920	1.32	1.61		0915	3.518	.798						
				0923	.80	1.65		0918	2.760	.955						
				0928	.48	1.69		0921	1.747	1.068						
				0936	.38	1.74		0923	1.328	1.119						
				0940	.30	1.76		0925	1.132	1.160						
				0948	.52	1.83		0928	.870	1.210						
				0958	.12	1.85		0931	.667	1.249						
				1017	.06	1.87		0935	.495	1.287						
				1038	.11	1.91		0939	.419	1.318						
				1112	.05	1.94		0943	.359	1.344						
								0949	.338	1.379						
								0954	.280	1.404						
								1004	.178	1.442						
								1011	.118	1.460						
								1017	.079	1.469						
								1023	.056	1.476						
								1027	.050	1.480						
								1048	.033	1.494						
								1103	.020	1.501						
								1120	.011	1.505						
								1138	.006	1.508						
								1200	.005	1.510						
								1238	.000	1.511						
Watershed conditions: Water-shed strip-cropped on the contour. 50% of area in corn 5-8 ft. high, 12,000 plants per acre, estimated 70% ground and canopy cover. Last tillage operation on June 7. 25% of area in second year alfalfa, fair cover; 25% of area in first year alfalfa, planted April 17, poor cover.																
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. 6/ RAINFALL FROM 0548 TO 0650. 7/ RUNOFF FROM 0616 TO 0750.																

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station



July 9, 1967

OXFORD, MISSISSIPPI WATERSHED WC-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED WC-2 AREA—1.45 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P1/	1.58	2.97	4.69	5.29	9.18	2.09	9.18	5.26	1.26	2.90	2.06	7.70	54.16
	Q	.14	.37	2.83	1.70	5.32	.06	3.76	2.27	.00	.13	.09	3.73	20.40
STA AV2/P (58-67)	P	3.34	4.85	5.36	4.58	4.80	3.25	4.44	4.32	3.42	2.10	3.46	5.19	49.11
	Q	1.37	2.39	2.79	1.11	1.69	.52	.84	.75	.41	.17	.57	2.05	14.66
MEAN 48 YR	P3/	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

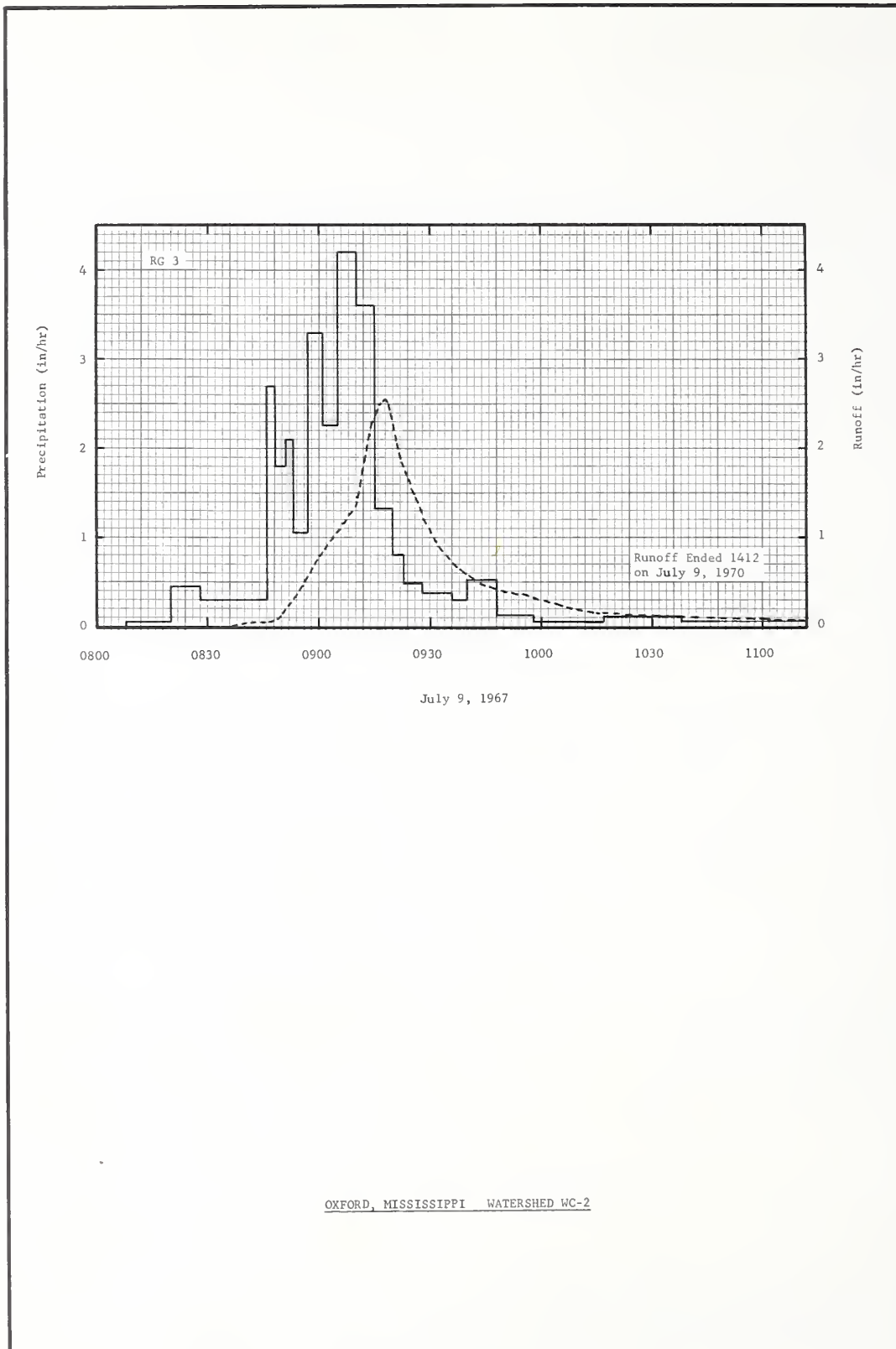
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE	MAXIMUM VOLUME FOR SELECTED TIME INTERVAL														
		1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS		
		DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1967	8-3	2.80	7-9	1.11	7-9	1.28	7-9	1.75	3-6	2.56	3-5	2.83	3-5	2.83	4-30	4.40

MAXIMUMS FOR PERIOD OF RECORD																
19 58 TO	3-28	4.93	3-28	1.57	3-28	2.61	3-28	2.82	3-28	3.81	12-3	4.40	12-3	4.50	3-24	7.35
19 67	1965		1965		1965		1965		1965		1964		1964		1965	

NOTES: Watershed conditions: 100% of area cultivated in corn, high plant population, low crop yield, fair to good cover provided by vegetation except during planting and early growing season. Terraced with rows on 0.2 to 0.4% slope.
 1/ Precipitation data from rain gage 3. 2/ Precipitation records began Jan. 1958, runoff records began July 1958.
 3/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI			WATERSHED WC-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 July 9, 1967										
	RC 3		7-9	RC	3		7-9			
6-20	.15	.000		0808	.00	.00		0837	.000	.000
6-21	1.08	.062		0820	.05	.01		0843	.049	.002
6-22	.13	.000		0828	.45	.07		0849	.089	.009
6-28	.05	.000		0838	.30	.12		0852	.244	.018
6-29	.11	.000		0846	.30	.16		0855	.400	.034
6-30	.57	.000		0848	2.70	.25		0858	.640	.060
7-1	.10	.000		0851	1.80	.34		0906	1.122	.177
7-2	.70	.000		0853	2.10	.41		0910	1.364	.260
7-5	1.80	.463		0857	1.05	.48		0914	2.248	.380
7-6	.02	.099		0901	3.30	.70		0916	2.463	.459
7-9	4/1.06	5/.362		0905	2.25	.85		0918	2.550	.542
				0910	4.20	1.20		0922	1.917	.691
				0915	3.60	1.50		0926	1.493	.805
				0920	1.32	1.61		0928	1.248	.851
				0923	.80	1.65		0934	.820	.954
				0928	.48	1.69		0944	.493	1.064
				0936	.38	1.74		0955	.376	1.143
				0940	.30	1.76		1007	.224	1.203
				0948	.52	1.83		1014	.171	1.226
				0958	.12	1.85		1022	.128	1.246
				1017	.06	1.87		1037	.103	1.275
				1038	.11	1.91		1102	.080	1.313
				1112	.05	1.94		1142	.059	1.360
								1150	.042	1.367
								1300	.020	1.403
								1412	.000	1.416

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 FROM 0548 TO 0650. 5/ RUNOFF FROM 0614 TO 0830.



MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED WC-3 AREA—1.61 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	1.58	2.97	4.69	5.29	9.18	2.09	9.18	5.26	1.26	2.90	2.06	7.70	54.16
	Q	.04	.00	1.72	.75	3.71	.05	3.10	1.61	.00	.09	.02	1.98	13.07
STA AV2/P (58-67)	P	3.34	4.85	5.36	4.58	4.80	3.25	4.44	4.32	3.42	2.10	3.46	5.19	49.11
	Q	1.16	2.09	2.72	.91	1.41	.74	1.09	1.20	.73	.33	.81	1.82	15.01
MEAN 48 YR	P 3/	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	7-9	3.46	7-9	1.22	7-9	1.31	7-9	1.73	5-6	1.99	5-6	2.14	5-6	2.14	4-30	3.15

MAXIMUMS FOR PERIOD OF RECORD

19 58 YR	3-28	6.48	3-28	1.92	3-28	3.14	3-28	3.23	3-28	4.25	3-28	4.71	3-28	4.71	3-24	7.55
19 67	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965	1965

NOTES: Watershed conditions: 100% of area cultivated in corn, high plant population, low crop yield, fair to good cover provided by vegetation except during planting and early growing seasons. Contour cultivation 0.2 to 0.4% row slope. 1/ Precipitation data from rain gage 3. 2/ Precipitation records began Jan. 1958, runoff records began July 1958. 3/ Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss.

1967 SELECTED RUNOFF EVENT

OXFORD, MISSISSIPPI

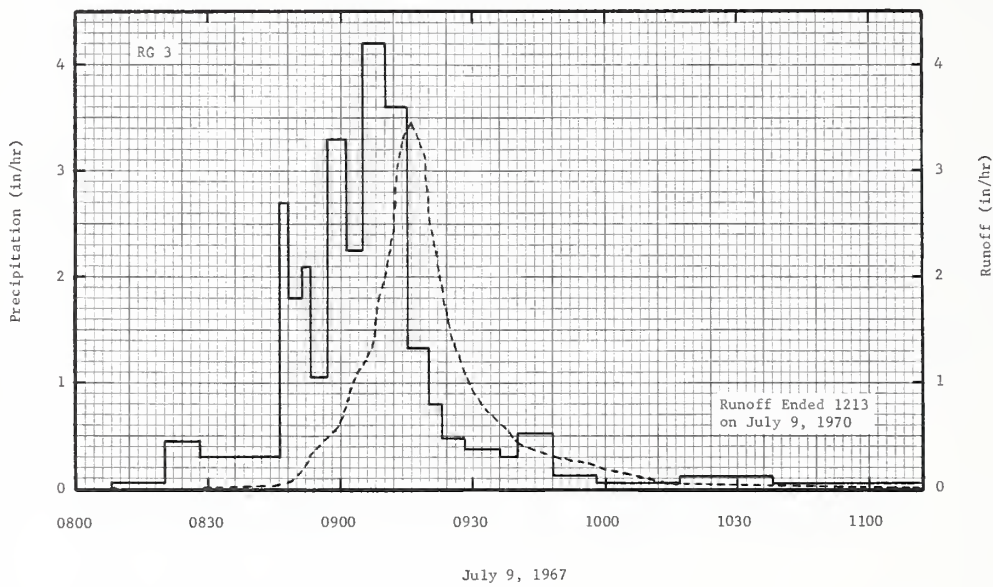
WATERSHED WC-3

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 July 9, 1967											
	RG 3		7-9	RG	3		7-9				
6-20	.15	.000		0808	.00	.00		0829	.000	.000	
6-21	1.08	.046		0820	.05	.01		0838	.007	.001	
6-22	.13	.000		0828	.45	.07		0842	.016	.001	
6-28	.05	.000		0838	.30	.12		0845	.024	.002	
6-29	.11	.000		0846	.30	.16		0848	.054	.004	
6-30	.57	.000		0848	2.70	.25		0851	.149	.009	
7-1	.10	.000		0851	1.80	.34		0853	.304	.017	
7-2	.70	.000		0853	2.10	.41		0855	.407	.029	
7-5	1.80	.336		0857	1.05	.48		0859	.548	.061	
7-6	.02	.011		0901	3.30	.70		0901	.756	.082	
7-9	4/1.06	5/.413		0905	2.25	.85		0903	1.035	.112	
				0910	4.20	1.20		0907	1.322	.191	
				0915	3.60	1.50		0909	1.870	.244	
				0920	1.32	1.61		0912	2.415	.351	
				0923	.80	1.65		0913	3.105	.397	
				0928	.48	1.69		0915	3.419	.506	
				0936	.38	1.74		0916	3.460	.563	
				0940	.30	1.76		0919	3.111	.727	
				0948	.52	1.83		0920	2.560	.775	
				0958	.12	1.85		0922	2.158	.853	
				1017	.06	1.87		0924	1.657	.917	
				1038	.11	1.91		0927	1.273	.990	
				1112	.05	1.94		0929	1.010	1.028	
								0933	.756	1.087	
								0938	.560	1.142	
								0940	.431	1.158	
								0943	.388	1.179	
								0954	.271	1.239	
								1004	.153	1.274	
								1008	.106	1.283	
								1017	.055	1.295	
								1026	.036	1.302	
								1036	.036	1.308	
								1040	.018	1.310	
								1048	.018	1.312	
								1106	.008	1.316	
								1114	.005	1.317	
								1146	.003	1.319	
								1202	.003	1.320	
								1213	.000	1.320	

Watershed conditions: 100% of area in corn, 5-8 ft. high, 12,000 plants per acre. Contour cultivation with rows on 0.2 to 0.4% slope. Estimated 70% ground and canopy cover provided by vegetation. Last tillage operation on June 7.

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 FROM 0548 TO 0650. 5/ RUNOFF FROM 0609 TO 0746.

Cooperative Research Project of USDA, University of Mississippi, and Mississippi State Agricultural Experiment Station



OXFORD, MISSISSIPPI WATERSHED WC-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI WATERSHED W-17A ^{1/}							62.17	
						AREA—3,200 ACRES (5.00 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ^{2/}	1.56	3.01	4.56	5.34	8.38	1.93	10.10	6.53	1.07	2.54	1.66	8.67	55.35
	O	.04	.09	1.92	.41	2.67	.00	4.13	2.63	.00	.00	.00	1.79	13.68
STA AV ^{3/} P (58-67)		3.19	4.67	4.92	4.63	3.99	2.70	4.80	4.56	3.71	1.91	3.14	5.21	47.43
Q		.62	1.31	1.46	.72	.61	.06	.41	.42	.40	.05	.07	.85	6.98
MEAN P ^{4/}														
48 YR		5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99

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
1967	7-9	.49	7-9	.49	7-9	.96	7-9	2.57	7-9	3.51	7-9	3.65	7-9	3.66	7-7	3.95

MAXIMUMS FOR PERIOD OF RECORD ^{5/}																
19 61 TO	7-9	.49	7-9	.49	7-9	.96	7-9	2.57	7-9	3.51	7-9	3.65	7-9	3.66	2-23	4.15
19 66	1967		1967		1967		1967		1967		1967		1967		1962	

NOTES: Watershed conditions: About 15% of area in cultivation (cotton and corn), fair cover November to March, poor cover April and May improving to good by mid-July; 22% in pasture and idle land, good cover April to October with fair cover remainder of year; 62% in woods, good cover; 1% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1965. ^{1/} About 25% of drainage area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from rain gages 2, 17, 22, and 28. ^{3/} Precipitation and runoff records began Jan. 1957. Runoff for 1957 was estimated, therefore was not included in the station averages. ^{4/} Mean P based on 48-yr (1920-67) U. S. Weather Bureau record period at Holly Springs 2N, Miss. ^{5/} Maximum discharges and volumes were not computed prior to 1961; poor records 1958-60.

1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI WATERSHED W-17A							62.17
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.00	.00	.00	.00	1.39	.00	.04	.18	.00	.00	.16	.00	
2	.00	.69	.00	.00	.03	.00	.73	3.70	.00	.00	.01	2.28	
3	.00	.00	.00	.00	.00	.00	.00	.90	.00	.00	.20	.00	
4	.00	.00	.00	.00	.00	.00	.00	.35	.00	.00	.00	.00	
5	.00	.00	.59	.00	.00	.00	1.71	.00	.00	.00	.00	.00	
6	.00	.00	2.70	.00	3.38	.00	.00	.00	.00	.00	.00	.10	
7	.00	.00	.00	.00	.00	.00	.00	.36	.15	.00	.00	.00	
8	.00	.00	.00	.00	.00	.00	.00	.00	.53	.09	.00	.00	
9	.00	.00	.00	.00	.00	.00	4.14	.10	.00	.00	.00	1.18	
10	.00	.00	.00	.11	.00	.00	.00	.00	.00	.00	.00	.09	
11	.00	.00	.00	.00	.00	.00	.08	.00	.03	.00	.29	.42	
12	.00	.00	.00	.00	.00	.00	.76	.00	.00	.00	.00	.00	
13	.56	.00	.00	.52	.00	.00	.58	.00	.00	.00	.00	.00	
14	.07	.00	.00	.75	.50	.00	.00	.00	.00	.00	.00	.59	
15	.00	.01	.00	.00	.27	.00	.00	.00	.00	.00	.00	.24	
16	.00	.10	.00	.00	.00	.00	.00	.00	.00	1.37	.00	.00	
17	.00	.25	.00	.00	.00	.00	.00	.00	.00	.10	.00	.80	
18	.00	.00	.00	.00	.00	.04	.00	.38	.00	.00	.00	.00	
19	.00	.27	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	
20	.00	.68	.12	.00	.26	.17	.08	.00	.00	.00	.04	1.68	
21	.00	.00	.00	.13	.79	.50	.00	.00	.00	.00	.17	.68	
22	.00	.00	.00	.10	.00	.27	.32	.00	.00	.00	.04	.00	
23	.00	.00	.00	1.72	.00	.00	.00	.00	.00	.00	.03	.00	
24	.00	.00	.00	.00	.00	.00	.00	.38	.00	.63	.00	.00	
25	.00	.00	.00	.69	.00	.00	.24	.00	.00	.00	.00	.00	
26	.93	.00	1.00	.73	.00	.11	.29	.10	.00	.00	.00	.00	
27	.00	1.01	.13	.00	.00	.00	.00	.08	.36	.00	.00	.035	
28	.00	.00	.00	.00	.00	.02	.39	.00	.00	.00	.00	.00	
29	.00	-----	.00	.00	.00	.03	.74	.00	.00	.00	.50	.00	
30	.00	-----	.00	.59	.42	.79	.00	.00	.00	.26	.22	.12	
31	.00	-----	.00	-----	1.34	-----	.00	.00	.09	-----	.46	.00	
TOTAL	1.56	3.01	4.56	5.34	8.38	1.93	10.10	6.53	1.07	2.54	1.66	8.67	
STAAV	3.19	4.67	4.92	4.63	3.99	2.70	4.80	4.56	3.71	1.91	3.14	5.21	

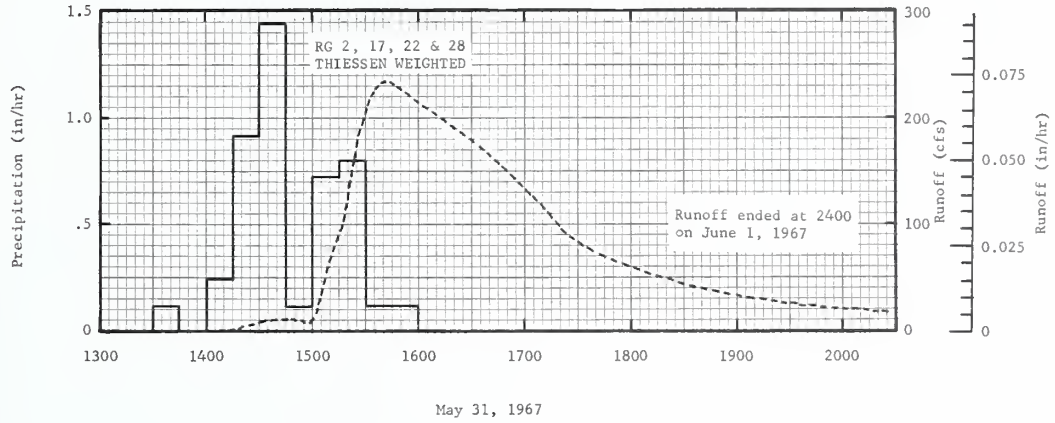
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 2, 17, 22 AND 28. STATION AVERAGE IS FOR 10-YR (1958-67) RECORD PERIOD.

1967 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	.16	.07	.34	.00	51.75	.42	.00	.00	.00	.00	.00	.00
2	.12	4.34	.15	.00	2.98	.00	1.29	263.59	.00	.00	.00	108.55
3	.10	.20	.12	.00	.09	.00	.00	4.40	.00	.00	.00	1.76
4	.09	.09	.11	.00	.03	.00	.00	81.89	.00	.00	.00	.10
5	.09	.08	.17	.00	.00	.00	4.16	2.14	.00	.00	.00	.04
6	.09	.04	250.81	.00	211.41	.06	.59	.72	.00	.00	.00	.00
7	.09	.00	4.23	.00	68.84	.00	.00	.09	.00	.00	.00	.00
8	.09	.00	.14	.00	.83	.00	.00	.00	.00	.00	.00	.00
9	.09	.00	.10	.03	.13	.00	483.26	.04	.00	.00	.00	2.63
10	.09	.00	.10	.03	.08	.00	8.42	.03	.00	.00	.00	1.98
11	.09	.00	.10	.00	.08	.00	.09	.00	.00	.00	.00	.03
12	.09	.00	.10	.00	.04	.00	.04	.00	.00	.00	.00	.03
13	.09	.00	.10	.00	.00	.00	35.29	.00	.00	.00	.00	.00
14	.09	.00	.10	.27	.10	.00	4.50	.00	.00	.00	.00	.04
15	.09	.00	.10	.08	.25	.00	.04	.00	.00	.00	.00	.08
16	.09	.00	.10	.04	.00	.00	.00	.00	.00	.00	.00	.04
17	.09	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	5.89
18	.09	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.30
19	.09	.05	.10	.03	.00	.00	.00	.00	.00	.00	.00	.00
20	.09	1.11	.10	.03	.00	.00	.00	.00	.00	.00	.00	92.55
21	.09	.26	.10	.00	.00	.00	.00	.00	.00	.00	.00	24.79
22	.09	.11	.10	.00	.00	.00	.00	.00	.00	.00	.00	1.44
23	.09	.10	.10	23.71	.00	.00	.00	.00	.00	.00	.00	.11
24	.09	.09	.10	.17	.00	.00	.00	.00	.00	.05	.00	.09
25	.09	.09	.09	.33	.00	.00	.00	.00	.00	.00	.00	.09
26	1.93	.09	.08	29.06	.00	.00	.00	1.05	.00	.00	.00	.07
27	.63	4.63	.08	.59	.00	.00	.00	.00	.00	.00	.00	.03
28	.00	1.41	.07	.10	.00	.00	.02	.00	.00	.00	.00	.00
29	.04	-----	.07	.10	.00	.00	16.47	.00	.00	.00	.00	.00
30	.08	-----	.08	.10	.00	.00	.77	.00	.00	.00	.00	.00
31	.07	-----	.08	-----	22.70	-----	.00	.00	-----	.00	-----	.05
MEAN	.16	.45	8.33	1.82	11.59	.01	17.90	11.42	.00	.00	.00	7.76
INCHES	.04	.09	1.92	.41	2.67	.00	4.13	2.63	.00	.00	.00	1.79

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0074380. QUALITY OF RECORDS: POOR, ESTIMATED TO BE WITHIN 20% OF ACTUAL.

1967 SELECTED RUNOFF EVENT			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)	
<u>Event of May 31 - June 1, 1967 1/</u>											
5-31	2/1.18	.0000	5-31	4:00	AVG 3/		5-31	1408	.00	.0000	
						.00		1415	.18	.0006	
						.12		1428	8.24	.0003	
						.00		1446	19.29	.0012	
						.24		1458	7.60	.0017	
						.92		1508	65.27	.0036	
						1.64		1518	105.92	.0080	
						.71		1524	162.07	.0122	
						.72		1542	236.00	.0307	
						.90	1.09	1558	217.86	.0494	
						.12	1.12	1644	160.34	.0944	
						.12	1.15	1712	114.35	.1142	
								1742	71.76	.1287	
								1848	26.95	.1472	
								1948	22.76	.1565	
								2056	13.25	.1628	
								2230	8.72	.1672	
								2400	2.00	.1669	
							6-1	0730	.12	.1717	
								2400	.00	.1720	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0003099. 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/ ISOHYETAL MAP ON P. 62.11-4. 2/ RAINFALL PRIOR TO 1330 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. 3/ THEISSEN WEIGHTED STORM RAINFALL, RAIN GAGES 2, 17, 22 AND 28. DAILY TOTALS FOR INDIVIDUAL RAIN GAGES LISTED ON PP. 62.11-2 AND 62.11-3.



OXFORD, MISSISSIPPI WATERSHED W-17A

MONTHLY PRECIPITATION AND RUNOFF (inches)						OXFORD, MISSISSIPPI							WATERSHED W-35A ^{1/}		62.18
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967 P ₂ Q	1.63 .28	2.95 .56	4.63 2.00	4.24 .34	8.94 4.00	1.40 .03	8.59 3.57	5.41 2.97	1.30 .00	2.22 .00	2.33 .00	7.39 2.27	51.03 16.02		
STA AV ₃ /P (58-67) Q	3.17 1.02	4.85 1.90	5.04 2.19	4.34 1.03	4.36 1.08	2.62 .13	4.55 .59	3.47 .50	4.22 .38	1.82 .05	3.52 .32	5.14 1.45	47.10 10.64		
MEAN P ₄ 48 YR	5.67	5.27	5.93	5.06	4.66	3.76	4.40	3.27	3.45	2.88	4.51	5.13	53.99		

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
1967	7-9	1.30	7-9	1.27	7-9	2.39	7-9	3.24	7-9	3.28	7-9	3.31	7-8	3.32	7-5	3.54
MAXIMUMS FOR PERIOD OF RECORD ^{5/}																
19 61 TO 19 67	7-9 1967	1.30	7-9 1967	1.27	7-9 1967	2.39	7-9 1967	3.24	7-9 1967	3.28	7-9 1967	3.31	7-8 1967	3.32	3-24 1965	5.12

NOTES: Watershed conditions: About 19% in cultivation (cotton and corn), fair cover November to March, poor cover 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; 22% in woods, good cover; 1% in bare gullies. Percentages of total area in various land use categories are based on the latest survey completed in 1964. ^{1/} About 9% of drainage area above small desilting and retention dams. ^{2/} Monthly precipitation Thiessen weighted from rain gages 3, 11, 24 and 26. ^{3/} Precipitation and runoff records began Jan. 1957. Runoff for 1957 was estimated, therefore was not included in the station averages. ^{4/} Mean P based on 48-yr (1920-67) U.S. Weather Bureau record period at Holly Springs 2N, Miss. ^{5/} Maximum discharges and volumes were not computed prior to 1961; poor records 1957-60.

1967 DAILY PRECIPITATION (inches)						OXFORD, MISSISSIPPI							WATERSHED W-35A		62.18
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.00	.00	.00	.00	1.05	.00	.49	.00	.00	.00	.25	.00			
2	.00	.35	.00	.00	.03	.00	.56	3.89	.00	.00	.00	1.23			
3	.00	.00	.00	.00	.00	.00	.00	.07	.00	.00	.19	.00			
4	.00	.00	.00	.00	.00	.00	.00	.44	.00	.00	.00	.00			
5	.00	.00	.60	.00	.00	.00	1.95	.00	.00	.00	.00	.00			
6	.00	.00	2.28	.00	3.82	.00	.02	.00	.00	.00	.00	.15			
7	.00	.00	.00	.00	.00	.00	.00	.05	.28	.00	.00	.00			
8	.00	.00	.00	.00	.00	.00	.00	.00	.33	.06	.00	.00			
9	.00	.00	.00	.00	.00	.00	3.65	.00	.00	.00	.00	1.23			
10	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.08			
11	.00	.00	.00	.00	.00	.00	.00	.00	.15	.00	.31	.39			
12	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00			
13	.54	.00	.00	.53	.00	.00	.24	.00	.00	.00	.00	.00			
14	.07	.00	.00	.87	.42	.00	.00	.00	.00	.00	.00	.52			
15	.00	.02	.00	.00	.25	.00	.00	.00	.00	.00	.00	.20			
16	.00	.16	.00	.00	.00	.00	.00	.00	.00	1.52	.00	.00			
17	.00	.30	.00	.00	.00	.00	.00	.04	.00	.09	.00	.81			
18	.00	.00	.00	.00	.00	.00	.00	.40	.00	.00	.00	.00			
19	.00	.39	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00			
20	.00	.68	.16	.00	.49	.02	.00	.01	.00	.00	.04	1.58			
21	.00	.00	.00	.07	.86	.48	.00	.00	.31	.00	.28	.60			
22	.00	.00	.00	.16	.00	.22	.11	.00	.00	.00	.46	.00			
23	.00	.00	.00	.97	.00	.02	.00	.00	.00	.00	.04	.00			
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00			
25	.00	.00	.00	.80	.00	.00	.00	.02	.00	.00	.00	.00			
26	1.02	.00	1.35	.26	.00	.00	.27	.46	.00	.00	.00	.00			
27	.00	1.05	.23	.00	.00	.00	.00	.03	.23	.00	.00	.065			
28	.00	.00	.00	.00	.00	.04	.73	.00	.00	.00	.00	.00			
29	.00	-----	.00	.00	.00	.05	.55	.00	.00	.00	.58	.00			
30	.00	-----	.00	.51	.69	.57	.00	.00	.00	.32	.18	.13			
31	.00	-----	.00	-----	1.33	-----	.00	.00	-----	.11	-----	.61			
TOTAL	1.63	2.95	4.63	4.24	8.94	1.40	8.59	5.41	1.30	2.22	2.33	7.39			
STA AV	3.17	4.85	5.04	4.34	4.36	2.61	4.55	3.47	4.22	1.82	3.52	5.14			

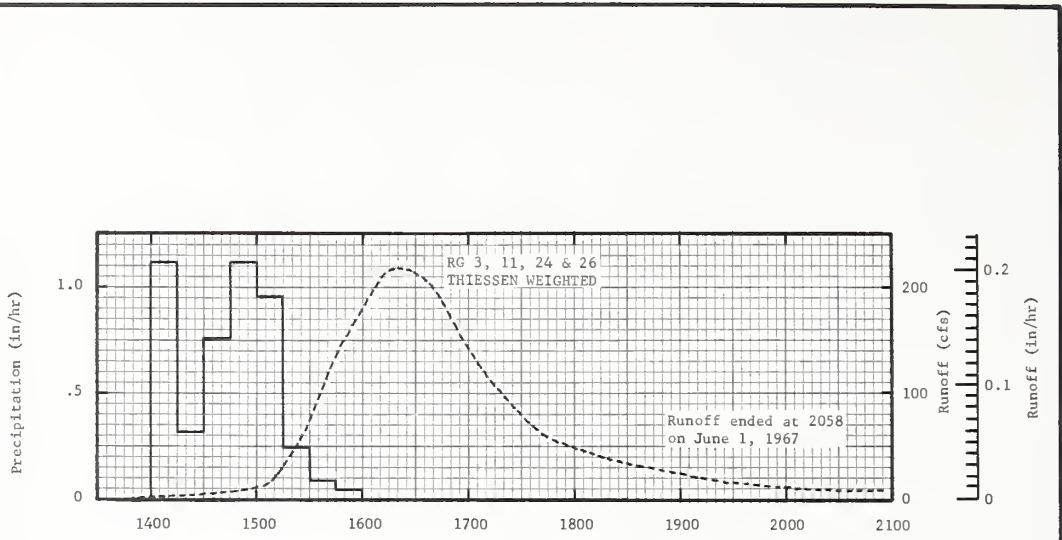
NOTES: FOR DAILY AIR TEMPERATURES IN THE VICINITY, SEE TABLE FOR WATERSHED W-4A, P. 62.1-1. DAILY PRECIPITATION VALUES THIESSEN WEIGHTED FROM RAIN GAGES 3, 11, 24 AND 26. STATION AVERAGE IS FOR 10-YR (1958-67) RECORD PERIOD.

1967 MEAN DAILY DISCHARGE (cfs)						OXFORD, MISSISSIPPI			WATERSHED #35A 62.1			
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.46	.00	.83	.00	10.58	1.32	.00	.00	.00	.00	.00	.00
2	.00	1.02	.26	.00	2.55	.00	.25	131.18	.00	.00	.00	2.78
3	.00	.57	.00	.00	.35	.00	.00	1.71	.00	.00	.00	.32
4	.00	.00	.00	.00	.00	.00	.00	2.51	.00	.00	.00	.00
5	.00	.00	.36	.00	.00	.00	8.90	.46	.00	.00	.00	.00
6	.00	.00	75.66	.00	105.66	.00	1.15	.00	.00	.00	.00	.00
7	.00	.00	2.91	.00	37.83	.00	.00	.00	.00	.00	.00	.00
8	.00	.00	1.37	.00	1.62	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	1.14	.00	.92	.00	150.78	.00	.00	.00	.00	4.19
10	.00	.00	.50	.00	.45	.00	1.38	.00	.00	.00	.00	5.17
11	.00	.00	.04	.00	.10	.00	.00	.00	.00	.00	.00	2.21
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	1.16	.00	.00	2.53	.08	.00	.00	.00	.00	.00	.00	1.22
15	.26	.00	.00	.00	.77	.00	.00	.00	.00	.00	.00	3.14
16	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	10.51
18	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	3.00
19	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	8.84	.00	.00	.00	.00	.00	.00	.00	.00	.00	42.41
21	.00	2.14	.00	.00	1.67	.00	.00	.00	.00	.00	.00	11.70
22	.00	.67	.00	.00	1.04	.00	.00	.00	.00	.00	.00	2.82
23	.00	.10	.00	4.33	.00	.00	.00	.00	.00	.00	.00	1.14
24	.00	.00	.00	.68	.00	.00	.00	.00	.00	.00	.00	.81
25	.00	.00	.00	.60	.00	.00	.00	.00	.00	.00	.00	.35
26	8.81	.00	2.47	6.74	.00	.00	.00	.00	.00	.00	.00	.00
27	1.87	9.79	4.89	.68	.00	.00	.00	.00	.00	.00	.00	.00
28	.46	2.56	.94	.00	.00	.00	.16	.00	.00	.00	.00	.00
29	.00	-----	.25	.00	.00	.00	.92	.00	.00	.00	.00	.00
30	.00	-----	.00	.00	.89	.00	.11	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	18.96	-----	.00	-----	-----	.00	-----	2.86
MEAN	.42	.92	2.95	.52	5.92	.06	5.28	4.33	.00	.00	.00	2.35
INCHES	.28	.56	2.00	.34	4.00	.03	3.57	2.97	.00	.00	.00	2.27

NOTES: TO CONVERT DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY 0.0218365. QUALITY OF RECORDS: FAIR, ESTIMATED TO BE WITHIN 15% OF ACTUAL.

1967 SELECTED RUNOFF EVENT			OXFORD, MISSISSIPPI				WATERSHED #35A 62.1				
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 (cfs)	ACC. (inches)	
Event of May 31 - June 1, 1967 ^{1/}											
5-31	2.16	.0000	5-31	4 RG	AVG ^{2/}	.00	5-31	1346	.00	.0000	
				1400	.00			.0004			
				1415	1.12			.28	1426	3.15	.0012
				1430	.32			.36	1506	14.54	.0065
				1445	.76			.55	1530	74.52	.0227
				1500	1.12			.93	1546	140.66	.0466
				1515	.96			1.07	1558	175.51	.0776
				1530	.24			1.13	1616	218.93	.1314
				1545	.08			1.15	1642	198.95	.2138
				1600	.04			1.16	1712	114.47	.2551
				1742					1742	62.72	.3254
				1830					1830	34.16	.3607
6-1							6-1	1928	16.88	.4831	
								2028	9.83	.3953	
								2146	6.06	.4047	
								2306	4.03	.4108	
2400	3.73	.4139									
1156	.91	.4391									
2058	.00	.4428									

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0009099. 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/} ISOHYETAL MAP ON P. 62.11-4. ^{2/} RAINFALL PRIOR TO 1400 ON 5-31-67. FOR 30-DAY ANTECEDENT P AND Q, SEE TABLES ON THIS AND PREVIOUS PAGE. ^{3/} THIESSEN WEIGHTED SOTRM RAINFALL, RAIN CAGES 3, 11, 24 AND 26. DAILY TOTALS FOR INDIVIDUAL RAIN CAGES LISTED ON PP. 62.11-2 AND 62.11-3.



May 31, 1967

OXFORD, MISSISSIPPI WATERSHED W-35A

REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) <u>1/</u>						TOMBSTONE, ARIZONA WATERSHED 63.003 AREA—2220 ACRES (3.47 SQ. MI.)							63.03	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1954	P	NR	NR	NR	NR	NR	NR	1.82	4.57	.45	.28	.00	.00	PARTIAL
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1955	P	.73	.09	.39	.00	.00	.40	11.00	3.69	.45	.11	.00	.08	16.94
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1956	P	.60	.14	.00	.22	.00	.39	4.16	1.11	.00	.29	.08	.11	7.10
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1957	P	1.34	.03	1.06	.05	.33	.45	1.66	3.94	.00	1.06	.05	.31	10.28
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1958	P	.00	1.07	1.79	.83	.01	.20	1.10	6.14	1.68	.87	.33	.00	14.02
	Q	.00	.00	.00	.00	.00	.00	.00	.65	T	.00	.00	.00	.65
1959	P	.00	.48	.00	.14	.00	.80	3.04	3.86	.72	.91	1.24	.88	12.07
	Q	.00	.00	.00	.00	.00	.00	.03	.05	T	.00	.00	.00	.08
1960	P	1.39	.46	.39	.00	.00	.00	2.35	1.59	.94	.40	.00	.18	7.70
	Q	.00	.00	.00	.00	.00	.00	.00	T	T	.00	.00	.00	T
1961	P	.39	.11	.01	.00	.00	.69	2.30	3.71	.73	1.87	.50	1.00	11.31
	Q	.00	.00	.00	.00	.00	.01	.04	.32	.00	.00	.00	.00	.37
1962	P	1.24	.03	.62	.00	.00	.03	4.65	.37	1.86	.19	.62	.76	10.37
	Q	.00	.00	.00	.00	.00	.00	.08	.00	T	.00	.00	.00	.08
1963	P	.18	.27	.05	.12	.00	.00	1.99	3.25	1.08	.26	1.36	.28	8.84
	Q	.00	.00	.00	.00	.00	.00	T	.04	.01	.00	.00	.00	.05
1964	P	.20	.01	.43	.31	.00	.02	4.37	2.36	3.55	.51	.84	.16	12.76
	Q	.00	.00	.00	.00	.00	.00	.10	.05	.24	.00	.00	.00	.39
1965	P	.71	.07	.25	.00	.11	.17	3.55	1.54	1.69	.00	.25	3.42	11.76
	Q	.00	.00	.00	.00	.00	.00	T	.01	.03	.00	.00	.00	.04
1966	P	.72	1.02	.01	.08	.00	.02	4.57	4.62	1.93	.02	.37	.15	13.51
	Q	.00	.00	.00	.00	.00	.00	.02	.01	T	.00	.00	.00	.03
1967	P	.00	.31	.00	.21	.52	.40	3.16	1.74	2.62	.18	.08	3.14	12.36
	Q	.00	.00	.00	.00	.00	.00	T	T	.03	.00	.00	.00	.03
STA AV2/P (54-67)	Q	.58	.31	.38	.15	.07	.27	3.68	2.92	1.33	.51	.44	.81	11.48
	Q	.00	.00	.00	.00	.00	.00	.03	.11	.03	.00	.00	.00	.17
MEAN P <u>3/</u> 71 YR		.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99

REEVALUATION OF PREVIOUSLY PUBLISHED

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS <u>1/</u>																
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
1954		NR														
1955		NR														
1956		NR														
1957		NR														
1958	8-16	.56E	8-16	.20E	8-16	.22	8-16	.24E	8-16	.24E	8-16	.24E	8-16	.24E	8-14	.42E
1959	8-17	.09	8-17	.029	8-17	.03	8-17	.03	8-17	.03	8-17	.03	8-17	.03	8-13	.05
1960	8-20	.01	8-20	.005	8-20	.005	8-20	.005	8-20	.005	8-20	.005	8-20	.005	8-15	.005
1961	8-17	.35	8-17	.24	8-17	.28	8-17	.28	8-17	.28	8-17	.28	8-17	.28	8-17	.28
1962	7-25	.05	7-25	.02	7-25	.03	7-25	.03	7-25	.03	7-25	.03	7-25	.03	7-25	.05
1963	8-22	.04	8-22	.02	8-22	.02	8-22	.02	8-22	.02	8-22	.02	8-22	.02	8-19	.04
1964	9-9	.19	9-9	.12	9-9	.18	9-9	.24	9-9	.24	9-9	.24	9-9	.25	9-9	.25
1965	9-4	.06	9-4	.02	9-4	.03	9-4	.03	9-4	.03	9-4	.03	9-4	.03	8-30	.03
1966	7-29	.05	7-29	.015	7-29	.018	7-29	.018	7-29	.018	7-29	.018	7-28	.018	7-23	.018
1967	9-10	.03	9-10	.011	9-10	.012	9-10	.012	9-10	.012	9-10	.012	9-10	.015	9-10	.015

MAXIMUMS FOR PERIOD OF RECORD 1/

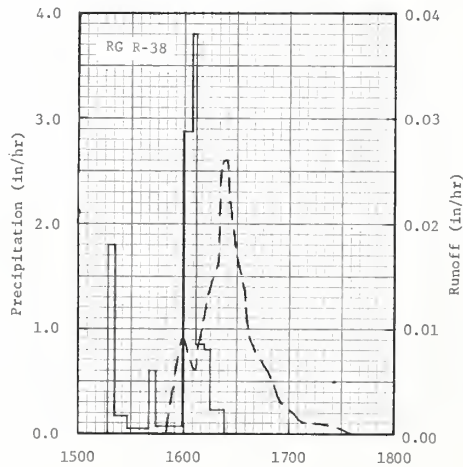
1954 TO 1967	8-16 1958	.56E	8-17 1961	.24	8-17 1961	.28	8-17 1961	.28	8-17 1961	.28	8-17 1961	.28	8-17 1961	.28	8-14 1958	.42E
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Notes: Watershed conditions: Includes subwatershed 63.004. Vegetation cover: Desert shrubs (whitethorn, creosotebush, and tarbush) with a crown spread approximating 30% and grasses with basal area of approximately 0.8% cover occupy 55% of the area. Grasses (black grama, curly mesquite grass, tobosa grass) with a basal area of 2.6% cover and shrub cover of 2% occupy the remaining 45% of the area. 1/ Tables show results of reevaluation of previously published data. Thiessen weighted using 13 rain gages. 2/ Precipitation station average based on period 1955-67; station average for runoff based on period 1958-67. 3/ Mean P based on 71-yr (1897-1967) U.S. Weather Bureau record period at Tombstone, Ariz.

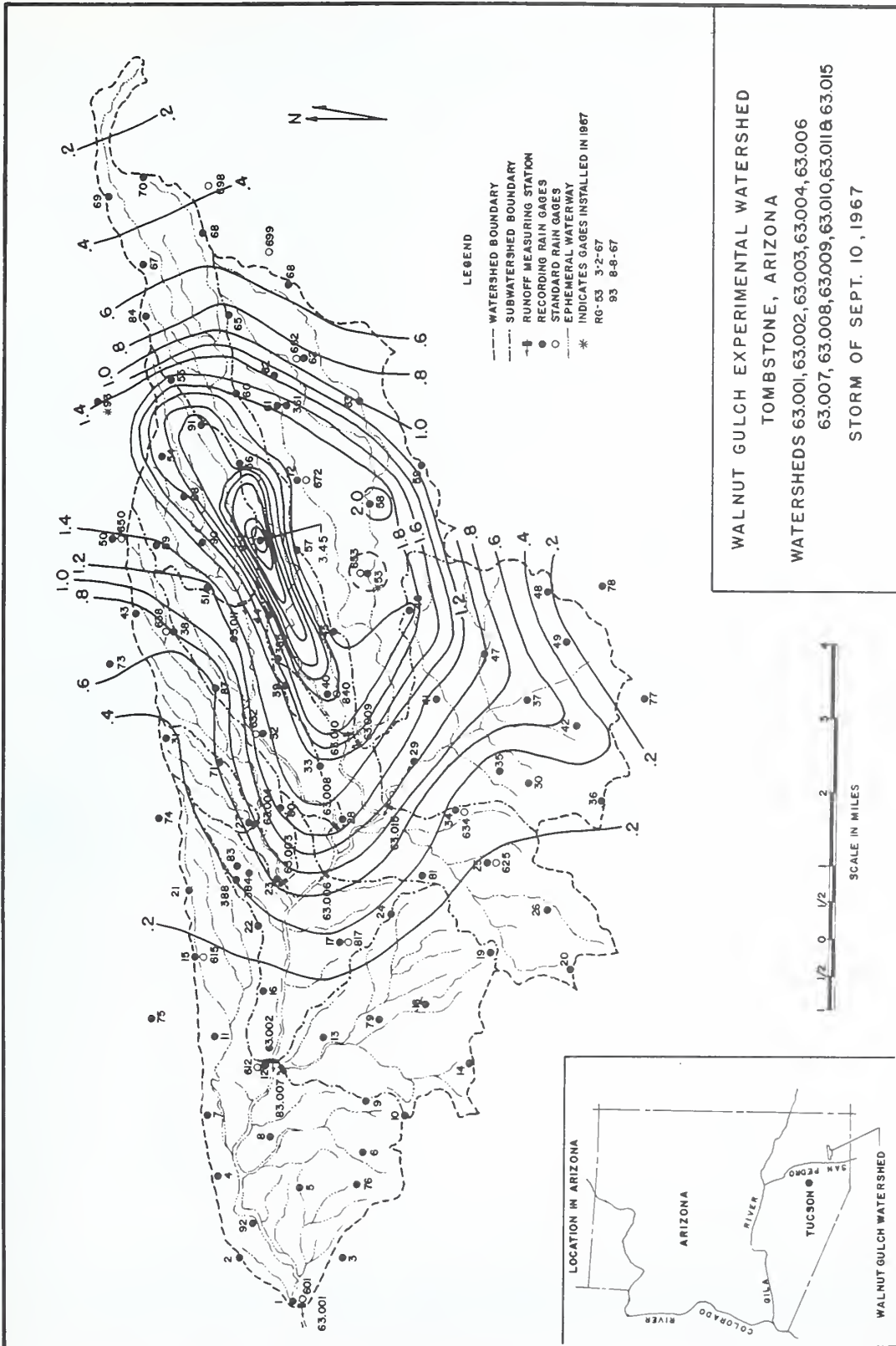
1967 SELECTED RUNOFF EVENT			TOMBSTONE, ARIZONA				WATERSHED 63.003		63.03	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of September 10, 1967 1/										
	RG R-38		9-10	RG	R-38		9-10			
8-10	.01	.00		1517	.00	.00		1550	.000	.0000
8-11	.04	.00		1521	1.80	.12		1551	.002	.0000
8-12	.04	.00		1528	.17	.14		1553	.003	.0001
8-13	.25	.00		1540	.05	.15		1555	.006	.0003
8-16	.03	.00		1544	.60	.19		1559	.009	.0007
9-1	.40	.00		1559	.08	.21		1606	.006	.0016
9-2	.03	.00		1604	2.88	.45		1607	.006	.0017
				1607	3.80	.64		1608	.009	.0018
				1612	.84	.71		1613	.012	.0026
				1615	.80	.75		1619	.016	.0041
				1623	.23	.78		1620	.021	.0044
								1621	.025	.0048
								1622	.026	.0052
								1624	.026	.0061
								1625	.024	.0065
								1627	.021	.0073
								1631	.016	.0085
								1635	.012	.0095
								1638	.009	.0100
								1648	.006	.0112
								1655	.003	.0117
								1702	.002	.0120
								1708	.001	.0121
								1711	.001	.0122
								1712	.001	.0122
								1735	.000	.0123

Watershed conditions: Includes Subwatershed 63.004. Vegetation cover: Desert shrubs (whitethorn creosote bush, and tarbush) with a crown spread approximating 30 percent and grasses with basal area of approximately 0.8 percent cover occupy 55 percent of the area. Grasses (black grama, curly mesquite grass, tobosa grass) with a basal area of 2.6 percent cover and a shrub cover of 2 percent occupy the remaining 45 percent of the area.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2,238. FOR REVISED TOPOGRAPHIC (P.63.1-3), GEOLOGIC (P.63.1-4) AND VEGETATION (P.63.1-5) MAP OF WATERSHED, SEE MISC. PUB. NO. 1226 (1966). 1/ ISOHYETAL MAP ON P. 63.3-3.



TOMBSTONE, ARIZONA WATERSHED 63.003



REEVALUATION OF PREVIOUSLY PUBLISHED MONTHLY PRECIPITATION AND RUNOFF (inches) <u>1/</u>						TOMBSTONE, ARIZONA WATERSHED 63.004 AREA - 560 ACRES							63.04	
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1954	P	NR	NR	NR	NR	NR	NR	1.64	4.29	.57	.21	.00	.00	PARTIAL
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1955	P	.71	.08	.41	.00	.00	.40	11.06	3.72	.40	.12	.00	.14	17.04
	Q	.00	.00	.00	.00	.00	.00	4.93	.38	.00	.00	.00	.00	5.31
1956	P	.56	.15	.00	.18	.00	.38	4.08	1.36	.00	.28	.06	.10	7.15
	Q	.00	.00	.00	.00	.00	.00	.12	.05	.00	.00	.00	.00	.17
1957	P	1.31	.02	1.02	.05	.32	.40	1.86	4.18	.00	.99	.04	.29	10.48
	Q	.00	.00	.00	.00	.00	.00	T	.16	.00	.00	.00	.00	.16
1958	P	.00	1.06	1.70	.86	.01	.20	1.08	6.25	1.65	.88	.32	.00	14.01
	Q	.00	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	.00	.37
1959	P	.00	.48	.00	.00	.00	.92	2.89	3.62	.68	.94	1.42	.83	11.78
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1960	P	.76	.46	.28	.00	.00	.00	2.59	2.11	1.22	.47	.00	.26	8.15
	Q	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
1961	P	.40	.14	.01	.00	.00	.78	2.38	4.28	.47	1.90	.55	1.06	11.97
	Q	.00	.00	.00	.00	.00	.00	T	.55	T	.00	.00	.00	.55
1962	P	1.32	.02	.77	.00	.00	.00	5.16	.42	1.64	.23	.70	.76	11.02
	Q	.00	.00	.00	.00	.00	.00	.05	.00	T	.00	.00	.00	.05
1963	P	.17	.29	.06	.13	.00	.00	2.02	3.34	1.36	.28	1.35	.27	9.27
	Q	.00	.00	.00	.00	.00	.00	T	.03	.01	.00	.00	.00	.04
1964	P	.19	.00	.47	.33	.00	.01	4.46	2.19	3.16	.52	.85	.16	12.34
	Q	.00	.00	.00	.00	.00	.00	.17	.03	.18	.00	.00	.00	.38
1965	P	.66	.09	.26	.00	.12	.15	3.02	1.51	1.19	.00	.26	3.43	10.69
	Q	.00	.00	.00	.00	.00	.00	.00	T	T	.00	.00	.00	T
1966	P	.72	1.04	.02	.08	.00	.03	4.12	4.71	2.12	.00	.37	.16	13.37
	Q	.00	.00	.00	.00	.00	.00	T	.01	T	.00	.00	.00	.01
1967	P	.00	.30	.00	.26	.58	.40	3.03	.00	4.47	.22	.10	3.41	12.77
	Q	.00	.00	.00	.00	.00	.00	T	T	.02	.00	.00	.00	.02
STA AVG P2/ (54-67)	Q	.52	.32	.38	.14	.08	.28	3.53	3.00	1.35	.50	.43	.78	11.31
	Q	.00	.00	.00	.00	.00	.00	.48	.14	.02	.00	.00	.00	.64
MEAN 71 YR	P <u>3/</u>	.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99

NOTES: Watershed conditions: Vegetative Cover: Entire area dominated by desert shrubs (whitethorn, creosotebush, and tarbush) with a crown spread approximating 38% and an understorey of grasses with approximately 0.6% basal cover. 1/ Table shows results of reevaluation of previously published data. Thiessen weighted using 3 rain gages. 2/ Precipitation and runoff records began in 1954. 3/ Mean P based on 71-yr. (1897-1967) U. S. Weather Bureau record period at Tombstone, Ariz.

TOMBSTONE, ARIZONA WATERSHED 63.004

REEVALUATION OF PREVIOUSLY PUBLISHED ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 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	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1954		NR		NR		NR		NR		NR		NR		NR		NR
1955	7-19	2.25	7-19	.98	7-19	1.10	7-19	1.10	7-19	1.10	7-19	1.63	7-19	1.63	7-19	4.37
1956	7-29	.18	7-29	.06E	7-29	.06E	7-29	.06E	7-29	.06E	7-29	.06E	7-29	.06E	7-29	.06E
1957	8-17	.20	8-17	.14	8-17	.15	8-17	.15	8-17	.15	8-17	.15	8-17	.15	8-14	.16
1958	8-16	.32	8-16	.15	8-16	.15	8-16	.15	8-16	.15	8-16	.15	8-14	.25	8-14	.25
1959		NR		NR		NR		NR		NR		NR		NR		NR
1960		NR		NR		NR		NR		NR		NR		NR		NR
1961	8-17	.63	8-17	.40	8-17	.43	8-17	.43	8-17	.43	8-17	.43	8-17	.44	8-17	.44
1962	7-29	.07	7-29	.03	7-29	.03	7-29	.03	7-29	.03	7-29	.03	7-27	.040	7-25	.044
1963	8-25	.03	8-25	.014	8-25	.014	8-25	.014	8-25	.014	8-25	.014	8-25	.014	8-19	.027
1964	9-9	.19	7-22	.13	9-9	.17	9-9	.17	9-9	.17	9-9	.17	9-8	.18	9-8	.18
1965	8-13	.022	8-13	.006	8-13	.006	8-13	.006	8-13	.006	8-13	.006	8-13	.006	8-13	.006
1966	8-16	.032	8-16	.008	8-16	.008	8-16	.008	8-16	.008	8-16	.008	8-16	.008	8-16	.009
1967	9-24	.046	9-24	.015	9-24	.022	9-24	.022	9-24	.022	9-24	.022	9-24	.022	9-24	.022

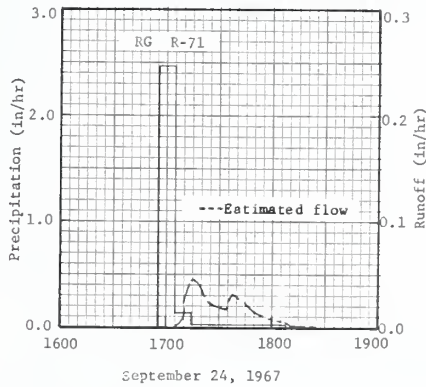
MAXIMUMS FOR PERIOD OF RECORD

1954 TO 1967	7-19 1955	2.25	7-19 1955	.98	7-19 1955	1.10	7-19 1955	1.10	7-19 1955	1.10	7-19 1955	1.63	7-19 1955	1.63	7-19 1955	4.37
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Notes: 1/ Table shows results of reevaluation of previously published data.

1967 SELECTED RUNOFF EVENT			TOMBSTONE, ARIZONA WATERSHED 63.004							
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 24, 1967										
	RG R-71		9-24	RG	R-71		9-24			
9-1	.35	.0000		1656	.00	.00		1705	.00000	.0000
9-5	.07	.0000		1705	2.47	.37		1706	.00069	.0000
9-10	.63	.0011E		1714	.13	.39		1707	.00250	.0000
9-11	.72	.0016E		1808	.02	.41		1708	.00581	.0001
9-14	.10	.0000						1709	.01424	.0003
9-16	.07	.0000						1710	.02249	.0006
								1711	.02798	.0010
								1712	.03383	.0015
								1713	.04020	.0021
								1715	.04658	.0036
								1719	.04020	.0065
								1721	.03383	.0077
								1723	.02798	.0087
								1727	.02249	.0104
								1734	.01806	.0128
								1735	.02249	.0131
								1736	.02798	.0135
								1738	.03188	.0145
								1742	.02798	.0165
								1745	.02249	.0178
								1747	.01806	.0185
								1750	.01424	.0193
								1754	.01093E	.0201E
								1757	.00813E	.0206E
								1800	.00581E	.0209E
								1803	.00393E	.0212E
								1807	.00250E	.0214E
								1810	.00142E	.0215E
								1814	.00069E	.0216E
								1818	.00025E	.0216E
								1821	.00004E	.0216E
								1825	.00000E	.0216E

Watershed conditions: Vegetative cover: Entire area dominated by desert shrubs (whitethorn, creosotebush, and tarbush) with a crown spread approximating 38% and an understory of grasses with approximately 0.6% basal cover.



TOMBSTONE, ARIZONA WATERSHED 63.004

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 565. FOR TOPOGRAPHIC, GEOLOGIC AND VEGETATION MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, FOR 1966, USDA MISC. PUB. 1226, PP. 63.1-3, 63.1-4, and 63.1-5.

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						TOMBSTONE, ARIZONA		WATERSHED 63.007		63.07			
						AREA—3340 ACRES (5.22 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1966 P ^{1/} O	.71 .00	1.05 .00	.02 .00	.41 .00	.01 .00	.10 .00	3.67 T	5.81 .07	1.67 .01	.00 .00	.34 .00	.17 .00	13.96 .08
1967 P Q	.00 .00	.24 .00	.02 .00	.17 .00	.22 .00	.28 .00	3.47 .02	2.74 .03	1.86 T	.45 .00	.09 .00	3.71 .00	13.25 .05
STA AV ^{2/} (66-67) Q	.36 .00	.64 .00	.02 .00	.29 .00	.12 .00	.19 .00	3.57 .01	4.28 .05	1.76 .01	.22 .00	.22 .00	1.94 .00	13.61 .07
MEAN P ^{3/} 71 YR	.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99

ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 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	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1966	8-14	.09	8-14	.03	8-14	.03	8-14	.03	8-14	.03	8-14	.03	8-14	.03	8-14	.03	.04
1967	8-3	.07	8-3	.03	8-3	.03	8-3	.03	8-3	.03	8-3	.03	8-3	.03	8-3	.03	.04

MAXIMUMS FOR PERIOD OF RECORD

1966 TO 1967	8-14 1966	.09	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	8-14 1966	.03	.04
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NOTES: Watershed conditions same as described under SELECTED EVENT. 1/ Tables show results of re-evaluation of previously published data. Thiessen weighted using 11 rain gages. 2/ Precipitation record began January, 1966; runoff record began June, 1966. 3/ Mean P based on 71-yr (1897-1967) U. S. Weather Bureau record period at Tombstone, Ariz.

1967 SELECTED RUNOFF EVENT TOMBSTONE, ARIZONA WATERSHED 63.007 63.07

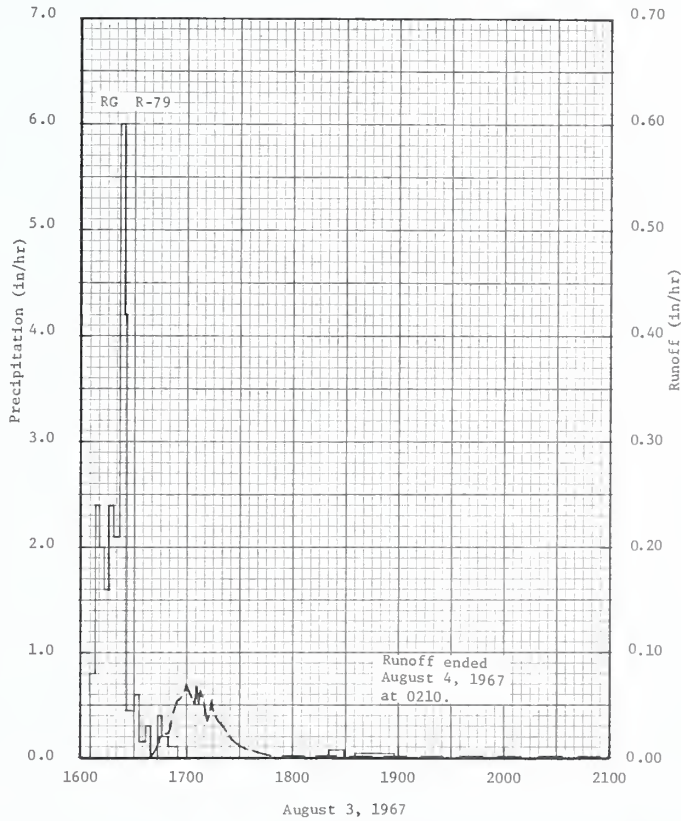
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
	RG R-79		Event of August 3, 1967							
			8-3	RG	R-79		8-3			
				1605	.00	0.00		1641	.00000	.0000
				1608	.80	.04		1642	.00039	.0000
				1610	2.40	.12		1643	.00356	.0000
				1613	2.00	.22		1644	.01158	.0002
				1616	1.60	.30		1645	.02028	.0004
				1618	2.40	.38		1647	.02573	.0012
				1622	2.10	.52		1649	.02875	.0021
				1624	6.00	.72		1650	.02401	.0025
				1626	4.20	.86		1652	.03147	.0035
				1630	.45	.89		1653	.04184	.0041
				1633	.60	.92		1654	.05303	.0049
				1637	.15	.93		1657	.05885	.0077
				1639	.30	.94		1659	.06479	.0097
				1643	0.00	.94		1700	.06901	.0108
				1646	.40	.96		1701	.06479	.0120
				1649	.20	.97		1702	.06841	.0131
				1655	.10	.98		1703	.05885	.0141
				1821	0.00	.98		1704	.05244	.0151
				1829	.07	.99		1705	.05187	.0159
				1836	0.00	.99		1706	.06901	.0169
				1858	.03	1.00		1707	.05187	.0179
								1708	.06660	.0189
								1709	.05885	.0200
								1710	.05303	.0209
								1711	.04733	.0217
								1712	.03602	.0224
								1713	.04733	.0231
								1714	.05535	.0240
								1715	.04733	.0248
								1716	.04184	.0256
								1718	.03652	.0269
								1720	.03147	.0280
								1721	.02573	.0285
								1724	.02028	.0296
								1726	.01559	.0302
								1730	.01158	.0312

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3367.8. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MSC. PUB. 1226, TOPOGRAPHIC, P. 63.1-3; GEOLOGIC, P. 63.1-4; AND VEGETATION, P. 63.1-5. 1/ RAINFALL PRIOR TO 1605 ON 8-3-67.

1967 SELECTED RUNOFF EVENT			TOMBSTONE, ARIZONA				WATERSHED 63.007		63.07	
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 August 3, 1967—Continued</u>										
							8-3	1734	.00831	.0318
								1740	.00564	.0325
								1745	.00356	.0329
								1752	.00208	.0332
								1803	.00104	.0335
								1810	.00068	.0336
								1817	.00050	.0337
								1820	.00045	.0337
								1825	.00036	.0337
								1835	.00024	.0338
								1845	.00018	.0338
								1900	.00015	.0339
								1915	.00012	.0339
								1940	.00009	.0339
								2010	.00005	.0340
								2100	.00004	.0340
							8-4	0210	.00002	.0340
									.00001	.0341

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 3367.8.

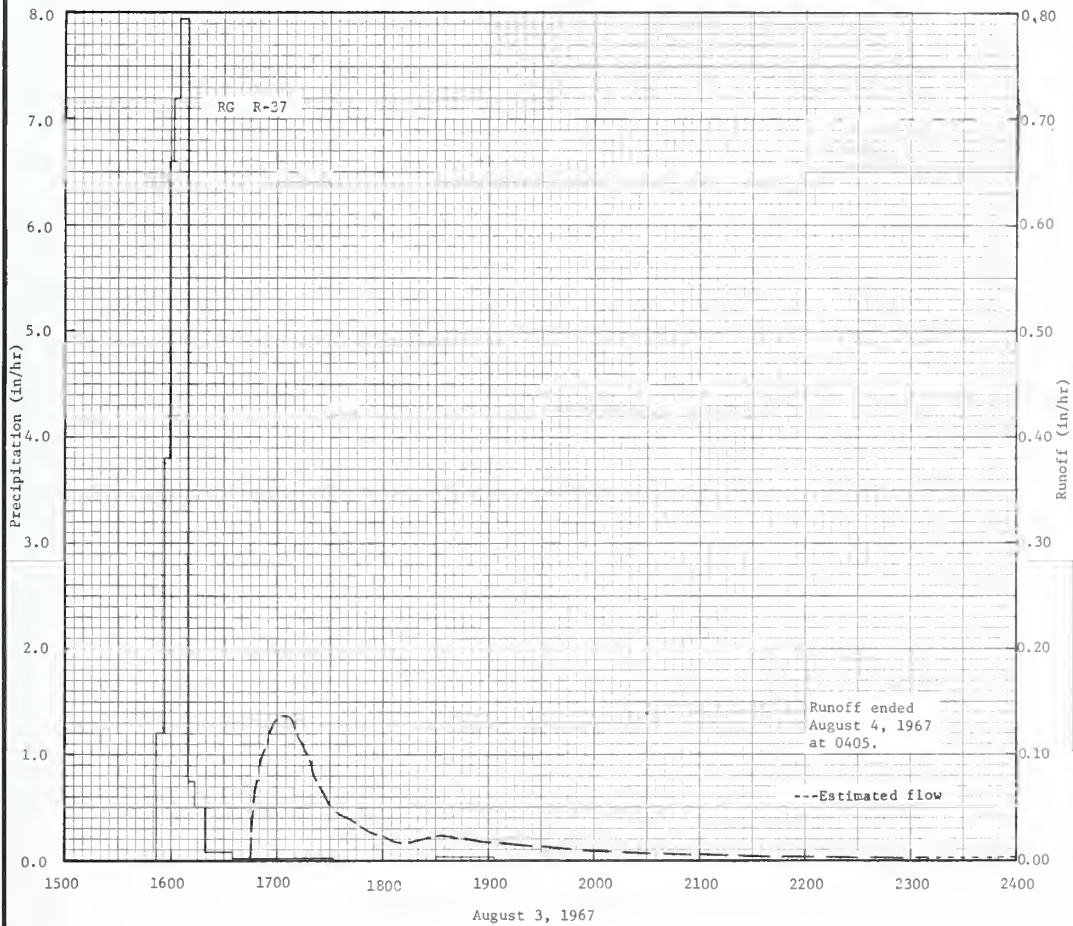


TOMBSTONE, ARIZONA WATERSHED 63.007

REEVALUATION OF PREVIOUSLY PUBLISHED 1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						TOMBSTONE, ARIZONA WATERSHED 63.015 AREA—5912 ACRES (9.24 SQ. MILES)							63.15			
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1965	P ^{1/} Q	.88 .00	.16 .00	.24 .00	.01 .00	.15 .00	.15 .00	3.66 .00	1.38 .00	1.46 .07	.03 .00	.30 .00	3.12 .00	11.54 .07		
1966	P Q	.87 .00	.96 .00	.24 .00	.09 .00	.01 .00	.20 .00	4.34 .08	4.63 .25	1.73 .00	.02 .00	.34 .00	.13 .00	13.32 .33		
1967	P Q	.00 .00	.34 .00	.04 .00	.21 .00	.49 .00	.32 .00	4.36 .05	3.32 .15	1.83 .06	.08 .00	.19 .00	2.89 .00	14.07 .26		
STA AV ^{2/} (65-67) Q	P	.58 .00	.49 .00	.09 .00	.10 .00	.22 .00	.22 .00	4.12 .04	3.11 .13	1.67 .04	.04 .00	.28 .00	2.05 .00	12.97 .21		
MEAN P ^{3/} 71 YR		.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS 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	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	
1965	9-4	.11	9-4	.05	9-4	.07	9-4	.07	9-4	.07	9-4	.07	9-4	.07	9-4	.07
1966	8-19	.17	8-19	.13	8-19	.17	8-19	.20	8-19	.20	8-19	.23	8-19	.25	8-19	.25
1967	8-3	.14	8-3	.09	8-3	.11	8-3	.14	8-3	.14	8-3	.14	8-3	.14	8-3	.15
MAXIMUMS FOR PERIOD OF RECORD																
19 65 To 19 67	8-19 1966	.17	8-19 1966	.13	8-19 1966	.17	8-19 1966	.20	8-19 1966	.20	8-19 1966	.23	8-19 1966	.25	8-19 1966	.25
NOTES: Watershed conditions: Same as for Selected Event. 1/ Tables show results of re-evaluation of previously published data. Thiessen weighted using 14 rain gages. 2/ Precipitation records began January, 1965; runoff records began June, 1965 (beginning of runoff season) upon completion of flume with capacity of 8000 cfs. 3/ Mean P based on 71-yr (1897-1967) U. S. Weather Bureau record period at Tombstone, Ariz.																
1967 SELECTED RUNOFF EVENTS						TOMBSTONE, ARIZONA WATERSHED 63.015							63.15			
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)						
<u>Event of August 3, 1967</u>																
	RG R-37		8-3	RG	R-37		8-3									
7-3	.66	.0000		1552	.00	.00		1644	.00000	.0000						
7-5	.18	.0000		1556	1.20	.08		1645	.00130	.0000						
7-7	.99	.0224E		1559	3.80	.27		1646	.00621	.0001						
7-9	.57	.0040E		1602	6.60	.60		1647	.05957	.0006						
7-11	.04	.0000		1605	7.20	.96		1648	.06972	.0017						
7-12	.24	.0000		1609	7.95	1.49		1649	.07691	.0029						
7-13	.07	.0000		1613	.75	1.54		1650	.08446	.0043						
7-16	.44	.0000		1619	.50	1.59		1651	.09236	.0057						
7-17	.79E	.0197E		1635	.08	1.61		1654	.10922	.0108						
7-25	.66	.0078E		1732	.01	1.62		1656	.11794	.0146						
7-27	.45	.0000		1830	.00	1.62		1658	.12581	.0186						
7-31	.03	.0000		1903	.02	1.63		1700	.13393	.0230						
8-2	.22	.0000						1705	.13725	.0343						
								1708	.13393	.0410						
								1712	.12581	.0497						
								1713	.11794	.0517						
								1715	.10922	.0555						
								1717	.10062	.0590						
								1719	.09236	.0622						
								1720	.08446	.0637						
								1723	.07691	.0677						
								1725	.06972	.0702						
								1727	.06287	.0724						
								1729	.05636	.0744						
								1731	.05188	.0762						
								1733	.04835	.0778						
								1736	.04472	.0802						
								1739	.04105	.0823						
								1744	.03734	.0856						
								1747	.03328	.0874						
								1752	.02900	.0899						
								1800	.02308	.0934						
								1805	.01983	.0952						
								1810	.01778	.0968						
Continued on next page																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5961. FOR MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MISG. PUB. 1226, TOPOGRAPHIC, P. 63.1-3; GEOLOGIC, P. 63.1-4; AND VEGETATION, P. 63.1-5.																

1967 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA				WATERSHED 63.015		63.15	
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)
			<u>Event of August 3, 1967—Continued</u>							
							8-3	1813	.01713	.0976
								1817	.01778	.0988
								1827	.02125	.1021
								1835	.02271	.1050
								1847	.02125	.1094
								1902	.01778	.1143
								1925	.01461	.1205
								2000	.00850	.1272
								2031	.00621	.1310
								2104	.00472	.1340
								2140	.00331	.1364
								2221	.00218	.1383
								2310	.00130E	.1397E
							8-4	0006	.00066E	.1406E
								0109	.00025E	.1411E
								0227	.00005E	.1413E
								0405	.00000E	.1414E

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5961.

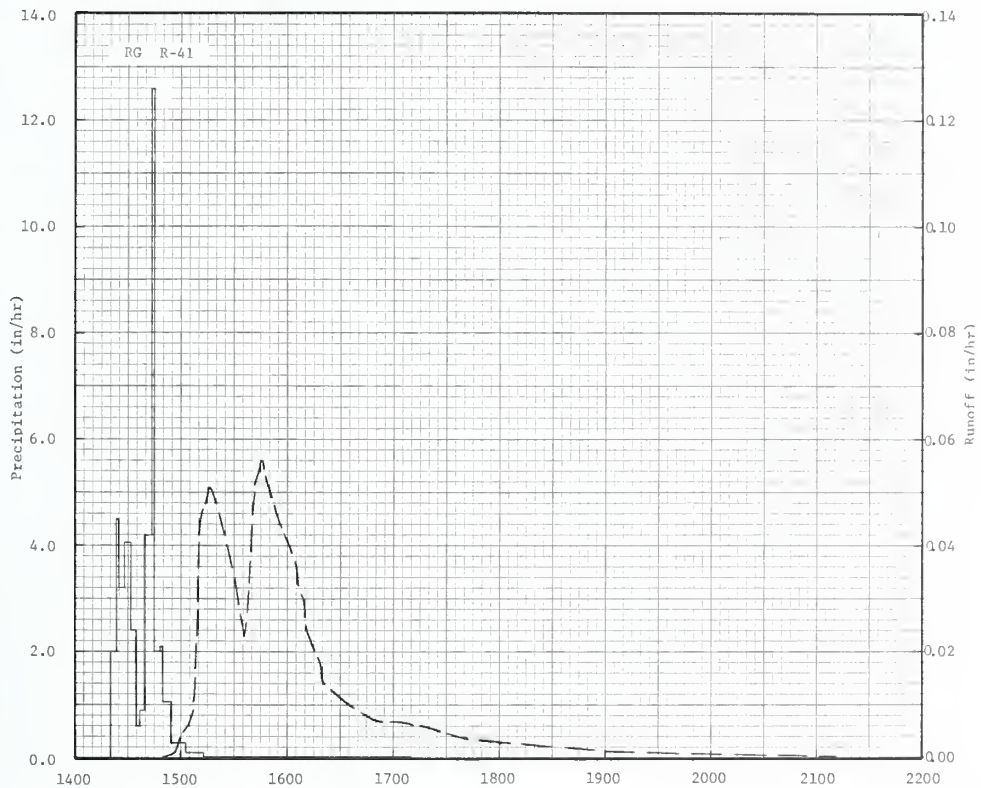


TOMBSTONE, ARIZONA WATERSHED 63.015

1967 SELECTED RUNOFF EVENTS			TOMBSTONE, ARIZONA			WATERSHED 63.015			63.15		
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)	
1/ Event of September 10, 1967											
	RG R-41		9-10	RG	R-41		9-10				
8-10	.01	.0000		1420	.00	.00		1449	.0000	.0000	
8-11	.33	.0000		1423	2.00	.10		1450	.0000	.0000	
8-12	.03	.0000		1425	4.50	.25		1452	.0002	.0000	
8-13	.14	.0000		1428	3.20	.41		1453	.0003	.0000	
8-21	1.27	.0007		1432	4.05	.68		1455	.0003	.0000	
9-1	.48	.0000		1434	2.40	.76		1457	.0007	.0000	
9-2	.02	.0000		1437	.60	.79		1458	.0013	.0001	
9-5	.05	.0000		1439	.90	.82		1459	.0033	.0001	
				1443	4.20	1.10		1504	.0062	.0005	
				1445	12.60	1.52		1507	.0085	.0009	
				1448	2.00	1.62		1508	.0178	.0011	
				1450	2.10	1.69		1509	.0250	.0014	
				1454	1.05	1.76		1510	.0373	.0020	
				1503	.27	1.80		1511	.0429	.0026	
				1513	.12	1.82		1512	.0466	.0034	
				1710	.01	1.83		1514	.0484	.0049	
								1516	.0505	.0066	
								1520	.0484	.0099	
								1523	.0447	.0122	
	RG R-46		9-10	RG	R-46			1526	.0410	.0144	
8-10	.07	.0000		1420	.00	.00		1528	.0373	.0157	
8-11	.48	.0000		1425	3.96	.33		1531	.0333	.0174	
8-13	.28	.0000		1428	2.60	.46		1532	.0290	.0179	
8-15	.12	.0000		1430	7.20	.70		1535	.0250	.0193	
8-16	.03	.0000		1432	4.80	.86		1536	.0235	.0197	
8-21	.23	.0007		1435	3.00	1.01		1537	.0290	.0201	
9-1	.53	.0000		1439	1.35	1.10		1538	.0333	.0207	
9-2	.05	.0000		1444	4.08	1.44		1539	.0410	.0213	
9-3	.04	.0000		1450	2.60	1.70		1540	.0447	.0220	
9-7	.06	.0000		1456	1.80	1.88		1542	.0519	.0236	
				1500	1.20	1.96		1544	.0539	.0254	
				1515	.28	2.03		1545	.0564	.0263	
								1548	.0519	.0290	
								1553	.0484	.0332	
								1556	.0447	.0355	
								1600	.0410	.0384	
								1604	.0373	.0410	
								1606	.0333	.0421	
								1609	.0290	.0437	
								1611	.0250	.0446	
								1615	.0212	.0461	
								1619	.0178	.0474	
								1625	.0146	.0491	
								1645	.0085	.0529	
								1650	.0078	.0536	
								1705	.0073	.0555	
								1717	.0062	.0568	
								1737	.0047	.0586	
								1801	.0033	.0603	
								1832	.0022	.0617	
								1905	.0013	.0626	
								1942	.0007	.0632	
								2024	.0002	.0636	
								2112	.0000	.0637	
								2207	.0000	.0637	

Watershed conditions:
 Vegetation cover: Desert shrubs (whitethorn, creosote bush, tarbush) occupy 78% of the area with a crown spread of approximately 30% and an understory of grasses of less than 1% basal area. The remaining 22% of the area supports a grass cover (black grama, tobosa grass, blue grama, sideoats grama, and curly mesquite grass) of approximately 2% basal area.

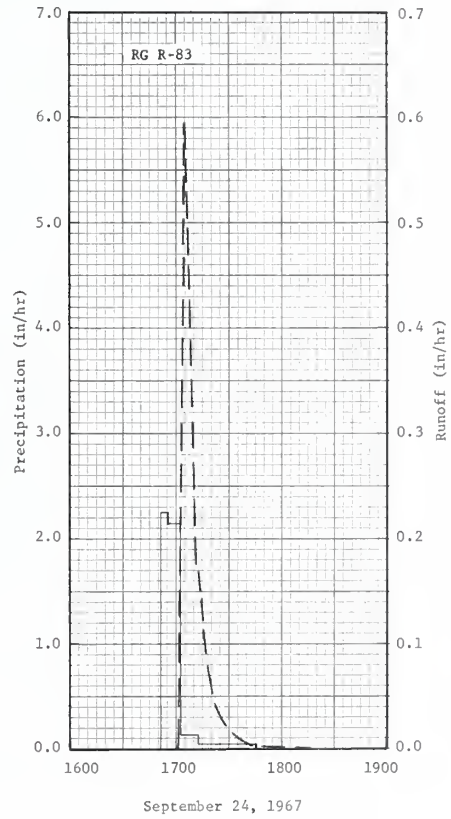
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5961. 1/ ISOHYETAL MAP ON P. 63.3-3 OF THIS VOLUME.



August 10, 1967

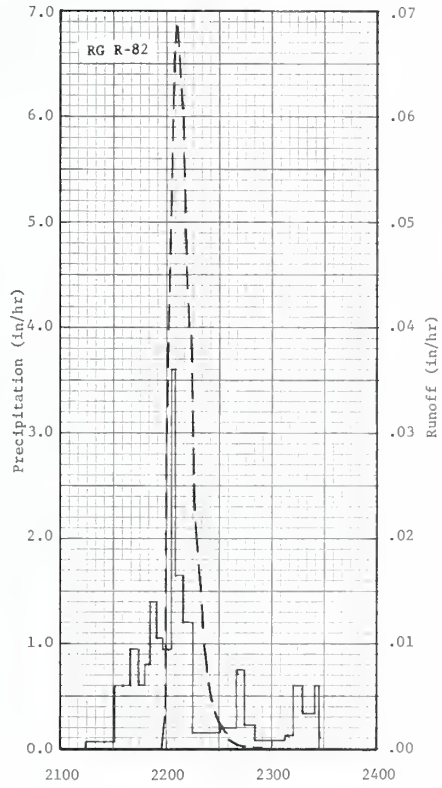
TOMBSTONE, ARIZONA WATERSHED 63.015

MONTHLY PRECIPITATION AND RUNOFF (inches)						TOMBSTONE, ARIZONA WATERSHED 63.103 AREA 8.3 ACRES								63.103		
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁	.00	.23	.00	.15	.36	.52	3.25	.00	4.58	.21	.08	3.28	12.66		
	O	.00	.00	.00	.00	.00	.00	.04	.03	.19	.00	.00	.01	.27		
	STA AVG P ₂	.38	.46	.09	.10	.14	.25	3.44	2.34	2.52	.07	.21	2.38	12.38		
	(65-67) ₂	.00	.00	.00	.00	.00	.00	.07	.24	.08	.00	.00	.02	.41		
	MEAN P ₃	.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99		
	71 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	
1967	9-24	.60	9-11	.09	9-11	.09	9-11	.09	9-11	.09	9-11	.09	9-10	.10	9-10	.10
MAXIMUMS FOR PERIOD OF RECORD																
19 64 TO	8-13	2.07	8-13	.53	8-13	.53	8-13	.53	8-13	.53	8-13	.53	8-13	.53	8-13	.53
19 67	1965		1965		1965		1965		1965		1965		1965		1965	
NOTES: 1/ Monthly precipitation is the record of 1 rain gage. 2/ Precipitation record began January 1965 and runoff record began July 1965. 3/ Mean P based on 71-yr (1897-1967) U.S. Weather Bureau record period at Tombstone, Ariz.																
1967 SELECTED RUNOFF EVENT						TOMBSTONE, ARIZONA WATERSHED 63.103									63.103	
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 September 24, 1967</u>																
	RG R-83		9-24	RG	R-83		9-24									
8-31	.38	.0000		1652	.00	.00		1702	.0000	.0000						
9-1	.03	.0000		1656	2.25	.15		1703	.1721	.0014						
9-5	.03	.0000		1703	2.14	.40		1704	.4624	.0067						
9-10	.45	.0159		1713	.12	.42		1705	.5950	.0155						
9-11	.66	.0881		1746	.04	.44		1706	.5484	.0251						
9-13	.13	.0000						1707	.4756	.0336						
								1708	.3859	.0408						
								1709	.3083	.0466						
								1710	.2581	.0513						
								1712	.1864	.0587						
								1714	.1434	.0642						
								1716	.1079	.0684						
								1718	.0826	.0715						
								1720	.0614	.0739						
								1723	.0409	.0765						
								1727	.0256	.0787						
								1732	.0139	.0804						
								1737	.0076	.0813						
								1742	.0047	.0818						
								1747	.0025	.0821						
								1757	.0008	.0823						
								1807	.0002	.0824						
								1817	.0000	.0825						
								1832	.0000	.0825						
Watershed conditions: Vegetation cover: Entire area dominated by desert shrubs (whitethorn, creosote bush, and tarbush) with a crown spread approximating 25 percent and an understory of grasses with approximately 0.6 percent basal cover.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.37. FOR TOPOGRAPHIC, GEOLOGIC, AND VEGETATION MAPS OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, FOR 1966, USDA MISC. PUB. 1226, P. 63.1-3, 63.1-4, AND 63.1-5.																



TOMBSTONE, ARIZONA WATERSHED 63.103

MONTHLY PRECIPITATION AND RUNOFF (inches)							TOMBSTONE, ARIZONA WATERSHED 63.111 AREA—143 ACRES							63.111		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P1/	.00	.32	.02	.01	.25	.50	2.91	.00	4.85	.13	.15	2.32	11.46		
	O	.00	.00	.00	.00	.00	.00	T	.02	.22	.00	.00	.00	.24		
STA AVG	P2/	.54	.27	.19	.11	.04	.17	4.12	2.07	2.87	.19	.60	1.06	12.23		
(62-67)	O	.00	.00	.00	.00	.00	.00	.49	.18	.42	.00	.00	.00	1.09		
MEAN	P3/															
71 YR		.83	.77	.61	.28	.18	.49	3.64	3.49	1.52	.66	.63	.89	13.99		
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
1967	9-10	.38	9-10	.21	9-10	.22	9-10	.22	9-10	.22	9-10	.22	9-10	.22	9-10	.22
MAXIMUMS FOR PERIOD OF RECORD																
19 62 TO	7-22	2.90	7-22	.83	7-22	.83	7-22	.83	7-22	.83	7-22	.84	9-10	1.34	9-8	1.45
19 67	1964		1964		1964		1964		1964		1964		1964		1964	
NOTES: 1/ Monthly precipitation is arithmetic average of 2 rain gages. 2/ Precipitation and runoff record began in 1962. 3/ Mean P based on 71-yr (1897-1967) U.S. Weather Bureau record period at Tombstone, Ariz.																
1967 SELECTED RUNOFF EVENT							TOMBSTONE, ARIZONA WATERSHED 63.111							63.111		
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)						
<u>Event of August 11, 1967</u>																
	RG R-82		8-11	RG	R-82		8-11									
7-11	.21	.00		2114	.00	.00		2158	.0000	.0000						
7-12	.04	.00		2131	.07	.02		2159	.0031	.0000						
7-13	.10	.00		2135	.60	.06		2200	.0157	.0002						
7-15	.05	.00		2139	.60	.10		2201	.0327	.0006						
7-16	.46	.00		2144	.96	.18		2202	.0472	.0013						
7-17	.67	.001		2148	.60	.22		2203	.0587	.0021						
7-19	.07	.00		2151	.80	.26		2204	.0654	.0032						
7-25	.10	.00		2154	1.40	.33		2205	.0671	.0043						
7-26	.10	.00		2158	1.05	.40		2206	.0687	.0054						
7-27	.27	.00		2203	.96	.48		2207	.0671	.0065						
7-31	.12	.00		2205	3.60	.60		2208	.0637	.0076						
8-2	.10	.00		2209	1.65	.71		2209	.0603	.0087						
8-3	.11	.00		2212	1.20	.77		2210	.0558	.0096						
8-4	.04	.00		2215	1.20	.83		2211	.0514	.0105						
8-5	.18	.00		2231	.15	.87		2212	.0458	.0113						
8-9	.11	.00		2240	.20	.90		2213	.0409	.0121						
8-10	.09	.00		2244	.75	.95		2214	.0362	.0127						
				2252	.22	.98		2215	.0298	.0132						
				2308	.08	1.00		2216	.0261	.0137						
				2313	.12	1.01		2217	.0224	.0141						
				2318	.60	1.06		2218	.0192	.0145						
				2325	.34	1.10		2219	.0163	.0148						
				2327	.60	1.12		2220	.0137	.0150						
								2222	.0098	.0154						
								2224	.0062	.0157						
								2226	.0048	.0159						
								2228	.0036	.0160						
								2230	.0026	.0161						
								2232	.0020	.0162						
								2234	.0014	.0162						
								2236	.0008	.0163						
								2238	.0005	.0163						
								2240	.0003	.0163E						
								2245	.0001	.0163E						
								2255	.0000	.0163E						
Watershed conditions: Representative of desert grassland. Vegetation dominated by short grasses (blue, sideoats, black and hairy grama, curly mesquite); also, present shrubs include (soapweed, mesquite, burweed), basal cover of grasses approximately 2.5 percent. Canopy approximately 20 percent.																
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 144.19. FOR TOPOGRAPHIC, GEOLOGIC, AND VEGETATION MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, USDA MISC. PUB. 1226, P. 63.1-3, AND 63.1-4, 63.1-5.																



August 11, 1967

TOMBSTONE, ARIZONA WATERSHED 63.111

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-2 AREA - 115 ACRES									57M-2
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P 1/ Q	.19 .00	.22 .20	.25 .00	2.36 .01	1.01 .62	4.61 .19	.28 .00	.70 .00	2.53 .03	.30 .00	.22 .00	.10 .00	12.77 1.05	
	STA AV2/P (58-67) Q	.20 .01	.24 .07	.48 .15	1.17 .01	2.15 .11	3.28 .10	1.69 .11	1.10 T	1.16 .01	.45 .00	.28 T	.21 .00	12.41 .57	
	MEAN P 3/ 60 YR	.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52	

NOTES: Watershed conditions: 100% rangeland. Condition classes: Excellent, 19%; good, 64%; fair, 17%. Degree of grazing: Full. 1/ Monthly precipitation obtained from rain gage W-2A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 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					.09					.10	.10			
2			.11											
3			.05			.13								
4		.02	.02											
5		.01		.05		1.63		.68						
6	.04	.07	.02			.02	.03							
7						.21								
8							.07							
9						.13			.04					
10					.04									
11		.03				.53								
12			.01	.15	.16	.03		.02	.31					
13			.02	.85		.59			.05					
14		.06							.17					
15	.02			.13	.20	.03			1.16					
16	.03			.14					.38					
17						.62	.10		.38					
18									.04					
19		.03	.01											
20												.03		
21														
22						.20								
23	.01				.16	.31					.11			
24	.01										.01			
25	.01					.18								
26	.01						.08							
27												.02		
28										.20		.02		
29				.04										
30			.01	1.00	.29							.03		
31	.06				.07									
TOTAL	.19	.22	.25	2.36	1.01	4.61	.28	.70	2.53	.30	.22	.10		
STA AV	.20	.24	.48	1.17	2.15	3.28	1.69	1.10	1.16	.45	.28	.21		

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-2A. STA AV IS BASED ON PERIOD 1958-67. 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.

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967					NEWELL, SOUTH DAKOTA							
DAILY DISCHARGE (inches)					WATERSHED W-2							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.05							
2					T							
3		.08										
4												
5					T	.12						
6					.02	.02						
7					.10							
8					.06							
9					.16							
10					.05							
11					.01	.01						
12					T	.01						
13					.01	.02						
14					T	.02						
15					.05				.01			
16		.04			T	.04			.01			
17					.03							
18					.01	.02			.01			
19												
20												
21		.08										
22												
23												
24												
25												
26												
27												
28												
29												
30					.01							
31												
MEAN		.20			.01	.62	.19		.03			
INCHES												

NOTES: DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-5							57M-5	
						AREA - 46 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹ /	.27	.46	.42	3.91	1.76	7.92	1.21	.31	2.62	.74	.40	.52	20.54
	Q	.21	.07	.00	.08	.13	.57	.05	.00	.00	.00	.00	.00	1.11
	STA AV ² /P	.25	.31	.64	1.45	2.61	4.28	1.63	1.33	1.06	.43	.29	.32	14.60
	(58-67) Q	.02	.02	.13	.02	.09	.28	.04	.10	T	.00	.00	.00	.70
	MEAN P ³ /													
	60 YR	.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52

NOTES: Watershed conditions: 100% rangeland. Condition classes: Excellent, 7%; good, 93%. Degree of grazing: Full. Production of cover: 2,600 lb/ac of oven dry material. 1/ Monthly precipitation obtained from rain gage W-5A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 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					.17					.01	.20		
2		.05	.09							.22			
3						.07							
4	.12		.10										
5		.06		.02		2.67		.25					
6		.15	.10							.09			
7						.36							
8				.02								.09	
9				.02			.17						
10													
11		.02			.05	.90							
12				.15	.10	1.40			.48				
13				1.72		1.05			.09				
14		.04		.55					.20				
15	.03				.40				1.13				
16	.07	.06											
17		.05						.06	.08			.15	
18			.13	.05		.54	.20		.43				
19							.75		.20				
20												.11	
21													
22					.23	.12					.07		
23						.58							
24		.03									.13		
25					.03	.05							
26						.18	.06						
27							.03					.07	
28					.03					.42		.10	
29													
30				1.38	.71								
31	.05				.04				.01				
TOTAL	.27	.46	.42	3.91	1.76	7.92	1.21	.31	2.62	.74	.40	.52	
STA AV	.25	.31	.64	1.45	2.61	4.28	1.63	1.33	1.06	.43	.29	.32	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-5A. STA AV IS BASED ON PERIOD 1958-67. 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.

1967 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					.01							
2					T							
3												
4												
5					T	.16						
6					.04	.03						
7					.07	.02						
8					T							
9												
10												
11						.20						
12						.06						
13				.04		.09						
14		.07		.03								
15												
16					T							
17												
18						.01						
19												
20							.05					
21												
22	.13											
23												
24												
25												
26												
27												
28												
29												
30				.01	.01							
31	.08											
MEAN	.21	.07		.08	.13	.57	.05					
INCHES												

NOTES: DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA						WATERSHED W-7		S7M-7
						AREA - 160 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	.11	.26	.24	2.57	1.61	6.14	.89	.28	1.54	.4S	.24	.24	14.57
	o	.18	.00	.00	.01	.09	.33	.00	T	.00	.00	.00	.00	.61
	STA AV2/P	.21	.29	.60	1.26	2.47	3.87	1.63	1.33	.94	.40	.29	.30	13.59
	(58-67) Q	.02	.02	.14	.02	.05	.12	.04	.02	.00	.00	.00	.00	.43
	MEAN P 3/	.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	18.52
	60 YR													

NOTES: Watershed conditions: 100% rangeland. Condition classes: Good, 82%; fair, 18%. Degree of grazing: Close. Production of cover: 2,400 lb/ac. 1/ Monthly precipitation obtained from rain gage W-7A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA						WATERSHED W-7		S7M-7
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1		.03			.17					.02	.12			
2			.06							.1S				
3			.02			.07								
4	.01			.02		2.06		.20						
5		.03												
6		.06	.04							.03				
7						.34								
8				.02									.06	
9				.02				.23						
10					.0S									
11		.02				.9S								
12				.10	.11	.50		.02	.26					
13				1.1S		.97			.04					
14		.03		.34					.14					
15	.04				.16				.60					
16	.04	.04		.07										
17		.04						.06	.06				.09	
18		.02				.41	.14		.24					
19			.12	.0S					.1S					
20							.38						.04	
21														
22						.10						.04		
23					.24	.49								
24		.03			.07	.08						.08		
25														
26						.12	.08							
27						.0S	.06							
28										.2S				
29					.07									
30				.80	.70				.0S				.02	
31	.02				.04								.03	
TOTAL	.11	.26	.24	2.57	1.61	6.14	.89	.28	1.54	.4S	.24	.24	14.57	
STA AV	.21	.29	.60	1.26	2.47	3.87	1.63	1.33	.94	.40	.29	.30	13.59	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-7A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.7-4.

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 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					T							
5					T	.14		T				
6												
7					T							
8					.07	T						
9					.01							
10					.01							
11						.05						
12						.04						
13					T	.09						
14					.01							
15												
16												
17												
18						T						
19												
20						.01						
21												
22	.07											
23												
24												
25												
26												
27												
28												
29												
30												
31	.11											
MEAN												
INCHES	.18			.01	.09	.33		T				

NOTES: DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-12							57F-12	
						AREA - 90 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	OEC	ANNUAL
1967	P 1/	.75	.21	.28	2.71	1.65	4.49	1.10	.83	2.70	.57	.28	.26	15.83
	Q	.52	.20	.16	.47	1.85	1.57	.00	.00	.17	.00	.00	.00	4.94
	STA AV2/P (58-67) Q	.29	.26	.67	1.37	2.59	3.58	1.63	1.06	1.25	.50	.32	.27	13.79
	MEAN P 3/	.05	.06	.41	.21	.92	.80	.13	.06	.02	.00	.01	.01	2.68
	60 YR	.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52

NOTES: Watershed conditions: 100% rangeland. Condition classes: Good, 94%; fair, 6%. Degree of grazing: Moderate.
 1/ Monthly precipitation obtained from rain gage W-12A. 2/ Precipitation and runoff records began Jan. 1958.
 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 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			.02		.16	.02	.03			.02	.16		
2					.02			.10		.16			
3						.07							
4		.02											
5		.03	.03			.12							
6	.32	.08	.12			.01	.06			.04			
7		.02				.18		.58					
8					.04							.14	
9						.20							
10													
11			.01	.02	.04	.94			.02			.02	
12			.01	.20	.17	.09			.18				
13			.05	1.10		.80		.10	.20	.03			
14		.02	.04	.31	.05	.50	.06		.34				
15					.23	.20			1.08	.01			
16	.07			.10					.25	.03			
17	.06							.05	.03			.02	
18						.48			.44				
19						.01	.43		.16				
20		.04		.14								.02	
21				.02									
22	.04					.08							
23	.10					.32					.01		
24	.02										.11		
25	.02			.08	.33	.06				.02			
26						.05	.20					.01	
27						.36							
28										.26			
29				.08	.05							.02	
30	.08			.66	.38							.03	
31	.04				.18		.32						
TOTAL	.75	.21	.28	2.71	1.65	4.49	1.10	.83	2.70	.57	.28	.26	
STA AV	.29	.26	.67	1.37	2.59	3.58	1.63	1.06	1.25	.50	.32	.27	

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN.
 PRECIPITATION OBTAINED FROM RAIN GAGE W-12A. STA AV IS BASED ON PERIOD 1958-67. 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.

1967						NEWELL, SOUTH DAKOTA						WATERSHED W-12		57F-12	
DAILY DISCHARGE (inches)															
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1					.07										
2															
3															
4															
5					.10										
6					.32										
7					.34										
8					.32										
9					.31										
10					.14										
11					.04	.12									
12					.03	.03									
13				.12	.06	.53									
14				.12	.03	.17			.01						
15					.02	.41			.02						
16		.20		.01	.02				.01						
17					.02										
18					.02	.31			.10						
19				T	.01				.03						
20															
21	.11														
22															
23															
24															
25															
26															
27			.16												
28															
29															
30	.41	-----		.22		-----			-----		-----				
31															
MEAN															
INCHES	.52	.20	.16	.47	1.85	1.57			.17						

NOTES:

DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND. SPILLWAY FLOW DURING MAY AND JUNE.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA							WATERSHED W-13		57F-13
						AREA - 160 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P ₁	.45	.24	.18	2.65	1.39	4.17	1.33	.25	1.66	.49	.26	.52	13.59	
	O	.00	.34	.13	.09	.65	.68	.00	.00	T	T	.00	.00	1.89	
STA AV2/P (58-67)	P	.25	.26	.51	1.17	2.51	3.32	1.41	1.07	.90	.44	.28	.30	12.42	
	Q	.00	.06	.23	.03	.35	.36	T	T	T	T	T	.00	1.03	
MEAN	P ₃														
60 YR	-	.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52	

NOTES: Watershed conditions: 100% rangeland. Condition classes: Excellent, 8%; good, 67%; fair, 25%. Degree of grazing: Full. Production of cover: 1,900 lb/ac. 1/ Thiessen weighted precipitation obtained from rain gages W-13B and W-13C. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 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	.01	.02	.05		.04		.07				.13				
2	.01		.03							.12					
3															
4		.02													
5		.04	.04	.03		.53									
6	.19	.04				.02									
7	.03	.03				.31	.02	.25		.03					
8	.10												.09		
9															
10															
11		.04		.04		1.48									
12				.24	.16	.24			.27						
13				.74		.69			.19	.12					
14		.05		.18			.02		.10	.02					
15	.02				.11	.24			.65						
16	.01			.03									.28		
17									.01				.02		
18						.20	.05		.25				.02		
19			.06	.10			.01		.19				.05		
20							.02						.05		
21															
22						.03					.04				
23					.20	.35									
24	.02										.07				
25				.03	.29	.05					.02				
26				.03		.03	.11								
27							.53								
28										.20					
29				.08	.04										
30				1.15	.45								.03		
31	.06				.10		.50								
TOTAL	.45	.24	.18	2.65	1.39	4.17	1.33	.25	1.66	.49	.26	.52			
STA AV	.25	.26	.51	1.17	2.51	3.32	1.41	1.07	.90	.44	.28	.30			

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. THIESSEN WEIGHTED PRECIPITATION OBTAINED FROM RAIN GAGES W-13B and W-13C. STA AV IS BASED ON PERIOD 1958-67. 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.

1967 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					.06							
2												
3		.30										
4												
5						.01						
6					.21							
7					.33	.02						
8			.13		.03							
9					.02							
10												
11						.27						
12				.01		.11			T			
13		.04		.01		.27						
14				.01								
15												
16				.01								
17												
18									T			
19				T								
20												
21												
22												
23												
24												
25												
26												
27												
28										T		
29												
30		-----			.05							
31												
MEAN		.34	.13	.09	.65	.68			T	T		

NOTES: DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA							WATERSHED W-14		57F-14
						AREA - 35 ACRES									
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	P ¹	1.50	.40	.41	3.46	1.27	3.42	.34	1.29	2.79	.35	.34	.46	16.03	
	R ²	.63	.25	.03	.54	.36	.37	.00	.00	.01	.00	.00	.00	2.19	
STA AV2/P (58-67)	Q	.42	.31	.70	1.78	2.50	3.26	1.75	1.10	1.14	.55	.37	.35	14.23	
		.09	.05	.24	.12	.29	.38	.15	.02	.01	T	.01	T	1.36	
MEAN 60 YR	P ³	.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52	

NOTES: Watershed conditions: 100% rangeland. Condition classes: Good, 54%; fair, 46%. Degree of grazing: Full. Production of cover: 2,600 lb/ac. 1/ Monthly precipitation obtained from rain gage W-14A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period at Newell, S. Dak.

1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA							WATERSHED W-14		57F-14
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC			
1	.08	.02			.03	.05					.13				
2	.03							.21	.05	.10	.03				
3	.02						.17								
4		.13													
5	.82		.19	.02		.07									
6	.14		.05					.66		.04					
7		.09				.08							.12		
8															
9		.03				.10									
10															
11						1.09							.14		
12			.04	.40	.20	.07			.11				.01		
13			.06	1.10		.92		.37	.16						
14		.13	.05	.26		.30			.38						
15	.05				.30	.03			1.30	.02					
16	.01			.15					.01						
17	.01					.21		.05	.03				.08		
18						.04	.11		.40						
19				.28					.18	.02					
20				.06					.17				.10		
21															
22															
23						.35						.02			
24	.21											.16			
25	.03				.32	.04	.02			.01					
26						.01	.14								
27						.12							.01		
28						.07				.16					
29				.03											
30				1.16	.28										
31	.10		.02		.14		.07								
TOTAL	1.50	.40	.41	3.46	1.27	3.42	.34	1.29	2.79	.35	.34	.46	16.03		
STA AV	.42	.31	.70	1.78	2.50	3.26	1.75	1.13	1.14	.55	.37	.35	14.23		

NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-14A. STA AV IS BASED ON PERIOD 1958-67. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1956-59, USDA MISC. PUB. 945, P. 65.14-4.

1967 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					.15	.01						
2												
3						.01						
4												
5												
6			.03		.08							
7					.06							
8					.03							
9					.03							
10												
11						.10						
12					.01	.01						
13					.05	.13						
14					.02							
15					.01	.11			.01			
16												
17												
18												
19												
20												
21		.25										
22												
23												
24												
25												
26												
27												
28												
29	.63											
30				.46								
31												
MEAN	.63	.25	.03	.54	.36	.37			.01			
INCHES												

NOTES: SPILLWAY FLOW: MAY AND JUNE. DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15 AREA - 115 ACRES								57F-15
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	1.43	.28	.22	3.74	1.43	3.52	.36	1.09	2.71	.35	.30	.36	15.79
	O	.65	.13	.00	.32	.53	.34	.00	.00	.01	.00	.00	.00	1.98
	STA AV2/P	.46	.28	.73	1.78	2.61	3.31	1.84	1.07	1.13	.58	.39	.33	14.51
	(58-67) Q	.07	.02	.12	.13	.38	.32	.17	.01	.01	T	.01	.00	1.24
	MEAN P 3/													
60 YR		.41	.36	.73	1.68	2.68	3.03	2.12	1.35	1.30	.98	.51	.37	15.52
NOTES: Watershed conditions: 100% rangeland. Condition classes: Good, 41%; fair, 59%. Degree of grazing: Full. Production of cover: 2,800 lb/ac. 1/ Monthly precipitation obtained from rain gage W-15A. 2/ Precipitation and runoff records began Jan. 1958. 3/ Mean P based on 60-yr. (1908-1967) U. S. Weather Bureau record period-at Newell, S. Dak.														
1967 DAILY PRECIPITATION (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15								57F-15
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	.03				.02	.05						.13		
2	.01	.02						.22	.01	.12	.03			
3	.01						.12							
4		.08												
5	.82		.10	.02		.08								
6	.19		.02							.01				
7		.07				.14		.62						
8														.08
9		.03				.03								
10														
11						1.13								.14
12			.02	.39	.20	.07			.12					.01
13			.04	1.10		.91		.20	.19					
14		.08	.02	.26					.37					
15	.05				.42	.04			1.22	.02				
16	.01			.14					.01					
17	.01					.36		.05	.03					.07
18						.08	.09		.41					
19					.25				.18	.02				
20					.03				.17					.05
21														
22														
23						.28							.02	
24	.21												.12	
25	.04				.37	.05	.02			.01				
26						.01	.18							
27						.13								
28						.04				.17				.01
29				.05										
30				1.50	.28									
31	.05		.02		.14		.07							
TOTAL	1.43	.28	.22	3.74	1.43	3.52	.36	1.09	2.71	.35	.30	.36		.36
STA AV	.46	.28	.73	1.78	2.61	3.31	1.84	1.07	1.13	.58	.39	.33		.33
NOTES: ALL PRECIPITATION FROM JAN. 1 TO MAY 12 AND NOV. 1 TO DEC. 31 IS SNOW; ALL OTHER PRECIPITATION IS RAIN. PRECIPITATION OBTAINED FROM RAIN GAGE W-15A. STA AV IS BASED ON PERIOD 1958-67. 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.														

Cooperative Research Project of USDA and the South Dakota Agricultural Experiment Station

1967 DAILY DISCHARGE (inches)						NEWELL, SOUTH DAKOTA WATERSHED W-15 57F-15						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	DCT	NDV	DEC
1					.10							
2					.01							
3					.02	.01						
4					.05							
5					.26							
6					.08							
7												
8												
9												
10												
11						.06						
12						.03						
13				.06		.16						
14				.03								
15					.01	.08						
16												
17									.01			
18												
19												
20												
21		.13										
22												
23												
24												
25												
26												
27												
28												
29	.65											
30		-----		.23		-----			-----			
31		-----				-----			-----			
MEAN INCHES	.65	.13		.32	.53	.34			.01			

NOTES:

SPILLWAY FLOW: MAY AND JUNE. DISCHARGE RECORD OBTAINED BY A-35 RECORDER ON POND.

MONTHLY PRECIPITATION AND RUNOFF (inches)						MOOREFIELD, WEST VIRGINIA WATERSHED W-1 AREA—8.57 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.62	1.34	4.84	1.09	5.07	1.66	4.90	6.01	1.87	2.90	1.91	3.91	36.12
1967	T	T	1.43	.02	.02	.00	T	.48	.08	.04	.00	1.25	3.32
STA AVG-P (58-67)	1.86	2.43	3.09	2.89	2.78	2.72	3.03	2.82	3.00	1.73	1.70	1.89	29.94
MEAN P ^{3/}	.24	.52	1.23	.37	.21	.05	.01	.10	.02	.05	.01	.14	2.95
69 YR	2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43

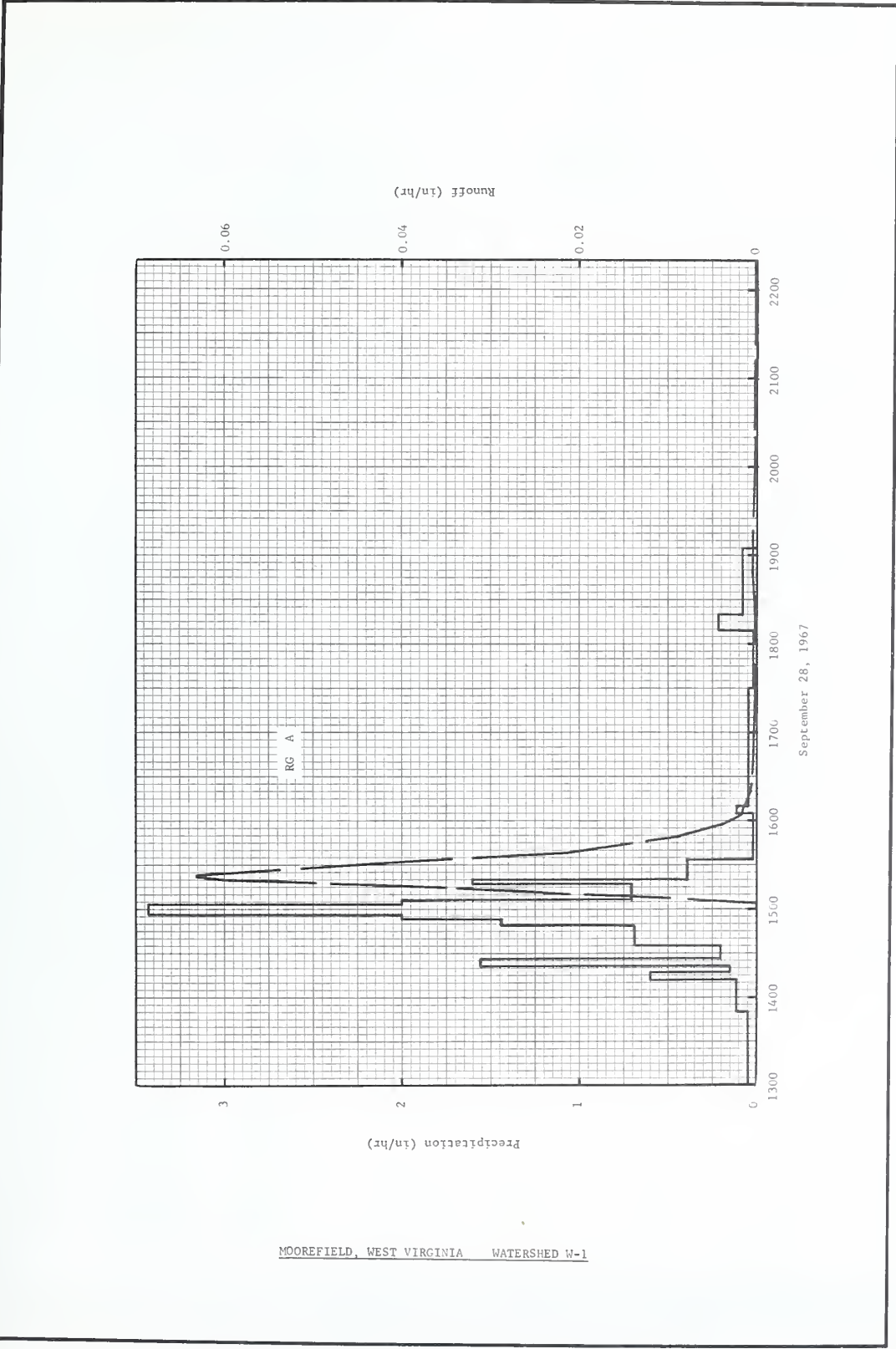
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-25	.22	8-25	.13	3-7	.16	3-6	.37	3-6	.49	3-6	.58	3-6	.62	12-7	.82

MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 19 67	8-3 1958	.44	8-3 1958	.17	3-19 1963	.25	3-19 1963	.68	3-19 1963	.89	3-20 1963	1.08	3-12 1962	1.35	3-11 1962	1.87

NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage A. 2/ Precipitation records began April 1958; runoff records began May 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.

1967 SELECTED RUNOFF EVENT				MOOREFIELD, WEST VIRGINIA 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 September 28, 1967											
	RG A			RG	A						
8-28	.00	.0328	9-28	1300	.00	.00	9-28	1500	.0000	.0000	
8-29	.00	.0134		1350	.05	.04		1504	.0001	.0000	
8-30	.00	.0083		1412	.11	.08		1507	.0077	.0002	
8-31	.00	.0083		1417	.60	.13		1510	.0194	.0009	
9 -1	.00	.0083		1421	.15	.14		1514	.0339	.0027	
9 -2	.00	.0083		1426	1.56	.27		1520	.0601	.0074	
9 -3	.00	.0083		1435	.20	.30		1522	.0631	.0094	
9 -4	.00	.0083		1448	.69	.45		1523	.0631	.0105	
9 -5	.00	.0083		1453	1.44	.57		1530	.0450	.0168	
9 -6	.00	.0051		1456	2.00	.67		1539	.0211	.0217	
9 -7	.00	.0047		1503	3.43	1.07		1550	.0088	.0245	
9-20	.04	.0000		1506	2.00	1.17		1558	.0039	.0253	
9-21	.02	.0000		1517	.71	1.30		1604	.0017	.0256	
9-27	.05	.0000		1520	1.60	1.38		1610	.0013	.0257	
9-28	4/.09	.0000		1534	.39	1.47		1620	.0008	.0259	
				1605	.02	1.48		1640	.0003	.0261	
				1610	.12	1.49		1730	.0001	.0263	
				1730	.05	1.56		1820	.0001	.0264	
				1809	.02	1.57		1850	.0003	.0265	
				1820	.22	1.61		1906	.0003	.0266	
				1905	.08	1.67		2020	.0001	.0269	
								2220	.0000	.0270	
Watershed conditions											
Permanent pasture, native grasses and weeds dormant due to extremely dry weather conditions, poor cover.											

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.6414. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USDA MISC. PUB. 1070, P. 66.1-3. 4/ .05 IN. FROM 0300 TO 0500. .04 IN. FROM 0735 TO 0800.



MOOREFIELD, WEST VIRGINIA WATERSHED W-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						MOOREFIELD, WEST VIRGINIA WATERSHED W-2 AREA—9.73 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.62	1.34	4.84	1.09	5.07	1.66	4.90	6.01	1.87	2.90	1.91	3.91	36.12
P 1/													
Q	.03	.05	1.71	T	.10	.00	.02	.97	.09	.19	T	1.25	4.41
STA AVG 2/P (58-67)	1.86	2.43	3.09	2.89	2.78	2.72	3.03	2.82	3.00	1.73	1.70	1.89	29.94
O	.32	.58	1.26	.42	.26	.06	.03	.16	.05	.09	.03	.18	3.44
MEAN P 2/ 69 YR	2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43

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
1967	8-25	.42	8-25	.28	8-25	.34	3-6	.53	3-6	.74	3-6	.83	3-6	.86	3-6	1.05

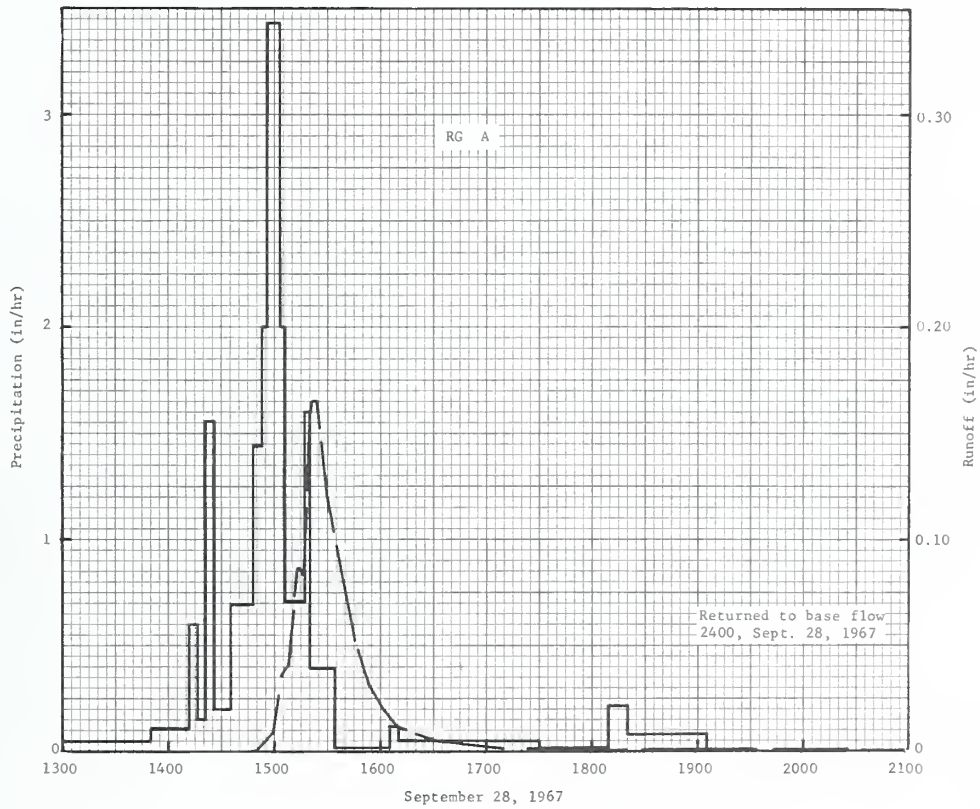
MAXIMUMS FOR PERIOD OF RECORD																
1958	8-3	.76	8-3	.34	8-3	.38	3-19	.82	3-20	1.05	3-20	1.21	3-12	1.44	3-20	2.02
1967	1958		1958		1958		1963		1963		1963		1962		1963	

NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage A. 2/ Precipitation and runoff records began April 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.

1967 SELECTED RUNOFF EVENT						MOOREFIELD, WEST VIRGINIA 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 September 28, 1967								
			RC A								
8-28	.00	.0262	9-28	1300	.00	.00	9-28	1447	.0000	.0000	
8-29	.00	.0036		1350	.05	.04		1450	.0011	T	
8-30	.00	.0024		1412	.11	.08		1456	.0059	.0004	
8-31	.00	.0024		1417	.60	.13		1459	.0088	.0007	
9-1	.00	.0019		1421	.15	.14		1501	.0185	.0012	
9-20	.04	.0000		1426	1.56	.27		1504	.0356	.0026	
9-21	.02	.0000		1435	.20	.30		1506	.0397	.0038	
9-27	.05	.0000		1448	.69	.45		1508	.0417	.0052	
9-28	4/ .09	.0000		1453	1.44	.57		1510	.0556	.0068	
				1456	2.00	.67		1513	.0863	.0103	
			1503	3.43	1.07	1515	.0863	.0132			
			1506	2.00	1.17	1516	.0831	.0146			
			1517	.71	1.30	1518	.1061	.0178			
			1520	1.60	1.38	1520	.1563	.0221			
			1534	.39	1.47	1522	.1653	.0275			
			1605	.02	1.48	1524	.1653	.0330			
			1610	.12	1.49	1530	.1204	.0473			
			1730	.05	1.56	1539	.0800	.0623			
			1809	.02	1.57	1546	.0530	.0701			
			1820	.22	1.61	1554	.0317	.0757			
			1905	.08	1.67	1603	.0185	.0795			
						1610	.0120	.0813			
						1620	.0077	.0829			
						1630	.0051	.0840			
						1648	.0028	.0852			
						1710	.0011	.0859			
						1740	.0007	.0863			
						1750	.0003	.0864			
						1808	.0003	.0865			
						1820	.0007	.0866			
						1828	.0011	.0867			
						1834	.0011	.0868			
						1900	.0007	.0872			
						2100	.0001	.0881			
						2400	5/ .0001	.0884			

Watershed conditions
Permanent pasture, native grasses and weeds dormant due to extremely dry weather conditions, poor cover.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 9.8111. FOR REVISED MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1962, USOA MISC. PUB. 1070, P. 66.2-3. 4/ .05 IN FROM 0300 TO 0500; .04 FROM 0735 TO 0800. 5/ RETURNED TO BASE FLOW.



MOOREFIELD, WEST VIRGINIA WATERSHED W-2

MONTHLY PRECIPITATION AND RUNOFF (inches)							MOOREFIELD, WEST VIRGINIA WATERSHED W-4 AREA—6.32 ACRES						
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.62	1.32	4.87	1.17	4.97	1.62	4.83	5.99	1.86	2.87	2.06	4.01	36.19
1967	.02	.01	.90	T	.03	T	.05	.67	.07	.06	T	.69	2.50
STA. AVE. P. (58-67)	2/1.89	2.40	3.12	2.90	2.91	2.76	2.92	2.76	2.98	1.68	1.73	1.87	29.92
MEAN P. 69 YR	3/2.28	.47	.84	.20	.14	.04	.05	.15	.05	.06	.02	.11	2.41
69 YR	2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43

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
1967	9-28	.20	8-25	.13	8-25	.16	3-7	.21	3-6	.29	8-25	.38	8-25	.53	8-24	.64

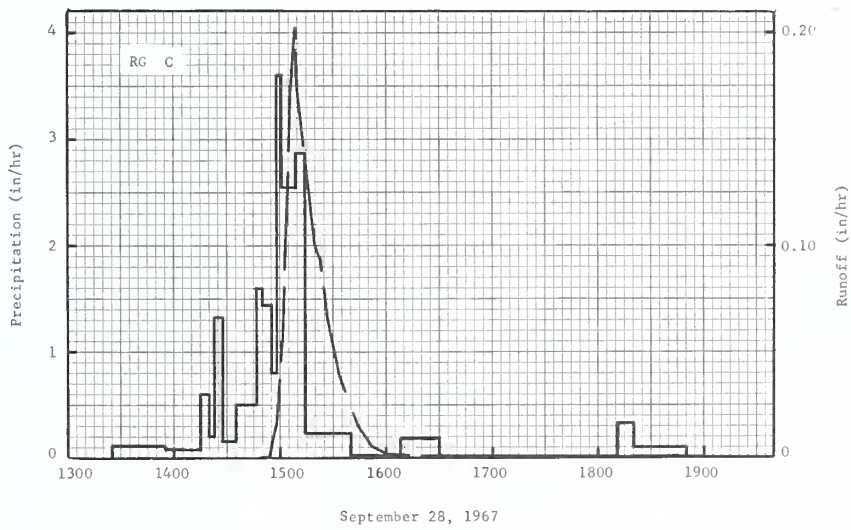
MAXIMUMS FOR PERIOD OF RECORD																
1958 TO 1957	8-3 1958	.69	8-3 1958	.27	2-19 1961	.31	3-19 1963	.64	3-19 1963	.76	3-20 1963	.85	2-18 1961	.97	2-17 1961	1.54

NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation records began June 1958; runoff records began May 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.

1967 SELECTED RUNOFF EVENT							MOOREFIELD, WEST VIRGINIA WATERSHED W-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 September 28, 1967													
	RG C			RG	C								
8-28	.00	.0482	9-28	1325	.00	.00	9-28	1448	.0000	.0000			
8-29	.00	.0140		1355	.12	.06		1452	.0002	T			
8-30	.00	.0038		1415	.09	.09		1454	.0005	T			
8-31	.00	.0038		1420	.60	.14		1456	.0105	.0002			
9-1	.00	.0011		1423	.20	.15		1458	.0168	.0006			
9-20	.04	.0000		1428	1.32	.26		1501	.0549	.0024			
9-21	.02	.0000		1435	.17	.28		1503	.0974	.0050			
9-27	.04	.0000		1447	.50	.38		1506	.1742	.0118			
9-28	4/.08	.0000		1450	1.60	.46		1508	.2024	.0180			
				1455	1.44	.58		1510	.1742	.0243			
				1458	.80	.62		1517	.1232	.0417			
				1501	3.60	.80		1520	.1014	.0473			
				1509	2.55	1.14		1523	.0935	.0522			
				1514	2.88	1.38		1527	.0677	.0575			
				1540	.23	1.48		1534	.0380	.0637			
				1608	.02	1.49		1544	.0151	.0681			
				1630	.19	1.56		1552	.0064	.0695			
				1811	.01	1.58		1600	.0023	.0701			
				1820	.33	1.63		1605	.0017	.0703			
				1850	.10	1.68		1610	.0011	.0704			
								1620	.0011	.0706			
								1630	.0005	.0707			
								1650	.0002	.0708			
								1740	.0000	.0709			
								1826	.0000	.0709			
								1830	.0005	.0709			
								1834	.0005	.0709			
								1846	.0002	.0710			
								1940	.0000	.0711			

Watershed conditions
Permanent pasture, native grasses and weeds dormant due to extremely dry weather conditions, poor cover.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.3727. 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. 4/ .06 IN. FROM 0330 TO 0510; .02 IN. FROM 0745 TO 0815.



MOOREFIELD, WEST VIRGINIA WATERSHED W-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						MOOREFIELD, WEST VIRGINIA WATERSHED W-5 AREA—9.55 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P 1/	.62	1.32	4.87	1.17	4.97	1.62	4.83	5.99	1.86	2.87	2.06	4.01	36.19
	Q	T	.01	1.62	T	.05	.00	.01	1.12	.05	.09	T	1.01	3.96
	STA AVG 2/P (58-67)	1.89	2.40	3.12	2.90	2.91	2.76	2.92	2.76	2.98	1.68	1.73	1.87	29.92
	MEAN P 3/	.37	.70	1.30	.36	.23	.05	.02	.17	.02	.09	.03	.16	3.50
	69 YR	2.19	2.04	2.78	2.74	3.36	3.75	3.55	3.34	2.53	2.37	1.79	1.99	32.43

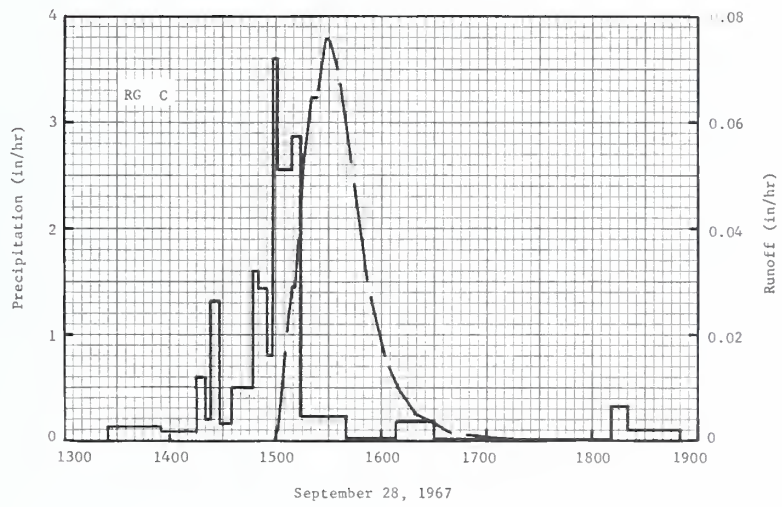
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	8-25	.30	8-25	.21	8-25	.27	3-6	.39	3-6	.56	8-25	.69	8-25	.95	8-24	1.10

MAXIMUMS FOR PERIOD OF RECORD																
1958 TO	8-3	.65	8-3	.27	8-3	.31	3-19	.70	3-19	.95	3-20	1.14	2-18	1.39	2-17	2.21
1967	1958		1958		1958		1963		1963		1963		1961		1961	

NOTES: Watershed conditions: 100% permanent pasture with controlled grazing. 1/ Precipitation records from rain gage C. 2/ Precipitation records began June 1958; runoff records began May 1958. 3/ Mean P based on 69-yr (1896-1964) U. S. Weather Bureau record period at Moorefield and Moorefield McNeill, West Virginia.

1967 SELECTED RUNOFF EVENT				MOOREFIELD, WEST VIRGINIA WATERSHED W-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 September 28, 1967											
	RG C			RG C							
8-28	.00	.0862	9-28	1325	.00	.00	9-28	1459	.0000	.0000	
8-29	.00	.0170		1355	.12	.06		1501	.0022	T	
8-30	.00	.0052		1415	.09	.09		1504	.0111	.0004	
8-31	.00	.0025		1420	.60	.14		1508	.0251	.0016	
9 -1	.00	.0014		1423	.20	.15		1509	.0287	.0020	
9-20	.04	.0000		1428	1.32	.26		1511	.0287	.0030	
9-21	.02	.0000		1435	.17	.28		1516	.0540	.0064	
9-27	.04	.0000		1447	.50	.38		1520	.0645	.0104	
9-28	4/ .08	.0000		1450	1.60	.46		1523	.0645	.0136	
				1455	1.44	.58		1528	.0757	.0194	
				1458	.80	.62		1530	.0757	.0220	
				1501	3.60	.80		1535	.0700	.0280	
				1509	2.55	1.14		1552	.0304	.0423	
				1514	2.88	1.38		1602	.0161	.0461	
				1540	.23	1.48		1610	.0100	.0479	
				1608	.02	1.49		1620	.0052	.0491	
				1630	.19	1.56		1630	.0028	.0498	
				1811	.01	1.58		1640	.0016	.0502	
				1820	.33	1.63		1702	.0003	.0505	
				1850	.10	1.68		1726	.0000	.0506	
<p>Watershed conditions</p> <p>Permanent pasture, native grasses and weeds dormant due to extremely dry weather conditions, poor cover.</p>											

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. 66.5-3. 4/ .06 IN. FROM 0330 TO 0510; .02 IN. FROM 0745 TO 0815.



MOOREFIELD, WEST VIRGINIA WATERSHED W-5

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						NORTH DANVILLE, VERMONT WATERSHED W-1							67.01	
						AREA—10,610 ACRES (16.58 SQ.MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965	P	2.26	3.26	1.38	2.60	.76	4.97	4.33	7.60	4.77	4.72	5.69	2.92	45.26
	Q	1.05	.81	1.51	3.66	.95	1.08	.39	.58	1.11	2.06	2.41	1.30	16.33
1966	P	2.85	3.00	5.26	1.96	4.18	3.84	2.83	5.20	3.76	2.71	2.92	3.93	42.44
	Q	.84	.71	3.23	4.93	3.41	1.06	.24	.29	.36	.47	.75	.96	17.25
1967	P	2.25	2.89	1.06	3.72	5.50	3.16	4.77	3.42	3.46	5.71	3.97	4.52	44.43
	Q	.48	.41	.53	5.25	4.14	1.29	.78	.49	.39	1.73	1.24	1.62	18.35
STA AV ^{2/} (58-67)	Q	2.89	3.36	3.26	3.59	3.66	3.89	3.92	4.57	3.11	4.45	4.37	3.38	44.45
MEAN P ^{3/} 73 YR		2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99

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
1965	11-17	.03	11-17	.03	11-17	.06	11-17	.18	11-17	.30	11-17	.414	11-16	.56	4-15	1.36
1966	3-25	.03	3-25	.03	3-25	.06	3-25	.17	3-25	.32	3-24	.52	3-24	.75	4-16	2.18
1967	10-18	.04	10-18	.04	5-3	.07	10-19	.17	5-3	.288	4-2	.49	4-2	.79	4-16	1.58

MAXIMUMS FOR PERIOD OF RECORD																
1959 TO 1967	10-24 1959	.10	10-24 1959	.10	10-24 1959	.20	10-24 1959	.50	10-24 1959	.77	10-24 1959	1.14	10-24 1959	1.45	4-12 1960	3.86

Notes: Watershed conditions: Predominantly hardwood forest, 64%; cultivated - 16% in long hay rotations and about 1% in row crops, total 17%; pasture, largely bluegrass, 15%; idle land in grass and woody plants, 3%; and homesites and roads, 1%. ^{1/} Precipitation records from the R-1 gage. ^{2/} Precipitation records began Jan. 1, 1959 and runoff records began Oct. 1959, part year values not included in Sta Av. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1965 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	18	-5	18	-20	31	14	36	10	62	30	58	35	71	40	73	46	60	48	57	41	40	21	31	8
2	10	-8	22	8	42	22	36	12	60	28	72	40	72	40	66	55	66	42	51	32	26	16	32	26
3	24	10	16	-9	50	30	37	20	64	31	58	35	66	54	66	54	68	38	50	28	45	19	36	25
4	26	14	14	-4	51	26	44	23	62	45	71	37	73	49	70	44	70	42	32	28	54	24	38	33
5	31	5	9	-14	48	30	50	28	50	28	77	46	75	46	77	40	68	38	34	25	34	20	34	27
6	30	16	28	9	41	36	54	28	56	32	82	40	64	45	83	49	72	42	41	24	45	28	35	23
7	20	-2	38	26	44	36	44	26	65	33	86	54	74	39	85	58	74	44	54	27	44	32	23	4
8	36	14	44	34	46	24	42	32	68	40	81	57	76	56	78	60	64	44	53	41	41	28	24	6
9	46	18	34	6	43	18	45	36	78	46	84	53	80	51	80	66	67	39	58	40	41	23	29	6
10	20	6	26	6	38	26	51	32	77	40	72	48	75	50	80	56	78	57	61	42	35	16	34	14
11	22	-1	39	16	26	11	54	24	75	51	66	43	76	46	71	48	68	38	51	40	40	25	29	10
12	30	13	32	14	26	6	40	34	73	46	76	40	72	46	76	44	62	34	54	38	40	34	22	20
13	24	10	32	3	32	12	44	32	73	49	53	36	79	44	78	55	56	34	48	31	44	36	30	21
14	14	-26	10	-11	32	12	54	28	58	30	51	40	78	62	83	52	58	44	55	28	38	24	32	30
15	-2	-30	30	-10	33	8	60	28	74	24	65	31	74	50	88	57	59	50	58	32	30	20	32	30
16	2	-12	36	8	36	4	50	37	74	43	72	36	78	44	84	62	58	38	52	36	36	24	34	30
17	6	-18	24	-10	36	13	40	31	76	53	74	38	70	57	85	58	58	32	52	28	41	24	32	23
18	12	-14	30	10	32	26	46	28	71	50	72	49	66	57	82	66	60	51	55	26	25	20	30	20
19	15	-6	10	-4	37	18	52	22	58	42	78	44	68	49	70	62	52	50	70	45	29	18	27	4
20	19	9	6	-12	26	8	60	27	64	45	84	47	60	44	69	50	76	52	71	46	28	14	10	-2
21	20	4	14	-12	20	7	60	28	70	29	82	56	70	44	69	45	82	62	66	46	32	26	22	-3
22	33	4	24	-1	26	4	50	34	73	42	78	55	71	41	71	49	82	60	48	44	38	30	26	10
23	8	-4	10	-6	31	14	40	28	60	32	80	49	73	55	78	56	82	65	53	41	33	29	31	10
24	24	7	24	-12	28	2	40	22	72	26	67	45	79	53	69	42	67	54	45	34	32	16	33	24
25	7	6	42	14	36	10	54	14	78	31	62	42	72	49	66	52	58	40	42	31	30	14	34	20
26	30	8	40	7	31	26	36	28	80	58	72	36	72	46	58	53	64	34	51	35	34	26	20	5
27	32	10	18	0	30	10	40	34	72	49	77	40	72	46	76	56	44	28	37	28	32	26	12	-6
28	25	-6	26	-3	30	0	58	30	70	41	84	48	68	52	74	45	51	25	32	27	32	24	20	2
29	9	-8	---	---	22	1	62	24	60	36	78	58	70	49	53	40	49	34	31	23	26	18	28	10
30	17	-8	---	---	28	16	70	28	56	32	66	49	70	42	54	40	54	26	50	22	25	12	34	16
31	22	-10	---	---	22	8	---	---	60	37	---	---	72	44	55	31	---	---	51	34	---	---	44	33
AV.	21	0	25	1	34	15	48	27	67	39	73	44	72	50	73	51	64	43	50	34	36	23	29	16
MEAN	10.5	13.1	24.7	37.6	53.1	58.4	61.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	62.2	29.3	30	22.3	22.3
STA AV	24	4	27	4	34	16	47	28	63	40	74	47	75	52	73	49	66	42	55	35	40	26	26	9

NOTES: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYDRO-THERMOGRAPH CHARTS, STA AV (STATION AVERAGE) BASED ON 1960-1965 RECORDS.

1966 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	48	28	21	8	46	32	40	26	57	37	59	32	76	49	78	46	75	46	50	41	54	34	35	30						
2	28	14	35	8	32	30	36	30	40	28	64	33	82	62	74	56	74	51	52	41	60	49	30	14						
3	33	22	32	18	40	25	37	28	53	22	75	36	88	67	59	48	63	51	58	34	62	38	16	7						
4	27	8	35	18	42	24	38	24	44	31	74	58	74	52	75	45	53	48	59	37	38	32	20	5						
5	32	8	26	14	38	32	40	26	58	28	74	55	78	47	76	52	68	50	53	39	38	27	26	2						
6	32	14	20	-2	36	28	43	24	51	33	82	60	69	54	76	48	68	46	48	36	36	31	28	20						
7	30	10	22	-9	31	17	44	24	38	22	73	57	76	60	82	52	62	48	61	38	42	33	32	20						
8	17	0	30	-6	24	6	36	32	50	24	70	48	72	54	84	57	70	44	69	42	45	34	34	31						
9	12	-5	28	4	35	0	38	32	38	30	65	44	76	49	82	54	72	42	70	42	50	42	40	33						
10	24	0	46	16	41	10	42	30	36	24	52	42	80	60	78	60	72	48	60	36	57	48	48	36						
11	28	-4	49	38	30	6	48	32	45	28	61	41	76	61	79	56	63	43	56	32	57	40	60	26						
12	2	-14	40	23	26	2	32	30	50	26	70	35	70	60	71	57	62	36	42	34	45	34	30	14						
13	9	-17	34	22	30	23	44	31	45	32	75	41	82	65	68	52	64	38	50	28	38	20	26	12						
14	18	6	35	16	42	10	48	32	68	28	81	58	70	53	70	44	62	47	56	33	36	18	30	24						
15	16	-8	28	8	33	4	53	26	71	35	72	50	66	48	70	50	60	42	60	43	31	18	25	12						
16	6	-9	27	4	34	1	52	27	58	46	58	50	72	44	74	62	56	37	52	44	28	16	26	12						
17	18	-4	28	2	42	2	52	28	60	43	72	50	77	47	70	59	64	37	44	36	37	28	34	26						
18	22	16	16	0	55	30	50	26	57	43	72	44	77	62	81	56	67	42	42	35	46	36	37	18						
19	27	16	10	-10	46	34	57	25	56	50	73	44	72	55	76	55	61	43	44	37	36	18	18	7						
20	31	22	2	-18	41	34	43	38	68	49	80	50	64	45	70	49	58	36	44	34	36	14	19	6						
21	33	15	8	-8	42	26	56	38	66	44	68	47	65	43	72	46	54	30	54	34	38	14	22	14						
22	32	12	18	6	48	22	54	32	68	40	76	40	72	46	62	55	56	46	58	30	40	15	21	17						
23	26	15	30	8	43	36	56	28	77	39	82	49	78	54	66	57	52	42	58	38	40	18	18	8						
24	28	20	38	2	46	38	44	35	81	43	80	68	80	62	62	50	47	36	58	35	36	25	20	5						
25	20	-4	26	20	41	23	54	36	73	47	68	54	80	62	66	46	51	36	54	29	45	33	18	14						
26	20	-14	32	22	34	17	36	26	78	40	78	54	70	52	64	50	52	32	49	26	46	38	18	10						
27	22	-5	42	16	31	12	40	20	78	44	83	58	70	46	64	46	54	31	55	27	48	31	18	4						
28	10	2	40	18	19	10	36	26	66	56	80	54	59	54	67	44	56	40	60	30	48	38	19	6						
29	17	1	---	---	29	6	52	28	67	40	82	54	68	56	70	41	54	34	56	28	48	34	25	12						
30	31	5	---	---	32	12	58	26	60	35	72	53	70	50	77	56	56	46	30	21	36	34	22	12						
31	16	8	---	---	34	28	---	---	56	32	---	---	76	45	72	52	---	---	40	18	---	---	20	10						
AV.	23	5	29	9	37	19	45	29	59	36	72	49	74	54	72	52	61	42	53	44	43	30	27	15						
MEAN	14.2	18.5	27.8	37.1	47.3	60.5	63.7	61.9	51.3	43.6	36.5	21.0	24	4	25	5	34	16	47	28	61	39	74	47						
STA AV	24	4	25	5	34	16	47	28	61	39	74	47	75	52	73	50	65	42	55	35	41	24	26	10						

Notes: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYDRO-THERMOGRAPH CHARTS, STA AV (STATION AVERAGE) BASED ON 1960-1966 RECORDS.

1967 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	12	30	12	13	5	74	31	74	32	78	30	85	53	76	49	58	27	56	42	64	32	17	0						
2	26	18	28	12	20	-4	72	30	63	36	84	50	86	58	76	40	52	34	64	36	55	44	22	-4						
3	25	16	18	-4	42	20	60	21	41	30	91	44	77	52	74	60	60	41	83	34	56	33	32	22						
4	31	25	26	-4	32	-8	37	12	55	25	92	49	74	44	78	62	62	36	66	44	49	32	22	18						
5	30	20	34	8	24	-10	58	30	52	31	89	52	68	47	76	51	68	48	63	48	38	23	32	18						
6	20	2	8	-12	30	21	38	30	52	25	88	50	70	46	72	48	65	35	48	29	32	18	32	5						
7	24	2	6	-14	29	13	34	28	52	20	84	51	80	38	78	42	68	27	45	20	33	16	26	18						
8	35	24	14	-15	30	0	49	26	42	30	62	47	80	51	76	43	83	42	45	18	30	16	32	26						
9	29	8	25	0	40	-6	58	19	49	32	87	46	74	62	72	60	77	54	58	44	26	9	32	16						
10	25	10	30	8	58	18	46	22	40	35	81	58	80	57	76	52	54	35	58	49	32	12	20	8						
11	24	10	33	0	60	30	28	12	50	30	79	50	82	50	62	46	64	30	52	41	39	8	28	10						
12	21	7	0	-14	30	8	32	10	46	34	76	56	82	54	72	44	74	28	48	34	46	36	40	28						
13	34	20	12	-22	40	6	65	12	53	29	73	55	78	51	76	50	76	34	42	22	40	19	42	32						
14	34	20	28	-12	40	26	67	27	61	27	62	53	82	49	74	52	78	28	43	22	20	12	32	23						
15	36	17	38	21	36	22	42	33	43	39	80	48	74	55	80	47	80	37	59	40	22	9	23	11						
16	17	0	38	4	22	6	33	32	45	30	88	62	74	54	84	52	84	48	57	43	16	-4	18	10						
17	32	4	10	-4	11	-6	38	32	62	28	83	63	78	52	86	54	84	44	66	51	22	-2	26	14						
18	22	-11	13	-10	5	-10	36	32	54	32	70	51	78	52	84	54	74	50	64	53	28	20	30	16						
19	10	-18	16	-9	30	-20	40	32	69	42	71	41	79	51	74	58	68	32	62	28	29	20	38	30						
20	24	0	21	-7	33	8	47	30	62	43	64	40	84	54	78	60	71	27	41	23	21	10	37	22						
21	38	10	26	12	36	1	57	28	55	32	74	53	84	58	75	54	68	54	49	22	24	2	38	17						
22	38	28	27	7	35	25	45	36	57	29	68	58	82	57	77	48	62	40	41	32	28	2	42	24						
23	40	28	28	20	43	21	44	35	63	29	83	62	78	54	69	40	48	38	53	22	34	26	24	12						
24	47	28	20	6	36	20	42	32	66	28	84	53	86	60	73	34	50	25	62	23	32	12	12	4						
25	34	28	6	0	39	24	42	28	44	32	83	56	82	60	75	39	44	25	56	38	28	10	24	2						
26	34	26	17	2	55	26	55	22	44	32	73	48	76	53	77	46	66	24	55	36	38	20	30	-2						
27	30	23	30	-5	48	26	57	26	56	37	82	42	80	51	72	61	76	41	48	33	38	20	14	-12						
28	28	18	34	13	42	32	58	30	62	42	82	43	68	59	78	52	70	58	46	28	22	10	22	9						
29	18	9	---	---	44	32	57	34	62	35	78	44	82	58	78	48	71	64	34	23	16	6	20	12						
30	14	7	---	---	42	24	68	30	59	32	62	40	82	54	77	51	76	46	46	21	24									

1965 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	0.00	0.11	0.00	0.00	0.00	0.00	0.00	0.00	1.56	0.97	0.38	0.05
2	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.06	0.03	0.01
3	0.00	0.02	0.00	0.00	0.00	0.00	0.66	0.00	0.00	0.41	0.00	0.22
4	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.53
5	0.00	0.17	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
6	0.10	0.03	0.00	0.00	0.00	0.00	0.00	0.14	0.00	0.30	0.00	0.10
7	0.00	0.45	0.00	0.21	0.00	1.96	0.00	0.68	0.00	0.16	0.00	0.03
8	0.04	0.26	0.00	0.14	0.00	0.00	0.30	0.70	0.02	0.52	0.57	0.00
9	0.21	0.00	0.00	0.00	0.10	0.10	0.00	0.30	0.00	0.02	0.15	0.00
10	0.00	0.62	0.08	0.00	0.15	0.30	0.45	1.13	0.54	0.00	0.00	0.03
11	0.00	0.00	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.07	0.00	0.00
12	0.00	0.20	0.00	0.47	0.00	0.38	0.00	0.81	0.00	0.35	0.00	0.14
13	0.25	0.00	0.00	0.33	0.00	1.07	0.00	0.59	0.25	0.02	0.20	0.24
14	0.08	0.00	0.00	0.00	0.00	0.10	0.21	0.00	0.02	0.00	0.10	0.17
15	0.00	0.00	0.00	0.20	0.00	0.02	0.00	0.00	0.20	0.54	0.00	0.09
16	0.00	0.00	0.00	0.38	0.00	0.05	0.00	0.00	0.04	0.00	0.67	0.11
17	0.10	0.00	0.00	0.07	0.12	0.00	0.08	0.00	0.00	0.00	1.63	0.06
18	0.00	0.34	0.05	0.09	0.00	0.29	1.42	0.80	0.15	0.00	0.15	0.07
19	0.00	0.05	0.14	0.00	0.00	0.00	0.05	0.30	0.19	0.00	0.00	0.15
20	0.25	0.06	0.04	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.03	0.00
21	0.00	0.00	0.02	0.25	0.00	0.05	0.00	0.00	0.00	0.00	0.30	0.10
22	0.05	0.03	0.24	0.10	0.10	0.01	0.00	0.00	0.00	0.15	0.02	0.04
23	0.00	0.04	0.05	0.08	0.00	0.51	0.00	0.18	0.10	0.62	0.00	0.00
24	0.49	0.00	0.00	0.00	0.00	0.12	0.05	0.00	1.09	0.07	0.00	0.37
25	0.06	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.56	0.00	0.10	0.29
26	0.35	0.05	0.28	0.23	0.00	0.00	0.00	1.08	0.00	0.02	0.27	0.09
27	0.15	0.00	0.17	0.05	0.05	0.00	0.06	0.03	0.00	0.05	0.78	0.00
28	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.61	0.00	0.18	0.12	0.00
29	0.04	-----	0.16	0.00	0.00	0.00	0.05	0.23	0.00	0.00	0.13	0.03
30	0.00	-----	0.05	0.00	0.00	0.01	0.00	0.02	0.00	0.02	0.04	0.00
31	0.00	-----	0.00	0.00	0.15	0.00	0.00	0.00	-----	0.19	-----	0.00
TOTAL	2.26	3.26	1.38	2.60	7.76	4.97	4.33	7.60	4.77	4.72	5.69	2.92
STA AV	2.98	3.48	3.29	3.80	3.32	4.00	3.95	4.64	2.97	4.52	4.63	3.14

Notes: PRECIPITATION VALUES ARE FOR R-1. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW.

1966 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	0.00	0.03	1.33	0.05	0.07	0.00	0.00	0.00	0.00	0.05	0.00	0.20
2	0.02	0.00	0.47	0.10	0.02	0.00	0.00	0.61	0.00	0.00	0.00	0.15
3	0.30	0.00	0.09	0.05	0.17	0.00	0.00	0.03	0.00	0.00	1.08	0.03
4	0.00	0.03	0.15	0.02	0.27	0.16	0.12	0.00	0.81	0.20	0.00	0.00
5	0.00	0.07	0.86	0.09	0.07	0.24	0.00	0.00	0.00	0.23	0.05	0.02
6	0.10	0.02	0.37	0.01	0.43	0.05	0.08	0.00	0.07	0.05	0.07	0.05
7	0.02	0.00	0.10	0.12	0.02	0.03	0.09	0.04	0.00	0.00	0.04	0.14
8	0.57	0.00	0.00	0.53	0.00	0.37	0.00	0.23	0.00	0.00	0.10	0.41
9	0.00	0.00	0.00	0.17	0.76	0.20	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.04	0.03	0.06	0.97	0.48	0.00	0.00	0.32	0.11	0.03
11	0.12	0.18	0.00	0.25	0.01	0.00	0.00	0.50	0.00	0.05	0.33	0.52
12	0.00	0.00	0.25	0.00	0.22	0.00	0.35	0.29	0.00	0.23	0.00	0.00
13	0.00	0.82	0.30	0.00	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.16	0.00	0.00	0.00	0.25	0.00	0.00	0.02	0.00	0.00	0.00
15	0.03	0.10	0.00	0.00	0.00	0.29	0.00	0.00	0.30	0.00	0.04	0.00
16	0.03	0.16	0.00	0.00	0.02	0.37	0.00	1.05	0.00	0.13	0.21	0.02
17	0.10	0.07	0.00	0.00	0.15	0.00	0.00	0.40	0.00	0.02	0.05	0.00
18	0.08	0.00	0.03	0.00	0.47	0.00	0.07	0.00	0.00	0.00	0.10	0.05
19	0.17	0.00	0.00	0.00	0.89	0.00	0.50	0.00	0.00	0.23	0.00	0.00
20	0.03	0.08	0.10	0.00	0.15	0.06	0.00	0.00	0.00	1.04	0.00	0.00
21	0.00	0.10	0.00	0.20	0.00	0.02	0.09	0.00	0.34	0.05	0.00	0.00
22	0.00	0.02	0.00	0.00	0.00	0.00	0.03	0.52	1.26	0.00	0.00	0.00
23	0.44	0.05	0.00	0.00	0.00	0.00	0.00	0.57	0.58	0.00	0.00	0.00
24	0.17	0.00	0.35	0.19	0.00	0.00	0.00	0.03	0.05	0.00	0.00	0.46
25	0.00	1.00	0.60	0.00	0.00	0.21	0.00	0.05	0.11	0.00	0.20	0.65
26	0.00	0.11	0.03	0.00	0.00	0.00	0.58	0.08	0.00	0.00	0.00	0.09
27	0.17	0.00	0.10	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00
28	0.00	0.00	0.09	0.00	0.00	0.00	0.13	0.00	0.00	0.00	0.00	0.00
29	0.00	-----	0.00	0.05	0.00	0.62	0.31	0.00	0.15	0.11	0.12	0.90
30	0.40	-----	0.00	0.10	0.00	0.00	0.00	0.64	0.07	0.00	0.42	0.21
31	0.10	-----	0.00	0.00	0.00	-----	0.00	0.06	-----	0.00	-----	0.00
TOTAL	2.85	3.00	5.26	1.96	4.18	3.84	2.83	5.20	3.76	2.71	2.92	3.93
STA AV	2.97	3.42	3.53	3.57	3.43	3.98	3.81	4.71	3.07	4.30	4.42	3.24

Notes: PRECIPITATION VALUES ARE FOR R-1. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW.

1967 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.61						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.09	0.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00
2	0.05	0.30	0.00	0.10	0.15	0.00	0.00	0.00	0.22	0.00	0.24	0.00
3	0.00	0.00	0.13	0.14	0.85	0.00	0.55	0.10	0.06	0.00	0.15	0.42
4	0.15	0.07	0.02	0.00	0.15	0.00	0.00	0.62	0.25	0.00	0.26	0.02
5	0.34	0.05	0.18	0.00	0.15	0.00	0.00	0.00	0.00	0.64	0.00	0.04
6	0.00	0.00	0.05	0.41	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.00
7	0.06	0.00	0.25	0.30	0.27	0.26	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.01	0.30	0.18	0.00	0.00	0.00	0.02	0.00	0.16
9	0.00	0.00	0.00	0.00	0.13	0.08	0.64	0.25	0.26	0.21	0.00	0.01
10	0.00	0.00	0.00	0.58	0.08	0.05	0.00	0.04	0.67	1.20	0.00	0.00
11	0.07	0.11	0.00	0.00	0.35	0.68	0.00	0.00	0.00	0.09	0.00	0.00
12	0.13	0.00	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.00	0.24	1.85
13	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00
14	0.06	0.00	0.08	0.00	0.04	0.17	0.00	0.00	0.00	0.04	0.10	0.00
15	0.12	0.00	0.03	0.47	0.25	0.40	0.00	0.00	0.00	0.01	0.55	0.16
16	0.02	0.52	0.12	0.13	0.07	0.14	0.69	0.00	0.00	0.00	0.00	0.05
17	0.00	0.00	0.00	0.40	0.13	0.31	0.00	0.00	0.00	0.05	0.12	0.03
18	0.00	0.00	0.00	0.30	0.15	0.04	0.00	0.00	0.00	1.67	0.13	0.02
19	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.14	0.00	0.09	0.18	0.05
20	0.00	0.22	0.00	0.00	0.05	0.00	0.00	0.10	0.00	0.08	0.17	0.00
21	0.00	0.31	0.00	0.00	0.05	0.00	0.45	0.00	0.00	0.06	0.08	0.00
22	0.00	0.00	0.03	0.30	0.15	0.60	0.00	0.15	0.66	0.09	0.15	0.03
23	0.08	0.82	0.00	0.55	0.00	0.00	0.04	0.00	0.00	0.00	0.79	0.02
24	0.00	0.10	0.00	0.03	0.00	0.00	0.33	0.00	0.49	0.00	0.05	0.00
25	0.00	0.10	0.00	0.00	0.22	0.25	0.65	0.00	0.19	0.00	0.01	0.05
26	0.00	0.02	0.00	0.00	1.33	0.00	0.00	0.00	0.00	1.05	0.10	0.18
27	0.49	0.00	0.10	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.04	0.00
28	0.32	0.20	0.05	0.00	0.00	0.00	0.32	0.55	0.01	0.00	0.23	0.40
29	0.17	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.10	0.96
30	0.07	-----	0.00	0.00	0.00	0.00	0.00	0.55	0.25	0.00	0.02	0.00
31	0.00	-----	0.00	-----	0.00	-----	0.25	0.12	-----	0.00	-----	0.07
TOTAL	2.25	2.89	1.06	3.72	5.50	3.16	4.77	3.42	3.46	5.71	3.97	4.52
STAAV	2.89	3.36	3.26	3.59	3.66	3.89	3.92	4.57	3.11	4.45	4.37	3.38

Notes: PRECIPITATION VALUES ARE FOR R-1. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW.

1965 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	13.52	28.97	6.95	6.99	35.46	6.78	2.88	1.82	51.67	37.00	27.47	24.71
2	12.34	18.41	6.33	7.78	29.43	4.70	2.67	1.82	76.69	45.70	20.22	23.32
3	16.40	7.56	11.04	7.70	24.55	4.07	5.84	1.82	18.54	25.24	18.42	22.28
4	13.79	5.65	26.75	8.59	24.13	3.78	7.61	1.75	10.24	35.68	22.02	49.72
5	13.48	5.34	71.58	11.14	20.15	3.33	5.75	1.41	7.30	21.20	18.57	43.63
6	14.24	5.03	92.56	16.93	17.91	3.13	18.14	1.41	6.02	16.72	16.80	29.29
7	12.86	4.75	82.14	18.26	16.26	26.88	5.61	2.71	4.92	15.52	17.08	18.62
8	13.96	28.98	74.60	17.38	15.49	70.08	6.72	5.42	4.60	51.61	26.95	16.89
9	20.65	48.03	44.57	22.34	16.11	18.01	5.15	6.76	4.49	44.65	91.42	15.66
10	22.15	36.21	30.62	47.25	18.29	16.52	4.97	19.03	12.08	24.55	30.60	19.07
11	14.58	21.53	21.79	56.44	17.91	12.99	4.39	8.59	7.84	19.51	23.75	14.80
12	14.26	13.42	16.79	68.07	14.54	7.79	3.33	4.17	5.24	32.35	22.36	14.98
13	14.26	11.80	15.43	70.57	12.32	113.63	2.78	41.41	5.46	26.23	27.12	14.98
14	14.16e	9.25	14.27	62.83	10.95	51.86	2.79	10.25	8.34	19.02	29.61	16.26
15	13.48e	8.34	12.64	72.53	9.98	26.63	3.13	5.22	8.47	33.88	19.73	17.01
16	13.48e	7.92	11.56	127.37	9.98	15.86	2.61	3.58	13.35	79.80	39.46	17.01
17	13.48e	7.08	11.57	65.76	14.95	12.70	2.37	3.10	7.97	29.01	178.91	17.17
18	13.48e	6.95	11.16	46.55	20.04	12.95	31.84	11.96	6.89	21.72	64.90	16.26
19	13.48e	6.42	10.75	46.30	13.97	9.90	16.12	12.50	10.03	19.26	39.83	13.66
20	13.48e	5.99	9.84	57.37	11.72	7.56	6.40	10.62	12.12	17.87	34.34	9.09
21	13.48e	5.99	8.59	75.23	9.18	6.02	4.65	5.15	8.92	16.26	31.35	14.32
22	13.48e	5.99	7.89	110.63	8.56	5.57	3.74	3.96	6.48	15.62	32.20	14.20
23	13.48e	5.46	8.30	58.30	8.12	5.12	3.29	3.64	5.03	63.55	31.77	12.52
24	14.02e	4.55	8.07	39.83	7.07	10.83	3.21	3.42	11.51	52.27	28.48	13.48
25	15.51e	5.33	7.91	35.17	6.31	6.30	2.98	3.21	111.25	29.06	25.36	15.70
26	17.55e	18.20	8.24	38.09	5.78	4.57	2.49	3.82	26.06	22.36	25.03	19.15
27	17.90e	19.65	7.92	53.61	5.46	3.97	2.21	23.08	14.35	21.08	39.16	15.29
28	14.06	8.05	8.25	42.69	5.61	3.57	2.22	26.72	10.91	21.08	36.13	15.19
29	12.52	-----	7.63	41.35	4.61	3.12	2.25	14.95	9.84	19.04	29.53	14.86
30	19.69	-----	7.70	39.26	4.49	3.07	2.19	10.09	8.99	17.64	25.78	13.91
31	23.71	-----	7.38	-----	4.76	-----	1.93	6.63	-----	24.88	-----	15.41
MEAN	15.06	12.89	21.64	45.41	13.68	16.04	5.56	8.39	16.52	29.66	35.81	18.66
INCHES	1.047	.809	1.505	3.656	.951	1.080	.386	.583	1.112	2.06	2.409	1.298

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0022433. RECORDS ARE GOOD.

1966 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	35.14	6.74	22.00	29.95	75.93	12.94	4.98	2.22	3.28	3.85	4.36	15.63
2	34.24	6.63	59.83	28.67	52.31	11.61	4.14	2.22	2.59	3.42	4.60	10.57
3	21.44	6.15	43.15	27.70	42.37	10.90	3.58	3.45	2.35	3.21	36.70	6.05
4	16.78	5.99	28.81	28.45	56.57	9.66	3.19	2.82	9.10	3.21	23.26	6.16
5	15.94	5.99	66.83	28.98	44.24	11.97	2.92	2.15	10.43	4.72	11.25	5.16
6	15.94	5.99	106.40	32.82	71.67	26.47	2.89	1.91	4.52	5.96	9.95	7.05
7	15.19	5.99	60.62	40.79	60.92	13.53	4.10	1.79	3.58	4.83	10.23	7.34
8	13.05	5.51	36.66	47.29	39.69	13.85	3.69	2.12	3.17	4.05	10.33	21.54
9	13.04	5.14	28.47	48.53	56.31	16.16	3.04	1.98	2.88	3.40	11.02	35.27
10	12.84	5.27	27.28	52.80	60.87	85.08	3.02	1.71	2.52	3.55	9.49	46.65
11	11.66	14.27	21.82	63.76	47.99	43.47	6.86	2.51	2.23	5.00	23.16	74.62
12	10.27	35.84	19.26	59.20	45.99	20.50	5.12	3.96	2.14	4.41	13.79	24.86
13	9.31	23.62	19.26	58.08	95.27	13.86	5.58	3.39	2.11	4.33	9.80	11.75
14	9.31	26.34	18.40	90.48	54.44	11.74	3.65	2.59	2.43	3.96	7.73	12.99
15	9.09	17.09	15.83	108.21	40.88	14.47	2.61	2.15	2.83	3.60	7.24	9.81
16	8.56	13.44	14.76	102.33	36.76	30.48	2.21	2.44	3.14	3.65	5.94	6.00
17	8.24	12.73	16.48	114.08	38.16	27.41	2.06	20.38	2.57	3.99	7.81	10.65
18	8.24	11.05	20.50	111.09	33.29	12.62	2.13	5.45	2.41	3.66	14.56	10.78
19	8.24	9.59	30.71	116.11	186.68	9.15	3.26	3.16	2.27	3.73	13.14	5.30
20	8.24	9.31	36.47	96.09	101.96	8.16	5.63	2.50	2.06	47.34	6.36	4.23
21	8.56	9.31	42.33	128.06	58.43	7.37	3.03	2.22	1.93	22.24	5.12	6.47
22	8.77	9.52	45.40	172.89	40.20	6.52	2.73	2.97	23.28	12.79	5.13	6.78
23	8.56	9.52	62.39	116.36	32.41	5.67	2.38	10.67	26.71	8.61	5.06	5.64
24	8.56	9.31	92.35	110.61	29.98	5.19	2.26	13.32	11.23	6.97	6.02	4.46
25	8.45	10.00	231.90	106.70	13.16	6.66	2.09	7.09	7.12	5.56	7.84	7.09
26	8.24	11.02	83.88	80.62	22.39	7.33	4.48	5.67	5.03	4.91	14.58	10.38
27	7.70	11.66	49.28	58.33	19.92	5.94	3.56	4.43	4.09	4.81	11.64	11.29
28	7.49	13.16	40.78	46.04	18.92	4.77	2.76	3.48	3.66	4.60	10.54	10.08
29	7.14	-----	33.39	42.48	16.75	7.02	4.83	2.69	3.51	4.52	11.70	10.71
30	7.22	-----	30.73	48.10	11.26	9.94	3.28	2.63	4.03	4.48	16.24	11.38
31	7.22	-----	32.88	-----	13.22	-----	2.59	5.07	-----	4.18	-----	10.64
MEAN	12.02	11.29	46.41	73.19	49.00	15.68	3.50	4.23	5.31	6.69	11.15	13.78
INCHES	.836	.709	3.23	4.925	3.407	1.055	.243	.294	.357	.466	.751	.959

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0022433.

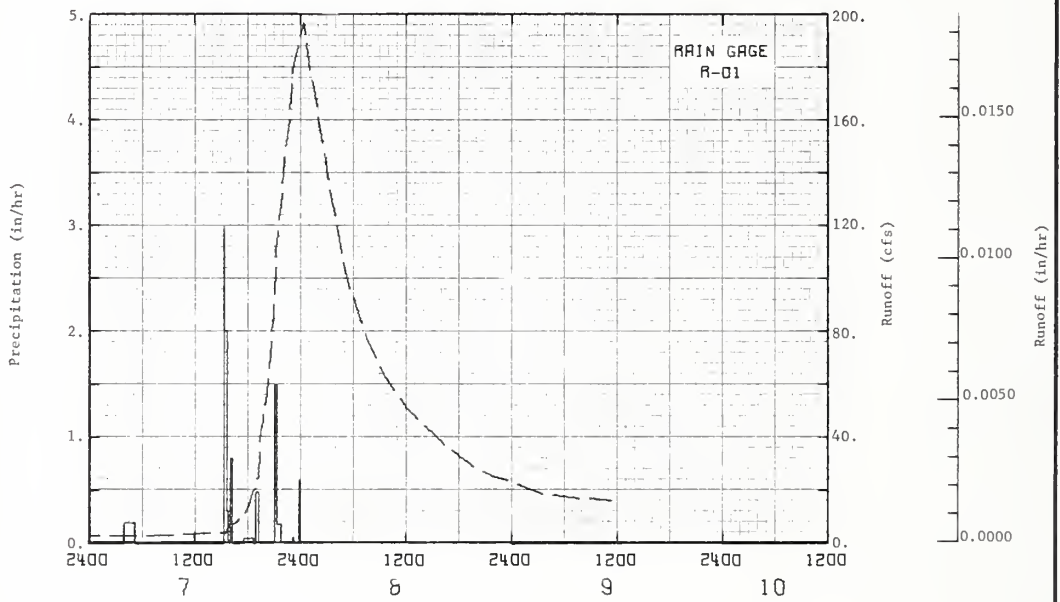
1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-1 67.01						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	10.40	6.21	3.56	62.45	49.49	23.63	5.84	12.48	9.28	8.51	12.93	9.88
2	9.25	6.01	3.32	137.52	51.88	21.54	5.14	6.23	6.01	10.30	12.57	10.35
3	8.37	5.94	3.32	209.49	181.05	19.73	7.95	5.01	5.27	6.93	34.16	14.53
4	7.92	5.83	3.32	81.93	89.23	17.71	8.59	13.83	5.07	5.08	28.89	16.99
5	7.81	5.88	3.21	53.92	70.20	26.47	5.50	13.23	6.84	5.37	31.77	13.88
6	7.27	5.30	3.32	52.18	48.78	13.22	4.81	6.41	5.08	9.65	19.62	11.95
7	7.34	5.24	3.32	39.05	38.84	11.98	4.38	5.03	4.03	7.01	16.15	12.44
8	6.91	5.03	3.26	35.70	53.86	15.90	4.10	4.08	3.53	5.36	15.08	13.03
9	7.01	4.91	3.21	46.16	62.22	21.33	4.43	3.97	3.35	5.37	12.70	13.64
10	7.27	4.87	3.45	153.24	64.39	14.87	12.25	6.78	21.30	36.16	13.09	12.00
11	6.49	5.03	5.31	72.37	49.65	16.94	5.87	6.24	9.41	112.64	11.79	11.61
12	5.99	5.19	8.25	46.62	73.54	51.01	32.41	4.76	5.65	24.19	14.67	117.63
13	5.86	5.10	6.54	43.85	40.60	21.32	14.80	3.97	4.53	15.08	23.70	120.63
14	5.78	5.88	5.62	63.43	32.32	17.70	7.32	3.64	3.88	11.55	17.13	47.70
15	5.78	6.08	5.24	112.68	39.28	44.27	5.29	3.35	3.49	11.06	12.51	27.91
16	5.36	9.61	4.99	102.28	46.57	40.32	69.63	3.18	3.23	9.84	11.93	19.24
17	5.53	11.51	5.15	64.78	32.45	23.63	25.85	10.91	3.16	9.32	13.29	18.81
18	5.30	8.55	4.92	101.64	54.17	32.41	12.05	8.21	3.10	45.01	16.50	18.13
19	5.30	9.06	4.03	68.29	94.94	16.32	9.33	2.81	3.05	117.01	16.10	26.45
20	5.46	11.81	3.88	70.58	99.75	11.88	7.80	4.57	2.52	29.88	15.37	28.81
21	5.46	12.81	3.66	64.59	49.12	11.00	5.91	4.20	2.65	21.72	12.82	21.24
22	5.46	7.86	3.58	107.84	38.36	18.23	7.42	3.82	4.25	20.88	13.75	24.69
23	6.04	6.37	3.58	123.62	44.27	18.82	5.86	4.08	4.41	16.75	27.86	21.47
24	8.67	5.55	3.74	85.75	38.60	12.71	9.70	3.38	3.78	14.21	42.30	11.01
25	9.61	4.71	4.07	63.77	29.43	11.05	10.44	3.06	10.59	12.80	23.31	9.84
26	8.38	4.28	5.27	57.27	145.44	13.23	11.62	2.75	6.44	97.92	19.89	12.00
27	7.54	3.72	8.89	58.54	87.38	8.40	6.00	5.58	4.60	34.12	19.88	7.50
28	7.79	3.72	19.63	57.68	50.39	7.09	8.92	36.62	3.94	22.47	16.77	10.54
29	6.87	-----	27.53	54.23	37.93	6.01	11.44	9.18	4.24	17.52	13.85	11.01
30	6.55	-----	32.79	49.49	30.26	5.55	6.88	5.67	15.08	15.61	10.58	12.71
31	6.58	-----	36.96	-----	26.33	-----	7.93	12.37	-----	13.91	-----	13.41
MEAN	6.95	6.50	7.64	78.03	59.70	19.14	11.14	7.08	5.73	24.94	18.37	23.26
INCHES	.483	.408	.531	5.251	4.142	1.288	.775	.492	.385	1.735	1.236	1.617

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0022433.

1965 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 June 7-9, 1965							
6- 7	RG R-1	1/.001	6- 7	RG	R-1		6- 7			
	.00									
			0400	.0000	.00	0302	2.675	.0000		
			0520	.1950	.26	0800	3.103	.0013		
			1520	.0000	.26	0929	3.317	.0017		
			1525	3.0000	.51	1330	3.959	.0031		
			1540	2.0000	1.01	1536	3.950	.0030		
			1550	.3000	1.06	1606	7.276	.0042		
			1605	.0000	1.06	1625	7.276	.0044		
			1620	.0000	1.26	1630	7.490	.0045		
			1740	.0000	1.26	1649	7.918	.0047		
			1840	.0500	1.31	1705	9.300	.0049		
			1855	.0000	1.31	1719	11.663	.0051		
			1920	.4800	1.51	1747	11.663	.0056		
			2110	.0000	1.51	1813	14.444	.0061		
			2120	1.5000	1.76	1830	10.794	.0068		
			2150	.1800	1.85	1905	21.078	.0076		
			2310	.0000	1.85	1916	25.037	.0080		
			2320	.0600	1.86	1933	42.477	.0089		
			2350	.0000	1.86	1945	46.543	.0097		
			2400	.6000	1.06	2004	51.893	.0112		
						2019	56.387	.0125		
						2046	78.642	.0153		
						2050	86.132	.0170		
						2119	111.169	.0199		
						2129	116.626	.0218		
						2135	122.297	.0220		
						2150	128.181	.0258		
						2204	138.346	.0287		
						2223	151.186	.0330		
						2247	160.173	.0388		
						2301	171.836	.0424		
						2319	181.573	.0474		
						2400	191.630	.0593		
						6- 8	0025	196.873	.0669	
						0057	181.573	.0763		
						0132	171.836	.0850		
						0308	138.346	.1091		
						0441	109.350	.1270		
						0514	100.683	.1324		
						0651	84.527	.1444		
						0735	77.251	.1510		
						0833	70.294	.1586		
						0927	63.770	.1642		
						1045	57.544	.1716		
						1205	50.716	.1783		
						1327	44.543	.1845		
						1458	41.515	.1907		
						1627	36.914	.1961		
						1801	32.634	.2012		
						1946	28.675	.2062		
						2146	25.037	.2112		
						2400	23.004	.2142		
						6- 9	0346	18.092	.2234	
						1115	15.942	.2353		

Watershed conditions: 64% Forest land, 16% hay, 15% pastured land, 3% idle land with dense grass and brush growth, 1% seeded to corn, 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 30-DAY ANTECEDENT RAINFALL AND RUNOFF SEE P. 67.1-3, AND 4. 1/ RUNOFF PRIOR TO 0302 ON 6-7-65.

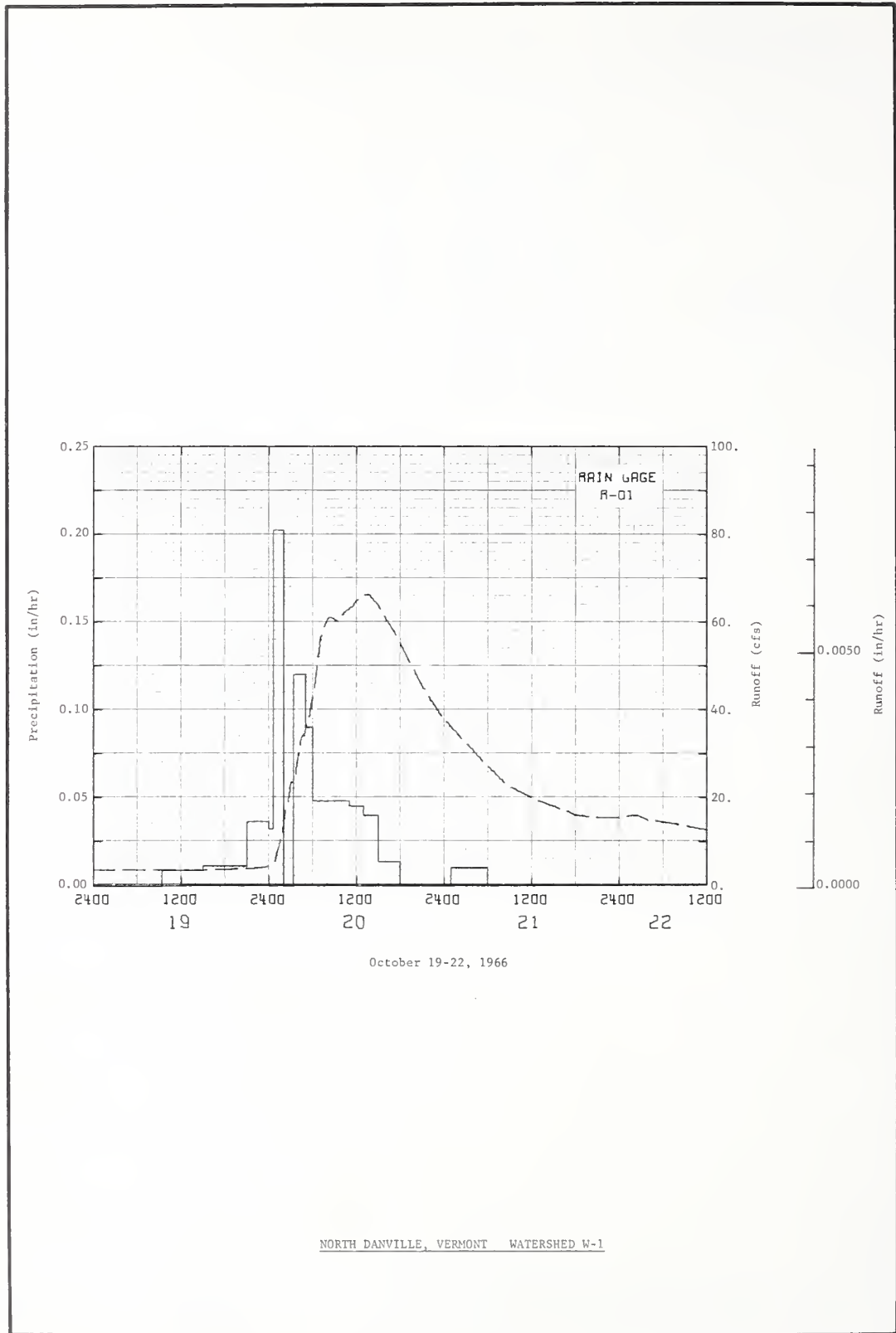


June 7-9, 1965

NORTH DANVILLE, VERMONT WATERSHED W-1

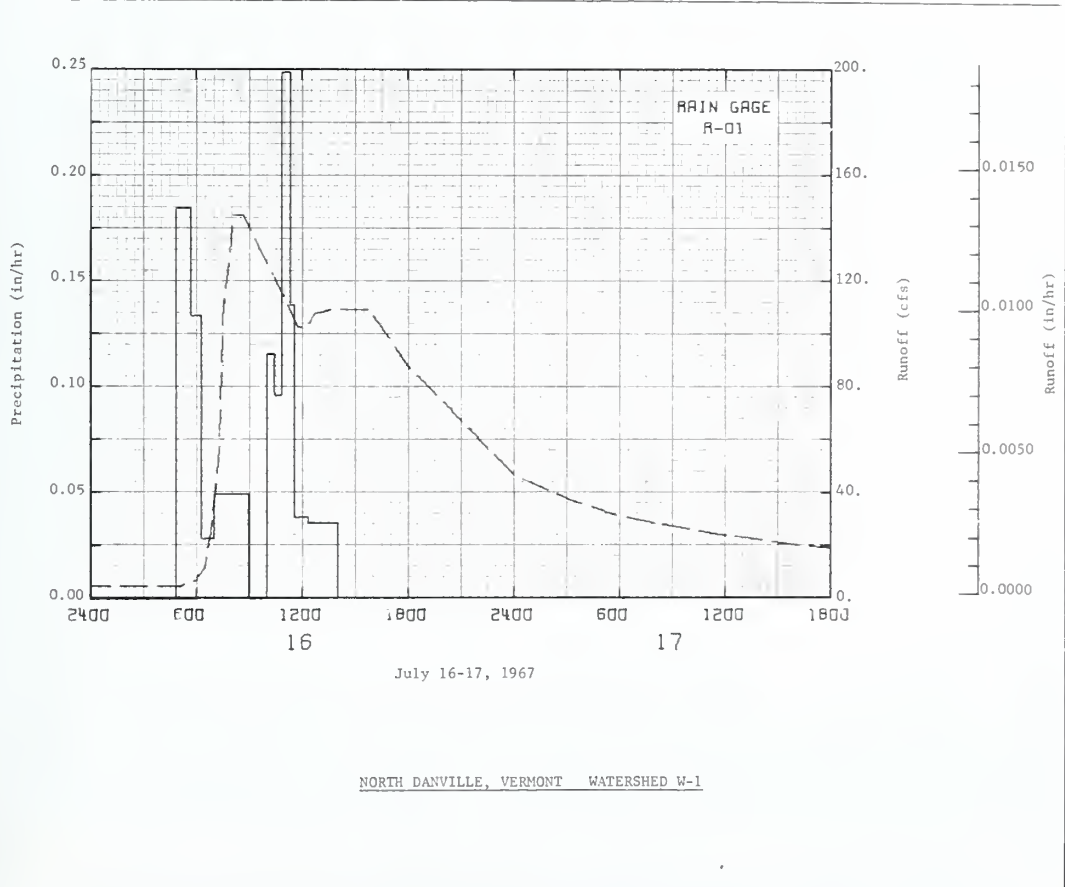
1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-1				67.01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of October 19-22, 1966											
10-19	RG R-1 .00 1/ .002		10-19	RG	R-1		10-19	0600	3.531	.0000	
				0919	.0000			.00	1200	3.531	.0020
				1500	.0099	.05		1330	3.638	.0025	
				2100	.0117	.12		1759	3.745	.0041	
				2400	.0367	.23		1920	3.050	.0046	
			10-20	0037	.0324	.25					
				0200	.2024	.53		2114	4.056	.0053	
				0321	.0000	.53		2245	4.280	.0059	
				0501	.1200	.73		2400	4.401	.0064	
				0601	.0900	.92	10-20	0033	4.915	.0066	
				1100	.0492	1.06		0047	5.243	.0067	
				1300	.0450	1.15		0110	9.239	.0069	
				1500	.0400	1.23		0117	8.540	.0070	
				1759	.0134	1.27		0147	11.235	.0075	
			10-21	0100	.0000	1.27		0205	14.872	.0079	
				0601	.0100	1.32		0219	17.012	.0082	
								0241	19.259	.0089	
								0301	23.646	.0095	
								0322	23.646	.0103	
								0339	24.288	.0109	
								0347	28.675	.0112	
								0356	28.675	.0116	
								0419	32.634	.0127	
								0431	34.239	.0133	
								0446	34.239	.0141	
								0537	39.733	.0170	
								0543	41.515	.0174	
								0555	41.515	.0182	
								0707	56.387	.0237	
								0733	58.741	.0260	
								0745	60.025	.0271	
								0815	61.202	.0299	
								0927	60.025	.0367	
								1029	62.486	.0426	
								1129	63.770	.0484	
								1200	65.054	.0516	
								1332	65.338	.0610	
								1500	63.770	.0699	
								1759	55.210	.0865	
								2100	45.473	.1007	
								2400	37.770	.1124	
							10-21	0559	27.177	.1306	
								0900	22.362	.1376	
								1200	19.794	.1435	
								1459	18.082	.1488	
								1759	15.042	.1536	
								2050	15.407	.1580	
								2400	15.407	.1623	
							10-22	0117	15.942	.1642	
								0232	15.942	.1661	
								0347	14.872	.1679	
								0601	14.444	.1710	
								0703	13.482	.1750	
								1200	12.510	.1786	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000935. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF, SEE P. 67.1-3, AND 5. 1/ RUNOFF PRIOR TO 0600 ON 10-19-66.



1967 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-1		47.01	
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)
7-16			Event of July 16-17, 1967							
RG R-1 .00 1/ .002										
			7-16							
			RG	R-1			7-16	0501	4.815	.0000
			0542	.1845	.16		0600	7.276	.0006	
			0618	.1333	.24		0629	12.091	.0010	
			0700	.0286	.25		0650	25.037	.0016	
			0901	.0404	.34		0720	47.564	.0035	
Watershed conditions: 64% Forest land, 16% hay, 15% pastured land, 3% idle land with dense grass and brush growth, 1% seeded to corn, 1% homesites.			1001	.0000	.34		0730	105.819	.0049	
			1027	.1154	.41		0807	144.659	.0120	
			1052	.0960	.45		0843	144.659	.0201	
			1121	.2483	.57		1147	197.395	.0555	
			1134	.1385	.60		1216	192.395	.0501	
			1221	.0383	.63		1245	107.531	.0648	
			1402	.0356	.69		1332	199.350	.0727	
							1546	109.350	.0955	
							1901	97.630	.1162	
							2400	46.543	.1537	
			7-17							
							7-17	0257	37.770	.1653
							0559	30.922	.1750	
							0859	27.177	.1832	
							1200	23.666	.1904	
							1900	19.617	.2023	
							2400	14.972	.2117	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0000935. FOR 30-DAY ANTECEDENT RAINFALL AND RUNOFF SEE P. 67.1-4 AND 5. 1/ RUNOFF PRIOR TO 0501 ON 7-16-67.



MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						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
1965 P	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86	36.45
1965 Q	.49	.99	2.88	1.54	.55	.66	.42	.39	.65	1.14	1.77	1.57	13.05
1966 P	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81	32.11
1966 Q	.92	.86	3.33	2.93	2.03	1.28	.85	.37	.36	.41	.53	.58	14.45
1967 P	1.25	1.82	.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51	36.87
1967 Q	.53	.40	1.46	3.20	2.76	1.40	1.00	.57	.36	.88	.93	1.15	14.39
STA AV ^{2/} P	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53	34.85
(58-67) Q	.76	.70	1.93	3.66	1.99	.97	.57	.42	.35	.72	1.12	1.21	14.40
MEAN P ^{3/} 73 YR	2.57	2.19	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99

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
1965	3-7	.04	3-7	.04	3-7	.08	3-7	.20	3-7	.32	3-7	.43	3-6	.78	3-7	2.00
1966	3-25	.04	3-25	.04	3-25	.08	3-25	.22	3-25	.35	3-25	.53	3-24	.73	3-23	1.54
1967	4-3	.04	4-3	.04	4-3	.07	4-1	.18	4-1	.30	4-1	.43	4-1	.75	3-28	2.10

MAXIMUMS FOR PERIOD OF RECORD

1958 TO 1967	3-5 1964	.08	3-5 1964	.08	3-5 1964	.16	3-5 1964	.39	3-5 1964	.58	3-6 1964	.83	3-30 1962	1.14	3-28 1962	2.54
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Notes: Watershed conditions: Pasture of mostly bluegrass, 38%; cultivated land entirely in clover and orchard grass hay, 37%; and forest stand, predominantly hardwoods, 25%. ^{1/} Precipitation records from Rain Gage R-10. ^{2/} Precipitation records began on Sept. 1958, Runoff began Oct. 1958, part year values not included in Sta Av. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.

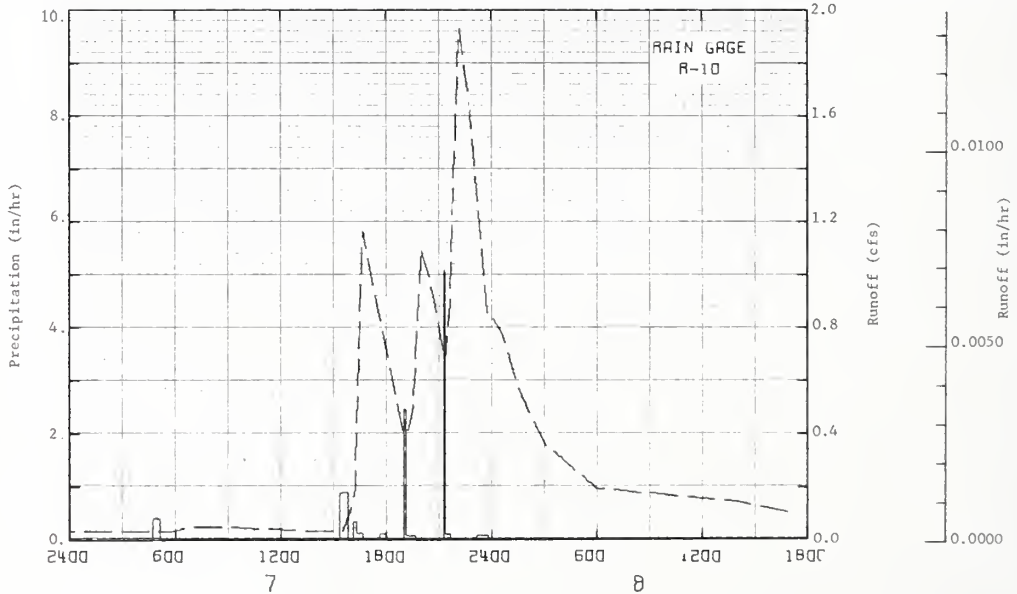
1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-2						67.02
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.14	.08	.14	.16	.13	.09	.03	.02	.53	.34	.25	.35
2	.14	.07	.14	.14	.11	.06	.03	.02	.28	.22	.22	.34
3	.12	.07	.45	.24	.12	.05	.14	.02	.09	.18	.24	.35
4	.11	.08	1.67	.21	.13	.05	.09	.02	.07	.13	.24	.72
5	.12	.08	2.24	.29	.12	.04	.11	.01	.06	.12	.21	.46
6	.11	.07	2.14	.35	.11	.04	.18	.01	.05	.12	.22	.38
7	.10	.08	2.57	.28	.12	.34	.05	.05	.05	.12	.22	.33
8	.10	1.06	1.91	.30	.11	.21	.09	.07	.06	.32	.52	.31
9	.19	1.08	.83	.33	.13	.17	.06	.08	.05	.19	.45	.30
10	.15	.35	.48	.52	.15	.15	.06	.18	.16	.14	.26	.33
11	.12	.21	.38	.42	.13	.11	.05	.07	.07	.14	.25	.30
12	.10	.18	.33	.62	.11	.12	.05	.05	.06	.26	.25	.29
13	.10	.17	.33	.67	.11	1.02	.04	.33	.10	.17	.33	.31
14	.10	.17	.33	.48	.10	.28	.04	.07	.10	.14	.28	.33
15	.10	.17	.28	.40	.10	.18	.03	.05	.14	.43	.23	.33
16	.10	.16	.25	.53	.10	.14	.02	.04	.11	.28	.55	.33
17	.08	.14	.22	.37	.29	.12	.03	.03	.08	.19	1.20	.33
18	.07	.14	.21	.36	.18	.14	.79	.15	.08	.17	.40	.31
19	.07	.14	.23	.27	.14	.11	.13	.18	.11	.17	.37	.29
20	.07	.14	.21	.25	.12	.09	.08	.08	.10	.17	.35	.26
21	.07	.13	.19	.24	.09	.09	.07	.05	.08	.16	.34	.26
22	.07	.11	.17	.33	.10	.09	.06	.05	.07	.18	.37	.25
23	.07	.10	.16	.22	.08	.07	.06	.04	.06	.56	.37	.24
24	.07	.10	.16	.22	.06	.10	.06	.03	.29	.32	.36	.24
25	.08	.17	.16	.20	.07	.06	.05	.03	.61	.22	.34	.28
26	.07	.43	.17	.25	.09	.03	.04	.15	.13	.21	.31	.26
27	.05	.22	.17	.27	.09	.03	.03	.15	.10	.23	.56	.23
28	.06	.14	.55	.21	.07	.03	.04	.19	.09	.28	.43	.23
29	.08	-----	.12	.17	.04	.03	.04	.08	.09	.38	.38	.23
30	.08	-----	.16	.15	.04	.03	.03	.06	.09	.22	.36	.23
31	.09	-----	.30	-----	.06	-----	.02	.05	-----	.23	-----	.25
MEAN INCHES	.10	.22	.57	.32	.11	.14	.08	.08	.13	.23	.36	.31
	.486	.985	2.876	1.541	.554	.664	.424	.393	.646	1.140	1.77	1.573

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .1630258.

1966 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	.34	.14	.63	.53	.33	.26	.12	.04	.04	.06	.06	.15	
2	.25	.14	.51	.53	.30	.25	.11	.06	.03	.05	.06	.11	
3	.23	.14	.24	.50	.32	.23	.94	.07	.03	.05	.38	.08	
4	.23	.14	.28	.52	.37	.23	.84	.05	.21	.06	.12	.06	
5	.21	.14	1.95	.56	.29	.34	.76	.05	.08	.11	.09	.06	
6	.21	.14	1.45	.65	.43	.49	.10	.03	.06	.08	.12	.08	
7	.21	.13	.46	.85	.32	.30	.13	.03	.05	.06	.10	.10	
8	.20	.12	.33	.79	.28	.31	.09	.03	.04	.05	.11	.27	
9	.19	.12	.34	.75	.61	.25	.08	.03	.04	.04	.10	.27	
10	.18	.12	.31	.80	.58	.93	.14	.03	.04	.07	.17	.27	
11	.18	.68	.28	.81	.46	.36	.18	.12	.03	.06	.09	.35	
12	.18	.50	.27	.83	.48	.25	.15	.12	.03	.06	.09	.14	
13	.18	.28	.26	.75	.65	.22	.11	.07	.03	.05	.08	.09	
14	.18	.34	.24	.90	.36	.22	.07	.04	.04	.06	.07	.11	
15	.17	.22	.23	.79	.32	.26	.07	.04	.06	.05	.07	.10	
16	.17	.20	.23	.73	.32	.52	.06	.09	.04	.05	.06	.08	
17	.17	.19	.22	.71	.37	.27	.05	.34	.03	.05	.09	.10	
18	.17	.16	.34	.62	.44	.20	.06	.07	.03	.05	.15	.12	
19	.17	.17	.45	.57	1.17	.18	.19	.04	.03	.06	.09	.07	
20	.17	.14	.53	.58	.58	.16	.12	.03	.03	.60	.07	.05	
21	.17	.13	.91	.55	.43	.15	.07	.03	.03	.13	.06	.06	
22	.17	.13	.84	.53	.38	.13	.07	.10	.52	.09	.05	.07	
23	.17	.13	1.13	.44	.35	.12	.06	.20	.23	.08	.05	.06	
24	.17	.13	1.57	.48	.32	.12	.05	.16	.10	.07	.06	.04	
25	.16	.13	2.82	.43	.31	.21	.04	.08	.08	.07	.11	.07	
26	.15	.13	.84	.37	.29	.16	.15	.07	.06	.06	.15	.08	
27	.14	.13	.67	.34	.29	.13	.07	.05	.06	.06	.12	.13	
28	.13	.13	.59	.34	.28	.11	.08	.04	.06	.07	.11	.12	
29	.13	-----	.54	.34	.27	.31	.12	.03	.05	.06	.12	.11	
30	.13	-----	.48	.41	.30	.18	.06	.07	.07	.06	.25	.10	
31	.13	-----	.46	-----	.26	-----	.05	.06	-----	.06	-----	.10	
MEAN	.18	.19	.66	.60	.40	.26	.17	.07	.07	.08	.11	.12	
INCHES	.919	.856	3.326	2.934	2.031	1.280	.846	.370	.364	.412	.530	.58	
Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .1630258.													
1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-2							67.2
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.10	.11	.08	2.36	.39	.37	.11	.18	.10	.09	.12	.12	
2	.09	.10	.08	1.90	.38	.34	.10	.11	.08	.10	.12	.12	
3	.09	.10	.07	1.67	.94	.32	.28	.13	.08	.07	.19	.14	
4	.10	.10	.07	.67	.44	.31	.14	.18	.08	.06	.22	.15	
5	.10	.10	.07	.46	.52	.29	.13	.12	.11	.06	.17	.15	
6	.10	.09	.07	.44	.40	.30	.12	.10	.08	.12	.14	.14	
7	.10	.09	.07	.38	.38	.28	.11	.09	.06	.07	.12	.14	
8	.10	.08	.07	.45	.66	.34	.11	.08	.06	.06	.12	.16	
9	.10	.08	.07	.51	.53	.38	.19	.10	.06	.07	.12	.16	
10	.10	.09	.09	1.00	.62	.28	.25	.14	.04	.62	.13	.15	
11	.10	.09	.13	.41	.77	.46	.12	.10	.10	.44	.12	.14	
12	.10	.09	.15	.35	.85	.45	.47	.08	.08	.14	.17	.97	
13	.10	.08	.13	.34	.40	.28	.15	.08	.07	.11	.17	.51	
14	.10	.07	.11	.39	.37	.32	.12	.08	.06	.11	.13	.28	
15	.10	.07	.10	.62	.56	.48	.11	.07	.06	.11	.13	.22	
16	.10	.13	.10	.72	.45	.33	1.14	.06	.05	.10	.12	.20	
17	.10	.11	.09	.55	.42	.32	.23	.06	.05	.10	.12	.18	
18	.09	.09	.08	.78	.53	.30	.18	.06	.05	.58	.14	.19	
19	.09	.08	.07	.61	.89	.22	.16	.08	.05	.31	.14	.35	
20	.09	.07	.07	.46	.60	.21	.14	.13	.05	.15	.14	.30	
21	.09	.08	.07	.42	.45	.20	.12	.09	.05	.14	.20	.22	
22	.09	.08	.07	.71	.45	.31	.12	.10	.09	.13	.34	.31	
23	.10	.08	.07	.69	.54	.24	.11	.08	.07	.12	.54	.23	
24	.13	.08	.07	.49	.40	.19	.24	.06	.09	.11	.55	.17	
25	.15	.08	.08	.41	.98	.27	.15	.05	.13	.11	.37	.16	
26	.15	.08	.17	.39	.80	.20	.12	.05	.07	.62	.24	.18	
27	.13	.08	.56	.38	.52	.16	.10	.16	.06	.17	.20	.18	
28	.13	.08	1.53	.37	.46	.15	.24	.49	.06	.15	.16	.20	
29	.12	-----	1.43	.34	.43	.14	.15	.10	.08	.13	.14	.21	
30	.11	-----	1.39	.34	.41	.13	.11	.09	.16	.12	.13	.21	
31	.11	-----	1.72	-----	.40	-----	.33	.17	-----	.12	-----	.22	
MEAN	.11	.09	.29	.65	.55	.29	.20	.11	.07	.17	.19	.23	
INCHES	.531	.401	1.456	3.197	2.762	1.397	1.003	.566	.364	.879	.929	1.149	
Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .1630258.													

1965 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-2		57.02	
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 June 7-8, 1965							
6-7	RG R-10 .00	1/.001	6-7	RG	R-10		6-7			
				0445	.0000	.00		0544	.032	.0000
				0510	.4000	.17		0659	.054	.0004
				1520	.0000	.17		1327	.032	.0023
				1550	.9000	.62		1534	.032	.0028
				1610	.0000	.62		1555	.100	.0030
				1620	.3600	.68		1614	.194	.0033
				1640	.1200	.72		1624	.573	.0037
				1740	.0000	.72		1440	1.170	.0053
				1800	.1200	.76		1726	.901	.0107
				1900	.0000	.76		1901	.400	.0177
				1910	2.4600	1.17		1915	.400	.0183
				1940	.0800	1.21		1931	.483	.0191
				2118	.0000	1.21		2001	1.098	.0218
				2120	5.1000	1.38		2047	.901	.0270
				2140	.1200	1.42		2121	.473	.0300
				2310	.0000	1.42		2137	.841	.0314
				2350	.0750	1.47		2200	1.652	.0346
								2211	1.929	.0368
								2244	1.652	.0435
								2348	.841	.0525
								2400	.841	.0536
							6-8	0037	.782	.0570
								0131	.573	.0611
								0302	.364	.0659
								0559	.194	.0715
								1400	.143	.0907
								1559	.100	.0932
								2400	.100	.0980

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. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE 67.1-1, 67.5-1, AND 67.2-1 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0544 ON 6-7-65.

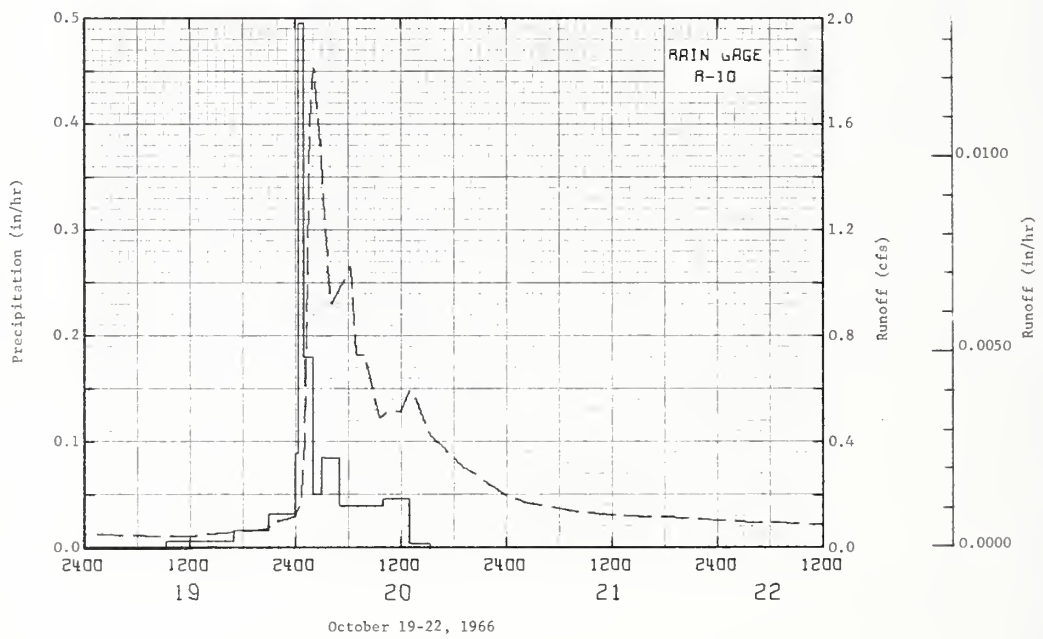


June 7-8, 1965

NORTH DANVILLE, VERMONT WATERSHED W-2

1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED #2		67.02												
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)											
<u>Event of October 19-22, 1966</u>																					
10-19	RG R-1 .00	1/.001	10-19	RG	R-10		10-19	0200	.052	.0000											
				0921	.0000	.00		0750	.045	.0020											
				1659	.0044	.05		1200	.046	.0032											
				2059	.0175	.12		1300	.052	.0035											
				2400	.0331	.22		1540	.059	.0045											
			10-20	0020	.0200	.75															
Watershed conditions: 38% pastured land; 27% hay and 25% forest.																					
															0100	.4950	.59		2000	.072	.0064
															0200	.1900	.76		2059	.079	.0069
															0259	.0508	.81		2119	.097	.0071
															0459	.0850	.98		2400	.125	.0091
															1000	.0309	1.18	10-20	0040	.171	.0058
															1300	.0457	1.32		0105	.403	.0106
															1520	.0043	1.33		0125	.002	.0122
																			0138	1.647	.0141
																			0158	1.762	.0179
																			0212	1.814	.0207
																			0257	1.477	.0291
																			0358	.957	.0375
								0409	.922	.0387											
								0517	.932	.0461											
								0523	1.064	.0538											
								0658	.730	.0574											
								0759	.730	.0624											
								0938	.492	.0693											
								1032	.515	.0724											
								1200	.515	.0775											
								1259	.592	.0812											
								1320	.592	.0826											
								1519	.424	.0894											
								1859	.308	.0995											
								2400	.197	.1071											
							10-21	0159	.171	.1036											
								0759	.137	.1159											
								1200	.125	.1155											
								1620	.116	.1230											
								2400	.106	.1288											
							10-22	0359	.097	.1315											
								1200	.088	.1365											

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.006793. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.2-2. 1/ RUNOFF PRIOR TO 0200 ON 10-19-66.



NORTH DANVILLE, VERMONT WATERSHED W-2

1967 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-2		67.07	
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)
Event of July 16, 1967										
7-16	RG R-10 .00	1/ .002	7-16	RG	R-10		7-16	0158	.116	.0000
				0420	.0000	.00		0439	.116	.0021
				0506	.1696	.13		0505	.107	.0026
				0524	.0667	.42		0522	.446	.0032
				0539	1.0000	.60		0531	1.028	.0030
				0548	1.4000	.90				
				0553	.4800	.04		0540	1.244	.0051
				0616	.0000	.94		0545	2.120	.0060
				0623	.8571	1.04		0555	4.006	.0095
				0640	.5294	1.19		0600	4.467	.0116
				0652	.6500	1.32		0605	4.789	.0145
				0700	.9000	1.44		0615	5.655	.0204
				0757	.0316	1.47		0625	4.215	.0271
				0840	.0837	1.53		0630	4.215	.0306
				1002	.0000	1.53		0640	5.839	.0374
				1042	.0750	1.58		0645	5.839	.0407
				1100	.2000	1.64		0655	4.026	.0474
				1321	.0383	1.73		0710	5.656	.0573
								0720	5.475	.0636
								0745	4.309	.0774
								0815	3.044	.0899
								0830	2.563	.0947
								0850	2.129	.1000
								0915	1.742	.1055
								1000	1.244	.1131
								1035	1.008	.1177
								1055	1.098	.1202
								1115	1.319	.1229
								1145	1.565	.1278
								1205	1.565	.1313
								1230	1.480	.1355
								1300	1.319	.1404
								1405	1.064	.1492
								1603	.673	.1608
								1904	.403	.1710
								2222	.325	.1800
								2400	.308	.1835

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.006793. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.2-2. 1/ RUNOFF PRIOR TO 0158 ON 7-16-67.

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						NORTH DANVILLE, VERMONT WATERSHED W-3						67.03		
						AREA--2.067 ACRES (3.23 SQ. MI.)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965	P	2.26	3.26	1.38	2.60	.76	4.97	4.33	7.60	4.77	4.72	5.69	2.92	45.26
	Q	.98	.88	1.35	3.70	1.47	1.40	.71	1.12	1.54	2.29	2.66	1.56	19.66
1966	P	2.85	3.00	5.26	1.96	4.18	3.84	2.83	5.20	3.76	2.71	2.92	3.93	42.44
	Q	1.12	.85	2.68	6.83	4.98	1.54	.62	.63	.69	.69	.91	1.09	22.63
1967	P	2.25	2.89	1.06	3.72	5.50	3.16	4.77	3.42	3.46	5.71	3.97	4.52	44.43
	Q	.76	.59	.73	6.28	5.91	1.84	1.08	.77	.66	1.88	1.46	2.06	24.02
STA AV ^{2/} P		2.89	3.36	3.26	3.59	3.66	3.89	3.92	4.57	3.11	4.45	4.37	3.38	44.45
(60-67) Q		.96	.83	1.40	6.66	3.61	1.45	.83	.75	.70	1.30	1.50	1.28	21.27
MEAN P ^{3/} 73 YR		2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99

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	
1965	11-17	.04	11-17	.04	11-17	.08	11-17	.22	11-17	.33	11-17	.44	11-16	.56	4-15	1.67	
1966	4-21	.04	4-21	.04	4-21	.08	4-21	.23	4-21	.41	4-21	.69	4-21	1.18	4-18	3.46	
1967	5-3	.07	5-3	.06	5-3	.11	4-14	.32	5-3	.43	4-2	.58	4-2	.88	4-17	1.97	

MAXIMUMS FOR PERIOD OF RECORD																	
19 60 TO 19 67	4-21 1963	.07	4-21 1963	.07	4-21 1963	.13	4-14 1967	.32	4-14 1964	.59	4-15 1964	1.08	4-16 1964	1.86	4-20 1964	4.44	

Notes: 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/} Precipitation records from Rain Gage R-1. ^{2/} Precipitation records began Jan. 1, 1959, runoff records began Jan. 1, 1960. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-3						67.03
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	3.38	2.00	2.38	2.36	8.78	2.52	1.69	1.21	17.23	9.91	6.27	5.05
2	3.38	2.00	2.38	2.38	7.73	2.13	1.69	1.22	14.11	8.54	4.45	5.09
3	3.31	1.96	3.19	2.38	6.93	1.94	1.60	1.22	3.99	6.07	4.42	4.98
4	3.09	1.87	4.67	2.53	6.71	1.90	2.93	1.18	3.15	7.72	5.45	8.83
5	3.04	1.92	6.01	2.79	5.92	1.80	1.94	1.15	2.71	4.67	4.17	7.54
6	2.7	2.00	6.93	4.23	5.25	1.66	5.80	1.15	2.48	4.34	4.04	5.46
7	2.80	2.01	8.87	3.78	4.83	13.86	2.51	1.98	2.33	4.13	4.04	4.50
8	2.83	8.22	9.70	3.77	4.69	11.43	2.24	3.35	2.33	12.06	7.91	4.91
9	3.55	5.54	6.91	5.34	4.81	3.12	2.23	2.82	2.25	8.38	15.31	4.12
10	3.07	3.31	5.34	13.73	5.78	3.39	2.33	7.12	4.23	5.46	5.81	4.15
11	2.93	2.97	3.92	10.21	5.36	2.85	1.87	2.63	2.71	4.65	5.21	3.94
12	2.79	2.75	3.90	11.76	4.30	2.40	1.63	1.89	2.29	7.66	4.88	3.81
13	2.74	2.62	3.63	10.84	3.88	23.79	1.53	15.88	2.49	5.90	6.18	3.69
14	2.57	2.40	3.37	12.43	3.64	7.65	1.62	2.89	2.82	4.67	5.92	3.88
15	2.52	2.52	3.15	15.57	3.48	4.51	1.55	2.06	3.07	8.93	4.77	3.94
16	2.47	2.43	3.06	27.31	3.45	3.35	1.40	1.67	3.31	10.44	8.04	3.94
17	2.44	2.24	3.02	14.03	3.56	3.09	1.39	1.50	2.59	5.95	37.07	3.88
18	2.50	2.34	2.99	11.22	3.50	3.58	6.30	4.88	2.50	5.09	11.34	3.75
19	2.50	2.30	2.95	11.79	3.42	2.90	2.81	3.34	3.04	4.77	8.52	3.40
20	2.26	2.06	2.79	15.27	3.28	2.60	1.96	2.67	3.11	4.25	7.73	3.40
21	2.25	2.11	2.70	18.26	3.00	2.33	1.80	1.99	2.63	3.88	7.42	6.14
22	2.27	2.08	2.70	28.21	2.95	2.24	1.60	1.75	2.25	3.96	7.42	3.65
23	2.02	2.13	2.71	14.44	2.86	2.25	1.55	1.79	2.11	12.65	7.27	3.38
24	2.13	2.08	2.59	10.99	2.89	3.13	1.50	1.67	5.68	8.58	6.59	3.31
25	2.13	2.56	2.58	10.24	2.56	2.33	1.49	1.58	20.94	6.09	6.17	4.07
26	2.20	4.77	2.56	11.24	2.42	2.01	1.39	2.86	4.40	5.11	6.04	4.46
27	2.31	2.74	2.52	13.11	2.38	1.84	1.10	7.26	3.42	4.88	8.84	5.38
28	2.31	2.38	2.48	11.09	2.31	1.72	.94	7.44	3.15	4.67	7.63	3.42
29	2.25	-----	2.38	10.36	2.24	1.59	.92	3.87	3.04	4.34	6.44	3.04
30	4.80	-----	2.38	9.98	2.15	1.54	1.02	2.99	2.96	4.64	5.79	3.04
31	3.06	-----	2.38	-----	2.31	-----	1.13	2.48	-----	6.11	-----	3.44
MEAN	2.74	2.73	3.78	10.72	4.11	4.05	1.98	3.14	4.44	6.40	7.70	4.37
INCHES	.977	.879	1.349	3.704	1.467	1.399	.708	1.123	1.535	2.29	2.662	1.561

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .011515.

1966 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	7.17	2.38	7.41	6.79	22.31	4.55	2.06	1.22	1.40	1.65	1.62	2.91		
2	5.03	2.33	5.97	6.44	15.36	4.06	1.89	1.35	1.34	1.46	1.69	2.48		
3	3.81	2.27	3.40	6.17	14.57	3.85	1.79	1.86	1.37	1.24	8.21	2.34		
4	3.41	2.33	3.53	6.04	17.27	3.70	1.79	1.38	4.02	1.26	3.28	2.97		
5	3.56	2.38	12.66	6.04	13.53	4.20	1.77	1.27	2.34	1.55	2.27	1.89		
6	3.48	2.30	12.39	6.60	20.33	6.99	1.72	1.13	1.73	1.87	2.27	2.06		
7	3.42	2.23	5.94	7.70	16.99	4.02	2.10	1.07	1.57	1.55	2.31	2.05		
8	3.21	2.24	3.61	8.85	12.08	4.95	1.83	1.44	1.41	1.38	2.46	3.76		
9	3.15	2.27	2.86	8.43	16.19	4.13	1.68	1.21	1.32	1.33	2.35	5.64		
10	3.25	2.28	2.75	8.87	15.30	19.65	1.82	1.20	1.25	1.61	2.20	6.77		
11	3.07	5.26	2.52	9.87	12.89	8.05	2.41	1.48	1.07	1.79	4.60	12.51		
12	2.94	4.33	2.38	10.49	12.29	4.66	2.30	1.64	1.09	1.83	2.74	3.97		
13	2.94	3.40	2.38	10.28	24.43	3.78	2.03	1.37	1.18	1.63	2.26	3.03		
14	2.90	3.95	2.48	19.71	13.79	3.65	1.58	1.22	1.33	1.53	2.00	3.11		
15	2.86	2.09	2.48	25.00	11.78	4.40	1.42	1.28	1.46	1.46	2.17	2.49		
16	2.86	3.00	2.38	25.00	10.59	7.70	1.37	2.04	1.38	3.03	2.02	2.55		
17	2.81	2.72	2.96	31.36	10.46	5.51	1.31	6.01	1.18	1.55	2.21	2.61		
18	2.75	2.73	4.28	32.54	10.07	3.54	1.38	1.69	1.21	1.46	3.16	2.76		
19	2.75	2.56	5.03	34.98	48.74	3.18	1.74	2.86	1.28	1.56	2.70	1.99		
20	2.75	2.48	5.41	25.69	24.28	3.01	2.17	1.21	1.19	8.40	2.02	2.11		
21	2.81	2.38	6.25	43.26	15.08	2.91	1.48	1.20	1.10	3.24	1.86	2.00		
22	2.86	2.33	6.77	53.62	11.59	2.54	1.54	1.63	6.67	2.40	1.86	1.96		
23	2.86	2.33	9.74	38.56	9.88	2.41	1.48	3.18	5.90	1.95	1.88	1.86		
24	2.76	2.27	13.57	35.07	8.89	2.29	1.32	3.04	2.54	1.81	2.03	2.92		
25	2.65	2.27	45.93	34.98	8.13	2.90	1.28	1.79	2.28	1.73	2.41	2.89		
26	2.61	2.27	15.12	25.29	7.34	2.87	2.14	1.65	1.83	1.63	3.06	2.16		
27	2.56	2.27	10.39	18.26	6.46	2.46	1.58	1.46	1.68	1.58	2.66	2.08		
28	2.48	2.27	9.36	15.64	5.92	2.08	1.60	1.43	3.00	1.54	2.55	2.11		
29	2.38	-----	8.13	14.65	5.68	3.07	2.24	1.31	2.92	1.60	2.65	2.23		
30	2.42	-----	7.74	16.51	5.12	2.86	1.50	1.91	1.88	1.59	3.16	2.17		
31	2.42	-----	7.27	-----	4.78	-----	1.26	2.03	-----	1.47	-----	2.11		
MEAN	3.13	2.64	7.52	19.76	13.94	4.47	1.73	1.76	2.00	1.93	2.62	3.05		
INCHES	1.116	.851	2.684	6.825	4.976	1.543	.617	.628	.690	.687	.906	1.088		

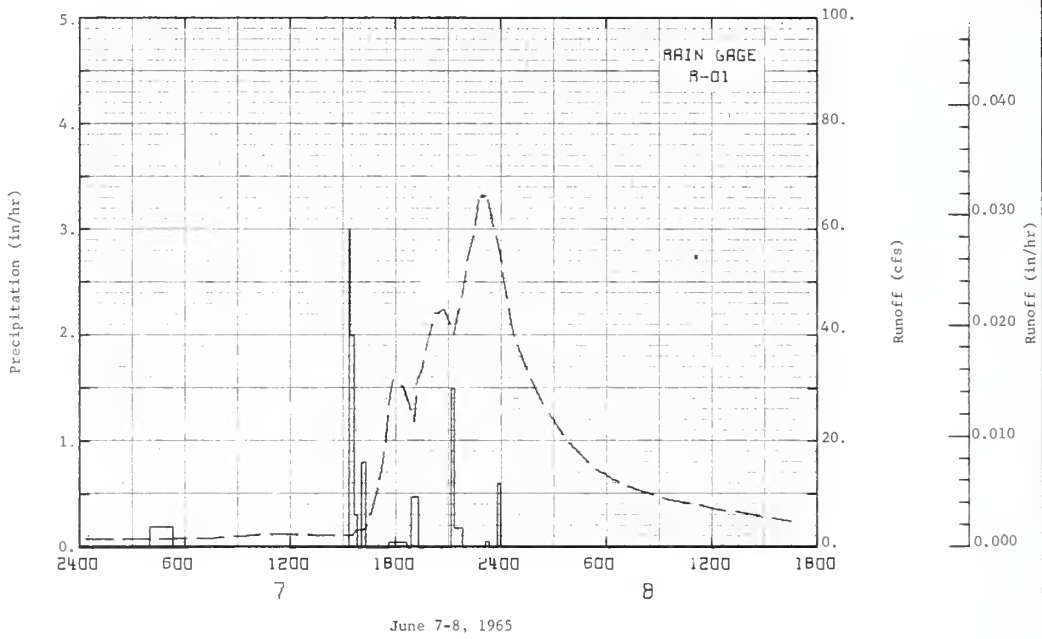
Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .011515.

1967 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	2.11	2.02	1.74	10.17	12.59	7.82	2.45	2.37	2.36	2.14	3.43	2.71		
2	2.17	1.94	1.66	31.95	12.43	7.03	2.23	1.86	1.98	2.68	3.37	2.69		
3	2.19	1.94	1.63	44.56	49.45	6.30	3.32	1.86	1.90	1.97	7.61	3.83		
4	2.19	1.94	1.65	14.40	18.94	5.82	2.64	5.18	1.79	1.76	6.14	3.67		
5	2.19	1.94	1.70	12.08	18.85	5.16	2.32	2.99	1.96	2.26	5.60	3.25		
6	2.09	1.92	1.70	10.91	13.25	4.49	2.26	2.13	1.70	2.99	3.99	3.08		
7	2.76	1.85	1.66	8.32	10.84	4.08	2.04	1.94	1.51	2.12	3.76	3.02		
8	2.15	1.81	1.63	7.35	14.96	5.54	1.94	1.75	1.47	1.94	3.55	3.04		
9	2.17	1.85	1.68	10.62	16.30	6.64	2.07	1.76	1.49	1.95	3.38	3.04		
10	2.11	1.85	1.85	36.01	16.41	4.42	3.93	2.20	4.38	11.68	3.47	3.03		
11	2.11	1.83	2.29	14.91	13.79	8.44	2.20	1.83	2.09	16.80	3.30	3.04		
12	2.11	1.83	2.26	10.43	17.19	12.22	8.90	1.71	1.76	3.60	3.96	35.32		
13	2.04	1.85	2.03	11.36	10.70	5.37	3.12	1.53	1.61	2.88	5.32	18.80		
14	2.02	1.81	1.96	17.21	8.98	5.03	2.29	1.65	1.56	2.60	3.84	8.75		
15	2.06	1.77	1.86	25.71	11.13	10.52	2.06	1.67	1.50	2.66	3.48	6.23		
16	2.06	2.08	1.85	20.86	11.76	6.73	7.89	1.61	1.42	2.49	3.70	6.31		
17	2.02	1.85	1.93	16.59	9.39	5.24	3.57	1.50	1.39	2.51	6.25	6.93		
18	1.89	1.85	1.88	21.46	18.01	6.41	2.57	1.46	1.39	17.45	3.53	6.07		
19	1.88	1.85	1.72	15.40	30.79	3.58	2.29	1.57	1.32	17.28	3.53	5.97		
20	1.94	1.82	1.71	18.70	25.10	3.44	2.25	1.94	1.22	4.85	3.43	5.90		
21	1.94	1.78	1.67	16.98	14.14	3.46	2.44	1.75	1.34	3.88	3.24	4.61		
22	1.94	1.77	1.64	26.86	11.52	6.28	3.12	1.58	2.53	3.98	3.57	5.26		
23	2.08	1.77	1.63	30.62	13.52	4.59	2.31	1.56	1.78	3.49	7.04	4.61		
24	2.55	1.75	1.63	21.64	9.76	3.53	3.49	1.34	1.76	3.30	6.46	3.60		
25	2.43	1.67	1.67	16.88	24.57	3.54	4.67	1.30	3.37	3.25	4.21	4.45		
26	2.25	1.67	1.81	16.27	36.62	3.49	3.42	1.28	2.02	20.42	4.01	3.55		
27	2.18	1.73	2.28	15.32	19.51	2.85	2.34	2.12	1.74	5.73	3.90	3.70		
28	2.23	1.77	3.10	14.49	13.80	2.56	2.91	7.79	1.54	4.15	3.74	3.46		
29	2.08	-----	3.31	13.82	10.85	2.40	2.73	2.03	1.94	3.76	3.49	3.60		
30	2.19	-----	3.73	13.12	9.58	2.38	2.13	1.69	3.66	3.58	2.75	3.48		
31	2.05	-----	4.82	-----	8.85	-----	2.18	4.30	-----	3.50	-----	3.64		
MEAN	2.13	1.84	2.05	18.17	16.57	5.31	3.03	2.17	1.92	5.28	4.24	5.76		
INCHES	.762	.593	.733	6.276	5.914	1.835	1.083	.774	.662	1.884	1.463	2.057		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .011515.

1965 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)
			Event of June 7, 1965							
6- 7	RG R-1 .00 $\frac{1}{2}$.003		6- 7	RG	R-1		6- 7			
				0400	.0000	.00		0416	1.426	.0000
				0520	.1950	.26		0619	1.772	.0017
				1520	.0000	.26		0709	1.855	.0024
				1525	3.0000	.51		0913	2.272	.0044
				1540	2.0000	1.01		1026	2.564	.0059
				1550	.3000	1.06		1326	2.272	.0093
				1605	.0000	1.06		1527	2.188	.0115
				1620	.8000	1.26		1535	2.647	.0116
				1740	.0000	1.26		1553	3.356	.0120
				1840	.0500	1.31		1606	3.356	.0123
				1855	.0000	1.31		1621	3.814	.0127
				1920	.4800	1.51		1636	6.440	.0133
				2110	.0000	1.51		1658	10.963	.0148
				2120	1.5000	1.76		1714	14.798	.0164
				2150	.1800	1.85		1729	20.413	.0185
				2310	.0000	1.85		1745	30.055	.0217
				2320	.0600	1.86		1752	31.597	.0234
				2350	.0000	1.86		1828	30.055	.0323
				2400	.6000	1.86		1906	23.698	.0405
								1914	31.597	.0423
								1934	34.015	.0475
								1951	39.246	.0525
								2018	44.019	.0615
								2044	45.019	.0708
								2123	40.184	.0841
								2130	43.039	.0864
								2151	48.083	.0940
								2207	54.690	.1006
								2233	50.630	.1126
								2245	65.674	.1187
								2315	65.674	.1345
								2400	54.690	.1562
							6- 8	0038	41.122	.1708
								0131	33.202	.1865
								0231	26.407	.2008
								0346	20.029	.2147
								0445	16.757	.2234
								0533	14.339	.2294
								0641	12.151	.2366
								0755	10.588	.2433
								0937	8.816	.2512
								1203	7.274	.2606
								1428	5.919	.2683
								1631	4.752	.2735
								1931	3.930	.2798
								2400	3.481	.2878

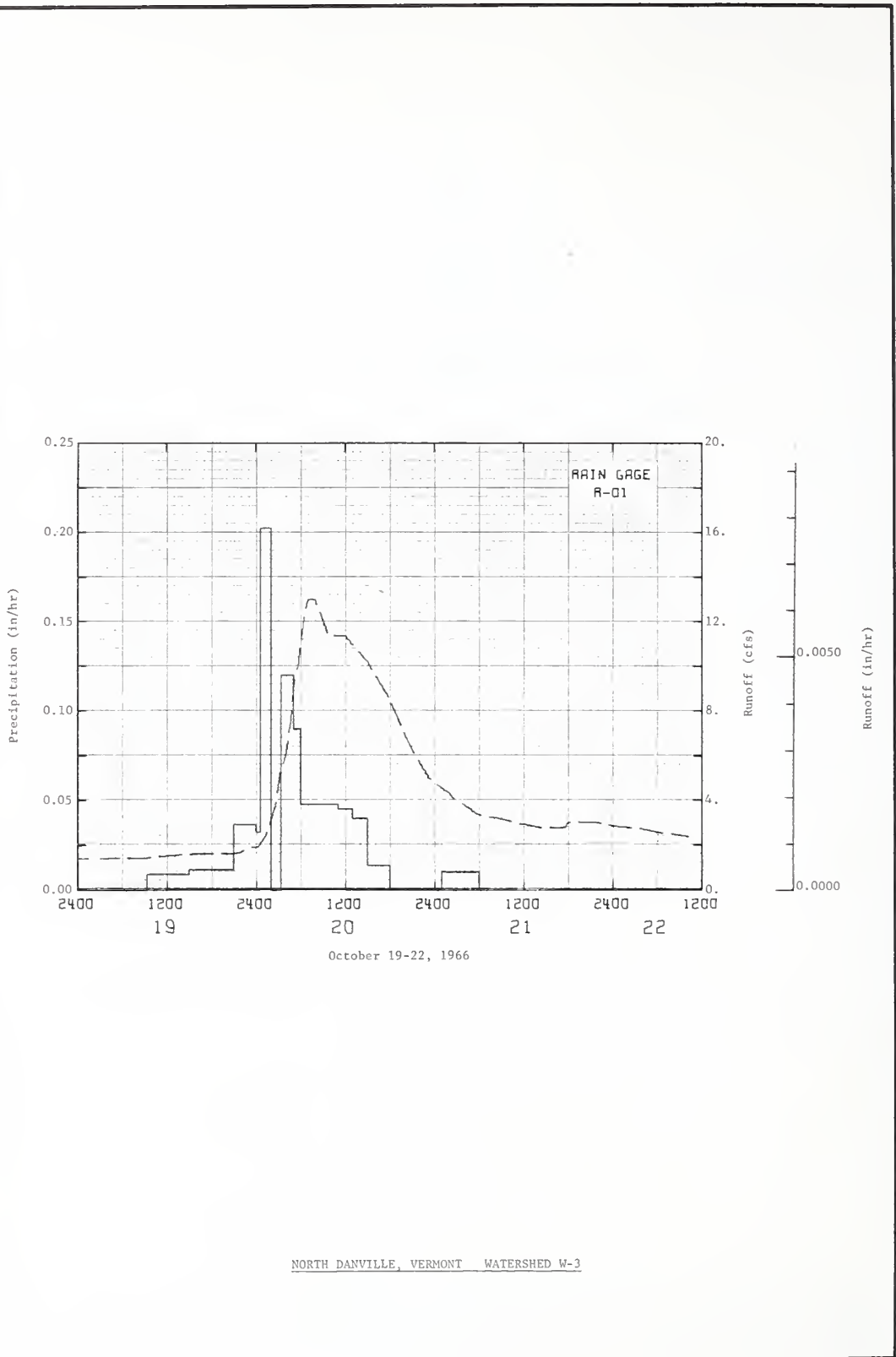
NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 67.3-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-1, 67.1-3, AND 67.3-1 RESPECTIVELY. $\frac{1}{2}$ /RUNOFF PRIOR TO 0416 ON 6-7-65.



NORTH DANVILLE, VERMONT WATERSHED W-3

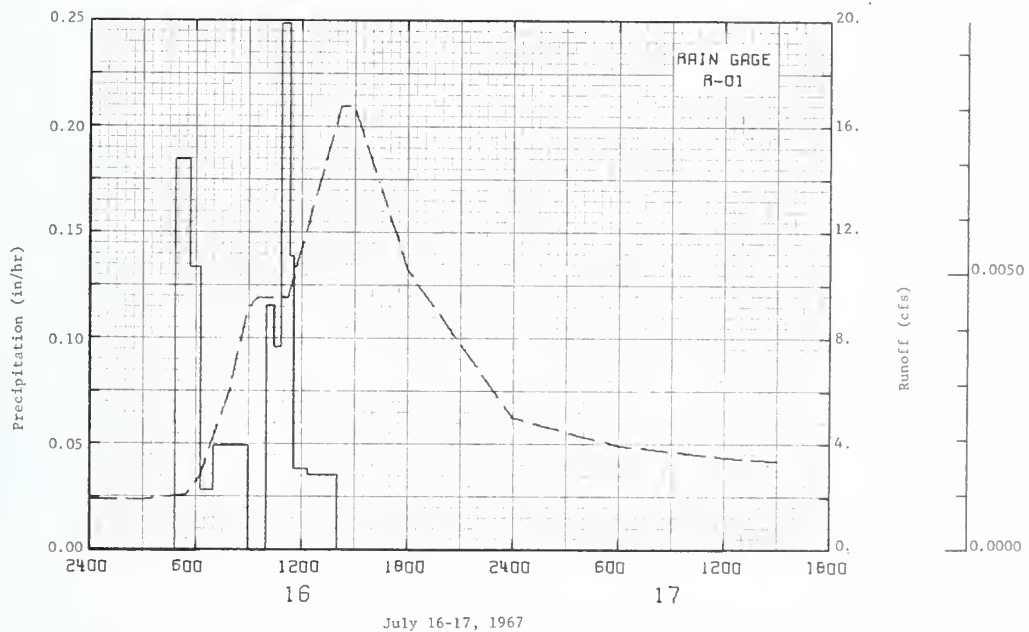
1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-3		67.03	
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of October 19-22, 1966										
10-19	RG R-1 .00	$\frac{1}{2}$.006	10-19	RG 0910	R-1 .0000	.00	10-19	0900	1.459	.0000
						.05		1531	1.426	.0048
						.12		2015	1.626	.0085
						.23		2145	1.688	.0097
			10-20	0037	.0324	.25		2244	1.855	.0105
				0200	.2024	.53		2400	1.938	.0116
				0321	.0000	.53	10-20	0932	2.022	.0121
				0501	.1200	.73		0119	2.459	.0129
				0601	.0900	.82		0154	2.855	.0136
				1100	.0482	1.05		0205	3.147	.0139
				1300	.0450	1.15		0245	3.939	.0150
				1500	.0400	1.23		0316	5.190	.0161
				1759	.0134	1.27		0405	6.149	.0183
			10-21	0100	.0000	1.27		0441	7.566	.0203
				0601	.0100	1.32		0514	9.504	.0226
								0546	10.213	.0251
								0557	10.963	.0260
								0631	12.151	.0291
								0656	13.006	.0316
								0756	13.006	.0378
								0943	11.359	.0492
								0958	11.359	.0496
								1114	11.359	.0565
								1200	11.359	.0607
								1301	10.963	.0661
								1459	10.213	.0761
								1646	9.150	.0844
								1800	9.504	.0896
								1910	7.566	.0941
								2107	6.149	.1005
								2310	4.981	.1064
								2400	4.752	.1080
							10-21	0156	4.335	.1122
								0258	3.939	.1143
								0428	3.699	.1170
								0544	3.356	.1191
								0858	3.147	.1241
								1118	2.939	.1275
								1159	2.939	.1285
								1446	2.751	.1323
								1713	2.751	.1355
								1738	2.855	.1361
								1759	3.043	.1366
								1844	3.043	.1377
								2118	3.043	.1414
								2400	2.955	.1452
							10-22	0302	2.751	.1493
								0601	2.564	.1531
								0843	2.459	.1564
								1012	2.376	.1581

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.1-3 AND 67.3-2 RESPECTIVELY. $\frac{1}{2}$ RUNOFF PRIOR TO 0900 ON 10-19-66.



1967 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)			
Watershed conditions: 67% forest land; 19% pastured land; 11% hay and 3% idle land with dense grass and brush growth.			Event of July 16-17, 1967										
			7-16	.00	.003	7-16	RG	R-1					
							0450	.0000	.00	7-16	0301	1.939	.0000
							0542	.1845	.16		0520	2.105	.0024
							0618	.1333	.24		0616	2.751	.0033
							0700	.0284	.26		0750	6.160	.0070
							0901	.0494	.36		0859	9.150	.0107
							1001	.0000	.36		0929	9.504	.0129
							1027	.1154	.41		1114	0.504	.0209
							1052	.0960	.45		1414	16.757	.0398
							1121	.2483	.57		1459	16.757	.0458
							1134	.1395	.60		1900	10.598	.0654
							1221	.0383	.63		2400	4.001	.0880
							1402	.0356	.69	7-17	0400	3.030	.1008
											1200	3.481	.1115
								1459	3.356	.1164			
								1914	2.855	.1227			
								2129	2.751	.1257			
								2400	2.751	.1290			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY 0.0004798. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.1-4 AND 67.3-2 RESPECTIVELY. 1 RUNOFF PRIOR TO 0301 ON 7-16-67.



NORTH DANVILLE, VERMONT WATERSHED W-3

NORTH DANVILLE, VERMONT WATERSHED W-4

LOCATION: Caledonia Co., Vt.; 4.7 mi. NW of St. Johnsbury; Morrill Brook, Sleepers River, Connecticut River Basin.

AREA: 10,752 ac. (16.8 sq. mi.)

SLOPES:	Percent Slope	0-3	3-8	8-15	15-25	25-35
	Percent of area	3	21	30	27	19

SOILS: Medium acid to neutral glacial till derived from schist interbedded with limestone.

Type	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in)	Structure	Permeability	Structure	Permeability	Avg. depth to (in)	Permeability	
Woodstock fine sandy loam	23	6	Weak granular	Rapid	Weak granular	Rapid	24	(Bedrock) zero	Rapid
Cabot silt loam	21	9	Moderate medium blocky	Moderate	Moderate	Moderate	18	Slow	Medium
Buckland loam	17	8	Moderate medium granular	Moderately rapid	Weak medium subangular blocky	Moderate	27	Slow	Medium
Colrain fine sandy loam	12	6	Weak granular	Rapid	Weak granular	Rapid	33	Rapid	Rapid
Glover rocky loam	12	7	Weak fine granular	Rapid	Weak fine subangular blocky	Moderate	24	(Bedrock) zero	Medium
Calais loam	8	8	Moderate medium granular	Rapid	Weak medium subangular blocky	Moderate	27	Moderate	Medium
Peacham loam	3	10	Moderate fine subangular blocky	Moderate	Structureless	Slow	12	Slow	Very slow
Worthington loam	1	9	Weak fine granular	Rapid	Weak fine granular	Moderately rapid	27	Rapid	Rapid
Other	3								

EROSION: Class 1 - 100%.

LAND CAPABILITY:	Class	I	II	III	IV	V	VII
	Percent of area	0	15	35	12	11	13

GEOLOGY: Very slightly anticlinal with no faults. Predominantly 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 dense and impervious with no solution chambers and has an approximate depth of 10,000 feet. For detailed strike and dip characteristics see Miscellaneous Publication No. 994, page 67.5-6. Overlying this geologic formation is a dense impervious glacial till (boulder clay) that is from 0-90 feet deep. Source of data: The Geology of the Lyndonville Area, Vermont; The Geology of the St. Johnsbury Quadrangle, Vermont and New Hampshire; Bulletin Nos. 8 and 13, Vermont Geological Survey, Vermont Development Commission, Montpelier, Vermont.

SURFACE DRAINAGE: For the nature of the principle waterway and its tributaries, see page 67.4-1 of this publication. For elevation characteristics, see Miscellaneous Publication No. 994, page 67.5-5.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: Stream discharge is recorded over a 5:1 broad crested V-notch Weir with a capacity of 7,000 cfs. The recording device consists of a continuous water stage recorder with chart speed of 9.6 in/day and gage scale of 1:6; field rating was established by current meter measurements.

WATERSHED CONDITIONS: Forest 74%, cultivated 12%, pasture 12%, and idle 2%.

GENERALLY REPRESENTS: Sloping to steep cultivated and forested land at higher elevations in the New England and Eastern New York Upland resource area with rapid to slowly permeable soils, rapid to moderate internal drainage, excellent surface drainage, and little or no erosion problems.

MONTHLY PRECIPITATION AND RUNOFF (inches) ^{1/}						NORTH DANVILLE, VERMONT WATERSHED W-4 AREA—10,752 ACRES (16.8 SQ. MI.)							67.04
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1960 P	2.18	2.41	1.47	3.42	2.97	3.34	2.99	1.69	3.88	4.01	2.60	1.59	32.55
Q	1.61	1.45	1.24	7.66	4.22	1.05	.43	.23	.42	1.00	1.18	.96	21.45
1961 P	.85	2.54	1.72	3.78	2.91	5.14	3.68	3.21	1.57	1.64	2.53	2.44	32.01
Q	.61	.97	1.67	5.11	3.89	2.96	1.73	.73	.45	.36	.72	.74	19.94
1962 P	2.03	2.32	1.71	3.18	2.91	2.91	4.62	2.70	3.71	6.71	2.36	2.00	37.16
Q	.71	.40	1.09	6.01	2.74	.78	.58	.75	.70	2.90	2.42	1.21	20.29
1963 P	2.14	2.30	2.21	3.82	2.72	1.57	3.69	4.84	1.48	.34	5.25	1.81	32.17
Q	.76	.54	1.11	6.92	3.73	.73	.35	.54	.22	.19	1.20	1.02	17.31
1964 P	2.48	.99	3.89	3.12	3.36	1.78	3.44	5.10	1.06	1.88	3.08	3.15	33.33
Q	.74	.54	2.00	5.37	2.68	.74	.41	.72	.27	.42	.94	1.24	16.07
1965 P	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86	36.45
Q	.86	.80	1.41	2.93	1.45	.93	.53	.74	1.15	1.98	2.30	1.51	16.59
1966 P	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81	32.11
Q	.91	.72	2.46	3.85	3.39	1.45	.36	.37	.41	.53	.84	.96	16.25
1967 P	1.25	1.82	.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51	36.87
Q	.63	.45	.71	4.80	4.50	1.69	1.07	.56	.48	1.76	1.34	1.63	19.62
STA AV ^{2/} P	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53	34.85
Q	.85	.73	1.46	5.33	3.32	1.29	.68	.58	.51	1.14	1.37	1.16	18.44
MEAN P ^{3/} 73 YR	2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99

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	4-18	.04	4-18	.04	4-18	.07	4-18	.20	4-18	.32	4-18	.52	4-17	.94	4-12	2.75	
1961	6-13	.04	6-13	.04	6-13	.07	6-13	.17	6-13	.26	4-26	.39	4-26	.64	4-21	2.15	
1962	10-7	.04	10-7	.04	10-7	.07	10-6	.21	10-6	.38	10-6	.66	4-7	.91	4-6	2.34	
1963	4-22	.04	4-22	.04	4-21	.07	4-21	.19	4-21	.32	4-21	.50	4-20	.89	4-16	2.60	
1964	4-14	.03	4-14	.03	4-14	.05	4-14	.10	4-14	.16	4-14	.30	4-14	.56	4-12	2.57	
1965	11-17	.02	11-17	.02	11-17	.04	11-17	.08	11-17	.12	11-17	.21	11-17	.30	4-15	1.20	
1966	3-25	.02	3-25	.02	3-25	.04	3-25	.12	3-25	.26	3-25	.50	3-24	.67	4-19	1.66	
1967	5-3	.02	5-3	.02	5-3	.04	5-3	.09	5-3	.12	5-3	.21	4-2	.35	4-15	1.50	
MAXIMUMS FOR PERIOD OF RECORD																	
1960 TO 1967	4-18	.04	4-18	.04	4-18	.07	10-6	.21	10-6	.38	10-6	.66	4-17	.94	4-12	2.75	
	1960		1960		1960		1962		1962		1962		1960		1960		

Notes: Watershed Conditions: See page 67.4-1. ^{1/} Precipitation data obtained from the R-10 gage. ^{2/} Precipitation records began Sept. 1958, Runoff records began Jan. 1960, part year records not used in Sta Av. ^{3/} Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period at St. Johnsbury, Vt.

1962 DAILY AIR TEMPERATURE (degrees F)														NORTH DANVILLE, VERMONT WATERSHED W-4												67.04	
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	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	81	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	15	32	30	51	26	84	46	73	28	82	38	79	50	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	8			

Notes: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYGROTHERMOGRAPH CHARTS. FOR OTHER TEMPERATURE VALUES FOR 1965, 1966, AND 1967, SEE PAGES 67.1-1.2. STA AV (STATION AVERAGE) BASED ON 1960-62 RECORDS.

1963 DAILY AIR TEMPERATURE (degrees F)														NORTH DANVILLE, VERMONT WATERSHED W-4												67.04	
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	MAX	MIN	
1	6	-4	20	-20	27	-8	58	14	48	29	86	40	92	64	73	39	67	44	63	25	48	35	26	6			
2	29	6	24	-2	33	20	51	31	48	30	84	44	96	63	66	58	74	41	74	35	44	35	26	6			
3	32	20	30	-16	34	14	32	30	66	24	82	42	70	50	79	52	75	50	64	46	34	4	26	5			
4	34	24	7	-24	38	18	42	12	77	38	88	54	64	46	74	52	68	38	50	38	46	4	25	8			
5	28	16	24	7	36	11	26	10	58	28	86	58	68	46	72	55	65	34	68	28	44	0	28	2			
6	31	16	32	18	34	11	40	18	59	22	82	60	67	44	80	54	66	39	78	34	44	7	20	0			
7	33	24	25	-12	31	20	43	28	58	27	77	50	68	42	81	56	73	48	84	50	59	43	26	16			
8	36	29	2	-24	40	4	38	24	66	37	78	50	68	47	78	54	75	42	63	38	57	49	30	2			
9	39	32	22	-7	39	8	38	20	74	48	72	45	64	43	76	46	74	48	48	26	50	42	40	8			
10	46	32	31	-3	38	8	32	26	48	26	62	38	65	46	62	44	60	41	62	26	43	9	30	4			
11	37	24	30	10	28	11	40	29	42	24	58	32	74	44	63	40	74	34	64	32	40	7	16	-2			
12	30	20	30	20	33	19	48	33	52	20	52	48	82	46	66	44	67	40	51	40	40	42	14	-2			
13	35	6	24	14	40	30	42	27	64	24	72	46	88	52	56	38	52	32	54	31	40	0	23	0			
14	20	-4	24	8	34	22	42	24	66	40	78	39	78	58	58	50	64	28	68	28	38	42	26	8			
15	21	-4	13	-4	30	10	48	28	62	32	66	47	73	56	68	48	68	31	75	40	38	8	12	6			
16	8	-21	0	-14	42	-5	56	26	76	27	70	40	76	58	62	42	74	34	74	43	40	26	8	2			
17	26	-7	18	-23	37	29	54	24	77	33	74	38	82	51	68	38	77	39	67	48	44	24	10	-6			
18	30	4	40	18	38	24	58	26	57	44	74	42	86	56	62	45	80	44	75	46	50	40	12	-8			
19	33	21	40	34	45	19	46	22	70	48	78	38	82	59	70	38	74	44	76	42	44	4	10	-3			
20	37	23	36	23	31	20	65	40	56	36	76	48	86	52	70	49	54	42	76	42	46	29	4	-1			
21	33	6	30	2	38	17	61	34	68	34	64	44	80	54	78	50	60	32	58	46	42	8	4	-0			
22	10	-8	7	-12	30	21	40	26	64	43	58	43	80	52	78	54	53	40	54	26	54	42	20	-2			
23	24	-1	16	-4	31	10	41	24	44	32	75	42	86	54	72	56	48	30	64	34	58	5	12	-8			
24	0	-10	26	4	48	1	38	26	63	24	88	46	90	54	61	48	58	24	76	40	34	0	20	0			
25	12	-14	24	8	58	27	44	29	72	25	87	46	94	62	60	46	68	26	78	44	26	15	24	-1			
26	14	-14	12	-15	64	34	42	26	75	30	90	56	92	61	67	37	76	34	75	46	40	6	10	-9			
27	25	6	26	-22	48	30	47	28	80	34	88	50	90	60	65	44	65	46	68	44	50	24	6	-7			
28	8	-6	26	1	38	20	54	25	70	37	88	58	94	65	68	37	56	34	58	46	34	16	12	-8			
29	13	-11	---	---	42	10	68	20	64	52	83	54	90	64	58	53	46	34	48	32	44	33	19	-6			
30	24	7	---	---	58	32	48	38	69	50	92	66	69	50	67	52	50	30	40	32	52	12	12	-7			
31																											

1964 DAILY AIR TEMPERATURE (degrees F)												NORTH DANVILLE, VERMONT WATERSHED W-4 67.04												
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	-14	31	26	40	12	26	2	70	34	62	38	82	58	78	40	62	40	54	26	50	20	17	9
2	26	14	30	6	44	30	38	4	68	32	64	40	76	50	68	56	64	36	56	36	46	24	22	8
3	32	28	11	0	51	24	36	22	72	30	65	34	74	56	72	47	63	38	61	41	48	20	28	14
4	37	16	27	11	48	24	24	12	74	34	55	44	76	56	74	42	58	48	67	36	48	22	26	20
5	19	-4	32	22	54	35	42	3	72	40	57	34	66	54	64	52	64	50	44	26	36	24	25	22
6	24	-4	32	10	33	14	40	12	76	40	72	30	70	54	63	42	64	46	50	20	40	36	24	8
7	28	12	32	28	48	12	49	32	82	46	72	48	70	50	76	36	68	40	40	24	41	24	18	-5
8	30	5	31	16	46	36	46	36	78	56	74	51	76	50	74	52	75	41	49	16	49	22	17	-6
9	30	2	13	-6	35	25	34	32	75	56	74	48	77	50	53	38	70	50	54	32	49	24	25	2
10	31	12	16	-10	24	18	50	30	58	48	78	46	78	50	66	36	62	52	46	30	38	28	21	4
11	12	-4	20	-14	28	14	47	28	60	46	67	44	81	52	74	46	65	50	38	24	34	24	34	5
12	6	-12	34	-6	30	15	58	24	72	44	74	46	80	56	71	58	53	32	48	20	43	35	44	34
13	4	-12	30	7	32	10	64	32	72	44	72	46	72	58	59	38	60	26	44	40	58	38	40	34
14	8	-3	28	12	40	10	54	48	56	42	64	53	76	60	60	38	62	28	48	34	40	28	40	16
15	20	-12	30	0	42	26	54	38	68	32	62	44	78	58	57	42	51	30	72	28	32	21	26	4
16	22	-2	22	4	26	12	48	32	74	44	56	39	80	56	70	42	52	27	73	38	36	24	16	-6
17	26	4	18	0	32	6	40	30	68	48	61	46	86	56	72	50	56	32	70	34	32	26	35	18
18	30	6	36	-6	24	10	58	34	64	44	70	40	90	60	66	46	56	39	63	42	36	18	28	4
19	36	26	29	4	26	14	47	30	66	42	80	44	82	60	62	42	58	28	46	38	32	10	24	2
20	38	28	26	16	34	20	40	30	62	36	84	56	78	52	62	42	60	26	44	32	42	20	30	16
21	38	32	18	5	40	16	56	32	62	30	80	56	86	64	64	44	64	34	40	30	36	20	32	10
22	34	18	14	-4	40	26	40	38	77	40	76	50	80	64	52	47	68	34	40	28	28	10	24	14
23	32	10	32	-8	32	18	48	38	85	58	80	46	86	62	58	51	73	50	38	22	32	2	35	25
24	42	28	30	2	43	12	46	40	84	65	78	60	70	62	70	50	68	48	36	26	32	18	44	35
25	44	28	22	-10	40	30	56	30	64	46	68	46	72	60	74	44	52	38	52	32	39	30	52	44
26	34	16	26	4	32	28	65	32	68	41	76	40	80	53	66	48	64	34	56	28	52	40	52	44
27	26	14	10	-10	29	22	70	34	64	48	68	46	84	62	70	40	68	46	64	38	42	18	46	26
28	18	6	28	-12	34	12	63	34	48	39	70	40	90	60	74	40	52	28	60	40	34	16	26	16
29	18	2	30	16	40	20	64	26	47	34	76	40	86	56	80	48	48	28	52	39	42	24	24	7
30	24	10	---	---	30	14	72	29	56	36	86	56	68	51	81	54	56	38	40	32	26	18	28	16
31	30	6	---	---	22	8	---	---	62	34	---	---	68	45	78	60	---	---	38	25	---	---	---	---
AV.	26	8	25	4	36	18	47	28	68	42	70	45	78	56	68	46	61	38	51	31	40	23	30	15
MEAN	17.0	14.5	27.0	17.5	37.5	55.0	57.5	55.0	67.0	57.0	67.0	67.0	77.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0	67.0
STA AV	24	5	27	5	34	16	47	28	65	40	74	47	76	53	73	49	66	42	56	35	41	26	25	8

Notes: TEMPERATURE DATA IS FROM R-12. READINGS TAKEN DAILY FROM HYGROTHERMOGRAPH CHARTS. FOR OTHER TEMPERATURE VALUES FOR 1965, 1966, AND 1967, SEE PAGES 67.1-1.2. STA AV (STATION AVERAGE) BASED ON 1960-64 RECORDS.

1960 DAILY PRECIPITATION (inches)												NORTH DANVILLE, VERMONT WATERSHED W-4 67.04												
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	1	0.00	0.00	0.00	0.16	0.25	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.05		
2	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.71	0.04	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.00	0.00	0.00
4	0.13	0.00	0.00	0.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.08	0.00	0.00	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.03	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.00	0.00	0.00	0.00	0.00
7	0.10	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00
8	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.00	0.00
9	0.00	0.10	0.00	0.08	0.38	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.01	0.00	0.00
10	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.00	0.00	0.00	0.15	0.05	0.00	0.00	0.00
11	0.00	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.05	0.00	0.25	0.12	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	2.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.22	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.04	0.00	0.00	1.05	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.52	0.00	0.00	0.00	0.00
16	0.16	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.03	0.00	0.00	0.26	0.00	0.00
17	0.04	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.19	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.00	0.00	0.00	0.00	0.00	0.00
20	0.02	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.15	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77
22	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00
23	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.30	0.11	0.00	0.00	0.00	0.00	0.00
24	0.00	0.04	0.00	0.24	0.34	1.17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00	0.00	0.00
25																								

1961 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-4 67.04						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.57	0.00	0.02	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.00
2	0.00	0.00	0.03	0.07	0.62	0.84	0.56	0.00	0.45	0.00	0.00	0.00
3	0.00	0.00	0.00	0.10	0.04	0.00	0.24	0.00	0.25	0.29	0.00	0.00
4	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.23	0.18	0.25
5	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.39
6	0.00	0.00	0.27	0.00	0.00	0.06	0.00	0.00	0.00	0.00	0.05	0.00
7	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.12
8	0.15	0.00	0.06	0.00	0.00	0.69	0.87	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.49	0.00	0.33	0.00	0.05	0.00	0.00	0.00	0.02	0.00
10	0.00	0.00	0.00	0.34	0.20	0.55	0.30	0.00	0.00	0.00	0.00	0.03
11	0.00	0.00	0.00	0.48	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.45	0.00	0.00	0.00	0.07
13	0.00	0.00	0.00	0.14	0.00	1.41	0.00	0.00	0.00	0.00	0.05	0.03
14	0.00	0.07	0.21	0.11	0.00	0.02	0.00	0.00	0.00	0.60	0.14	0.00
15	0.00	0.08	0.27	0.00	0.00	0.00	0.00	0.38	0.62	0.00	0.21	0.04
16	0.00	0.00	0.17	0.79	0.77	0.00	0.95	0.16	0.00	0.00	0.04	0.00
17	0.00	0.10	0.00	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15
18	0.00	0.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.10
19	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.47
20	0.05	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.25	0.24
21	0.00	0.00	0.00	0.00	0.15	0.25	0.30	1.21	0.10	0.00	0.07	0.04
22	0.00	0.00	0.00	0.13	0.01	0.90	0.00	0.08	0.00	0.00	0.00	0.00
23	0.00	0.72	0.00	0.52	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.14	0.00	0.00	0.00	0.21	0.09	0.00	0.00	0.00	0.55	0.05
25	0.00	0.77	0.00	0.00	0.00	0.18	0.32	0.07	0.00	0.00	0.00	0.00
26	0.05	0.41	0.00	0.61	0.52	0.00	0.00	0.29	0.00	0.05	0.00	0.02
27	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00	0.00	0.10	0.03
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.41
29	0.00	-----	0.00	0.00	0.07	0.00	0.00	0.10	0.00	0.03	0.06	0.00
30	0.00	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.00	0.00
31	0.00	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.00
TOTAL	0.85	2.54	1.72	3.78	2.91	5.14	3.68	3.21	1.57	1.64	2.53	2.44
STAV	2.39	2.68	2.38	2.83	2.38	3.54	2.40	3.34	2.58	4.62	3.50	2.54

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 3-YR RECORD PERIOD 1959-1961.

1962 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-4 67.04						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.00	0.02	0.03	0.79	0.02	0.10	0.05	0.20	0.00	0.00	0.28	0.00
2	0.00	0.00	0.00	0.01	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.08	0.10	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.25	0.00
4	0.10	0.03	0.08	0.00	0.11	0.00	0.00	0.06	0.00	0.00	0.05	0.00
5	0.13	0.07	0.12	0.00	0.00	0.04	0.00	0.00	0.25	0.75	0.00	0.00
6	0.43	0.05	0.00	0.00	0.05	0.00	0.00	0.21	0.10	2.25	0.00	0.15
7	0.25	0.00	0.00	0.72	0.00	0.00	0.00	0.33	0.00	0.90	0.00	0.05
8	0.03	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
9	0.00	0.05	0.00	0.20	0.00	0.00	0.66	0.02	0.00	0.45	0.00	0.23
10	0.00	0.05	0.00	0.05	0.00	0.00	0.00	0.47	0.88	0.15	0.27	0.09
11	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.03	0.47	0.00	0.38	0.00
12	0.00	0.00	0.25	0.04	0.00	0.00	0.05	0.00	0.00	0.25	0.00	0.00
13	0.00	0.00	0.30	0.34	0.00	0.00	0.55	0.00	0.00	0.00	0.00	0.00
14	0.00	0.06	0.00	0.16	0.18	0.00	0.00	0.40	0.05	0.00	0.00	0.00
15	0.53	0.00	0.00	0.10	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00
16	0.03	0.30	0.00	0.03	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.14	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.05	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.05	0.00	0.05	0.00
19	0.00	0.32	0.00	0.00	0.00	0.89	0.00	0.00	0.08	0.00	0.00	0.05
20	0.00	0.07	0.00	0.00	1.07	0.00	0.00	0.45	0.07	0.00	0.00	0.04
21	0.00	0.00	0.00	0.00	0.03	0.00	0.22	0.10	0.00	0.16	0.13	0.00
22	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.77	0.60
23	0.00	0.17	0.00	0.14	0.00	0.81	0.37	0.00	0.00	0.08	0.00	0.10
24	0.00	0.52	0.00	0.00	0.83	0.06	0.19	0.00	0.00	0.06	0.18	0.10
25	0.00	0.15	0.00	0.00	0.00	0.60	0.00	0.00	0.00	0.10	0.00	0.00
26	0.05	0.13	0.00	0.00	0.00	0.00	0.36	0.00	0.20	0.00	0.00	0.00
27	0.10	0.04	0.03	0.00	0.00	0.00	0.05	0.00	0.36	0.04	0.00	0.00
28	0.00	0.12	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.30	0.00	0.00
29	0.00	-----	0.00	0.05	0.00	0.00	0.00	0.43	0.05	0.00	0.00	0.35
30	0.28	-----	0.00	0.52	0.00	0.10	0.00	0.00	0.00	0.10	0.00	0.07
31	0.02	-----	0.89	0.00	0.00	0.00	1.80	0.00	0.00	1.07	0.00	0.12
TOTAL	2.03	2.32	1.71	1.78	2.91	4.62	2.70	2.70	3.71	6.71	2.36	2.00
STAV	2.30	2.59	2.21	2.92	2.51	3.38	2.95	3.18	2.86	5.14	3.22	2.40

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 4-YR RECORD PERIOD 1959-1962.

1963 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-4 67.04						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.02	0.00	0.08	0.00	0.28	0.00	0.00	0.14	0.00	0.00	0.58	0.01
2	0.00	0.80	0.04	0.10	0.00	0.00	0.42	0.64	0.00	0.00	0.22	0.00
3	0.00	0.05	0.00	1.00	0.00	0.00	0.00	0.04	0.27	0.05	0.19	0.24
4	0.00	0.08	0.14	0.33	0.00	0.00	0.33	0.58	0.03	0.00	0.05	0.00
5	0.00	0.17	0.01	0.00	0.28	0.00	0.08	0.00	0.00	0.00	0.00	0.00
6	0.00	0.07	0.54	0.00	0.00	0.11	0.00	0.00	0.00	0.00	0.08	0.00
7	0.00	0.06	0.07	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.26	0.00
8	0.00	0.00	0.10	0.00	0.42	0.00	0.55	0.00	0.00	0.06	0.46	0.00
9	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.25	0.00	0.00	0.39	0.56
10	0.00	0.00	0.15	0.15	0.64	0.00	0.00	0.00	0.00	0.00	0.16	0.08
11	0.09	0.00	0.00	0.02	0.30	0.15	0.00	0.05	0.00	0.20	0.40	0.07
12	0.22	0.41	0.22	0.00	0.00	0.05	0.00	0.00	0.25	0.00	0.10	0.19
13	0.34	0.07	0.23	0.00	0.00	0.00	0.00	0.95	0.00	0.00	0.01	0.14
14	0.00	0.03	0.02	0.00	0.06	0.00	0.15	0.52	0.00	0.00	0.04	0.03
15	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.32	0.00	0.00	0.00	0.05
16	0.00	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.00	0.00	0.06	0.00
17	0.00	0.00	0.25	0.00	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.01	0.45	0.23	0.00	0.17	0.18	0.00	0.00	0.48	0.03
19	0.00	0.16	0.00	0.20	0.00	0.00	0.10	0.00	0.05	0.03	0.05	0.03
20	0.22	0.13	0.28	0.15	0.26	0.05	0.00	0.00	0.00	0.00	0.00	0.03
21	0.05	0.12	0.02	0.54	0.02	0.63	0.45	0.00	0.00	0.00	0.10	0.00
22	0.00	0.00	0.00	0.01	0.04	0.02	0.00	0.00	0.05	0.00	0.00	0.00
23	0.55	0.00	0.00	0.10	0.05	0.00	0.00	0.52	0.00	0.00	0.48	0.03
24	0.05	0.13	0.00	0.31	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.12
25	0.00	0.02	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.55	0.00	0.05	0.00	0.00	0.05	0.00	0.00	0.14	0.00	0.00	0.00
28	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.07
29	0.00	-----	0.00	0.00	0.02	0.00	0.03	0.15	0.67	0.00	0.74	0.08
30	0.00	-----	0.00	0.42	0.12	0.00	0.99	0.35	0.00	0.00	0.40	0.00
31	0.00	-----	0.00	-----	0.00	-----	0.00	0.20	-----	0.00	-----	0.00
TOTAL	2.14	2.30	2.21	3.82	2.72	1.57	3.69	4.84	1.48	0.34	5.25	1.81
STA AV	2.27	2.53	2.21	3.10	2.55	3.02	3.10	3.51	2.58	4.18	3.62	2.28

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 5-YR RECORD PERIOD 1959-1963.

1964 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-4 67.04						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.18	0.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.12	0.06	0.00	0.27	0.00	0.00	0.20	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.47	0.00	0.10	0.40	0.00	0.00	0.35	0.00	0.19
4	0.06	0.05	0.42	0.02	0.00	0.36	0.00	0.00	0.45	0.02	0.00	0.85
5	0.00	0.19	1.09	0.00	0.00	0.00	0.05	0.05	0.00	0.03	0.45	0.14
6	0.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06
7	0.02	0.06	0.00	0.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.03	0.06	0.00	0.00	0.09	0.10	0.00	0.00	0.05
9	0.40	0.00	0.41	0.00	0.39	0.00	0.00	0.00	0.00	0.00	0.00	0.04
10	0.20	0.00	0.53	0.00	0.19	0.10	0.00	0.00	0.00	0.02	0.05	0.00
11	0.00	0.00	0.02	0.00	0.11	0.00	0.05	0.00	0.14	0.02	0.20	0.07
12	0.00	0.00	0.00	0.00	0.00	0.00	0.04	1.70	0.00	0.00	0.00	0.09
13	0.05	0.05	0.00	0.00	0.20	0.00	0.10	0.00	0.00	0.08	0.15	0.01
14	0.05	0.05	0.02	0.61	0.65	0.05	0.64	0.05	0.00	0.00	0.00	0.10
15	0.00	0.00	0.10	0.31	0.00	0.21	0.01	0.10	0.00	0.00	0.00	0.00
16	0.03	0.18	0.00	0.00	0.18	0.08	0.00	0.00	0.00	0.00	0.40	0.00
17	0.01	0.00	0.00	0.29	0.17	0.00	0.00	0.05	0.00	0.15	0.06	0.00
18	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.12	0.09	0.04
19	0.00	0.04	0.00	0.00	0.23	0.00	0.45	0.00	0.00	0.26	0.33	0.00
20	0.01	0.00	0.00	0.00	0.05	0.00	0.00	0.05	0.00	0.00	0.25	0.00
21	0.44	0.05	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.56	0.00	0.00
22	0.00	0.00	0.00	0.81	0.05	0.00	0.83	0.95	0.00	0.02	0.00	0.11
23	0.00	0.00	0.00	0.06	0.00	0.00	0.00	1.67	0.00	0.00	0.00	0.05
24	0.00	0.00	0.00	0.00	0.17	0.20	0.00	0.10	0.00	0.00	0.00	0.07
25	0.70	0.00	0.10	0.00	0.38	0.00	0.00	0.00	0.00	0.00	0.00	0.03
26	0.07	0.04	0.77	0.00	0.12	0.06	0.00	0.25	0.00	0.00	0.90	0.25
27	0.00	0.00	0.03	0.00	0.38	0.54	0.00	0.00	0.37	0.00	0.00	0.37
28	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.05	0.48
29	0.00	0.00	0.40	0.00	0.00	0.03	0.15	0.04	0.00	0.25	0.15	0.00
30	0.04	-----	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.09
31	0.00	-----	0.00	-----	0.00	-----	0.00	0.00	-----	0.00	-----	0.06
TOTAL	2.48	0.99	3.89	3.12	3.36	1.78	3.44	5.10	1.06	1.88	3.08	3.15
STA AV	2.30	2.28	2.49	3.10	2.69	2.81	3.16	3.77	2.33	3.80	3.53	2.43

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 6-YR RECORD PERIOD 1959-1964.

1965 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.73	0.06	0.00		
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00		
3	0.00	0.00	0.00	0.00	0.00	0.05	0.62	0.00	0.00	0.24	0.00	0.09		
4	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00	0.35		
5	0.00	0.05	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00	0.00		
6	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.06		
7	0.00	0.55	0.00	0.16	0.00	1.47	0.00	0.64	0.00	0.25	0.00	0.00		
8	0.04	0.14	0.00	0.09	0.00	0.02	0.25	0.46	0.02	0.35	0.72	0.00		
9	0.15	0.03	0.00	0.00	0.08	0.08	0.00	0.25	0.00	0.03	0.13	0.00		
10	0.00	0.57	0.00	0.00	0.10	0.30	0.09	0.76	0.47	0.00	0.00	0.00		
11	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12	0.00	0.15	0.00	0.55	0.00	0.39	0.00	0.77	0.00	0.32	0.00	0.15		
13	0.10	0.00	0.00	0.20	0.00	1.41	0.00	0.50	0.25	0.00	0.15	0.20		
14	0.05	0.00	0.00	0.00	0.00	0.15	0.08	0.00	0.00	0.00	0.10	0.20		
15	0.00	0.05	0.00	0.15	0.00	0.00	0.02	0.00	0.25	0.59	0.00	0.05		
16	0.02	0.00	0.00	0.23	0.00	0.25	0.00	0.00	0.00	0.00	0.60	0.09		
17	0.05	0.00	0.00	0.02	0.13	0.00	0.09	0.00	0.00	0.00	1.17	0.02		
18	0.00	0.21	0.05	0.00	0.00	0.20	1.44	0.60	0.05	0.00	0.08	0.00		
19	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.35	0.15	0.00	0.00	0.05		
20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.00		
21	0.00	0.00	0.00	0.20	0.00	0.14	0.00	0.00	0.00	0.00	0.15	0.02		
22	0.00	0.00	0.15	0.05	0.04	0.01	0.00	0.00	0.00	0.14	0.00	0.00		
23	0.00	0.00	0.04	0.09	0.00	0.38	0.00	0.11	0.04	0.81	0.00	0.00		
24	0.44	0.00	0.00	0.00	0.00	0.12	0.10	0.00	0.86	0.03	0.00	0.35		
25	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.10	0.18		
26	0.27	0.00	0.21	0.29	0.00	0.00	0.00	0.95	0.00	0.00	0.26	0.02		
27	0.06	0.00	0.04	0.03	0.05	0.00	0.10	0.00	0.00	0.10	0.82	0.03		
28	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.15	0.07	0.00		
29	0.00	---	0.13	0.00	0.00	0.00	0.09	0.14	0.00	0.00	0.04	0.00		
30	0.00	---	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00		
31	0.00	---	0.00	0.00	0.35	---	0.00	0.00	---	0.19	---	0.00		
TOTAL	1.46	2.32	0.69	2.06	0.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86		
STA AV	2.18	2.28	2.24	2.95	2.42	3.12	3.23	4.10	2.58	3.83	3.67	2.35		

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 7-YR RECORD PERIOD 1959-1965.

1966 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	0.00	0.00	0.65	0.00	0.13	0.00	0.00	0.00	0.00	0.01	0.00	0.14		
2	0.04	0.00	0.26	0.05	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.07		
3	0.21	0.00	0.00	0.05	0.14	0.00	0.00	0.00	0.00	0.00	0.90	0.04		
4	0.00	0.00	0.22	0.00	0.09	0.15	0.02	0.00	0.68	0.20	0.00	0.00		
5	0.00	0.00	0.83	0.05	0.11	0.10	0.00	0.00	0.00	0.08	0.06	0.00		
6	0.05	0.00	0.21	0.00	0.38	0.30	0.15	0.00	0.05	0.02	0.09	0.03		
7	0.00	0.00	0.08	0.04	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.24		
8	0.35	0.00	0.05	0.38	0.00	0.22	0.00	0.23	0.00	0.00	0.11	0.37		
9	0.00	0.00	0.00	0.08	0.65	0.13	0.00	0.00	0.00	0.00	0.02	0.00		
10	0.01	0.00	0.00	0.00	0.04	0.97	0.38	0.00	0.00	0.20	0.02	0.00		
11	0.04	0.20	0.00	0.09	0.00	0.00	0.01	0.45	0.00	0.00	0.27	0.30		
12	0.00	0.00	0.15	0.01	0.27	0.00	0.31	0.09	0.00	0.10	0.00	0.00		
13	0.00	0.83	0.22	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
14	0.05	0.07	0.02	0.00	0.00	0.14	0.00	0.00	0.09	0.00	0.00	0.00		
15	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.17	0.00	0.00	0.00		
16	0.00	0.05	0.00	0.00	0.00	0.34	0.00	0.56	0.00	0.06	0.20	0.02		
17	0.00	0.10	0.00	0.00	0.10	0.04	0.00	0.58	0.00	0.00	0.03	0.00		
18	0.00	0.05	0.02	0.00	0.42	0.00	0.05	0.00	0.00	0.00	0.06	0.03		
19	0.11	0.00	0.00	0.00	0.83	0.00	0.40	0.00	0.00	0.22	0.00	0.00		
20	0.00	0.00	0.10	0.00	0.16	0.02	0.00	0.00	0.00	1.11	0.00	0.00		
21	0.03	0.15	0.00	0.10	0.00	0.01	0.05	0.00	0.30	0.00	0.00	0.00		
22	0.00	0.10	0.05	0.00	0.00	0.00	0.00	0.46	1.06	0.00	0.00	0.00		
23	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.50	0.24	0.00	0.00	0.00		
24	0.05	0.00	0.38	0.15	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.30		
25	0.00	0.47	0.54	0.00	0.00	0.25	0.00	0.09	0.10	0.00	0.17	0.30		
26	0.00	0.00	0.00	0.00	0.00	0.08	0.49	0.06	0.00	0.00	0.00	0.02		
27	0.11	0.00	0.05	0.00	0.00	0.00	0.17	0.06	0.00	0.00	0.00	0.00		
28	0.00	0.07	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.03		
29	0.00	---	0.00	0.00	0.00	0.50	0.00	0.00	0.11	0.09	0.08	0.87		
30	0.24	---	0.15	0.09	0.00	0.00	0.00	0.32	0.04	0.00	0.55	0.05		
31	0.00	---	0.00	0.00	0.00	---	0.00	0.00	---	0.00	---	0.00		
TOTAL	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81		
STA AV	2.08	2.26	2.45	2.72	2.57	3.16	3.13	4.05	2.62	3.61	3.53	2.40		

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 8-YR RECORD PERIOD 1959-1966.

1967 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00		
2	0.03	0.26	0.00	0.10	0.30	0.00	0.00	0.00	0.04	0.03	0.15	0.00		
3	0.00	0.00	0.02	0.10	0.70	0.00	0.35	0.06	0.02	0.00	0.10	0.41		
4	0.10	0.09	0.00	0.00	0.10	0.00	0.00	0.25	0.31	0.00	0.30	0.03		
5	0.15	0.03	0.22	0.00	0.10	0.00	0.00	0.00	0.04	0.55	0.00	0.00		
6	0.00	0.00	0.05	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
7	0.05	0.00	0.20	0.25	0.03	0.21	0.00	0.00	0.00	0.00	0.00	0.00		
8	0.00	0.00	0.01	0.00	0.32	0.14	0.00	0.00	0.00	0.01	0.00	0.30		
9	0.00	0.00	0.00	0.00	0.24	0.11	0.50	0.26	0.15	0.11	0.00	0.00		
10	0.00	0.00	0.00	0.55	0.01	0.00	0.00	0.07	0.75	1.60	0.00	0.00		
11	0.03	0.05	0.00	0.00	0.31	0.90	0.00	0.00	0.00	0.07	0.00	0.00		
12	0.08	0.00	0.00	0.00	0.07	0.00	0.93	0.00	0.00	0.00	0.11	1.28		
13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00		
14	0.07	0.00	0.00	0.00	0.00	0.11	0.00	0.05	0.00	0.06	0.04	0.00		
15	0.06	0.00	0.00	0.54	0.29	0.41	0.00	0.00	0.00	0.03	0.32	0.02		
16	0.00	0.38	0.00	0.32	0.03	0.08	1.73	0.00	0.00	0.00	0.00	0.00		
17	0.00	0.00	0.00	0.57	0.36	0.27	0.00	0.00	0.00	0.00	0.17	0.00		
18	0.00	0.00	0.00	0.35	0.15	0.05	0.06	0.00	0.00	1.24	0.13	0.04		
19	0.00	0.00	0.00	0.05	0.78	0.00	0.00	0.24	0.00	0.03	0.07	0.00		
20	0.00	0.26	0.00	0.00	0.11	0.03	0.00	0.15	0.00	0.02	0.05	0.00		
21	0.00	0.06	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.04	0.01	0.00		
22	0.00	0.00	0.00	0.34	0.20	0.23	0.00	0.16	0.30	0.02	0.05	0.03		
23	0.08	0.00	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.02		
24	0.00	0.51	0.00	0.05	0.00	0.23	0.40	0.00	0.34	0.00	0.05	0.00		
25	0.00	0.02	0.00	0.00	1.22	0.00	0.21	0.00	0.05	0.00	0.03	0.00		
26	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.94	0.03	0.11		
27	0.25	0.01	0.05	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.01	0.00		
28	0.20	0.06	0.05	0.00	0.00	0.00	0.34	0.50	0.03	0.00	0.09	0.35		
29	0.01	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.05	0.78		
30	0.00	-----	0.00	0.00	0.00	0.00	0.00	0.24	0.34	0.00	0.00	0.00		
31	0.00	-----	0.00	-----	0.00	-----	0.20	0.21	-----	0.00	-----	-----		
TOTAL	1.25	1.82	0.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51		
STAAV	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53		

Notes: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE FOR 9-YR RECORD PERIOD 1959-1967.

1960 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	16.84	17.49	17.98	141.26	69.46	27.31	8.69	9.36	.94	8.20	26.17	22.29		
2	23.51	16.90	16.67	89.05	70.30	40.49	6.10	5.35	.76	4.89	30.75	16.64		
3	48.36	16.31	16.26	77.70	66.51	21.37	6.59	4.15	.71	4.42	18.52	18.33		
4	60.53	16.09	16.37	176.51	62.74	17.66	11.79	3.21	.75	3.95	18.94	16.75		
5	36.35	16.08	15.74	176.46	58.83	14.48	7.76	7.94	1.20	3.45	15.80	19.37		
6	29.81	16.87	15.37	104.50	56.33	12.84	8.08	16.45	1.01	7.19	14.01	22.09		
7	28.46	18.98	15.18	87.32	55.73	10.97	6.20	6.32	.79	9.43	11.86	25.02		
8	27.61	16.85	15.18	79.26	55.73	9.71	4.99	4.69	.69	5.47	10.49	16.78		
9	25.02	17.10	14.77	79.10	60.79	8.99	5.71	3.71	.55	4.29	11.41	10.65		
10	24.51	16.05	13.97	76.24	90.01	8.37	4.39	3.02	.56	3.88	16.65	14.90		
11	22.95	42.26	13.10	79.19	57.19	7.56	3.57	2.85	.66	3.83	16.41	10.95		
12	21.16	83.07	13.20	105.25	52.59	7.06	3.14	2.26	37.55	3.77	13.18	12.04		
13	20.99	42.16	11.89	116.08	63.24	6.52	2.88	1.92	62.07	3.37	12.30	12.24		
14	20.66	30.45	12.98	114.97	78.96	5.81	3.05	1.84	19.96	9.04	11.98	12.40		
15	20.66	25.57	12.98	163.23	139.36	22.93	2.63	1.72	9.54	12.68	18.24	13.13		
16	20.20	22.50	13.49	155.26	182.53	26.51	2.07	1.98	6.01	10.31	38.64	13.80		
17	19.46	19.41	13.41	185.30	81.22	12.83	1.90	1.47	4.47	13.54	20.48	14.25		
18	19.35	19.78	13.66	236.91	60.06	31.11	2.15	1.22	3.78	8.17	15.80	13.58		
19	19.35	20.33	13.66	155.93	56.53	13.81	4.40	1.01	3.66	7.21	13.93	12.74		
20	19.35	19.35	13.66	114.89	54.54	9.96	13.36	1.66	4.47	42.57	12.81	11.92		
21	19.04	17.91	13.84	110.34	52.79	8.83	6.05	2.32	4.85	19.06	12.48	11.60		
22	18.93	17.84	13.51	112.32	51.44	7.00	3.73	3.03	4.07	10.79	12.08	12.65		
23	18.57	17.44	12.98	100.83	50.68	5.96	3.02	3.90	3.66	10.54	14.04	12.24		
24	18.18	16.90	12.77	97.65	76.35	13.35	2.27	2.50	3.25	57.99	13.55	11.60		
25	17.89	18.10	11.98	131.13	74.64	65.36	1.85	1.70	3.06	72.03	11.78	11.29		
26	17.81	19.79	11.57	95.71	40.08	21.59	1.62	1.35	2.82	38.63	10.98	11.60		
27	17.63	19.79	11.92	86.99	23.57	11.71	1.69	1.16	2.60	20.93	11.20	11.60		
28	17.99	18.15	13.49	75.52	17.99	8.53	3.26	.93	2.52	16.02	15.14	10.61		
29	18.10	17.64	15.70	68.48	16.14	6.81	2.33	.87	2.40	13.65	33.07	10.24		
30	18.36	-----	25.02	68.26	14.24	9.71	13.46	1.45	2.58	12.18	50.05	10.53		
31	18.71	-----	128.73	-----	15.99	-----	45.74	1.14	-----	11.37	-----	10.83		
MEAN	23.43	23.47	18.10	115.39	61.50	15.84	6.27	3.31	6.40	14.57	17.76	14.02		
INCHES	1.608	1.45	1.242	7.663	4.220	1.052	.430	.227	.425	1.000	1.179	.962		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .00213695.

1961 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-4							67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	11.19E	6.07	23.06	42.25	79.76	24.23	18.91	8.85	7.34	2.88	10.47	8.60	
2	11.56	6.07	22.82	53.79	117.00	77.47	22.70	7.65	12.85	2.91	10.20	7.44	
3	11.37	5.57	25.34	41.91	97.07	44.91	52.90	7.46	17.89	3.40	7.21	8.06	
4	11.29	5.16	29.40	42.12	77.86	30.93	27.06	7.78	19.07	10.76	6.46	10.07	
5	11.29	5.45	23.93	51.42	70.48	25.85	21.58	6.87	16.08	7.95	12.79	52.59	
6	11.00	5.66	21.87	57.42	68.48	24.00	18.54	6.36	9.25	5.59	10.34	29.02	
7	10.86	5.86	23.91	58.70	67.81	20.74	17.39	5.67	7.06	4.78	18.21	17.45	
8	11.11	6.18	22.38	52.50	67.36	32.39	29.98	5.23	6.60	4.53	14.08	13.98	
9	10.83	6.29	18.61	49.77	67.51	54.99	46.10	4.78	5.96	4.12	9.75	8.52	
10	10.38	6.40	20.20	49.75	116.74	63.88	33.28	4.33	5.23	3.72	8.07	9.70	
11	10.38	6.51	18.82	48.52	69.53	64.44	33.50	4.29	4.81	3.66	6.49	11.62	
12	9.93	6.40	17.92	53.52	67.25	34.75	22.43	23.40	4.34	3.66	6.57	10.54	
13	9.45	6.08	16.93	51.61	66.69	63.08	17.80	9.57	4.20	3.66	6.97	10.36	
14	9.52	5.86	16.70	47.55	66.69	129.44	15.70	6.64	4.59	6.32	10.25	8.63	
15	9.52	5.97	17.19	54.01	65.23	50.02	15.18	5.42	12.99	12.80	10.17	6.16	
16	9.38	6.07	17.10	83.92	66.13	37.91	121.25	16.96	8.53	7.35	7.80	4.18	
17	9.24	5.97	16.05	108.47	47.80	31.92	39.66	9.62	5.74	5.76	14.45	3.99	
18	9.63	5.97	14.38	73.38	37.45	28.41	21.48	6.62	4.79	5.19	10.84	5.47	
19	8.91	7.56	15.46	70.41	34.22	24.75	16.91	5.42	4.46	4.78	7.73	8.40	
20	8.44	10.89	14.82	71.15	31.55	22.40	14.25	4.71	4.24	4.55	6.15	9.18	
21	8.01	9.74	14.19	83.53	31.84	25.54	18.02	34.98	4.71	4.47	7.83	8.97	
22	7.14	8.31	15.23	96.46	35.86	119.48	21.00	32.03	5.71	4.27	7.47	8.57	
23	6.41	9.50	17.97	173.83	31.31	51.95	13.89	15.23	4.56	4.23	8.54	8.44	
24	5.76	21.75	22.49	112.39	29.57	42.79	14.38	15.48	4.09	3.95	24.15	8.44	
25	6.30	31.69	23.04	103.49	27.37	44.22	29.26	9.32	3.94	3.82	31.29	8.44	
26	6.51	125.56	22.80	174.22	32.70	52.22	20.35	13.91	3.66	4.04	14.22	8.44	
27	6.51	71.06	28.58	115.69	55.03	37.39	12.57	13.93	3.21	4.19	10.77	8.44	
28	6.51	36.28	47.45	106.87	36.66	29.52	10.57	9.64	3.06	4.04	9.93	8.71	
29	6.51	-----	76.17	95.95	33.88	24.81	10.32	8.72	3.02	4.00	9.09	8.71	
30	6.40	-----	49.31	85.73	31.45	21.70	13.20	10.29	2.92	7.14	9.39	7.94	
31	6.18	-----	40.16	-----	26.26	-----	10.18	7.90	-----	9.04	-----	7.20	
MEAN	8.95	15.71	24.33	77.01	56.60	44.54	25.17	10.61	6.83	5.21	10.92	10.85	
INCHES	.6143	.974	1.670	5.114	3.887	2.958	1.727	.728	.454	.358	.725	.744	

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1962 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT WATERSHED W-4							67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	5.28	6.68	6.74	204.48	72.35	17.65	4.78	30.35	4.77	8.64	106.28	23.69	
2	7.26	6.18	6.74	122.50	74.39	18.13	4.03	14.22	4.40	8.31	46.52	23.57	
3	7.26	6.18	6.74	61.00	85.05	16.02	3.32	8.74	3.75	7.63	37.26	23.24	
4	7.70	6.57	6.62	58.31	67.03	14.04	2.92	6.80	3.21	7.48	45.04	24.06	
5	7.29	7.17	6.51	72.38	61.01	13.53	2.75	8.47	3.41	12.53	38.68	23.25	
6	7.65	8.91	6.51	84.87	50.91	14.62	2.65	7.19	7.67	146.96	32.57	31.77	
7	13.55	8.91	6.62	187.57	44.40	11.61	2.40	16.87	5.89	253.03	29.45	34.07	
8	16.96	7.87	6.74	213.27	36.73	10.74	2.14	17.17	4.42	76.36	30.60	26.02	
9	11.88	7.32	6.74	151.72	33.19	9.50	9.24	10.00	3.70	77.82	31.20	24.02	
10	10.06	6.91	6.89	149.00	31.52	8.4	10.40	9.89	9.06	65.24	35.29	24.07	
11	9.11	6.29	7.33	96.10	30.19	12.11	5.18	26.38	34.20	53.04	74.02	18.15	
12	8.16	5.71	7.66	88.42	28.55	11.47	5.98	14.62	13.81	43.25	44.15	13.73	
13	7.23	5.45	7.68	90.93	27.30	9.22	14.67	9.47	9.92	38.86	33.88	14.43	
14	6.62	5.45	7.61	77.64	30.72	7.88	10.02	11.31	7.88	30.83	32.24	15.54	
15	7.58	5.66	7.68	68.46	31.41	6.80	8.51	24.98	7.15	27.95	30.04	14.44	
16	27.25	5.86	7.59	60.66	30.23	5.92	6.73	11.61	5.92	26.80	27.47	14.19	
17	23.22	5.86	7.60	55.14	28.10	5.21	7.69	8.92	6.20	27.43	25.87	13.66	
18	18.46	5.97	7.59	52.97	25.66	4.74	6.05	7.39	48.61	24.76	25.26	13.49	
19	15.27	5.97	7.67	54.99	24.67	17.29	5.94	6.08	16.67	22.94	21.93	14.11	
20	11.97	5.86	7.95	58.71	25.27	18.02	4.58	5.96	11.77	22.36	25.78	14.30	
21	10.10	5.97	8.20	63.85	101.21	10.87	5.26	14.49	9.88	24.86	25.18	10.57	
22	9.24	6.07	8.76	68.60	37.60	7.87	5.13	13.01	9.04	25.95	70.90	10.10	
23	9.24	6.07	9.80	91.45	28.91	13.70	3.90	8.03	9.07	24.04	46.78	12.50	
24	9.04	6.18	10.23	68.63	40.50	19.67	13.82	6.08	7.02	23.23	32.83	14.37	
25	8.97	6.29	10.70	56.06	54.30	27.81	8.06	5.11	6.62	23.27	29.45	14.64	
26	8.77	6.29	11.05	56.15	31.47	13.36	6.70	4.48	9.37	22.48	23.00	14.46	
27	8.71	6.40	14.93	68.14	25.27	8.81	9.95	4.20	15.48	21.65	23.02	13.58	
28	8.35	6.62	21.75	70.94	22.37	6.65	8.39	4.15	16.42	25.24	23.30	12.98	
29	7.00	-----	38.43	67.94	19.90	5.65	5.45	7.60	11.40	36.18	23.39	12.65	
30	6.60	-----	76.15	93.93	18.49	4.93	4.98	10.56	9.66	25.55	23.29	12.88	
31	6.74	-----	137.83	-----	17.70	-----	68.44	6.09	-----	77.22	-----	12.81	
MEAN	10.40	6.45	15.84	90.49	39.88	11.76	8.39	10.98	10.55	42.32	36.49	17.59	
INCHES	.714	.400	1.087	6.010	2.737	.781	.576	.753	.700	2.904	2.423	1.207	

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1963 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT		WATERSHED W-4				67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	6.20	9.24	7.68	79.42	148.39	19.14	3.43	3.14	7.72	5.20	6.22	25.57	
2	12.24	9.24	7.68	81.61	89.61	17.32	3.11	4.65	4.73	3.97	11.17	15.53	
3	12.48	9.24	7.68	143.87	76.70	15.57	4.62	11.35	3.73	3.50	10.10	16.65	
4	12.56	9.18	7.68	121.71	77.25	14.75	3.45	12.62	8.42	3.78	7.10	16.94	
5	12.56	8.97	7.68	76.98	95.52	13.56	6.63	16.20	5.67	3.51	7.21	13.47	
6	12.81	8.97	7.93	68.76	70.95	12.72	4.87	7.99	4.08	3.16	8.23	20.69	
7	12.71	8.97	8.18	78.44	59.85	12.96	4.47	5.02	3.28	2.83	17.10	20.05	
8	12.56	8.97	7.99	80.76	62.74	11.03	19.32	4.11	2.73	2.71	20.54	14.04	
9	12.56	8.97	8.12	69.22	77.72	10.57	19.94	3.34	2.38	2.90	37.22	37.30	
10	12.56	8.97	8.18	58.76	59.02	9.81	9.14	3.83	2.16	2.62	21.38	37.17	
11	13.07	8.97	8.18	58.01	90.27	9.02	6.90	3.31	1.97	2.62	26.01	26.22	
12	13.23	8.97	8.18	97.25	81.62	11.73	5.45	3.44	2.04	3.74	25.86	22.59	
13	13.23	8.97	8.18	95.30	69.30	11.68	4.39	7.07	4.08	3.53	18.95	25.92	
14	12.72	8.97	8.18	88.78	51.04	9.08	4.17	36.32	3.34	3.14	14.66	15.48	
15	12.01	8.97	8.06	92.01	43.94	8.38	4.77	21.43	2.70	2.97	12.16	12.97	
16	11.14	8.57	8.00	112.23	38.82	8.17	4.92	14.89	2.35	2.73	11.33	11.44	
17	10.68	8.44	8.49	110.04	35.66	10.67	3.93	8.15	2.12	2.57	11.42	10.26	
18	10.16	8.44	9.05	174.34	38.32	12.98	3.85	8.27	1.99	2.52	13.66	9.78	
19	10.09	8.44	8.75	118.33	44.98	8.40	5.52	6.59	1.85	2.52	27.50	10.01	
20	10.38	8.64	8.83	184.59	42.82	6.93	3.80	5.24	1.83	2.44	15.93	9.28	
21	11.09	8.51	8.96	176.32	47.50	27.85	3.44	4.76	1.83	2.33	13.01	8.34	
22	10.53	8.44	8.95	194.25	39.47	15.98	3.74	3.68	1.79	2.22	13.41	8.18	
23	10.16	8.44	8.69	112.18	36.28	11.52	2.82	6.70	1.72	2.19	17.84	7.79	
24	10.47	8.44	8.87	111.65	33.28	8.38	2.41	7.38	1.59	2.27	35.63	8.09	
25	10.09	8.44	10.37	96.75	29.58	6.68	2.05	4.84	1.53	2.30	16.10	9.29	
26	9.59	8.25	16.29	85.87	27.62	5.55	1.66	3.84	1.58	2.31	12.92	9.21	
27	9.59	7.81	27.51	78.15	25.29	4.73	1.40	3.25	1.52	2.27	12.65	8.02	
28	9.72	7.68	53.53	77.76	23.52	4.85	1.12	2.78	1.88	2.27	11.45	7.56	
29	9.52	-----	51.71	81.94	22.36	4.20	.95	2.90	4.76	2.22	14.02	7.44	
30	9.52	-----	70.68	120.65	23.91	3.92	8.47	4.09	9.73	2.18	71.18	7.44	
31	9.31	-----	73.87	-----	22.16	-----	5.32	13.98	-----	2.21	-----	6.65	
MEAN	11.15	8.72	16.20	104.20	54.37	10.94	5.16	7.91	3.24	2.83	18.07	14.82	
INCHES	.765	.541	1.112	6.920	3.730	.726	.354	.543	.215	.194	1.200	1.020	

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1964 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT		WATERSHED W-4				67.04	
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	6.73	10.83	6.93	17.89	57.17	18.75	4.13	2.00	4.63	3.45	6.47	9.19	
2	6.81	10.83	7.04	18.93	49.72	17.84	3.51	1.84	3.99	3.26	6.06	7.38	
3	7.32	10.50	7.86	18.26	43.06	15.50	5.76	1.91	3.51	5.54	5.45	8.10	
4	7.62	9.86	9.88	16.87	38.81	26.83	12.21	1.60	5.37	5.52	5.21	9.60	
5	7.81	9.66	132.99	17.58	35.06	24.68	6.76	1.53	10.37	4.10	6.07	10.73	
6	7.93	9.52	92.81	18.42	32.39	17.76	5.20	1.53	6.16	3.74	16.44	11.55	
7	7.81	9.74	49.99	29.92	30.95	15.18	5.22	1.51	4.56	3.41	10.31	11.02	
8	7.49	9.56	41.32	76.82	30.58	15.65	5.32	1.49	4.15	3.13	8.05	10.95	
9	7.32	9.11	31.20	55.35	51.28	13.45	4.43	3.68	4.15	3.14	7.38	10.53	
10	7.74	8.57	26.20	52.12	49.43	12.14	3.66	2.33	4.15	3.32	7.34	10.45	
11	7.93	7.84	22.89	65.74	49.00	14.22	3.60	1.78	4.57	3.43	8.05	9.66	
12	7.81	7.68	24.35	74.44	37.21	10.97	3.60	8.66	6.77	3.43	10.97	11.39	
13	7.33	7.71	22.71	100.09	31.07	9.54	3.43	16.67	4.52	3.59	10.16	14.81	
14	6.90	7.93	21.44	207.29	90.38	9.52	5.80	5.58	3.81	4.22	10.16	14.33	
15	6.18	7.81	30.76	204.07	58.78	9.66	8.43	5.03	3.43	4.15	7.87	12.18	
16	6.41	7.95	29.85	146.70	40.99	12.87	4.53	5.59	3.11	3.73	8.92	9.81	
17	6.62	7.79	21.43	115.69	54.57	9.35	3.30	3.98	3.03	3.45	22.98	10.24	
18	6.89	7.81	21.40	118.41	34.56	7.62	2.63	3.90	3.15	7.64	11.52	9.75	
19	6.94	8.06	19.32	107.22	37.01	6.91	5.63	3.04	3.10	9.03	7.47	9.13	
20	7.17	8.31	18.88	84.94	38.44	6.31	5.25	2.56	2.79	8.71	16.93	8.77	
21	11.52	8.44	19.93	78.00	29.51	5.56	3.76	2.50	2.59	17.21	15.02	8.63	
22	18.63	8.31	22.12	136.14	27.07	4.91	20.39	7.60	2.52	13.90	9.72	8.44	
23	14.45	7.81	21.51	130.38	24.41	4.21	22.61	84.30	2.64	9.52	6.63	8.44	
24	10.74	3.84	21.34	89.07	20.93	4.17	8.48	61.78	2.34	7.55	9.86	9.85	
25	18.49	7.71	23.38	78.42	44.53	5.39	6.32	31.18	2.04	6.51	9.08	50.23	
26	41.16	8.15	30.75	75.93	29.57	4.80	5.12	21.47	2.08	6.27	59.07	108.37	
27	23.81	8.00	36.98	75.36	30.96	13.61	4.23	14.69	2.17	6.12	56.66	60.99	
28	16.05	6.74	24.47	76.82	42.58	8.15	3.32	7.38	6.59	5.70	22.01	26.33	
29	13.00	6.51	24.07	73.50	29.18	5.51	2.61	5.78	4.90	5.80	24.10	23.40	
30	12.17	-----	21.99	64.32	23.26	5.05	2.65	5.21	3.95	10.62	16.31	22.61	
31	11.15	-----	19.35	-----	20.36	-----	2.45	5.01	-----	8.15	-----	22.09	
MEAN	10.84	8.37	29.20	80.82	39.12	11.20	5.947	10.42	4.04	6.04	14.08	18.03	
INCHES	.744	.537	2.004	5.370	2.685	.744	.408	.715	.268	.415	.935	1.237	

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1965 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	15.97	8.97	10.91	10.37	54.25	9.49	3.87	1.99	47.88	32.32	29.15	27.68		
2	15.29	8.97	10.69	10.56	47.28	8.06	3.14	1.93	57.48	41.03	22.98	27.16		
3	17.90	8.84	13.53	10.68	40.77	7.21	6.90	1.88	14.09	25.64	21.79	26.26		
4	15.93	8.64	23.47	12.20	34.47	7.14	10.41	1.68	11.06	36.41	22.71	43.91		
5	14.25	8.31	34.74	14.78	29.58	5.98	7.77	1.44	9.80	23.49	20.73	39.24		
6	14.24	8.18	47.08	20.00	26.82	5.16	22.82	1.25	10.24	20.02	20.22	30.45		
7	14.00	8.19	54.54	20.67	25.33	11.86	9.02	2.52	8.53	18.71	20.22	24.11		
8	14.89	22.32	62.12	21.62	25.12	36.41	10.01	8.19	7.77	45.58	27.20	20.66		
9	17.73	34.15	42.21	25.46	25.47	14.20	7.91	15.22	8.27	40.35	66.68	21.80		
10	21.82	22.99	31.92	44.36	28.18	12.12	7.55	30.30	16.86	28.29	30.01	25.23		
11	16.52	17.51	25.01	44.82	28.45	10.32	6.81	13.95	12.22	23.31	24.69	20.25		
12	13.85	14.48	19.53	58.04	23.71	8.10	4.79	7.61	8.56	32.43	24.14	20.02		
13	13.07	14.04	19.27	61.94	20.96	71.31	3.91	43.91	8.61	29.17	27.16	21.00		
14	13.32	13.09	18.42	51.62	19.16	40.97	3.79	15.00	11.88	23.71	30.12	22.71		
15	11.51	12.06	16.89	55.95	18.09	23.12	4.49	8.13	12.13	27.26	22.85	22.94		
16	10.92	11.40	15.69	94.52	17.29	16.06	3.10	5.72	15.91	45.57	37.88	22.94		
17	11.29	10.79	15.79	59.56	18.85	14.11	2.74	4.67	10.78	26.75	124.62	22.02		
18	10.64	10.83	15.81	46.98	18.57	17.38	41.20	18.09	9.80	22.95	56.88	20.88		
19	9.80	10.52	15.87	45.49	17.40	13.88	23.13	16.83	11.46	21.33	40.20	16.23		
20	9.80	9.96	14.83	52.13	16.05	10.61	10.04	14.19	13.88	20.22	36.01	14.05		
21	9.80	9.66	13.03	62.53	13.99	8.97	7.48	7.80	11.49	19.15	33.55	18.74		
22	9.66	9.45	12.08	91.11	13.24	9.30	5.51	5.80	9.27	18.65	34.45	18.29		
23	9.52	9.04	12.48	61.46	13.11	7.88	4.87	5.63	7.96	52.18	33.86	16.70		
24	9.52	8.76	12.29	48.03	11.84	14.87	4.55	4.69	13.53	45.60	30.97	17.91		
25	9.66	9.39	11.77	43.64	11.00	9.21	4.81	4.33	85.85	29.03	29.56	19.54		
26	9.66	17.28	11.92	45.34	10.21	6.93	3.87	6.71	26.77	24.41	29.15	20.90		
27	9.66	19.82	11.67	56.43	9.80	5.76	3.23	26.64	16.91	23.91	40.92	17.30		
28	9.80	12.69	11.61	48.01	9.76	5.26	3.16	25.10	14.28	24.63	38.08	16.12		
29	9.66	-----	10.74	51.98	8.48	4.51	2.84	14.30	13.41	22.97	32.43	15.55		
30	9.38	-----	10.97	53.07	8.44	4.00	2.52	11.24	12.41	22.01	28.78	15.37		
31	9.25	-----	10.74	-----	8.58	-----	2.22	9.50	-----	26.16	-----	16.15		
MEAN	12.53	12.87	20.57	44.11	21.10	14.01	7.69	10.85	17.30	28.81	34.60	22.00		
INCHES	.860	.798	1.411	2.929	1.448	.930	.528	.744	1.149	1.977	2.298	1.510		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1966 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	23.30	9.80	15.41	26.70	64.80	22.80	10.06	2.38	4.42	5.28	5.79	18.34		
2	25.04	9.80	27.99	25.50	50.17	21.28	7.60	2.21	3.11	4.92	6.07	12.68		
3	20.48	9.80	30.03	26.33	44.75	19.75	6.46	4.40	2.61	4.27	34.35	8.21		
4	17.01	9.80	20.39	26.61	48.22	18.33	5.72	3.71	10.28	3.96	22.54	10.70		
5	17.09	9.80	32.86	25.95	38.36	26.29	4.92	2.48	13.69	5.76	12.48	7.49		
6	16.51	9.95	30.27	33.57	46.37	28.86	4.94	1.82	6.30	6.34	11.92	8.82		
7	16.32	9.53	37.27	40.44	45.30	20.57	6.73	1.59	4.77	5.77	11.43	9.55		
8	14.55	8.71	26.24	44.27	33.70	20.93	5.76	2.09	3.82	4.68	11.79	21.13		
9	13.75	8.44	22.65	46.47	44.66	23.01	4.43	1.86	3.15	4.10	12.63	30.02		
10	13.58	8.61	23.14	46.26	51.79	26.90	4.54	3.22	2.73	3.99	11.31	36.96		
11	13.41	13.41	21.36	44.74	47.71	45.39	7.86	5.81	2.19	6.56	24.60	58.91		
12	12.57	24.89	19.11	46.48	52.07	26.94	8.85	8.24	1.87	6.44	16.15	23.43		
13	11.60	19.76	20.00	45.36	78.46	20.91	9.55	4.39	1.91	6.57	11.80	13.34		
14	11.29	22.81	19.57	69.41	57.29	18.57	5.61	2.95	1.91	5.79	9.88	16.47		
15	11.29	17.36	18.60	75.87	49.48	21.07	4.04	2.22	2.47	5.13	9.64	13.41		
16	10.98	14.10	17.17	71.94	46.63	36.37	3.34	2.49	3.47	5.16	7.28	8.71		
17	10.68	13.49	17.36	78.10	48.18	34.35	2.76	28.52	2.92	5.40	10.18	13.94		
18	10.83	12.08	20.37	79.89	44.57	20.52	2.56	9.03	2.38	4.93	14.18	14.35		
19	10.98	10.99	27.04	80.70	144.08	16.36	4.47	5.01	2.11	4.58	13.50	8.85		
20	11.13	9.69	30.89	73.18	89.14	14.38	7.83	3.36	1.96	42.62	7.81	6.67		
21	11.44	9.18	35.62	88.17	62.15	12.26	4.39	2.59	1.78	21.99	6.86	8.27		
22	11.60	8.97	40.90	119.15	50.30	10.70	3.86	4.03	26.59	12.80	6.87	8.58		
23	11.60	9.11	51.09	90.24	44.35	10.01	3.00	13.19	29.18	9.86	6.60	7.27		
24	11.60	9.24	71.62	90.04	40.37	9.14	2.81	13.82	13.74	8.42	7.50	6.49		
25	11.44	9.24	202.40	85.79	36.38	12.16	2.28	7.21	9.01	7.20	9.46	8.71		
26	11.13	9.38	71.53	69.32	34.01	15.90	4.99	5.28	6.74	6.68	15.75	8.10		
27	10.68	9.52	41.03	52.32	31.19	11.56	4.86	3.97	5.59	6.14	13.30	9.10		
28	10.24	9.66	37.86	47.20	29.43	8.63	3.76	4.41	4.98	6.07	12.39	9.02		
29	9.95	-----	28.11	42.72	27.53	11.93	7.34	3.27	4.81	5.96	13.85	8.89		
30	9.95	-----	25.26	47.18	24.63	19.92	4.90	3.28	5.51	5.85	20.11	8.89		
31	9.95	-----	28.11	-----	23.54	-----	3.15	6.68	-----	5.17	-----	9.38		
MEAN	13.29	11.68	35.85	58.00	49.34	21.79	5.27	5.34	6.20	7.69	12.60	14.05		
INCHES	.912	.724	2.460	3.852	3.386	1.447	.362	.366	.412	.528	.837	1.064		

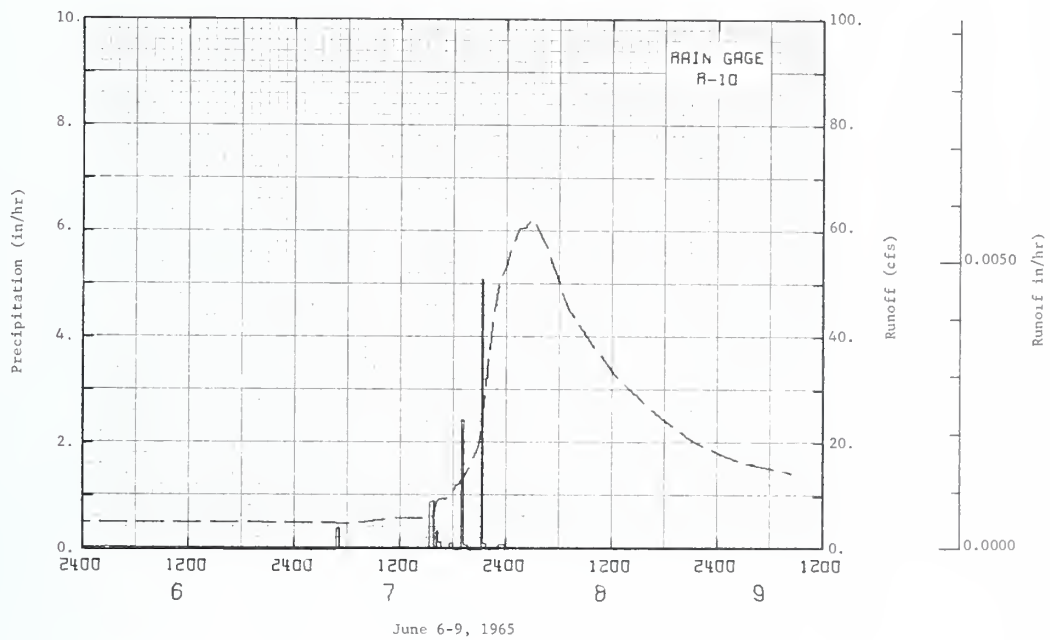
Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1967 MEAN DAILY DISCHARGE (cfs)						NORTH DANVILLE, VERMONT						WATERSHED W-4		67.04
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	7.90	8.71	6.40	56.07	54.77	36.11	9.88	10.53	11.91	11.37	17.23	12.93		
2	10.16	8.71	6.26	102.78	57.25	32.57	8.94	7.95	7.75	11.56	16.55	13.19		
3	9.41	8.54	6.29	145.10	143.77	29.79	14.44	7.04	6.85	9.11	30.39	18.54		
4	9.42	8.38	6.29	75.20	76.93	27.26	15.84	16.84	6.59	7.10	27.80	19.83		
5	9.52	8.09	6.19	57.30	74.69	24.94	10.29	18.70	9.57	11.82	30.19	15.65		
6	9.34	7.78	6.27	57.38	59.59	22.89	9.08	9.59	6.96	17.71	21.56	13.75		
7	13.59	7.50	6.16	48.20	50.79	21.37	7.65	7.86	5.34	10.75	19.85	13.79		
8	13.26	7.23	6.20	45.64	64.31	24.66	6.97	6.32	4.53	8.47	18.85	14.23		
9	9.87	7.04	6.17	52.70	66.35	29.30	7.34	5.96	4.20	8.30	17.02	14.64		
10	9.01	7.00	6.52	124.12	70.44	22.36	15.73	10.15	25.50	28.08	17.28	13.59		
11	8.97	6.97	8.29	68.77	57.32	28.60	8.95	7.45	12.04	95.55	15.64	12.72		
12	8.71	6.97	9.80	49.84	73.58	49.95	30.37	6.49	7.29	25.42	18.41	73.38		
13	8.79	6.30	11.12	50.28	49.77	27.67	18.52	5.51	5.70	17.55	26.03	95.55		
14	8.57	6.07	8.71	58.92	42.77	23.93	10.34	5.03	4.96	14.49	19.90	42.49		
15	8.91	6.26	8.28	86.93	50.03	51.98	7.90	4.74	4.21	14.34	15.98	28.84		
16	8.57	7.80	8.18	86.71	57.49	39.29	67.11	4.22	3.73	12.79	15.64	21.71		
17	8.48	9.52	8.86	65.13	43.52	28.43	27.22	3.87	3.50	12.20	16.86	22.85		
18	8.20	7.89	9.84	92.28	80.36	36.03	15.39	3.51	3.32	28.90	20.19	23.30		
19	7.68	7.05	10.09	72.75	103.75	22.59	12.86	3.55	3.19	86.39	18.94	28.59		
20	7.26	6.56	9.90	70.84	100.61	18.76	11.40	6.08	2.96	28.32	17.23	31.28		
21	7.20	6.54	8.26	64.12	61.53	17.38	10.52	5.57	2.79	22.42	14.32	24.03		
22	7.26	6.62	7.43	91.06	51.15	24.42	26.95	4.61	5.50	22.11	15.50	27.20		
23	7.71	6.48	6.41	105.37	57.20	24.77	12.64	4.98	7.13	19.79	24.70	25.36		
24	9.98	6.74	6.35	80.34	44.30	18.29	19.51	3.82	5.46	21.12	37.75	14.97		
25	11.21	6.97	6.58	65.24	72.04	16.78	19.51	3.10	13.71	24.02	23.60	14.79		
26	10.38	6.65	7.80	60.48	117.15	18.56	19.29	2.68	9.07	87.82	20.58	19.29		
27	9.80	6.18	10.97	61.19	71.76	13.16	11.27	6.75	6.33	44.34	20.36	12.95		
28	9.89	6.46	17.22	59.88	55.70	11.55	13.87	34.46	5.32	30.25	18.00	15.80		
29	9.39	-----	26.52	57.65	46.86	10.39	15.14	11.82	5.48	23.92	15.28	16.90		
30	8.78	-----	32.32	54.64	41.27	9.77	10.23	7.29	16.73	19.74	12.76	18.01		
31	8.67	-----	34.77	-----	38.15	-----	9.33	16.40	-----	17.74	-----	17.69		
MEAN	9.22	7.25	10.34	72.23	65.65	25.45	15.63	8.16	7.25	25.60	20.15	23.80		
INCHES	.633	.449	.709	4.797	4.505	1.690	1.072	.560	.482	1.757	1.338	1.633		

Notes: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .002213695.

1965 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-4		67.04	
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 June 7, 8 and 9, 1965							
6-7	.00	1/.003	6-7	RG	R-10		6-7	0703	4.870	.0000
				0445	.0000	.00		0733	5.254	.0002
				0510	.4080	.17		1133	6.074	.0023
				1520	.0000	.17		1530	6.074	.0046
				1550	.9000	.62		1603	8.443	.0049
				1610	.0000	.62				
Watershed conditions: 74% forest land; 12% pastured land; 2% idle land with dense grass and brush growth; 12% cultivated.				1620	.3600	.63		1630	9.522	.0053
				1640	.1200	.72		1705	9.522	.0058
				1740	.0000	.72		1800	10.980	.0066
				1800	.1200	.76		1822	11.916	.0070
				1900	.0000	.76		1915	13.576	.0080
				1910	2.4600	1.17		2006	16.121	.0092
				1940	.0300	1.21		2037	18.512	.0100
				211 ^A	.0000	1.21		205 ^A	20.456	.0106
				2120	5.1000	1.3 ^A		2119	25.370	.0113
				2140	.1200	1.42		2131	27.045	.0118
				2310	.0000	1.42		2152	33.547	.012 ^A
				2350	.0750	1.47		2216	39.768	.0142
								2244	45.626	.0162
								2315	50.301	.0183
								2400	53.361	.0219
							6-8	0034	56.520	.0248
								0130	60.643	.029 ^A
								0200	60.643	.0327
								0300	62.337	.0353
								0443	56.529	.0477
								0613	48.911	.0550
								0707	45.203	.0589
								0930	39.117	.0682
								1219	32.960	.0775
								1546	27.418	.0872
								172 ^A	24.872	.0913
								2113	20.216	.0991
								2400	18.099	.1040
							6-9	0301	15.121	.108 ^A
								0825	14.277	.1164

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000092. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF SEE P. 67.1-1, 67.4-7 AND 67.4-11 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0703 ON 6-7-65.

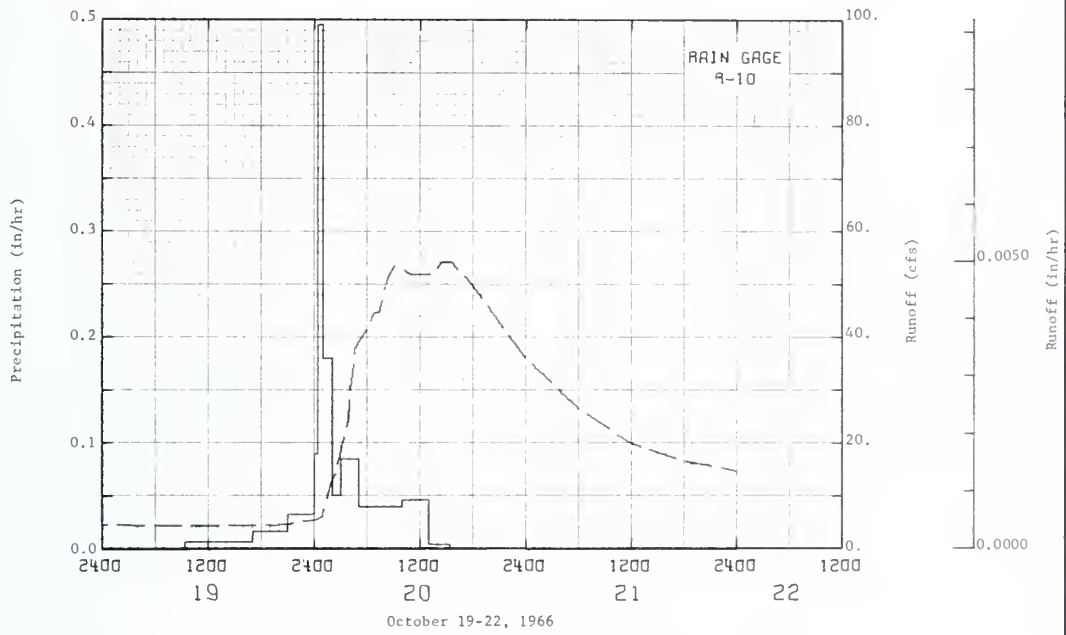


NORTH DANVILLE, VERMONT WATERSHED W-4

1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-4				67.04
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)	
10-19	.00	1/.003	Event of October 19, 20 and 21, 1966								
					RG	R-10					
			10-19	0921	.0000	.00	10-19	0600	4.327	.0000	
				1659	.0066	.05		1200	4.327	.0024	
				2059	.0175	.12		1344	4.504	.0031	
				2400	.0331	.22		1759	4.504	.0049	
			10-20	0020	.0900	.25		2100	4.870	.0062	
				0100	.4950	.59		2400	5.655	.0077	
				0200	.1800	.76	10-20	0053	6.291	.0082	
				0259	.0508	.91		0154	12.897	.0091	
				0459	.0850	.99		0231	14.635	.0099	
				1000	.0399	1.19		0256	18.099	.0105	
				1300	.0467	1.32		0348	24.381	.0122	
				1520	.0043	1.33		0436	37.835	.0145	
								0500	39.117	.0159	
								0601	41.757	.0197	
								0646	44.501	.0227	
								0717	44.501	.0248	
								0816	51.056	.0291	
								0901	53.361	.0327	
								0931	53.361	.0352	
								1046	51.818	.0413	
								1201	51.818	.0473	
								1316	51.818	.0533	
								1423	54.143	.0588	
								1529	54.143	.0643	
								1800	49.553	.0763	
								2400	35.060	.1000	
							10-21	0600	25.392	.1172	
								1200	19.781	.1299	
								1800	16.506	.1399	
								2400	14.635	.1485	

Watershed conditions: 74% forest land; 12% pastured land; 12% cultivated; 2% idle land with dense grass and brush growth.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000092. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.4-7 AND 67.4-11 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0600 ON 10-18-66.

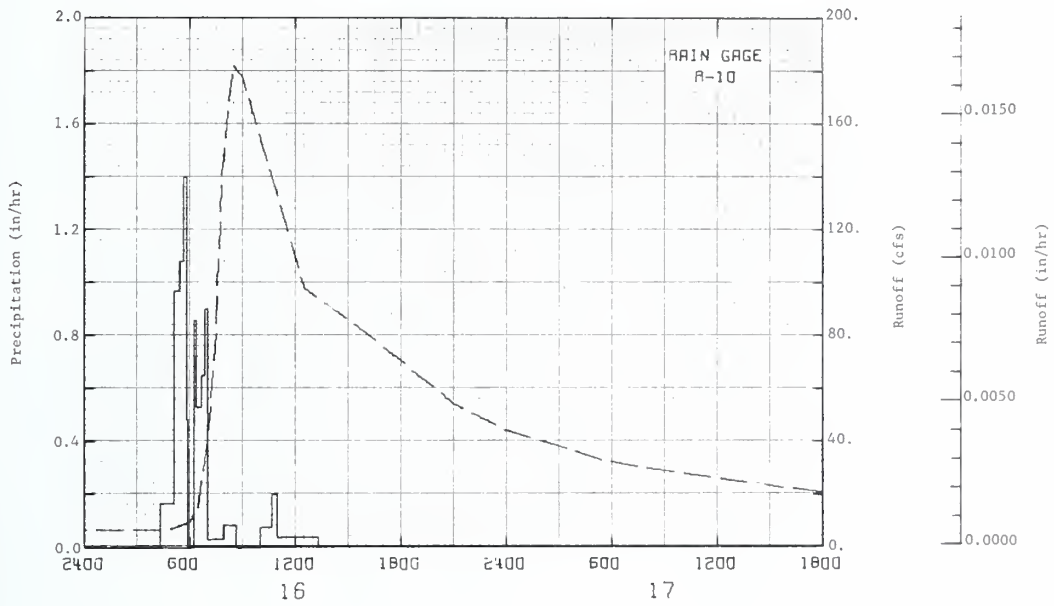


NORTH DANVILLE, VERMONT WATERSHED W-4

1967 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-4		67.04		
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)	
			Event of July 16-17, 1967								
7-16	.00	1/.003	7-16	RG	R-10			7-16	0445	6.966	.0000
				0420	.0000	.00	0559		9.804	.0009	
				0506	.1696	.13	0629		14.999	.0015	
				0524	.9667	.42	0706		45.911	.0032	
				0539	1.0800	.69	0729		30.827	.0054	
				0548	1.4000	.90					
				0553	.4800	.04	0749		140.112	.0088	
				0616	.0000	.94	0827		182.030	.0182	
				0623	.8571	1.04	0901		177.225	.0276	
				0640	.5294	1.19	1231		97.714	.0720	
				0652	.6500	1.32	1601		90.827	.1008	
				0700	.9000	1.44					
				0757	.0316	1.47					
				0840	.0837	1.53	7-17		2101	54.143	.1319
				1002	.0000	1.53			2400	43.805	.1454
1042	.0750	1.58		0500	31.803	.1663					
				1200	25.873	.1823					
				1800	20.656	.1952					
				1100	.2000	1.64	2400	17.292	.2057		
				1321	.0383	1.73					

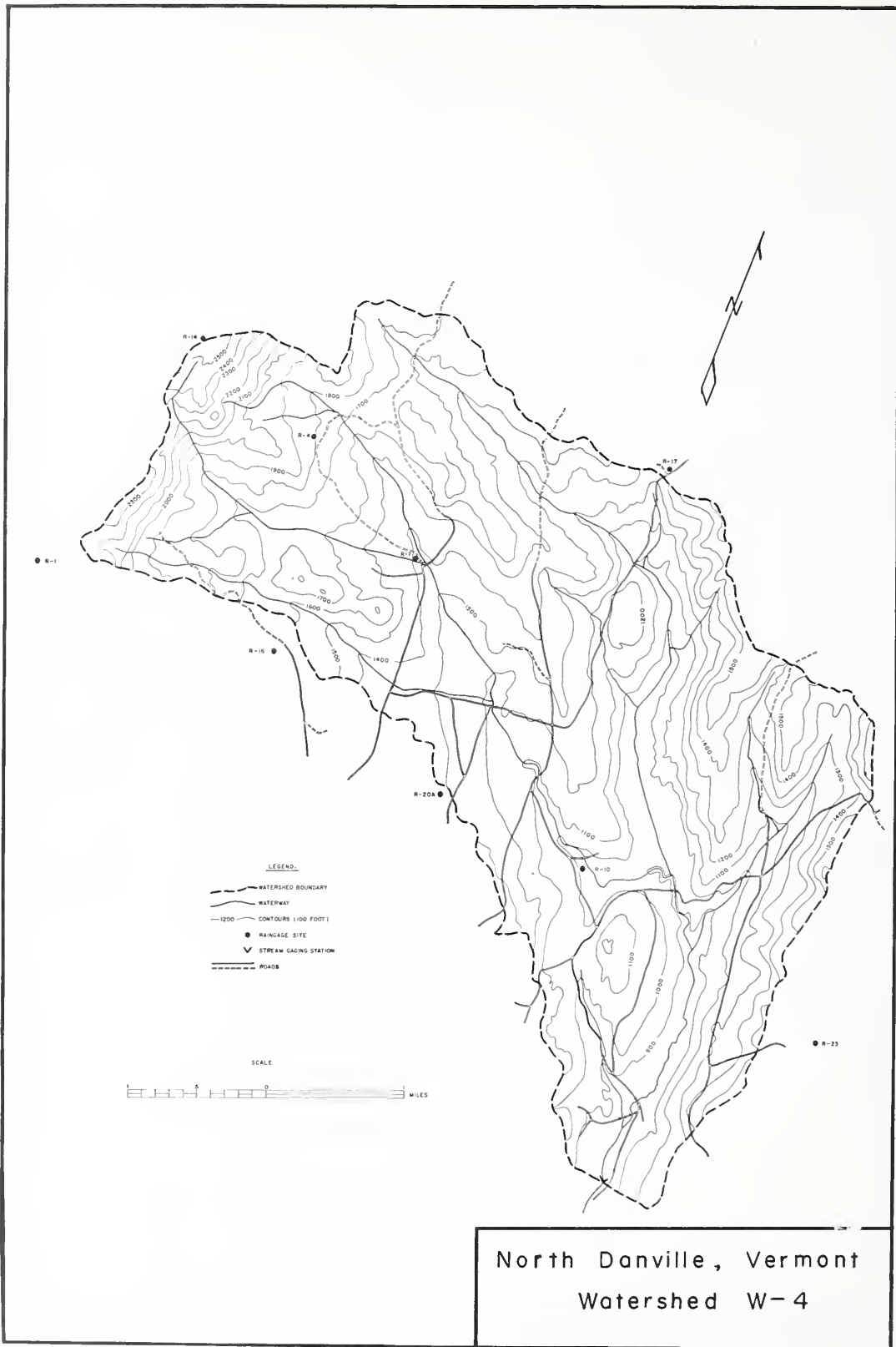
Watershed conditions: 74% forest land, 12% pastured land; 12% cultivated; 2% idle land with dense grass and brush growth.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000092. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.4-8 AND 67.4-12 RESPECTIVELY. 1/ RUNOFF PRIOR TO 0445 ON 7-16-67.



July 16-17, 1967

NORTH DANVILLE, VERMONT WATERSHED W-4



MONTHLY PRECIPITATION AND RUNOFF (inches) 1/						NORTH DANVILLE, VERMONT WATERSHED W-5						67.05		
						AREA—27,469 ACRES (42.92 SQ. MI.)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965	P 1/	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86	36.45
	Q	1.15	1.85	2.38	2.73	.92	.91	.41	.64	1.13	2.03	2.52	1.54	18.21
1966	P	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81	32.11
	Q	.94	.74	3.29	4.73	3.50	1.22	.30	.29	.33	.46	.98	1.16	17.94
1967	P	1.25	1.82	.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51	36.87
	Q	.56	.38	.73	5.26	4.17	1.28	.91	.50	.40	1.65	1.94	1.57	19.35
STA AV2/P		1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	3.53	34.85
	Q	1.49	1.23	2.41	5.72	2.73	.97	.53	.45	.45	1.10	1.42	1.37	19.87
MEAN P 3/		2.57	2.14	2.44	2.82	3.23	3.77	3.47	3.27	3.48	3.06	3.15	2.59	35.99
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
1965	11-17	0.03	11-17	0.03	11-17	0.06	11-17	0.18	11-17	0.29	11-17	0.41	3-7	0.57	3-3	1.65
1966	3-25	0.04	3-25	0.04	3-25	0.07	3-25	0.20	3-25	0.36	3-25	0.56	3-24	0.79	4-16	1.88
1967	5-3	0.03	5-3	0.03	5-3	0.06	5-3	0.16	5-3	0.28	4-2	0.46	4-2	0.76	4.15	1.58

MAXIMUMS FOR PERIOD OF RECORD

1960 TO	4-18	0.04	4-18	0.04	4-18	0.08	3-25	0.20	10-7	0.38	10-6	0.70	4-16	1.12	4-12	3.14
1967	1960		1960		1960		1966		1962		1962		1964		1960	

Notes: 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/ Precipitation records from rain gage R-10. 2/ Precipitation records began Sept. 1958, runoff records began Jan. 1, 1960. Part year amounts not included in averages. 3/ Mean P based on 73-yr (1895-1967) U.S. Weather Bureau record period from St. Johnsbury, Vt.

1965 DAILY PRECIPITATION (inches)						NORTH DANVILLE, VERMONT WATERSHED W-5						67.05		
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC		
1	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.00	1.35	0.73	0.06	0.00		
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.02	0.00	0.00		
3	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.62	0.00	0.00	0.00	0.00		
4	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.00		
5	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.74	0.00	0.00	0.00	0.00		
6	0.06	0.00	0.00	0.00	0.00	0.00	0.01	0.05	0.00	0.00	0.00	0.00		
7	0.00	0.55	0.00	0.16	0.00	1.47	0.00	0.64	0.00	0.25	0.00	0.00		
8	0.04	0.14	0.00	0.09	0.00	0.02	0.25	0.46	0.02	0.35	0.72	0.00		
9	0.15	0.03	0.00	0.00	0.08	0.08	0.00	0.25	0.00	0.03	0.13	0.00		
10	0.00	0.57	0.00	0.00	0.10	0.30	0.09	0.76	0.47	0.00	0.00	0.00		
11	0.00	0.00	0.00	0.00	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
12	0.00	0.15	0.00	0.55	0.00	0.39	0.00	0.77	0.00	0.32	0.00	0.15		
13	0.10	0.00	0.00	0.20	0.00	1.41	0.00	0.50	0.25	0.00	0.15	0.20		
14	0.05	0.00	0.00	0.00	0.00	0.15	0.08	0.00	0.00	0.00	0.10	0.20		
15	0.00	0.05	0.00	0.15	0.00	0.00	0.02	0.00	0.25	0.59	0.00	0.05		
16	0.02	0.00	0.00	0.23	0.00	0.25	0.00	0.00	0.00	0.00	0.60	0.09		
17	0.05	0.00	0.00	0.02	0.13	0.00	0.00	0.00	0.00	0.00	1.17	0.02		
18	0.00	0.21	0.05	0.00	0.00	0.20	1.46	0.60	0.05	0.00	0.08	0.00		
19	0.00	0.04	0.05	0.00	0.00	0.00	0.00	0.35	0.15	0.00	0.00	0.05		
20	0.20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.05	0.00		
21	0.00	0.00	0.00	0.20	0.00	0.14	0.00	0.00	0.00	0.00	0.15	0.02		
22	0.00	0.00	0.15	0.05	0.04	0.01	0.00	0.00	0.00	0.14	0.00	0.00		
23	0.00	0.00	0.04	0.09	0.00	0.38	0.00	0.16	0.04	0.81	0.00	0.00		
24	0.44	0.00	0.00	0.00	0.00	0.12	0.10	0.00	0.86	0.03	0.00	0.35		
25	0.00	0.45	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.10	0.18		
26	0.27	0.00	0.21	0.29	0.00	0.00	0.00	0.95	0.00	0.00	0.26	0.02		
27	0.06	0.00	0.04	0.03	0.05	0.00	0.10	0.00	0.00	0.10	0.82	0.03		
28	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.50	0.00	0.15	0.07	0.00		
29	0.00	-----	0.13	0.00	0.00	0.00	0.09	0.14	0.00	0.00	0.04	0.00		
30	0.00	-----	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00		
31	0.00	-----	0.00	-----	0.35	-----	0.00	0.00	-----	0.19	-----	0.00		
TOTAL	1.46	2.32	.69	2.06	.80	4.97	3.65	6.07	4.05	4.01	4.51	1.86		
STA AV	2.18	2.28	2.24	2.95	2.42	3.12	3.23	4.10	2.58	3.83	3.67	2.35		

NOTES: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 8-YR RECORD PERIOD 1960-65.

1966 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	0.00	0.00	0.65	0.00	0.13	0.00	0.00	0.00	0.00	0.01	0.00	0.14
2	0.04	0.00	0.26	0.05	0.00	0.00	0.00	0.26	0.00	0.00	0.00	0.07
3	0.21	0.00	0.00	0.05	0.14	0.00	0.00	0.00	0.00	0.00	0.90	0.04
4	0.00	0.00	0.22	0.00	0.09	0.15	0.02	0.00	0.68	0.20	0.00	0.00
5	0.00	0.00	0.83	0.05	0.11	0.10	0.00	0.00	0.00	0.08	0.06	0.00
6	0.05	0.00	0.21	0.00	0.38	0.30	0.15	0.00	0.05	0.02	0.09	0.03
7	0.00	0.00	0.08	0.04	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.24
8	0.35	0.00	0.05	0.38	0.00	0.22	0.00	0.23	0.00	0.00	0.11	0.37
9	0.00	0.00	0.00	0.08	0.65	0.13	0.00	0.00	0.00	0.00	0.02	0.00
10	0.01	0.00	0.00	0.00	0.04	0.97	0.38	0.00	0.00	0.20	0.02	0.00
11	0.04	0.20	0.00	0.09	0.00	0.00	0.01	0.45	0.00	0.00	0.27	0.30
12	0.00	0.00	0.15	0.01	0.27	0.00	0.31	0.09	0.00	0.10	0.00	0.00
13	0.00	0.83	0.22	0.00	0.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.05	0.07	0.02	0.00	0.00	0.14	0.00	0.00	0.09	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.17	0.00	0.00	0.00
16	0.00	0.05	0.00	0.00	0.00	0.34	0.00	0.56	0.00	0.06	0.20	0.02
17	0.00	0.10	0.00	0.00	0.10	0.04	0.00	0.58	0.00	0.00	0.03	0.00
18	0.00	0.05	0.02	0.00	0.42	0.00	0.05	0.00	0.00	0.00	0.06	0.03
19	0.11	0.00	0.00	0.00	0.83	0.00	0.40	0.00	0.00	0.22	0.00	0.00
20	0.00	0.00	0.10	0.00	0.16	0.02	0.00	0.00	0.00	1.11	0.00	0.00
21	0.03	0.15	0.00	0.10	0.00	0.01	0.05	0.00	0.30	0.00	0.00	0.00
22	0.00	0.10	0.05	0.00	0.00	0.00	0.00	0.46	1.06	0.00	0.00	0.00
23	0.12	0.00	0.01	0.00	0.00	0.00	0.00	0.50	0.24	0.00	0.00	0.00
24	0.05	0.00	0.38	0.15	0.00	0.00	0.00	0.00	0.06	0.00	0.00	0.30
25	0.00	0.47	0.54	0.00	0.00	0.25	0.00	0.09	0.10	0.00	0.17	0.30
26	0.00	0.00	0.00	0.00	0.00	0.08	0.49	0.06	0.00	0.00	0.00	0.02
27	0.11	0.00	0.05	0.00	0.00	0.00	0.17	0.06	0.00	0.00	0.00	0.00
28	0.00	0.07	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.00	0.00	0.03
29	0.00	-----	0.00	0.00	0.00	0.50	0.00	0.00	0.11	0.09	0.08	0.87
30	0.24	-----	0.15	0.09	0.00	0.00	0.00	0.32	0.04	0.00	0.55	0.05
31	0.00	-----	0.00	-----	0.00	-----	0.00	0.00	-----	0.00	-----	0.00
TOTAL	1.41	2.09	3.99	1.09	3.64	3.43	2.44	3.66	2.90	2.09	2.56	2.81
STA AV	2.08	2.26	2.45	2.72	2.57	3.16	3.13	4.05	2.62	3.61	3.53	2.40

NOTES: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 9-YR RECORD PERIOD 1960-1966.

1967 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	0.12	0.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.00	0.00
2	0.03	0.26	0.00	0.10	0.30	0.00	0.00	0.00	0.04	0.03	0.15	0.00
3	0.00	0.00	0.02	0.10	0.70	0.00	0.35	0.06	0.02	0.00	0.10	0.41
4	0.10	0.09	0.00	0.00	0.10	0.00	0.00	0.25	0.31	0.00	0.30	0.03
5	0.15	0.03	0.22	0.00	0.10	0.00	0.00	0.00	0.04	0.55	0.00	0.00
6	0.00	0.00	0.05	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.05	0.00	0.20	0.25	0.03	0.21	0.00	0.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.01	0.00	0.32	0.14	0.00	0.00	0.00	0.01	0.00	0.30
9	0.00	0.00	0.00	0.00	0.24	0.11	0.50	0.26	0.15	0.11	0.00	0.00
10	0.00	0.00	0.00	0.55	0.01	0.00	0.00	0.07	0.75	1.60	0.00	0.00
11	0.03	0.05	0.00	0.00	0.31	0.90	0.00	0.00	0.00	0.07	0.00	0.00
12	0.08	0.00	0.00	0.00	0.07	0.00	0.93	0.00	0.00	0.00	0.11	1.28
13	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00
14	0.07	0.00	0.00	0.00	0.00	0.11	0.00	0.05	0.00	0.06	0.04	0.00
15	0.06	0.00	0.00	0.54	0.29	0.41	0.00	0.00	0.00	0.03	0.32	0.02
16	0.00	0.38	0.00	0.32	0.03	0.08	1.73	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.57	0.36	0.27	0.00	0.00	0.00	0.00	0.17	0.00
18	0.00	0.00	0.00	0.35	0.15	0.05	0.06	0.00	0.00	1.24	0.13	0.04
19	0.00	0.00	0.00	0.05	0.78	0.00	0.00	0.24	0.00	0.03	0.07	0.00
20	0.00	0.26	0.00	0.00	0.11	0.03	0.00	0.15	0.00	0.02	0.05	0.00
21	0.00	0.06	0.00	0.00	0.05	0.00	0.04	0.00	0.00	0.04	0.01	0.00
22	0.00	0.00	0.00	0.34	0.20	0.23	0.00	0.16	0.30	0.02	0.05	0.03
23	0.08	0.50	0.00	0.27	0.00	0.00	0.00	0.00	0.00	0.00	0.45	0.02
24	0.00	0.01	0.00	0.05	0.00	0.23	0.40	0.00	0.34	0.00	0.05	0.00
25	0.00	0.02	0.00	0.00	1.22	0.00	0.21	0.00	0.05	0.00	0.03	0.00
26	0.00	0.00	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.94	0.03	0.11
27	0.25	0.01	0.05	0.00	0.00	0.00	0.00	0.85	0.00	0.00	0.01	0.00
28	0.20	0.06	0.05	0.00	0.00	0.00	0.34	0.50	0.03	0.00	0.09	0.35
29	0.01	-----	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.00	0.05	0.78
30	0.00	-----	0.00	0.00	0.00	0.00	0.00	0.24	0.34	0.00	0.00	0.00
31	0.00	-----	0.00	-----	0.00	-----	0.30	0.21	-----	0.00	-----	0.14
TOTAL	1.25	1.82	0.60	3.93	5.45	2.77	4.86	3.04	2.47	4.88	2.29	3.51
STA AV	1.99	2.21	2.25	2.85	2.89	3.12	3.32	3.94	2.60	3.75	3.40	2.53

NOTES: DAILY PRECIPITATION VALUES FROM RAIN GAGE R-10. ALL PRECIPITATION IS RAIN EXCEPT FOR THE MONTHS OF DECEMBER, JANUARY, AND FEBRUARY, DURING WHICH ALL PRECIPITATION IS SNOW OR RAIN ON SNOW. STATION AVERAGE IS FOR 10-YR RECORD PERIOD 1960-1967.

1965 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	49.12	16.00	46.87	23.22	92.07	15.42	7.48	4.43	97.35	87.86	73.80	73.68		
2	40.81	15.79	34.39	21.58	77.87	12.29	6.92	4.78	195.33	118.77	56.69	71.54		
3	76.30	15.51	76.30	21.74	67.17	10.80	11.85	5.54	51.33	65.33	53.41	66.09		
4	84.95	14.68	197.07	22.93	67.24	9.97	19.65	5.26	31.60	93.65	55.81	136.18		
5	66.28	13.85	279.45	28.14	60.20	9.34	17.67	4.99	24.11	58.49	52.07	121.52		
6	65.47	13.57	298.25	42.11	47.03	8.31	60.98	4.43	19.75	45.29	48.47	85.03		
7	47.86	13.85	300.19	49.79	39.52	35.78	16.01	7.37	17.01	42.59	48.47	59.91		
8	52.00	167.94	351.21	48.36	36.56	139.15	17.83	13.70	15.41	127.94	60.81	49.76		
9	77.10	226.29	219.03	62.46	38.20	28.32	14.80	17.80	16.00	107.81	221.06	49.63		
10	82.56	212.44	140.36	110.00	49.84	24.06	13.01	45.78	32.82	66.02	82.49	61.48		
11	44.51	172.00	103.32	123.55	51.43	21.42	12.45	18.68	25.84	53.46	63.23	53.11		
12	36.72	132.20	75.56	150.69	33.61	14.96	9.42	13.01	16.88	80.92	61.49	54.01		
13	34.50	100.85	68.16	162.30	26.59	237.31	8.31	131.03	16.16	70.27	72.38	54.01		
14	33.80	66.32	63.00	133.85	24.30	122.31	7.56	25.32	25.33	52.90	82.91	57.61		
15	24.78	49.44	53.58	146.66	23.13	70.68	8.27	13.85	23.85	69.80	59.68	59.83		
16	32.97	34.76	37.63	271.55	21.33	62.76	7.20	11.08	37.40	169.71	104.50	59.83		
17	58.30	30.18	42.09	150.20	34.35	28.29	6.37	9.42	23.47	72.61	453.99	55.82		
18	48.55	31.16	41.17	108.44	45.05	29.37	83.90	45.53	19.67	57.06	173.13	52.63		
19	36.56	34.21	34.48	104.00	27.84	21.41	47.84	39.75	25.03	52.63	109.72	44.25		
20	36.56	43.42	23.92	120.54	23.82	17.22	15.93	29.42	32.38	49.30	94.17	30.63		
21	36.56	47.92	24.19	149.52	19.94	14.96	12.46	14.18	25.53	46.53	89.19	43.22		
22	36.56	42.34	88.25	237.82	18.28	14.03	10.25	12.03	20.22	45.98	91.19	45.57		
23	36.56	31.71	24.70	137.36	18.42	12.64	9.35	10.87	17.17	147.39	92.23	40.99		
24	32.13	25.68	23.90	101.77	16.62	23.00	8.59	10.39	26.30	132.75	82.82	43.49		
25	27.42	34.18	23.94	90.91	15.37	16.11	8.54	9.69	273.71	75.95	76.45	47.56		
26	25.20	212.94	22.55	97.81	14.68	12.12	7.18	10.35	69.56	61.49	74.51	55.05		
27	22.71	259.08	22.45	124.17	13.99	10.53	6.02	69.14	40.10	59.27	110.16	45.15		
28	22.44	80.16	25.94	102.15	13.99	9.42	5.82	66.17	30.50	61.73	104.63	41.00		
29	21.05	-----	22.39	102.99	12.74	8.31	5.82	39.99	27.97	55.67	85.59	38.50		
30	19.04	-----	23.99	98.86	12.46	8.03	5.26	27.80	27.97	51.14	74.61	38.50		
31	17.73	-----	22.83	-----	12.42	-----	4.71	19.22	-----	65.39	-----	40.95		
MEAN	42.81	76.37	88.75	104.85	34.07	34.94	15.40	23.90	43.53	75.67	96.99	57.31		
INCHES	1.150	1.853	2.384	2.726	.915	.908	.414	.642	1.131	2.033	2.521	.539		

NOTES: TO CONVERT MEAN DAILY DISCHARGE, IN CFS, TO IN/DAY, MULTIPLY BY .0008665.

1966 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	76.15	23.27	46.56	101.47	184.92	42.65	17.67	4.95	5.19	10.14	12.19	57.10		
2	81.35	21.88	110.59	98.33	141.82	42.11	13.88	4.96	4.64	9.21	13.02	40.99		
3	57.71	20.50	88.47	97.37	115.00	37.32	11.61	7.73	4.99	8.24	78.50	25.64		
4	46.81	19.67	57.61	96.86	144.25	38.59	10.01	6.29	17.00	7.12	69.69	31.67		
5	43.08	19.67	148.75	99.12	119.50	48.27	8.82	5.05	21.49	11.53	40.60	23.81		
6	44.04	19.67	298.50	110.77	168.10	74.20	9.50	4.09	10.02	13.70	36.98	26.81		
7	40.99	20.50	154.46	125.61	163.82	43.10	13.66	3.60	7.20	12.43	36.77	28.87		
8	37.39	20.50	82.79	153.43	113.38	40.88	12.59	3.85	6.65	10.73	36.45	65.61		
9	36.28	19.67	63.88	151.75	155.20	49.77	9.75	3.53	5.82	8.78	38.74	98.40		
10	35.73	19.67	63.20	154.45	168.31	211.02	9.34	2.61	5.55	8.36	34.21	128.18		
11	34.07	34.08	58.17	156.38	127.25	114.09	20.53	5.03	10.73	12.00	69.87	199.73		
12	32.13	84.56	47.51	159.25	117.29	59.84	16.28	7.56	4.29	11.29	49.14	76.21		
13	28.39	61.71	47.99	154.68	228.46	44.64	19.23	6.99	3.81	11.63	36.45	37.78		
14	28.53	68.66	48.75	217.15	141.02	36.72	12.51	5.89	4.07	10.73	30.01	48.70		
15	29.64	50.99	46.39	249.47	110.69	45.20	9.19	5.54	5.89	9.83	28.01	40.95		
16	29.08	38.50	43.04	233.95	98.33	83.61	7.86	9.15	6.92	9.97	21.18	25.19		
17	27.14	38.29	42.97	253.64	103.64	85.77	6.99	67.65	10.79	10.53	30.78	41.41		
18	26.87	32.93	53.06	254.82	89.95	45.29	5.78	18.44	4.71	10.39	46.92	42.90		
19	27.70	28.63	81.92	253.39	417.47	33.84	16.13	11.49	4.70	10.27	46.69	26.89		
20	27.97	23.61	97.63	218.79	245.25	29.41	24.72	7.41	4.36	113.21	24.71	19.76		
21	27.97	21.33	116.75	276.33	159.61	23.73	10.06	5.82	3.97	54.95	21.56	23.50		
22	27.97	20.77	130.86	379.33	118.19	20.39	7.36	7.85	59.77	31.02	21.33	25.07		
23	29.08	21.05	168.99	268.25	100.62	17.70	6.30	27.42	65.83	24.34	20.24	20.53		
24	29.08	34.15	249.44	254.92	87.05	15.71	5.44	31.97	29.22	18.00	23.32	15.72		
25	27.97	20.77	642.50	240.91	77.20	20.15	4.70	16.34	17.59	15.72	29.43	17.14		
26	29.08	21.05	226.71	187.13	70.17	22.27	11.09	12.60	12.95	14.06	50.64	21.25		
27	25.48	21.05	148.44	137.50	63.65	17.56	11.18	10.46	10.32	13.29	43.90	24.97		
28	23.54	21.88	114.44	124.21	58.44	12.84	7.34	9.28	9.49	13.23	39.54	24.51		
29	23.54	-----	100.54	121.59	56.12	17.81	13.13	6.30	9.69	12.67	43.20	24.24		
30	23.54	-----	109.77	122.97	48.54	33.03	9.13	5.12	10.80	12.72	58.11	26.73		
31	23.54	-----	107.96	-----	44.04	-----	5.89	9.64	-----	11.37	-----	29.15		
MEAN	34.90	30.32	122.54	181.79	130.23	46.92	11.22	10.79	12.62	17.14	37.74	43.21		
INCHES	.937	.736	3.292	4.726	3.498	1.220	.301	.290	.328	.461	.981	1.161		

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0008665.

1967 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	24.89	19.67	13.57	184.45	123.61	72.36	17.71	30.91	24.79	23.53	36.66	27.11
2	21.88	19.67	13.57	361.57	133.35	64.57	16.04	18.60	15.72	24.55	35.21	28.58
3	20.50	18.70	13.57	512.45	440.06	57.86	24.57	15.58	14.13	18.21	76.06	36.70
4	20.63	18.28	13.57	207.42	199.30	52.93	29.13	33.40	13.28	14.37	67.66	43.27
5	21.05	18.28	13.57	147.14	182.04	46.08	18.27	39.30	17.46	17.74	79.55	34.67
6	20.36	17.52	13.57	149.12	137.37	41.96	16.11	19.04	13.71	30.70	50.24	29.01
7	27.86	16.58	13.57	120.29	112.72	38.26	14.03	15.57	10.99	21.25	42.35	28.63
8	30.12	15.51	13.57	119.19	151.15	46.43	12.80	13.94	9.22	16.23	39.24	30.53
9	21.05	15.23	13.57	134.13	160.29	52.19	13.50	13.42	8.27	16.01	34.75	31.92
10	19.67	14.82	14.20	363.42	167.49	43.81	33.91	25.29	54.38	71.24	35.18	28.76
11	19.67	14.68	18.56	249.47	132.52	39.00	17.45	22.72	26.31	287.79	30.96	26.90
12	19.11	14.40	24.51	126.13	188.52	50.83	77.65	16.57	16.06	63.29	36.12	222.86
13	19.32	13.62	26.61	109.91	114.37	37.05	44.51	13.78	13.09	40.37	54.40	279.13
14	18.83	12.33	21.26	136.40	94.31	29.90	21.64	12.69	11.47	32.28	43.29	115.95
15	19.60	12.88	19.63	256.25	109.75	107.72	16.33	10.78	10.39	30.85	33.71	74.53
16	18.74	16.50	19.25	267.85	130.02	103.82	180.07	9.00	9.07	27.01	34.08	50.27
17	18.34	22.47	18.23	164.48	91.93	67.77	72.84	7.93	8.37	26.52	35.75	52.16
18	17.45	17.17	16.65	259.15	153.65	95.68	35.82	7.32	7.91	77.14	42.05	53.77
19	16.41	15.03	15.56	201.08	226.44	50.96	29.54	7.40	7.78	275.88	40.92	77.24
20	16.00	13.33	15.38	185.89	250.41	38.07	24.62	13.03	6.82	71.55	38.20	84.96
21	15.72	13.83	14.26	167.67	129.60	34.77	19.47	12.51	6.79	53.88	32.75	62.09
22	16.34	13.64	14.09	258.94	100.27	50.79	39.69	10.47	10.53	51.44	33.88	71.53
23	17.24	13.57	14.17	301.51	124.22	55.66	23.06	11.59	13.91	42.44	59.91	63.55
24	22.64	13.57	14.81	213.85	92.59	38.58	35.36	8.77	11.29	37.22	104.33	32.83
25	27.07	14.82	15.85	163.91	181.80	33.24	36.02	7.03	27.32	35.29	56.27	29.97
26	24.86	15.79	19.37	146.12	330.57	38.64	39.34	6.23	18.74	224.29	46.30	39.93
27	23.54	14.73	34.01	148.79	171.01	26.21	21.45	12.86	13.13	85.34	69.49	24.81
28	23.59	13.57	61.78	143.35	121.62	21.67	34.31	84.74	11.34	58.93	43.64	30.56
29	22.23	-----	92.58	137.53	98.65	19.04	39.26	26.24	11.41	47.92	35.87	31.91
30	19.11	-----	109.61	126.82	85.95	17.21	23.09	15.58	34.43	42.97	28.87	36.05
31	19.53	-----	116.48	-----	77.83	-----	20.93	30.05	-----	39.01	-----	34.16
MEAN	20.75	15.72	27.06	202.14	155.27	49.10	33.82	18.46	15.27	61.46	45.92	58.53
INCHES	.557	.381	.727	5.255	4.171	1.276	.909	.496	.397	1.651	1.194	1.572

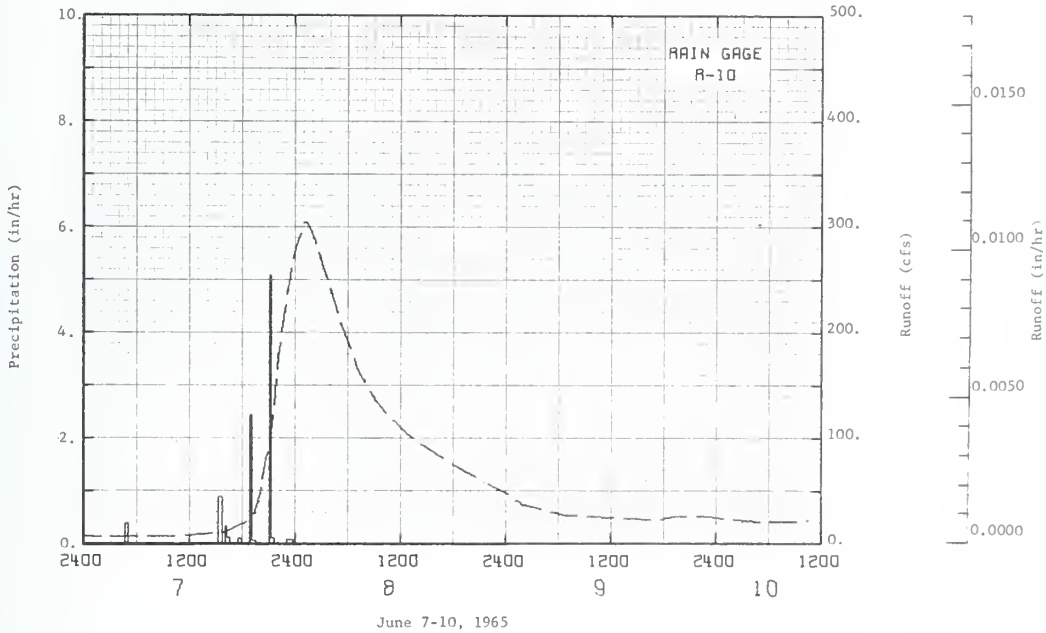
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0008665.

1965 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 June 7-10, 1965											
6- 7	.00	.001	6- 7	RG 0445	R-10 .0000	.00	6- 7	0301	7.200	.0000	
				0510	.4000	.17		0901	7.760	.0016	
				1520	.0000	.17		0943	9.032	.0018	
				1550	.9000	.62		1550	11.010	.0040	
				1610	.0000	.62		1616	13.295	.0042	
				1620	.3600	.62		1711	16.896	.0047	
				1640	.1200	.72		1758	19.042	.0052	
				1740	.0000	.72		1844	22.712	.0058	
				1800	.1200	.76		1924	27.421	.0064	
				1900	.0000	.76		2000	45.978	.0072	
				1910	2.4600	1.17		2017	54.011	.0077	
				1940	.0900	1.21		2047	81.085	.0089	
				2118	.0000	1.21		2112	95.003	.0102	
				2120	5.1000	1.38		2130	114.045	.0113	
				2140	.1200	1.42		2154	157.877	.0134	
				2310	.0000	1.42		2213	177.542	.0151	
				2350	.0750	1.47		2228	194.100	.0168	
								2257	221.059	.0204	
								2330	252.003	.0251	
								2347	269.221	.0278	
								2400	275.849	.0299	
							6- 8	0024	295.394	.0340	
								0102	304.120	.0407	
								0126	304.170	.0451	
								0221	286.354	.0469	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.00036104. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1960-61, USDA MISC. PUB. 994, P. 67.5-5. FOR 30-DAY ANTECEDENT TEMPERATURE RAINFALL AND RUNOFF, SEE P. 67.1-1, 67.5-1 AND 67.5-3, RESPECTIVELY. 1/ RUNOFF PRIOR TO 0301 ON 6-7-65.

1965 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 June 7-10, 1965 - Continued										
							6-8	0336	252.603	.0671
								0445	221.859	.0770
								0558	103.330	.0861
								0701	170.064	.0930
								0747	155.661	.0975
								0928	133.226	.1063
								1030	122.701	.1111
								1249	103.866	.1206
								1416	95.003	.1258
								1720	78.461	.1354
								1903	70.075	.1400
								2043	62.320	.1440
								2400	48.471	.1506
							6-9	0203	36.561	.1538
								0645	27.421	.1592
								1416	24.097	.1662
								1717	22.712	.1688
								1915	25.759	.1696
								1918	27.421	.1706
								2215	26.590	.1735
								2400	24.928	.1751
							6-10	0133	23.543	.1765
								0501	21.327	.1793
								1032	22.712	.1837

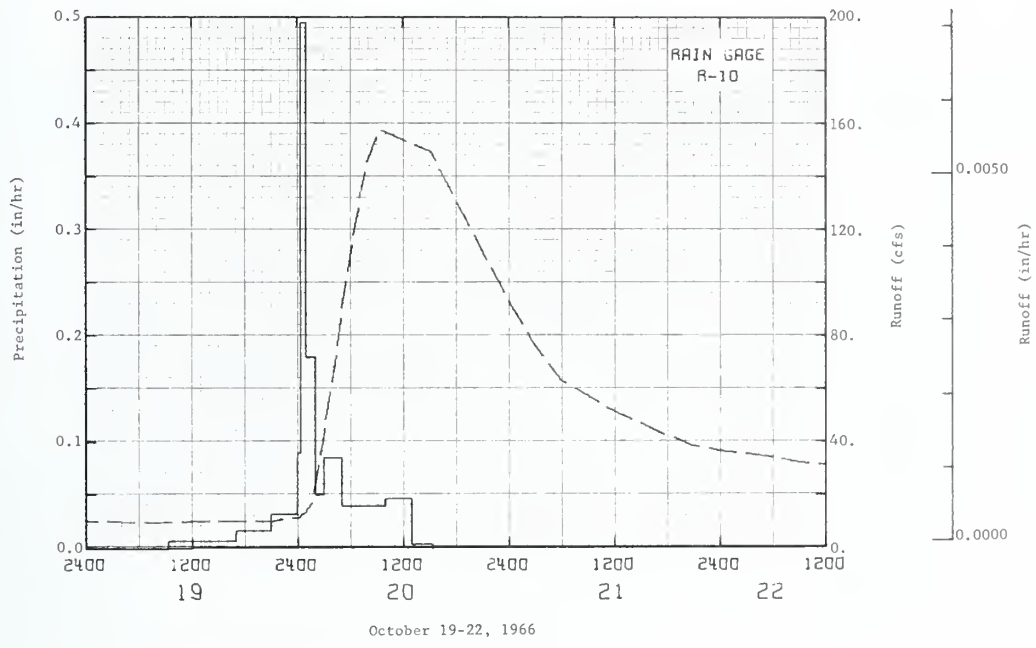
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104.



NORTH DANVILLE, VERMONT WATERSHED W-5

1966 SELECTED RUNOFF EVENT			NORTH DANVILLE, VERMONT				WATERSHED W-5		47.05		
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 October 19-22, 1966								
10-19	.00	.002	10-19	RG	R-10	.00	10-19	0600	9.694	.0000	
				0921	.0000			1200	10.248	.0022	
			10-20	1659	.0066	.05	10-20	1759	10.248	.0044	
				2059	.0175			1920	10.525	.0049	
Watershed conditions: 67% forest; 17% hay; 13% pastured land; 2% idle land with dense brush and grass growth; 1% homesites and roads.			10-20	2400	.0331	.22	10-20	2059	10.525	.0055	
				0020	.0900			.25	2300	11.633	.0063
				0100	.4950			.58	2400	11.633	.0067
				0200	1.200			.76	0910	11.633	.0068
				0259	.0508			.81	0915	11.610	.0069
				0459	.0850			.98	0100	14.126	.0071
				1000	.0399			1.18	0144	17.727	.0075
				1300	.0467			1.32	0331	54.011	.0098
				1520	.0043			1.33	0355	42.874	.0106
											10-21
						0515	95.280	.0143			
						10-21	0600	109.960	.0171		
							0745	144.028	.0251		
						10-21	0900	154.830	.0318		
							0915	157.600	.0332		
						10-21	1300	152.060	.0542		
							1511	149.291	.0661		
						10-21	1757	131.287	.0801		
							2400	93.064	.1046		
						10-21	0300	76.169	.1138		
							0600	62.874	.1213		
						10-22	1200	51.241	.1337		
							1800	42.100	.1438		
						10-22	2044	38.500	.1478		
							2400	36.284	.1522		
						10-22	0301	35.176	.1561		
							0601	34.068	.1598		
						10-22	0900	32.129	.1634		
							1200	31.021	.1668		

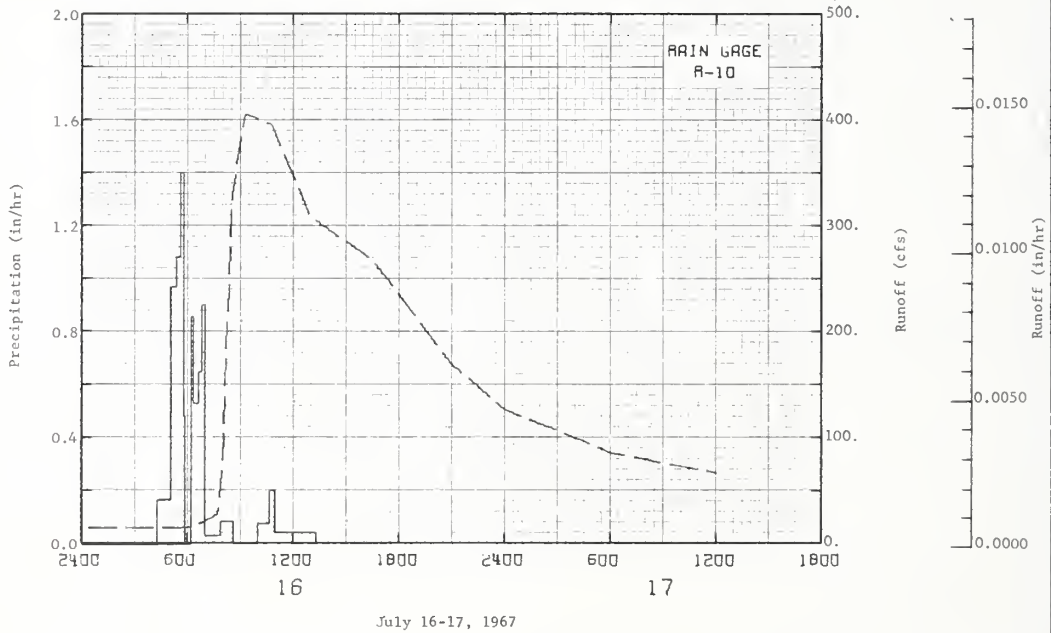
NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1960-61, USDA MISC. PUB. 994, P. 67.5-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.5-3, RESPECTIVELY. 1/ RUNOFF PRIOR TO 0600 ON 10-19-66.



NORTH DANVILLE, VERMONT WATERSHED W-5

1967 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 16-17, 1967							
7-16	.00	.003	7-16	RG	R-10		7-16	0513	14.690	.0000
Watershed conditions: 67% forest; 17% hay; 13% pastured land; 2% idle land with dense brush and grass growth; 1% homesites and roads.				0420	.0000	.00		0629	16.342	.0007
				0506	.1696	.13		0745	29.083	.0017
				0524	.9667	.42		0801	74.507	.0022
				0539	1.0900	.69		0910	152.060	.0029
				0548	1.4000	.90				
				0553	.4800	.94		0834	329.325	.0063
				0616	.0000	.94		0918	404.663	.0160
				0623	.9571	1.04		1048	394.692	.0376
				0640	.5294	1.10		1300	307.444	.0655
				0652	.6500	1.32		1630	267.006	.1018
				0700	.9000	1.44		2059	168.956	.1371
				0757	.0316	1.47		2400	126.301	.1532
				0840	.0837	1.53		7-17 0600	85.309	.1761
				1002	.0000	1.53		1200	66.197	.1925
				1042	.0750	1.58		2400	43.208	.2163
	1100	.2000	1.64		7-18 0401	39.500	.2222			
	1321	.0383	1.73		0716	37.392	.2266			
					1349	34.068	.2350			
					1815	32.960	.2404			
					2400	32.960	.2472			

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY 0.000036104. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES 1960-61, USDA MISC. PUB. 994, P. 67.5-5. FOR 30-DAY ANTECEDENT TEMPERATURE, RAINFALL AND RUNOFF, SEE P. 67.1-2, 67.5-2 AND 67.5-4, RESPECTIVELY. 1/ RUNOFF PRIOR TO 0513 ON 7-16-67.



NORTH DANVILLE, VERMONT WATERSHED W-5

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-1 (68 036068) AREA—57,700 ACRES (90.2 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	3.32 P1/ Q	.90 .167	.63 .162	1.85 .131	1.67 .674	2.21 .725	.22 .029	.00 .009	.62 .011	1.43 .015	1.60 .020	1.02 .034	15.47 2.179
STA AVG P (63-67)	2.52 .438	.96 .305	.75 .224	1.49 .491	1.50 .571	1.92 .361	.16 .036	.64 .027	.44 .013	.77 .019	2.35 .042	1.88 .318	15.38 2.845
28 YR. MEAN P 2/	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43

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
1967	6-7	.005	6-7	.004	6-7	.008	1-21	.022	6-6	.034	6-6	.054	6-6	.105	6-6	.329

MAXIMUMS FOR PERIOD OF RECORD

1963 TO 1967	12-23 1964	.065	12-23 1964	.064	12-23 1964	.125	12-23 1964	.270	12-23 1964	.327	12-23 1964	.453	12-23 1964	.721	01-28 1965	1.313
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NOTES: Watershed Conditions: Predominately sagebrush rangeland, 95%; small stands of forest, 2%; permanent fields of flow irrigated alfalfa, 3%. 1/ Precipitation values are Thiessen weighted from 20 gages. 2/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.

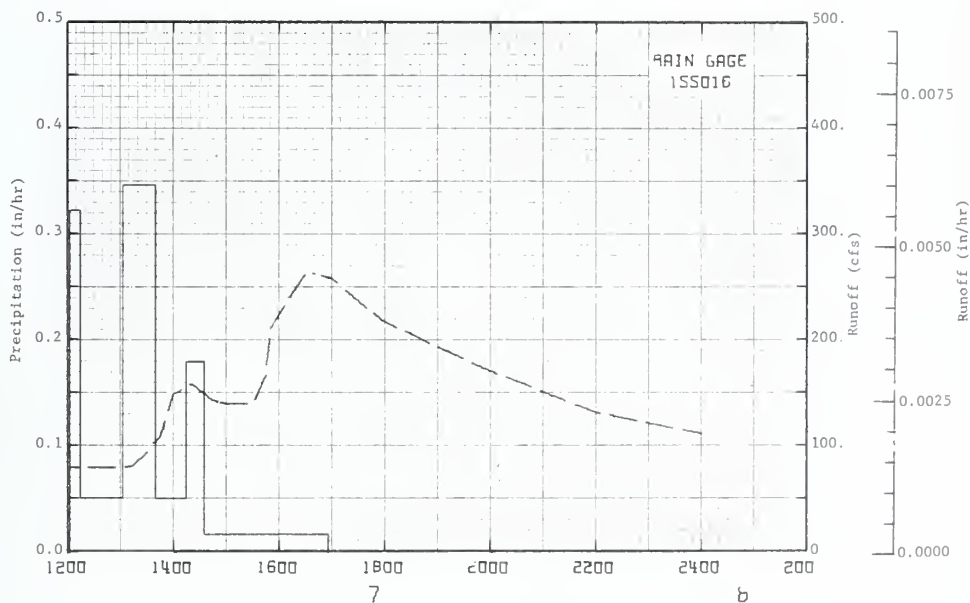
1967 DAILY AIR TEMPERATURE (degrees F)											REYNOLDS, IDAHO WATERSHED W-1 (68 036068)										68.01			
DAY	JAN		FEB		MAR		APR		MAY		JUNE		JULY		AUG		SEPT		OCT		NOV		DEC	
	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN
1	42	28	43	29	53	37	45	19	51	30	61	39	79	47	88	56	97	61	67	39	59	35	37	18
2	36	25	44	32	38	24	51	21	57	33	65	35	85	50	89	55	95	61	57	37	47	24	37	19
3	43	25	48	37	37	19	58	22	60	39	68	39	95	56	95	53	88	52	59	34	47	22	46	25
4	46	35	51	33	39	17	56	35	59	34	68	47	91	62	92	57	86	59	63	34	44	23	48	37
5	40	23	42	31	48	23	49	32	61	32	58	45	91	59	88	60	79	67	55	37	49	26	45	25
6	31	21	47	23	56	34	51	28	68	35	61	47	89	57	88	50	80	58	59	34	61	21	31	19
7	32	23	43	24	47	21	50	28	73	47	61	44	87	57	78	51	86	51	65	31	70	31	33	23
8	35	20	44	20	54	34	53	34	79	38	64	43	89	59	83	47	80	57	71	34	69	47	32	12
9	41	18	46	41	51	30	53	32	65	43	63	42	84	53	91	47	82	47	72	40	47	35	31	12
10	34	21	44	35	50	36	54	35	54	31	67	45	89	55	92	50	81	53	74	39	59	42	40	18
11	45	26	51	25	46	28	48	34	49	26	63	45	95	56	93	57	61	41	75	43	60	42	43	23
12	43	31	55	27	36	17	54	35	47	27	63	41	99	57	95	56	58	39	59	35	61	42	23	9
13	47	42	53	29	42	27	58	34	55	34	66	42	96	74	97	56	64	36	70	31	58	42	21	3
14	50	29	29	18	42	25	43	30	66	32	70	49	91	62	94	54	70	36	54	34	60	42	21	-1
15	51	36	31	21	54	22	43	27	72	40	77	49	93	57	95	56	76	39	58	25	57	34	23	-1
16	38	24	37	27	53	42	46	29	79	41	82	53	88	65	97	59	79	41	69	29	54	28	29	3
17	39	20	45	35	56	36	48	36	85	45	84	52	85	61	98	68	83	43	73	33	50	20	26	20
18	39	17	43	25	50	31	46	33	76	45	89	51	88	55	97	68	76	47	58	32	42	24	33	20
19	48	38	35	23	46	33	39	29	76	47	89	56	82	53	97	65	80	49	67	29	41	31	31	8
20	46	37	40	17	54	30	47	31	81	41	87	59	83	50	98	60	82	52	67	48	46	30	29	14
21	43	32	43	23	55	31	46	21	87	46	73	54	85	52	87	59	90	49	63	39	47	29	28	11
22	36	20	53	21	61	30	46	24	90	52	75	47	93	56	90	51	78	55	55	32	46	27	35	25
23	35	14	53	25	55	34	45	33	80	53	91	57	94	61	95	54	77	44	56	24	49	28	36	22
24	29	18	53	29	46	24	52	29	71	45	91	55	95	58	89	57	82	46	59	34	52	25	44	21
25	37	28	43	35	50	19	49	32	64	36	97	55	92	57	88	57	80	48	50	25	36	29	46	42
26	43	28	46	29	48	25	45	33	73	34	91	56	89	57	90	59	79	47	57	28	35	17	49	38
27	50	40	55	24	56	22	50	37	80	41	74	55	87	54	89	63	83	44	59	35	37	15	52	39
28	53	45	60	31	53	36	41	27	70	55	81	49	98	52	90	53	86	44	48	27	35	17	44	29
29	50	40	---	---	38	27	43	26	63	45	89	52	90	69	92	54	86	53	61	29	38	23	40	26
30	41	28	---	---	42	26	41	32	57	41	71	50	92	60	93	53	65	45	60	30	36	18	37	29
31	39	31	---	---	41	26	---	---	55	36	---	---	90	61	94	58	---	---	60	31	---	---	40	28
AV.	42	28	46	28	48	28	48	30	68	39	75	48	90	57	92	56	80	49	62	33	50	29	36	20
MEAN	34.8		36.6		38.1		39.2		53.7		61.5		73.6		74.0		64.2		47.6		39.4		27.8	
STA AV	36.18		44.26		47.25		54.30		66.39		73.46		86.50		84.49		77.43		65.33		50.27		40.20	

NOTES: TEMPERATURE DATA READINGS TAKEN FROM HYGROTHERMOGRAPH RECORD. STA AV BASED ON 1963-67 RECORD PERIOD. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1963, P. 68.1-8.

1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-1 (68 036068)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.01	0.48	0.0	0.0	0.0	0.03	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.02	0.02	0.0	0.0	0.41	0.0	0.0
3	0.05	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.01
4	0.05	0.0	0.0	0.01	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.05	0.0	0.0	0.10	0.0	0.28	0.0	0.0	0.0	0.17	0.0	0.33
6	0.08	0.0	0.0	0.07	0.0	0.47	0.0	0.0	0.0	0.01	0.0	0.0
7	0.0	0.0	0.0	0.02	0.0	0.16	0.01	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.01	0.21	0.0	0.0	0.06	0.0	0.02	0.16
9	0.0	0.0	0.03	0.0	0.13	0.01	0.0	0.0	0.0	0.0	0.19	0.0
10	0.0	0.0	0.03	0.01	0.12	0.04	0.0	0.0	0.0	0.0	0.09	0.0
11	0.0	0.0	0.10	0.20	0.04	0.0	0.0	0.0	0.45	0.23	0.0	0.01
12	0.09	0.0	0.06	0.01	0.07	0.07	0.0	0.0	0.02	0.01	0.0	0.04
13	0.09	0.29	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.19	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.09	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.18	0.03	0.0	0.0	0.0	0.13	0.0	0.0	0.0	0.0	0.02
17	0.0	0.08	0.0	0.07	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.04
18	0.0	0.02	0.08	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.22
19	0.0	0.0	0.01	0.10	0.0	0.04	0.0	0.0	0.0	0.0	0.18	0.0
20	0.34	0.0	0.02	0.10	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.02
21	1.41	0.0	0.0	0.03	0.0	0.21	0.0	0.0	0.0	0.10	0.0	0.02
22	0.06	0.0	0.0	0.09	0.0	0.13	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.01	0.47	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.03
24	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0
25	0.0	0.05	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.05
26	0.18	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.03	0.0	0.01
27	0.07	0.0	0.0	0.04	0.0	0.04	0.0	0.0	0.0	0.03	0.0	0.02
28	0.03	0.0	0.08	0.19	0.04	0.0	0.0	0.0	0.0	0.40	0.06	0.0
29	0.10	---	0.06	0.01	0.17	0.0	0.0	0.0	0.06	0.0	0.23	0.0
30	0.08	---	0.02	0.06	0.20	0.0	0.0	0.0	0.03	0.0	0.0	0.0
31	0.55	---	0.08	---	0.80	---	0.0	0.0	---	0.0	---	0.04
TOTAL	3.32	0.90	0.63	1.85	1.67	2.21	0.22	0.0	0.62	1.43	1.60	1.02
STA AV	2.52	0.96	0.75	1.49	1.50	1.92	0.16	0.64	0.44	0.77	2.35	1.88
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM 20 GAGES. STA AV BASED ON RECORD PERIOD 1963-67. TOTAL PRECIPITATION FOR YEAR = 15.47 INCHES.												
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-1 (68 036068)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.86	22.83	15.32	9.67	15.31	91.68	7.52	0.64	0.78	1.01	1.81	1.09
2	2.75	19.27	14.22	9.49	14.32	81.82	7.12	0.61	0.88	1.17	1.80	1.19
3	3.16	21.24	11.52	9.37	13.64	73.32	5.30	0.61	0.91	1.26	1.84	1.31
4	3.82	21.99	9.65	7.17	13.44	61.03	3.55	0.69	0.93	1.10	1.87	1.26
5	2.53	19.64	10.78	7.65	14.20	65.64	3.37	0.68	0.91	1.13	1.83	1.72
6	1.68	14.95	10.88	7.61	21.57	132.46	2.92	0.70	0.92	1.17	1.80	1.00
7	3.32	15.14	10.37	7.83	38.69	122.73	2.78	0.66	0.90	1.11	1.82	1.40
8	3.29	13.41	10.19	7.88	46.04	107.51	2.63	0.75	0.92	1.07	1.78	1.41
9	2.79	15.19	9.70	7.99	71.78	94.13	2.36	0.66	0.91	1.01	2.17	1.81
10	3.31	14.02	8.92	8.27	60.23	95.06	2.53	0.70	0.92	1.00	2.20	2.64
11	3.22	11.92	9.05	10.19	42.71	86.18	2.47	0.72	1.18	1.03	1.97	2.59
12	3.27	12.61	8.94	9.70	29.95	84.52	2.47	0.71	1.11	1.14	1.87	1.47
13	4.42	14.47	8.80	9.50	25.52	75.97	2.18	0.73	0.99	1.13	1.87	1.01
14	6.13	12.09	8.09	9.81	26.58	69.85	1.99	0.73	0.93	1.06	1.61	0.91
15	6.29	10.66	7.81	9.39	34.40	61.15	1.70	0.78	0.91	1.15	1.46	1.12
16	5.99	12.07	10.96	8.05	52.02	52.15	1.59	0.84	0.88	1.11	1.46	1.52
17	4.46	14.21	20.64	8.36	80.44	48.92	1.56	0.79	0.85	1.14	1.45	1.70
18	3.77	16.08	20.52	8.54	86.73	49.78	1.44	0.83	0.81	1.11	2.45	2.14
19	6.19	9.50	17.98	8.74	93.72	41.01	1.39	1.07	0.86	1.08	2.79	2.20
20	8.13	9.86	16.08	7.94	97.08	33.54	1.39	0.92	0.82	1.17	1.60	2.10
21	91.18	11.05	15.94	8.68	91.70	34.04	1.29	0.75	0.79	1.15	1.39	2.00
22	50.03	11.78	17.17	8.68	100.18	33.71	1.35	0.73	0.74	1.12	1.23	2.21
23	17.22	13.64	19.58	12.01	97.03	31.75	1.47	0.58	0.81	1.07	1.19	2.55
24	13.34	14.04	15.68	13.63	80.60	28.83	1.47	0.36	0.84	1.22	1.10	2.83
25	14.42	14.51	13.12	16.45	60.26	26.31	1.24	0.40	0.78	1.16	1.01	5.36
26	12.21	14.12	13.03	17.29	52.35	22.26	1.13	0.71	0.84	1.26	0.97	8.18
27	29.99	12.57	12.21	17.41	53.59	18.69	1.28	0.76	0.80	1.32	0.92	7.93
28	44.83	13.05	11.36	17.42	53.52	15.78	1.06	0.90	0.77	1.91	1.11	6.70
29	64.84	---	11.71	16.15	51.63	11.53	0.93	0.78	0.81	1.51	1.13	4.93
30	35.39	---	10.28	15.83	48.46	8.21	0.84	0.76	0.96	1.53	0.98	3.58
31	40.40	---	11.25	---	65.46	---	0.67	0.65	---	1.82	---	3.63
MEAN	15.98	14.50	12.64	10.56	52.68	58.65	2.29	0.72	0.88	1.20	1.62	2.67
INCHES	0.204	0.167	0.162	0.131	0.674	0.725	0.029	0.009	0.011	0.015	0.020	0.034
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.000413.												

1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO			WATERSHED W-1 (SR 036068)				
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)
<u>Event of June 7-8, 1967</u>										
6-7	RG 155016 .00	$\frac{1}{100}$	6-7	RG 155016 1202	.0000	.00	6-7	1200	20.478	.0000
				1215	.3224	.07		1300	40.478	.0014
				1302	.0510	.11		1315	92.930	.0017
				1340	.3473	.33		1345	109.776	.0026
				1415	.0514	.36		1400	150.417	.0031
				1435	.1901	.42		1420	158.902	.0040
				1657	.0144	.45		1445	143.136	.0051
								1500	139.586	.0057
								1530	139.586	.0069
								1545	166.708	.0075
								1550	211.910	.0078
								1630	264.608	.0105
								1700	257.910	.0128
								1800	210.596	.0168
								2000	170.708	.0235
								2200	131.914	.0297
								2400	111.778	.0329

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00001717. $\frac{1}{100}$ RUNOFF PRIOR TO 1200 ON 6-7-67



June 7-8, 1967

REYNOLDS, IDAHO WATERSHED W-1 (68036068)

MONTHLY PRECIPITATION AND RUNOFF (inches)													REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017)	
													AREA—8,990 ACRES (14.05 SQ.MILES)	
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967	3.37	1.01	.57	2.07	1.61	2.97	.04	.00	.88	1.54	1.36	.84	16.26	
	.458	.399	.325	.421	.391	.365	.033	.003	.003	.022	.048	.067	2.535	
STA AVG P (65-67)	3.02	.77	.58	1.57	1.92	1.67	.10	1.29	.57	.90	2.07	1.07	15.53	
MEAN P (65-67)	.772	.430	.286	.353	.412	.213	.036	.093	.038	.048	.073	.106	2.860	
28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43	

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
1967	1-21	.009	1-21	.009	1-21	.017	1-21	.044	1-21	.074	1-21	.103	1-21	.133	1-21	.261

MAXIMUMS FOR PERIOD OF RECORD																
1965 TO 1967	08-23 1965	.073	08-23 1965	.044	08-23 1965	.056	01-28 1965	.114	01-28 1965	.208	01-28 1965	.379	01-28 1965	.766	01-28 1965	1.495

NOTES: Watershed Conditions: Predominately sagebrush rangeland, 99%; irrigated pasture and hay crops, 1%. For Maximum and Minimum Daily Air Temperatures, see Table for Watershed W-1, p. 68.1-1. 1/ Precipitation values are Thiessen weighted from gages 012029, 022040, and 024095. 2/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.

1967 DAILY PRECIPITATION (inches)							REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017)						
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	0.0	0.0	0.0	0.0	0.13	0.71	0.0	0.0	0.0	0.06	0.0	0.0	
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.45	0.0	0.0	
3	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.01	
4	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	0.04	0.0	0.0	0.09	0.0	0.37	0.0	0.0	0.0	0.14	0.0	0.32	
6	0.09	0.0	0.0	0.10	0.0	0.55	0.0	0.0	0.0	0.03	0.0	0.0	
7	0.0	0.0	0.0	0.02	0.0	0.22	0.02	0.0	0.0	0.0	0.0	0.18	
8	0.0	0.0	0.0	0.0	0.0	0.06	0.0	0.0	0.02	0.0	0.01	0.01	
9	0.0	0.0	0.07	0.0	0.02	0.03	0.0	0.0	0.0	0.0	0.21	0.0	
10	0.0	0.0	0.05	0.0	0.06	0.18	0.0	0.0	0.0	0.0	0.14	0.02	
11	0.0	0.0	0.04	0.25	0.02	0.0	0.0	0.0	0.63	0.29	0.0	0.02	
12	0.09	0.0	0.07	0.02	0.17	0.19	0.0	0.0	0.07	0.0	0.0	0.04	
13	0.15	0.18	0.03	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0	
14	0.0	0.23	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15	0.0	0.06	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	0.0	0.22	0.02	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.0	
17	0.0	0.0	0.0	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	
18	0.0	0.21	0.07	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.61	0.14	
19	0.0	0.01	0.0	0.13	0.0	0.18	0.0	0.0	0.0	0.0	0.17	0.02	
20	0.27	0.0	0.0	0.16	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	
21	1.43	0.0	0.0	0.01	0.0	0.20	0.0	0.0	0.0	0.08	0.0	0.0	
22	0.11	0.0	0.0	0.08	0.0	0.19	0.0	0.0	0.0	0.02	0.0	0.0	
23	0.0	0.0	0.03	0.62	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.01	
24	0.09	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0	
25	0.0	0.10	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02	
26	0.22	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
27	0.03	0.0	0.0	0.06	0.0	0.04	0.0	0.0	0.0	0.04	0.0	0.0	
28	0.05	0.0	0.04	0.10	0.0	0.0	0.0	0.0	0.0	0.43	0.02	0.0	
29	0.0	---	0.06	0.03	0.24	0.0	0.0	0.0	0.10	0.0	0.18	0.0	
30	0.03	---	0.01	0.0	0.48	0.0	0.0	0.0	0.06	0.0	0.0	0.0	
31	0.61	---	0.08	---	0.49	---	0.0	---	---	0.0	---	0.03	
TOTAL	3.37	1.01	0.57	2.07	1.61	2.97	0.04	0.0	0.88	1.54	1.36	0.84	
STA AV	3.02	0.77	0.58	1.57	1.92	1.67	0.10	1.29	0.57	0.90	2.07	1.07	

NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES 012029, 022040, AND 024095. STA AV BASED ON RECORD PERIOD 1965-67. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 68.2-7. TOTAL PRECIPITATION FOR YEAR = 15.26 INCHES.

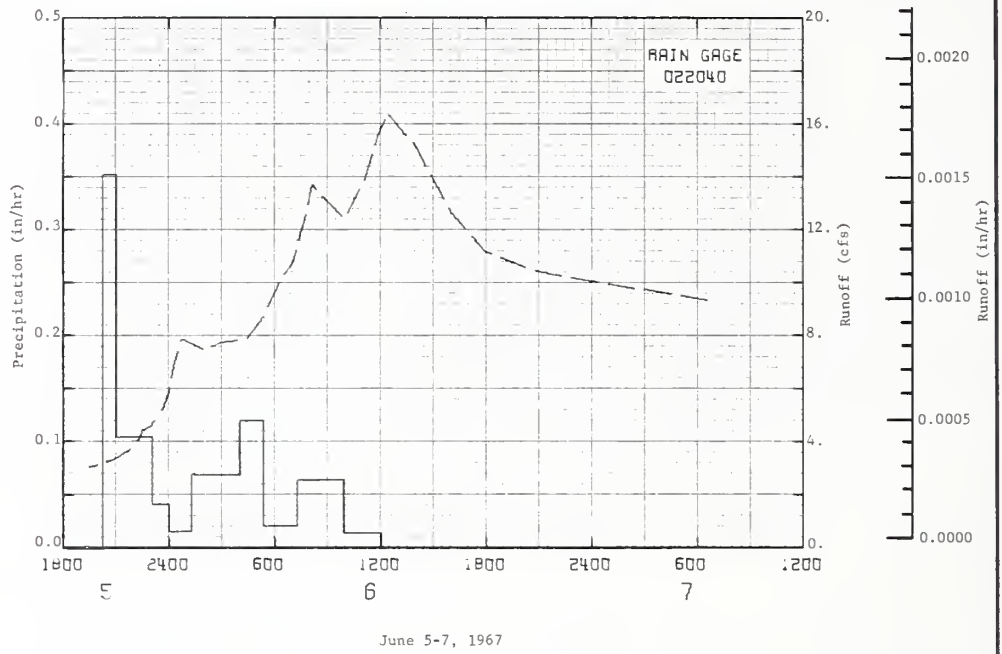
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.30	8.32	5.01	3.88	7.56	6.44	1.13	0.06	0.02	0.15	0.42	0.65
2	1.15	7.26	4.77	3.80	7.30	6.30	1.05	0.06	0.02	0.23	0.45	0.66
3	1.27	7.04	4.02	3.73	7.10	4.62	1.02	0.05	0.02	0.31	0.47	0.83
4	1.63	7.37	3.36	3.73	6.94	3.85	0.96	0.05	0.02	0.18	0.49	0.84
5	1.24	7.13	3.80	3.92	7.09	3.54	0.87	0.05	0.02	0.19	0.45	1.03
6	1.10	6.18	3.91	3.88	7.35	11.24	0.78	0.05	0.02	0.21	0.46	0.47
7	1.40	5.98	3.61	4.04	8.46	8.91	0.77	0.04	0.02	0.20	0.48	0.73
8	1.17	5.46	3.62	3.79	8.81	9.35	0.74	0.04	0.02	0.19	0.38	0.58
9	1.06	5.25	3.45	3.91	8.66	8.51	0.65	0.04	0.02	0.17	0.55	0.63
10	1.20	4.66	3.53	3.81	7.84	7.16	0.54	0.03	0.02	0.17	0.57	0.73
11	1.18	4.33	3.37	4.22	7.02	6.53	0.48	0.02	0.02	0.16	0.50	0.70
12	2.33	4.21	3.30	4.68	6.61	6.41	0.37	0.02	0.02	0.25	0.47	0.42
13	2.72	4.36	3.11	4.89	5.95	5.39	0.28	0.02	0.04	0.26	0.45	0.24
14	2.47	4.01	2.89	5.14	5.38	4.82	0.26	0.02	0.05	0.27	0.49	0.29
15	2.66	4.01	2.71	4.92	4.59	4.36	0.22	0.02	0.06	0.24	0.48	0.33
16	2.38	4.15	2.88	4.60	3.64	3.98	0.21	0.02	0.06	0.23	0.52	0.39
17	2.08	5.45	3.47	4.56	2.88	3.75	0.25	0.02	0.06	0.23	0.54	0.55
18	1.85	6.11	4.00	4.63	2.45	3.44	0.21	0.02	0.05	0.26	1.08	0.83
19	2.48	5.10	3.94	4.59	2.11	3.43	0.21	0.02	0.06	0.21	1.42	0.94
20	2.63	4.50	3.83	4.54	2.70	3.16	0.23	0.02	0.06	0.28	0.99	0.66
21	28.52	4.76	4.05	4.79	3.14	3.66	0.22	0.02	0.06	0.27	0.83	0.53
22	21.02	4.62	4.52	4.76	2.75	3.41	0.22	0.02	0.05	0.27	0.70	0.59
23	8.78	5.11	5.03	6.08	2.43	2.81	0.15	0.03	0.06	0.21	0.70	0.67
24	6.20	5.25	5.06	7.45	2.36	2.37	0.14	0.03	0.06	0.27	0.68	0.71
25	5.61	5.33	4.75	8.72	2.68	2.03	0.12	0.03	0.05	0.25	0.62	1.51
26	5.43	4.97	4.79	8.77	2.61	1.85	0.10	0.03	0.03	0.28	0.58	2.06
27	9.84	4.87	4.45	8.64	2.08	2.07	0.08	0.02	0.05	0.35	0.47	1.82
28	13.03	4.98	4.45	8.55	1.38	1.80	0.08	0.02	0.07	0.76	0.69	1.46
29	15.83	---	4.58	8.14	2.16	1.45	0.06	0.02	0.06	0.50	0.72	1.25
30	11.22	-----	4.05	7.92	2.23	1.25	0.07	0.02	0.10	0.46	0.60	0.95
31	12.14	-----	4.37	-----	3.45	-----	0.06	0.02	-----	0.46	-----	1.07
MEAN	5.58	5.38	3.96	5.30	4.77	4.60	0.41	0.03	0.04	0.27	0.61	0.81
INCHES	0.458	0.399	0.325	0.421	0.391	0.365	0.033	0.003	0.003	0.022	0.048	0.067

NOTES: TO CONVERT CFS TO IN/OAY, MULTIPLY BY 0.002648.

1967 SELECTED RUNOFF EVENT REYNOLDS, IDAHO WATERSHED W-2 (SALMON CREEK 68 046017)

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 5-7, 1967											
6-5	RG 022040 .00	1/0.07	6-5	RG 2015	.0000	.00	6-5	1930	3.062	.0000	
				2101	.3522	.27		2058	3.390	.0005	
				2301	.1050	.48		2143	3.734	.0008	
				2400	.0406	.52		2216	4.090	.0011	
			6-6	0115	.0157	.54		2230	4.462	.0012	
				0402	.0686	.73		2258	4.654	.0014	
				0522	.1200	.89		2330	5.056	.0017	
				0715	.0212	.93		2400	5.928	.0020	
				0830	.0640	1.01	6-6	0018	7.050	.0022	
				0953	.0650	1.10		0042	7.900	.0025	
				1204	.0137	1.13		0155	7.470	.0036	
								0255	7.750	.0044	
								0425	7.900	.0057	
								0518	8.664	.0065	
								0606	9.854	.0073	
								0701	10.786	.0084	
								0740	12.420	.0092	
								0806	13.708	.0098	
								0855	13.080	.0110	
								0958	12.420	.0125	
								1106	13.912	.0141	
								1149	15.540	.0153	
								1224	16.420	.0163	
								1401	15.120	.0191	
								1501	12.640	.0222	
								1755	11.170	.0247	
								2055	10.402	.0283	
								2400	10.032	.0317	
							6-7	0631	9.320	.0387	
								1258	8.350	.0450	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .0001103. 1/ RUNOFF PRIOR TO 1930 ON 6-5-67.



REYNOLDS, IDAHO WATERSHED W-2 (68046017)

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084 AREA—7,846 ACRES (12.26 SQ.MILES))										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P1/0	3.83 .433	.94 .296	.53 .226	1.95 .249	1.26 .243	1.86 .208	.10 .014	.00 .004	.98 .002	1.67 .003	1.63 .006	1.07 .029	15.82 1.713			
STA AVG P0	2.44 .250	.88 .120	.84 .212	1.19 .182	.88 .144	1.18 .110	.05 .009	.03 .003	.68 .002	1.24 .002	2.68 .004	1.36 .029	13.45 1.067			
MEAN P2/28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43			
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
1967	1-21	.011	1-21	.010	1-21	.020	1-21	.053	1-21	.096	1-21	.124	1-21	.150	1-21	.286
MAXIMUMS FOR PERIOD OF RECORD																
1966 TO 1967	1-21 1967	.011	1-21 1967	.010	1-21 1967	.020	1-21 1967	.053	1-21 1967	.096	1-21 1967	.124	1-21 1967	.150	1-21 1967	.286
NOTES: Watershed Conditions: WATERSHED CONDITIONS same as that described in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1966, USDA Misc. Pub. 1226, P. 68.3-2. 1/ Precipitation values are Thiessen weighted from gages 043097, 054088, and 072067. 2/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.																
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084)										
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC				
1	0.0	0.0	0.0	0.0	0.0	0.38	0.0	0.0	0.0	0.06	0.0	0.0				
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.46	0.0	0.0				
3	0.09	0.0	0.0	0.0	0.09	0.0	0.01	0.0	0.0	0.0	0.0	0.02				
4	0.05	0.0	0.0	0.01	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
5	0.05	0.0	0.0	0.0	0.0	0.24	0.0	0.0	0.0	0.25	0.0	0.34				
6	0.09	0.0	0.0	0.17	0.0	0.34	0.0	0.0	0.0	0.0	0.0	0.0				
7	0.0	0.0	0.0	0.02	0.0	0.06	0.02	0.0	0.0	0.0	0.0	0.14				
8	0.0	0.0	0.0	0.0	0.0	0.41	0.0	0.0	0.09	0.0	0.02	0.0				
9	0.0	0.0	0.03	0.0	0.16	0.0	0.0	0.0	0.0	0.0	0.24	0.0				
10	0.0	0.0	0.03	0.0	0.15	0.04	0.0	0.0	0.0	0.0	0.10	0.0				
11	0.0	0.0	0.05	0.20	0.05	0.0	0.0	0.0	0.71	0.31	0.0	0.0				
12	0.09	0.0	0.06	0.01	0.09	0.06	0.0	0.0	0.03	0.0	0.0	0.05				
13	0.13	0.27	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
14	0.0	0.16	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
15	0.0	0.08	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0				
16	0.0	0.18	0.04	0.0	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.03				
17	0.0	0.14	0.0	0.13	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.05				
18	0.0	0.02	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.90	0.16				
19	0.0	0.01	0.0	0.10	0.0	0.02	0.0	0.0	0.0	0.0	0.12	0.01				
20	0.45	0.0	0.02	0.09	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.0				
21	1.72	0.0	0.01	0.06	0.0	0.16	0.0	0.0	0.0	0.10	0.0	0.01				
22	0.06	0.0	0.0	0.06	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0				
23	0.0	0.0	0.0	0.55	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.08				
24	0.11	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.02	0.0				
25	0.0	0.08	0.01	0.12	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.08				
26	0.17	0.0	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.02				
27	0.04	0.0	0.0	0.01	0.0	0.06	0.0	0.0	0.0	0.05	0.0	0.03				
28	0.02	0.0	0.04	0.11	0.02	0.0	0.0	0.0	0.0	0.42	0.06	0.0				
29	0.04	---	0.05	0.04	0.10	0.0	0.0	0.0	0.12	0.0	0.14	0.0				
30	0.06	---	0.0	0.09	0.10	0.0	0.0	0.0	0.03	0.0	0.0	0.0				
31	0.66	---	0.06	---	0.47	---	0.0	0.0	---	0.0	---	0.05				
TOTAL	3.83	0.94	0.53	1.95	1.26	1.86	0.10	0.0	0.98	1.67	1.63	1.07				
STA AV	2.44	0.88	0.84	1.19	0.88	1.18	0.05	0.03	0.68	1.24	2.68	1.36				
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED VALUES FROM GAGES 043097, 054088, AND 072067. STA AV BASED ON 1966-67 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 68.3-4. TOTAL PRECIPITATION FOR YEAR = 15.82 INCHES.																

1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.25	6.73	2.02	1.91	5.10	4.43	0.46	0.03	0.03	0.02	0.04	0.10
2	0.25	5.16	2.79	1.81	4.60	3.36	0.36	0.04	0.03	0.02	0.04	0.10
3	0.29	5.11	2.11	1.74	4.32	2.14	0.25	0.04	0.03	0.02	0.04	0.11
4	0.36	5.48	1.85	1.74	4.10	1.76	0.22	0.03	0.03	0.02	0.04	0.11
5	0.26	4.60	2.09	1.87	3.83	1.91	0.22	0.03	0.03	0.02	0.04	0.33
6	0.19	3.75	1.91	1.87	3.53	5.88	0.19	0.05	0.02	0.02	0.04	0.11
7	0.26	3.39	1.93	1.82	3.72	2.98	0.15	0.05	0.02	0.02	0.04	0.13
8	0.29	3.28	2.02	1.63	3.45	6.17	0.17	0.05	0.02	0.02	0.04	0.11
9	0.27	2.99	2.10	1.62	3.58	4.59	0.19	0.06	0.03	0.02	0.04	0.11
10	0.25	2.72	1.63	1.54	3.49	3.43	0.16	0.06	0.03	0.03	0.04	0.13
11	0.26	2.46	1.97	1.88	3.31	3.20	0.13	0.05	0.03	0.03	0.04	0.15
12	0.29	2.60	1.95	1.77	3.24	2.99	0.11	0.03	0.03	0.03	0.04	0.14
13	0.55	3.24	1.80	1.67	3.16	2.57	0.10	0.03	0.03	0.03	0.04	0.13
14	0.69	2.81	1.65	1.61	3.00	2.27	0.09	0.03	0.02	0.03	0.04	0.12
15	0.70	2.43	1.52	2.23	2.55	1.93	0.09	0.03	0.02	0.03	0.04	0.16
16	0.52	2.95	2.27	1.84	1.78	1.77	0.10	0.03	0.02	0.03	0.04	0.15
17	0.37	4.26	3.42	1.92	1.48	1.67	0.12	0.03	0.02	0.03	0.04	0.19
18	0.35	4.85	3.26	1.95	1.38	1.53	0.12	0.03	0.02	0.04	0.16	0.24
19	0.51	3.22	3.30	2.03	1.46	1.36	0.11	0.03	0.02	0.04	0.13	0.21
20	0.53	2.91	3.00	1.85	1.56	1.28	0.11	0.03	0.02	0.04	0.06	0.15
21	32.50	2.90	2.65	2.13	1.78	1.78	0.11	0.03	0.02	0.04	0.06	0.12
22	16.83	2.84	3.08	2.06	1.62	1.74	0.10	0.05	0.02	0.04	0.06	0.10
23	3.77	3.21	3.40	3.49	1.62	1.53	0.08	0.04	0.02	0.04	0.06	0.13
24	2.30	3.41	3.35	4.05	1.50	1.21	0.10	0.04	0.02	0.03	0.07	0.21
25	2.90	3.43	3.10	4.98	1.46	1.08	0.07	0.04	0.02	0.03	0.08	0.94
26	2.86	3.23	3.01	5.77	1.48	0.81	0.06	0.04	0.02	0.03	0.08	1.52
27	14.62	2.32	2.51	6.28	1.41	0.89	0.04	0.04	0.02	0.03	0.08	1.25
28	18.51	1.44	2.28	6.18	1.35	0.84	0.04	0.04	0.02	0.03	0.08	0.79
29	18.72	---	2.16	5.63	1.37	0.69	0.06	0.04	0.02	0.03	0.08	0.55
30	10.79	---	2.00	5.30	1.15	0.61	0.07	0.04	0.02	0.04	0.09	0.35
31	11.57	---	2.24	---	2.78	---	0.29	0.03	---	0.04	---	0.46
MEAN	4.61	3.49	2.40	2.74	2.59	2.28	0.14	0.04	0.02	0.03	0.06	0.30
INCHES	0.433	0.296	0.226	0.249	0.243	0.208	0.014	0.004	0.002	0.003	0.006	0.029

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.003034.

1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-3 (MACKS CREEK 68 046084)								
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 5-7, 1967											
6-5	RG 043097 .00	1/.005	6-5	RG 2032	043097 .0000	.00	6-5	2104	1.791	.0000	
				2130	.2585	.25		2400	3.328	.0009	
				2254	.0857	.37	6-6	0137	3.239	.0016	
			6-6	0425	.0253	.51		0619	10.095	.0056	
				0523	.0517	.56		0742	7.745	.0071	
				0550	.0166	.57		0900	9.900	.0086	
				0605	.4955	.62		1245	6.000	.0124	
				0742	.0000	.62		1348	5.703	.0131	
				1002	.0171	.66		1536	4.770	.0150	
								2400	3.328	.0188	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00012640. 1/ RUNOFF PRIOR TO 2104 ON 6-5-67

REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)

LOCATION: Owyhee County, Idaho; 40 miles south of Nampa; main stem of Reynolds Creek which is tributary to the Snake River.

AREA: 13,453 acres (21.02 sq. miles).

SLOPES:	Slope-Percent	0-5	5-10	10-20	20-40
	Percent of Area	23	28	18	31

SOILS: Residual, derived mostly from basalt; lesser amounts from granite and rhyolite.

Soil (Series)	Percent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	Internal drainage
Takeuchi coarse sandy loam, rocky coarse sandy loam, very rocky coarse sandy loam, very stony coarse sandy loam	14.6	3	Weak thin platy parting to moderate very fine granular structure	Moderate	Moderate or weak medium and fine subangular blocky parting to weak fine and medium granular	Moderate	40	Very slow or none	Medium
Gabica cobbly gravelly loam, very gravelly loam, rocky loam, very rocky loam, stony loam, very stony loam	21.1	5	Weak thin and medium platy parting to moderate fine and medium granular	Moderate	Weak fine subangular blocky parting to moderate fine granular	Moderately slow	20	Very slow or none	Medium
Harmehl cobbly loam, gravelly loam, stony gravelly loam, very gravelly loam, loam, stony loam	13.2	5	Moderate or strong fine and very fine granular	Moderate	Moderate fine and medium subangular blocky	Moderately slow	40	Very slow or none	Medium
Harmehl-Demast gravelly loam, stony gravelly loam, loam, stony loam, rocky stony loam	10.5	-	See characteristics of Harmehl and Demast Series						
Nettleton gravelly loam, stony gravelly loam, loam	9.0	8	Very weak very thin platy parting to moderate or strong very fine granular	Moderate	Weak coarse prismatic parting to moderate or strong coarse and medium angular blocky	Moderately slow	60	Very slow or none	Medium
Demast loam, gravelly loam, stony loam	6.7	10	Very weak very thin platy upper 2 in. parting to strong very fine and fine granular	Moderate	Weak medium prismatic parting to weak medium and fine subangular blocky then moderate fine granular	Moderate	60	Very slow or none	Medium

SOILS--CONTINUED

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	
Kanlee coarse sandy loam, very rocky coarse sandy loam	6.0	5	Moderate or strong very fine granular structure	Moderate	Weak medium fine and very fine subangular blocky parting to weak fine and medium granular	Moder- ately slow	40	Very slow or none	Medium
Gemid very cobbly loam, grave- lly loam, loam, stony loam, very stony loam	4.6	5	Weak very thin and platy parting to moderate fine very fine and medium granular	Moderate	Strong medium prismatic parting to moderate medium and coarse angular blocky	Slow to very slow	50	Very slow or none	Medium
Additional Series	14.3	—	—	—	—	—	—	—	—
Total	100%								

EROSION:

Erosion class	1	2	3	4	5	+
Percent of area	41	32	16	11	0	0

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII	VIII
Percent of area	0	0	0	55	63	17	12	3

GEOLOGY: The Tollgate Watershed (W-4) lies in the closing end of a synclinal trough with granite extrusives along the outer perimeters. The geologic formations are composed of approximately 65% basalt, 30% granite, and 5% rhyolite and latite extrusives. Faulting is minimal and insignificant as a hydrologic factor. Aquifers occur in the basalt but are of low transmissivity. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geological data: Cenozoic geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 6.5 miles; overall slope 8%; a natural watershed with defined incised channels.

CHARACTER OF FLOW: Perennial stream.

INSTRUMENTATION: Runoff: Precalibrated 7000 c.f.s. capacity drop-box weir; three water stage recorders; low flow rating by volumetric and current meter measurements. Precipitation: 27 Belfort recording rain gages with 24-hour time scales.

WATERSHED CONDITIONS: The watershed is generally sagebrush rangeland except for scattered stands of Douglas fir and aspen and mountain meadows. The topography is steep with numerous rock outcrops on the ridges. The watershed is used mainly for cattle grazing except during the winter when snow blankets most of the area. Vegetation consists predominantly of big sagebrush, little sagebrush, rabbitbrush, snowberry, bluebunch wheatgrass, Idaho fescue, and squirreltail grass. Cover percentages are:

Vegetative Cover percent	0-25	26-50	51-75	76-100
Percent of area	25	15	15	45

GENERALLY REPRESENTS: Partially forested sagebrush rangelands of mountainous areas between 4600 and 7300 feet elevation with a major portion of precipitation as snow. Represents large areas in south Idaho, eastern Washington and Oregon, and portions of other western states.

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P ₁	5.40	1.31	1.24	2.38	1.98	2.47	.63	.02	.71	1.62	1.76	1.45	20.97
Q	.401	.352	.567	.730	3.871	2.853	.391	.065	.035	.073	.093	.131	9.562
STA AV 2/P	5.40	1.31	1.24	2.38	1.98	2.47	.63	.02	.71	1.62	1.76	1.45	20.97
1967 Q	.401	.352	.567	.730	3.871	2.853	.391	.065	.035	.073	.093	.131	9.562
MEAN P 3/													
28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43

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
1967	6-7	.021	6-7	.019	6-7	.036	6-7	.082	6-7	.129	6-7	.214	6-7	.417	5-17	1.523

MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 1967	6-7 1967	.021	6-7 1967	.019	6-7 1967	.036	6-7 1967	.082	6-7 1967	.129	6-7 1967	.214	6-7 1967	.417	5-17 1967	1.523

NOTES: Watershed Conditions: same as described above under WATERSHED CONDITIONS. 1/ Precipitation values are Thiessen weighted from 8 gages. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.

1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	0.0	0.0	0.0	0.0	0.0	0.40	0.0	0.0	0.0	0.02	0.0	0.0	
2	0.0	0.0	0.0	0.0	0.0	0.12	0.08	0.0	0.0	0.53	0.0	0.0	
3	0.08	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.01	
4	0.08	0.0	0.0	0.03	0.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
5	0.09	0.0	0.0	0.16	0.0	0.34	0.0	0.0	0.0	0.22	0.0	0.34	
6	0.14	0.0	0.0	0.04	0.0	0.53	0.0	0.0	0.0	0.01	0.0	0.0	
7	0.0	0.0	0.0	0.03	0.0	0.41	0.0	0.0	0.0	0.0	0.0	0.28	
8	0.0	0.0	0.0	0.0	0.02	0.20	0.0	0.0	0.0	0.0	0.0	0.0	
9	0.0	0.0	0.01	0.0	0.15	0.02	0.0	0.0	0.0	0.0	0.19	0.0	
10	0.0	0.0	0.03	0.0	0.26	0.01	0.0	0.0	0.0	0.0	0.10	0.0	
11	0.0	0.0	0.22	0.15	0.08	0.0	0.0	0.0	0.60	0.13	0.0	0.02	
12	0.19	0.0	0.06	0.0	0.10	0.05	0.0	0.0	0.01	0.0	0.0	0.04	
13	0.15	0.36	0.04	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
14	0.0	0.18	0.02	0.07	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
15	0.0	0.21	0.0	0.18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
16	0.0	0.35	0.02	0.01	0.0	0.0	0.37	0.0	0.0	0.0	0.0	0.04	
17	0.0	0.11	0.0	0.07	0.0	0.0	0.18	0.0	0.0	0.0	0.0	0.06	
18	0.0	0.04	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.33	
19	0.0	0.0	0.02	0.14	0.0	0.02	0.0	0.0	0.0	0.0	0.20	0.0	
20	0.67	0.0	0.05	0.20	0.0	0.08	0.0	0.0	0.0	0.01	0.0	0.04	
21	2.13	0.0	0.0	0.04	0.0	0.24	0.0	0.0	0.0	0.14	0.0	0.06	
22	0.10	0.0	0.0	0.16	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	
23	0.0	0.0	0.03	0.40	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.02	
24	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.06	0.01	
25	0.01	0.06	0.0	0.14	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.09	
26	0.39	0.0	0.0	0.05	0.0	0.0	0.0	0.01	0.0	0.0	0.0	0.03	
27	0.17	0.0	0.0	0.10	0.0	0.04	0.0	0.0	0.0	0.04	0.0	0.04	
28	0.09	0.0	0.25	0.31	0.06	0.0	0.0	0.01	0.0	0.0	0.08	0.0	
29	0.20	---	0.16	0.0	0.13	0.0	0.0	0.0	0.06	0.51	0.50	0.0	
30	0.10	---	0.08	0.10	0.18	0.0	0.0	0.0	0.04	0.0	0.0	0.0	
31	0.72	---	0.16	---	0.84	---	0.0	0.0	---	0.0	---	0.04	
TOTAL	5.40	1.31	1.24	2.38	1.98	2.47	0.63	0.02	0.71	1.62	1.76	1.45	
STA AV	5.40	1.31	1.24	2.38	1.98	2.47	0.63	0.02	0.71	1.62	1.76	1.45	

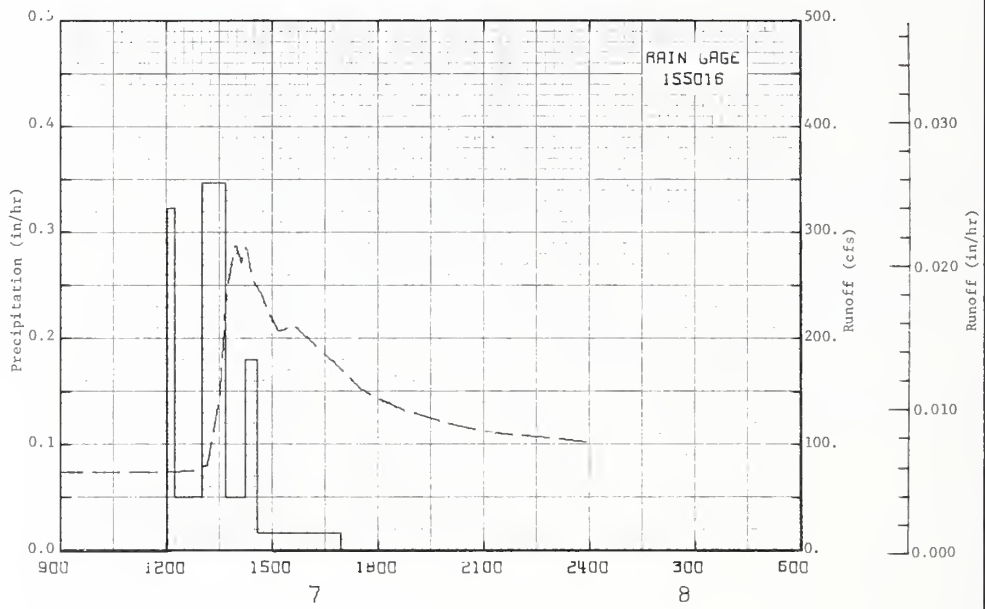
NOTES: PRECIPITATION AMOUNTS ARE THIESSEN WEIGHTED AMOUNTS FROM 6 GAGES. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE P. 68.4-6. TOTAL PRECIPITATION FOR YEAR = 20.97 INCHES.

1967 MEAN DAILY DISCHARGE (cfs)					REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.11	11.87	8.90	10.20	14.50	86.87	14.80	2.47	0.33	0.87	1.66	1.85
2	2.01	9.89	7.79	10.56	15.08	77.20	12.64	2.31	0.26	1.11	1.54	1.92
3	2.06	9.29	6.92	11.83	17.91	65.53	12.75	2.02	0.28	1.77	1.47	1.69
4	2.36	8.95	6.17	12.77	23.25	61.27	12.85	1.89	0.36	1.20	1.56	1.78
5	1.98	7.85	6.43	13.66	29.39	64.93	12.80	1.81	0.45	1.30	1.57	1.91
6	1.78	7.25	6.38	12.14	40.66	95.71	12.24	1.74	0.64	1.34	1.55	1.77
7	2.10	6.89	6.25	11.95	64.02	110.41	11.23	1.83	0.65	1.22	1.53	1.89
8	1.94	6.70	6.39	12.09	76.07	98.59	10.68	1.92	0.65	1.12	1.45	1.86
9	1.87	6.61	6.29	13.21	92.25	84.41	9.11	1.78	0.61	1.05	1.71	1.85
10	1.99	6.28	6.38	14.23	75.66	77.86	8.41	1.59	0.43	1.01	1.90	2.07
11	2.05	5.75	6.31	14.53	57.79	72.07	8.06	1.54	1.39	1.01	1.79	1.88
12	2.04	5.88	6.00	15.62	47.81	65.38	7.49	1.48	1.53	1.15	1.72	1.50
13	2.98	6.78	6.07	17.57	43.14	59.52	6.74	1.37	1.18	1.14	1.69	1.53
14	4.12	6.10	5.48	17.32	47.86	55.18	6.57	1.27	1.11	1.15	1.66	1.72
15	4.11	5.83	5.22	15.41	63.24	50.65	6.17	1.07	0.94	1.22	1.69	1.92
16	3.70	6.54	9.90	14.43	79.58	44.65	6.90	0.94	0.81	1.25	1.66	1.86
17	2.83	7.02	17.50	13.95	101.47	45.81	6.63	0.82	0.70	1.17	1.56	1.50
18	2.79	7.18	15.91	13.08	108.72	43.44	6.31	0.79	0.60	1.13	2.00	1.34
19	2.78	5.95	13.69	12.69	109.02	41.45	5.50	0.85	0.65	1.15	3.10	1.41
20	2.93	5.59	13.13	12.15	100.26	39.74	5.24	0.71	0.67	1.20	2.56	1.46
21	29.81	6.15	14.66	12.96	100.98	42.97	5.05	0.69	0.60	1.17	2.22	1.61
22	19.31	6.03	17.09	11.94	118.34	36.82	4.79	0.70	0.46	1.36	1.77	2.27
23	8.59	6.33	17.53	13.35	117.50	32.49	4.24	0.63	0.52	1.31	1.81	2.94
24	6.50	6.75	15.36	14.90	104.60	28.60	3.72	0.59	0.57	1.40	1.92	3.75
25	6.12	6.99	14.25	15.35	90.09	26.07	3.34	0.58	0.52	1.40	1.71	4.57
26	5.25	6.77	13.50	14.58	79.34	23.87	3.02	0.55	0.54	1.39	1.57	5.61
27	10.11	6.96	12.71	14.77	77.42	23.65	2.91	0.65	0.53	1.42	1.17	5.07
28	18.48	8.51	13.35	14.74	76.54	21.64	2.86	0.62	0.46	2.75	1.39	4.07
29	37.51	---	12.28	15.43	75.12	18.70	2.80	0.53	0.40	1.99	1.58	3.03
30	19.85	-----	11.39	14.90	68.02	17.01	2.80	0.46	0.70	1.74	2.05	2.25
31	14.46	-----	11.07	-----	72.27	-----	2.59	0.37	-----	1.68	-----	3.91
MEAN	7.31	7.10	10.33	13.74	70.58	53.75	7.14	1.18	0.65	1.33	1.75	2.3R
INCHES	0.401	0.352	0.567	0.730	3.871	2.853	0.391	0.065	0.035	0.073	0.093	0.131

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.001769.

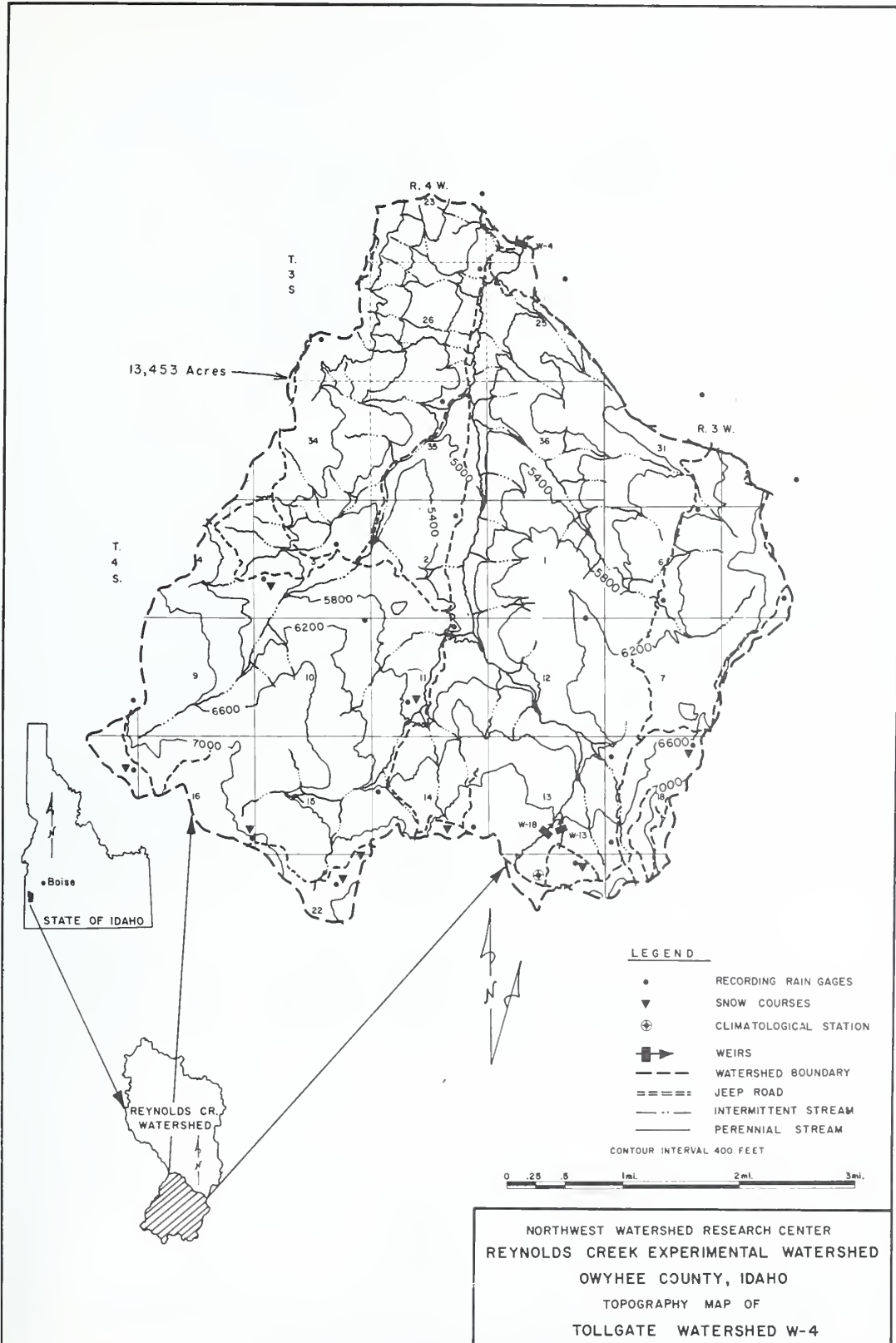
1967 SELECTED RUNOFF EVENT				REYNOLDS, IDAHO WATERSHED W-4 (TOLLGATE 68 116083)							
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of June 7-8, 1967											
6-7	RG 155016 .00	1.051	6-7	RG 1202	155016 .0000	.00	5-7	0900	73.731	.0000	
				1215	.3225	.07		112R	73.731	.0134	
				1302	.0510	.11		1246	76.126	.0206	
				1340	.3473	.33		1246	76.126	.027R	
				1415	.0514	.36		1310	91.916	.0301	
				1435	.1401	.42		1319	105.983	.0311	
				1457	.0169	.46		1331	145.244	.0330	
								1337	194.675	.0342	
								1343	243.548	.0359	
								135R	288.067	.040R	
								1407	270.788	.0438	
								1415	286.112	.0469	
								1424	254.661	.0496	
								1442	241.901	.0551	
								1458	219.833	.0597	
								1510	206.999	.0628	
								1537	211.751	.069R	
								1613	193.170	.0787	
								1648	175.708	.0867	
								1730	152.220	.0951	
								1900	142.775	.1006	
								1846	132.012	.1083	
								195R	119.600	.1195	
								2101	112.136	.1284	
								2231	106.903	.1406	
								2400	102.009	.1520	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00007372. 1/ RUNOFF PRIOR TO .00007372 ON 6-7-67



June 7-8, 1967

REYNOLDS, IDAHO WATERSHED W-4 (68116083)



REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)

LOCATION: Owyhee County, Idaho; 35 miles south of Nampa, Idaho; an east-flowing tributary to Reynolds Creek, tributary to the Snake River.

AREA: 306 acres

SLOPES:	Slope-Percent	5-10	10-20	20-30	30-40	40-50	50-60	60-70
	Percent of area	2	32	32	13	9	8	4

SOILS: Residual, derived mostly from basalt; lesser amounts from lacustrine sediments, granite and pediment alluvium and colluvium.

Soil (Series)	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to(in.)	Permeability	
Harmehl-Demast stony loams	30.8	-	See characteristics for Harmehl and Demast Series						
Reywat-Bakeoven rocky loam, very stony loam, rocky very stony loam	19.5	-	See characteristics for Reywat and Bakeoven Series						
Bakeoven-Reywat very rocky very stony loam	15.6	-	See characteristics for Bakeoven and Reywat Series						
Ruclick-Babbington stony very gravelly loam, stony loam, rocky stony loam	13.0	-	See characteristics for Ruclick and Babbington Series						
Demast stony loam	7.2	10	Very weak very thin platy upper 2 in. parting to strong very fine and fine granular	Moderate	Weak medium prismatic parting to weak medium and fine subangular blocky thin moderate fine granular	Moderate	60	Very slow or none	Medium
Nettleton gravelly loam	6.5	8	Very weak very thin platy parting to moderate or strong very fine granular	Moderate	Weak coarse prismatic parting to moderate or strong coarse and medium angular blocky	Moderately slow	60	Very slow or	Medium
Bakeoven extremely rocky loam very rocky loam	5.6	3	Weak very fine platy to granular	Moderate	Weak very fine and subangular blocky	Moderate or moderately slow	7	Very slow or none	Medium
Additional Series	1.8	—	—	—	—	—	—	—	—
Total	100%								
Individual Series Descriptions Which Occur in Combinations Above									
Babbington		8	Weak very thin platy parting to weak very fine granular	Moderate	Strong or moderate medium prismatic fine and very fine subangular blocky	Moderately slow	60	Very slow or none	Medium

SOILS-CONTINUED

Soil (Series)	Per- cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme- ability	Structure	Perme- ability	Avg. depth to(in.)	Perme- ability	Internal drainage
Harmehl		5	Moderate or strong fine and very fine granular	Moderate	Moderate fine and medium subangular blocky	Moder- ately slow	40	Very slow or none	Medium
Ruclick		8	Weak very thin platy parting to moderate very fine granular	Moderate	Moderate fine prismatic parting to moderate fine angu- lar blocky	Moder- ately slow	39	Very slow or none	Medium
Reywat		10	Weak thin platy fine granular	Moderately rapid	Weak or moderate subangular blocky	Slow to moderate	18	Very slow or none	Medium

EROSION:	Erosion class	1	2	3	4	5	+
	Percent of area	9	47	38	6	0	0

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	VIII
	Percent of area	0	0	0	0	20	55	20	5

GEOLOGY: The Murphy Creek Watershed lies along west dipping basalt and latite formations. Approximately 80% of the area is composed of basalt and 20% of latite. Several faults transect the watershed, but their hydrologic significance is not known. Aquifers occur in the basalt at considerable depth and are not capable of supporting pumping rates in excess of 5-8 g.p.m. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geological data: Cenozoic geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 1.57 miles; overall slope 17%; a natural watershed with well incised channels.

CHARACTER OF FLOW: Spring-fed intermittent stream.

INSTRUMENTATION: Runoff: Precalibrated 200 c.f.s. capacity drop-box weir; two water stage recorders; low-flow rating by volumetric and current meter measurements. Precipitation: 4 Belfort recording rain gages outside the watershed boundaries, 24-hour time scales.

WATERSHED CONDITIONS: The watershed is sagebrush rangeland used almost exclusively for cattle grazing. Willows are common along watercourses and in seep areas. Vegetation consists largely of big sagebrush, bitterbush, Idaho fescue, Sandberg bluegrass, bluebunch wheatgrass, squirreltail grass, and snowberry.

Vegetative Cover percentage	0-25	26-50	51-75	76-100
Percent of area	10	35	20	35

GENERALLY REPRESENTS: Sagebrush rangelands in the elevation range from 4600 to 6000 feet with steep slopes, eastward flowing streams, and less than 20 inches of precipitation annually. Similar to foothill and lower mountainous areas in south Idaho, eastern Oregon and Washington, and other western states.

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CR. 68 043004)											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ₁	5.00	1.35	.76	2.41	1.23	2.50	.05	.00	1.07	1.49	1.79	1.05	18.70			
	Q	1.067	.898	.461	.866	1.080	.530	.043	.00	.00	.008	.035	.076	5.064			
STA AVG ₂ /P		5.00	1.35	.76	2.41	1.23	2.50	.05	.00	1.07	1.49	1.79	1.05	18.70			
1967		1.067	.898	.461	.866	1.080	.530	.043	.00	.00	.008	.035	.076	5.064			
MEAN P ₃ /																	
28 YR		1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43			
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		
1967		1-21	.021	1-21	.024	1-21	.045	1-21	.109	1-21	.209	1-21	.280	1-21	.329	1-21	.704
MAXIMUMS FOR PERIOD OF RECORD																	
1967 to 1967		1-21	.021	1-21	.024	1-21	.045	1-21	.109	1-21	.209	1-21	.280	1-21	.329	1-21	.704
NOTES: Watershed Conditions: Same as that described above under WATERSHED CONDITIONS. For Daily Maximum and Minimum Temperatures see Table for Watershed W-1, p. 68.1-1. 1/ Precipitation values are Thiessen weighted from gages 022040 and 043097. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.																	
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)											
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC					
1	0.0	0.0	0.0	0.0	0.0	0.62	0.0	0.0	0.0	0.09	0.0	0.0					
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.48	0.0	0.0					
3	0.13	0.0	0.0	0.0	0.03	0.0	0.01	0.0	0.0	0.0	0.0	0.02					
4	0.10	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
5	0.08	0.0	0.0	0.12	0.0	0.45	0.0	0.0	0.0	0.18	0.0	0.42					
6	0.12	0.0	0.0	0.07	0.0	0.45	0.0	0.0	0.0	0.0	0.0	0.0					
7	0.0	0.0	0.0	0.02	0.0	0.10	0.01	0.0	0.0	0.0	0.0	0.27					
8	0.0	0.0	0.0	0.0	0.0	0.16	0.0	0.0	0.07	0.0	0.03	0.0					
9	0.0	0.0	0.08	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.23	0.0					
10	0.0	0.0	0.06	0.0	0.13	0.0	0.0	0.0	0.0	0.0	0.13	0.0					
11	0.0	0.0	0.09	0.20	0.06	0.0	0.0	0.0	0.77	0.33	0.0	0.0					
12	0.16	0.0	0.09	0.03	0.16	0.13	0.0	0.0	0.0	0.0	0.0	0.06					
13	0.24	0.29	0.03	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
14	0.0	0.23	0.0	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
15	0.0	0.14	0.0	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
16	0.0	0.35	0.04	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.02					
17	0.0	0.16	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04					
18	0.0	0.04	0.12	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.79	0.15					
19	0.0	0.01	0.0	0.18	0.0	0.25	0.0	0.0	0.0	0.0	0.15	0.0					
20	0.53	0.0	0.01	0.15	0.0	0.07	0.0	0.0	0.0	0.0	0.0	0.0					
21	1.83	0.0	0.0	0.08	0.0	0.12	0.0	0.0	0.0	0.11	0.0	0.0					
22	0.17	0.0	0.0	0.08	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.0					
23	0.0	0.0	0.02	0.63	0.0	0.0	0.0	0.0	0.0	0.0	0.04	0.03					
24	0.14	0.0	0.0	0.01	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.0					
25	0.0	0.13	0.0	0.12	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.02					
26	0.31	0.0	0.0	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0					
27	0.06	0.0	0.0	0.04	0.0	0.07	0.0	0.0	0.0	0.06	0.0	0.0					
28	0.01	0.0	0.08	0.13	0.0	0.0	0.0	0.0	0.0	0.22	0.05	0.0					
29	0.05	---	0.11	0.07	0.13	0.0	0.0	0.0	0.17	0.0	0.34	0.0					
30	0.08	---	0.0	0.11	0.02	0.0	0.0	0.0	0.06	0.0	0.0	0.0					
31	0.99	---	0.03	---	0.62	---	0.0	0.0	---	0.0	---	0.02					
TOTAL	5.00	1.35	0.76	2.41	1.23	2.50	0.05	0.0	1.07	1.49	1.79	1.05					
STA AV	5.00	1.35	0.76	2.41	1.23	2.50	0.05	0.0	1.07	1.49	1.79	1.05					
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED FROM GAGES 022040 AND 043097. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE P. 68.11-6. TOTAL PRECIPITATION FOR YEAR = 18.70 INCHES.																	

1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CR. 68 043004)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.083	0.611	0.322	0.387	0.571	0.424	0.056	0.001	0.0	0.0	0.004	0.017
2	0.083	0.610	0.261	0.334	0.481	0.292	0.045	0.001	0.0	0.0	0.004	0.017
3	0.083	0.735	0.233	0.337	0.481	0.211	0.040	0.0	0.0	0.001	0.004	0.017
4	0.067	0.751	0.171	0.308	0.481	0.194	0.040	0.0	0.0	0.001	0.004	0.020
5	0.046	0.644	0.188	0.320	0.481	0.192	0.038	0.0	0.0	0.002	0.004	0.025
6	0.038	0.511	0.172	0.308	0.451	0.722	0.035	0.0	0.0	0.001	0.005	0.022
7	0.038	0.441	0.181	0.293	0.487	0.319	0.034	0.0	0.0	0.001	0.008	0.022
8	0.038	0.399	0.191	0.280	0.678	0.550	0.034	0.0	0.0	0.001	0.009	0.022
9	0.038	0.397	0.182	0.267	0.652	0.387	0.030	0.0	0.0	0.001	0.012	0.022
10	0.038	0.352	0.173	0.256	0.640	0.302	0.029	0.0	0.0	0.001	0.016	0.022
11	0.036	0.328	0.179	0.280	0.599	0.326	0.024	0.0	0.0	0.001	0.015	0.031
12	0.033	0.369	0.147	0.234	0.557	0.323	0.020	0.0	0.0	0.002	0.015	0.033
13	0.171	0.350	0.147	0.211	0.557	0.308	0.017	0.0	0.0	0.001	0.014	0.033
14	0.243	0.280	0.112	0.221	0.519	0.274	0.016	0.0	0.0	0.001	0.014	0.029
15	0.171	0.274	0.104	0.246	0.481	0.250	0.014	0.0	0.0	0.001	0.014	0.027
16	0.111	0.271	0.104	0.293	0.481	0.214	0.014	0.0	0.0	0.002	0.014	0.031
17	0.075	0.371	0.145	0.309	0.451	0.179	0.021	0.0	0.0	0.003	0.014	0.033
18	0.065	0.471	0.174	0.267	0.464	0.160	0.013	0.0	0.0	0.003	0.025	0.033
19	0.063	0.338	0.172	0.291	0.457	0.141	0.008	0.0	0.0	0.003	0.037	0.024
20	0.099	0.314	0.169	0.326	0.429	0.144	0.008	0.0	0.0	0.003	0.029	0.019
21	3.013	0.306	0.164	0.334	0.392	0.142	0.007	0.0	0.0	0.007	0.024	0.019
22	1.556	0.334	0.210	0.352	0.399	0.122	0.006	0.0	0.0	0.013	0.022	0.019
23	0.627	0.389	0.221	0.465	0.383	0.112	0.006	0.0	0.0	0.011	0.022	0.019
24	0.406	0.340	0.211	0.851	0.374	0.105	0.004	0.0	0.0	0.008	0.022	0.022
25	0.337	0.360	0.201	0.570	0.354	0.093	0.003	0.0	0.0	0.008	0.020	0.052
26	0.337	0.310	0.211	0.568	0.322	0.079	0.006	0.0	0.0	0.008	0.019	0.149
27	1.288	0.358	0.221	0.519	0.284	0.078	0.003	0.0	0.0	0.007	0.018	0.074
28	1.616	0.348	0.233	0.544	0.249	0.072	0.0	0.0	0.0	0.012	0.017	0.051
29	1.424	-----	0.244	0.577	0.260	0.064	0.0	0.0	0.0	0.004	0.017	0.036
30	0.775	-----	0.222	0.600	0.201	0.054	0.0	0.0	0.0	0.005	0.017	0.030
31	0.739	-----	0.276	-----	0.280	-----	0.001	0.0	-----	0.005	-----	0.028
MEAN	0.443	0.412	0.191	0.371	0.448	0.227	0.018	0.0	0.0	0.003	0.015	0.032
INCHES	1.067	0.898	0.461	0.866	1.080	0.530	0.043	0.0	0.0	0.008	0.035	0.076

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.77784.

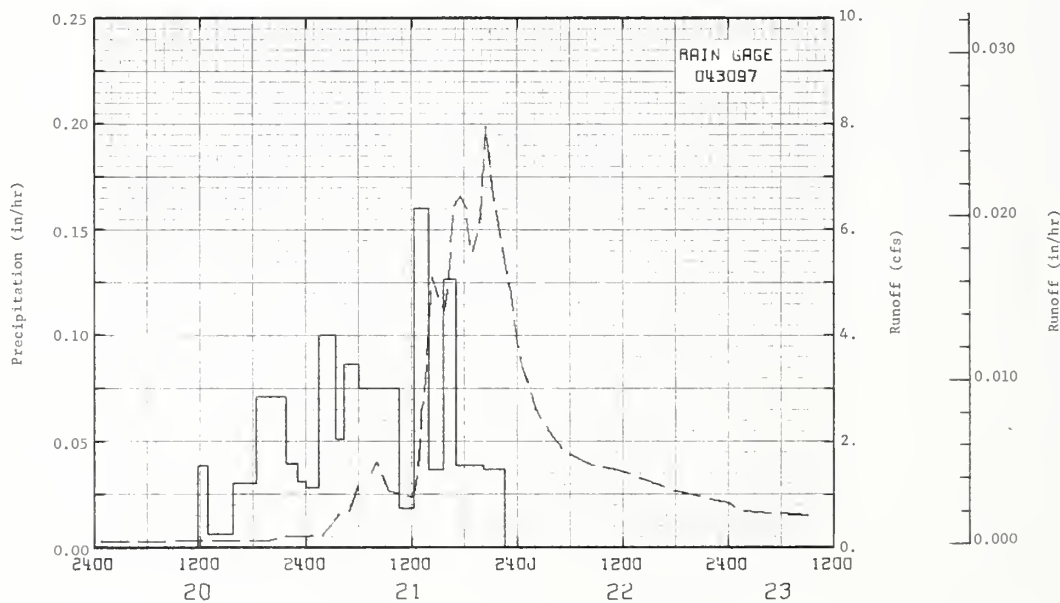
1967 SELECTED RUNOFF EVENT REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)

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 20-23, 1967											
1-20	1/ .14	.000	1-20	1145	.0000	.00	1-19	2400	.064	.0000	
				1247	.0397	.04	1-20	1934	.093	.0050	
				1546	.0067	.06		2206	.221	.0063	
				1823	.0305	.14		2400	.221	.0076	
				2146	.0709	.38	1-21	0158	.243	.0091	
				2302	.0394	.43		0246	.412	.0100	
				2400	.0313	.46		0340	.640	.0115	
			1-21	0126	.0279	.50		0452	.684	.0141	
				0320	.1000	.69		0555	1.183	.073	
				0419	.0508	.74		0655	1.250	.0212	
				0603	.0865	.89		0800	1.622	.0262	
				1036	.0750	1.23		0922	1.056	.0322	
				1212	.0195	1.26		1200	.939	.0407	
				1357	.1600	1.54		1225	1.118	.0421	
				1636	.0367	1.60		1254	1.705	.0443	
				1706	.1266	1.79		1307	2.576	.0458	
				2011	.0397	1.91		1325	2.922	.0485	
				2236	.0372	2.00		1348	3.845	.0527	
								1416	5.118	.0594	
								1454	4.770	.0696	
								1546	4.451	.0825	
								1613	5.118	.0895	
								1648	6.439	.1005	
								1731	6.644	.1156	
								1810	6.439	.1294	
								1840	5.475	.1391	
								1904	5.660	.1463	
								1949	6.238	.1608	
								2024	7.970	.1742	
								2118	6.645	.1955	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .003240. 1/ RAINFALL PRIOR TO 2400 ON 1-19-67.

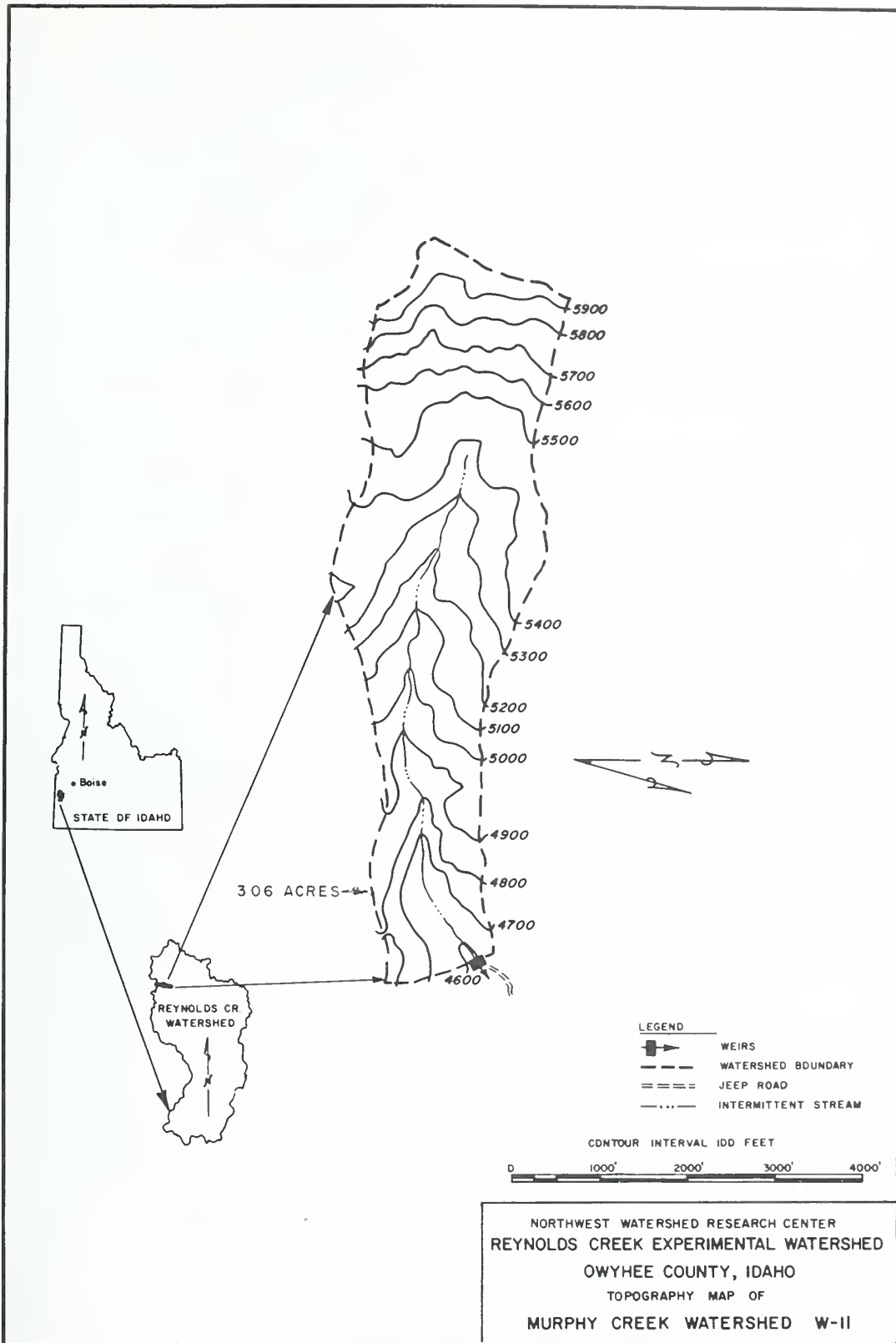
1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-11 (MURPHY CREEK 68 043004)								
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Event of January 20-23, 1967—Continued											
							1-21	2204	5.848	.2110	
								2316	4.777	.2317	
								2400	3.845	.2419	
							1-22	0030	3.429	.2478	
								0213	2.576	.2645	
								0343	2.159	.2760	
								0528	1.790	.2872	
								0828	1.543	.3034	
								1112	1.465	.3168	
								1800	1.056	.3445	
							1-23	2400	.831	.3629	
								0128	.684	.3665	
								0930	.597	.3832	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .003240.



January 20-23, 1967

REYNOLDS, IDAHO WATERSHED W-11 (68043004)



REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)

LOCATION: Owyhee County, Idaho; 30 miles south of Nampa, Idaho, a west-flowing tributary to Reynolds Creek, tributary to the Snake River.

AREA: 205 acres

SLOPES:	Slope-Percent	5-10	10-20	20-30	30-40	40-50
	Percent of area	12	26	26	31	5

SOILS: Soils developed from granitic colluvium over basaltic bedrock, and residual soils developed from basalt.

Soil (Series)	Percent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth (in.)	Permeability	Internal drainage
Reywat-Bakeoven stony gravelly loam, rocky loam, stony loam, very stony loam, rocky very stony loam	58.0	-	See characteristics for Reywat and Bakeoven Series						
Lolalita coarse sandy loam	15.0	3	Weak thin platy parting to very weak very fine granular	Moderately rapid	Massive or very weak coarse and medium subangular blocky	Moderately rapid	60	Very slow or none	Rapid
Bakeoven very rocky loam	9.0	3	Weak or moderate very thin and thin platy parting to weak very fine granular	Moderate	Weak very fine and fine subangular blocky	Moderate or moderately slow	7	Very slow or none	Medium
Larimer stony, gravelly loam, loam	7.0	6	Very thin platy parting to very weak very fine granular	Moderate	Weak fine and very fine subangular blocky	Moderately slow	60	Very slow or none	Medium
Castlevally extremely rocky coarse sandy loam	6.0	6	Very weak thin platy parting to very weak very fine granular	Moderate	Weak medium subangular blocky	Moderate	22	Very slow or none	Medium
Newell gravelly loam	5.0	5	Weak thin platy parting to moderate very fine granular	Moderate	Moderate or strong very fine and fine subangular blocky	Moderate	60	Very slow or none	Medium
Reywat	--	10	Weak thin platy fine granular	Moderately rapid	Weak or moderate subangular blocky	Slow to moderate	18	Very slow or none	Medium

EROSION:	Erosion Class	1	2	3	4	5	+
	Percent of area	0	0	20	80	0	0

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	VIII
	Percent of area	0	0	0	0	0	55	35	10

WATERSHED DESCRIPTION-CONTINUED

GEOLOGY: The Summit Watershed lies on the west-dipping limb of a broad anticline with a granitic intrusion along the upper perimeter. The bedrock is composed of approximately 80% basalt and 20% granite. Soils for the most part are very shallow. Unconfined aquifers occur in the basalt with water tables averaging 20 feet below the surface. Faulting is not a significant hydrologic factor. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geologic data: Cenozoic Geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 2660 feet; overall slope 21% a natural watershed with well incised and eroded channels.

CHARACTER OF FLOW: Ephemeral stream.

INSTRUMENTATION: Runoff: Precalibrated 200 c.f.s. capacity drop-box weir; two water level recorders, low-flow rating by volumetric measurement. Precipitation: two Belfort recording rain gages near the watershed boundaries; 24-hour time scales.

WATERSHED CONDITIONS: Sagebrush rangeland with almost exclusive cattle grazing in early spring and late fall. Numerous barren ridges. Vegetation consists largely of big sagebrush, cheatgrass, Sandberg bluegrass, bluebunch wheatgrass, and squirreltail grass.

Vegetative Cover percent	0-25	25-50	51-75	76-100
Percent of area	25	75	0	0

GENERALLY REPRESENTS: Arid sagebrush rangelands receiving less than 10 inches of annual rainfall. Similar to extensive low-elevation rangelands in the lowlands and foothills of southern Idaho, eastern Washington and Oregon and portions of other western states.

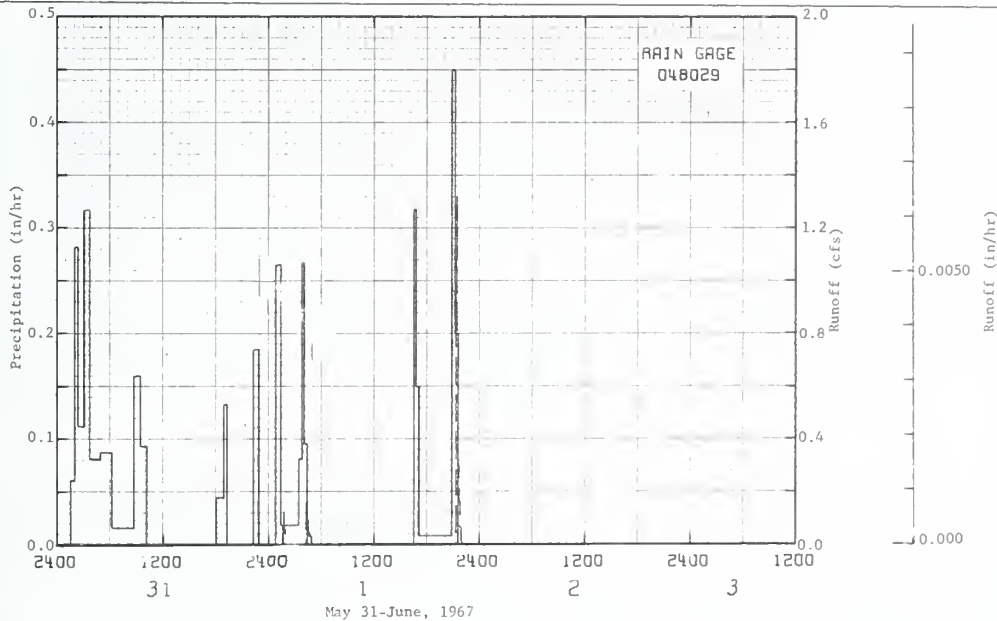
MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ /Q	.81	.35	.29	1.20	1.52	2.24	.03	.00	.24	.68	1.19	.48	9.03			
	.00	.00	.00	.00	.00	.002	.00	.00	.00	.00	.00	.00	.002			
STA AVG ₂ /P	.81	.35	.29	1.20	1.52	2.24	.03	.00	.24	.68	1.19	.48	9.03			
1967 Q	.00	.00	.00	.00	.00	.002	.00	.00	.00	.00	.00	.00	.002			
MEAN P ₃ /Q																
28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43			
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
1967	6-1	.006	6-1	.001	6-1	.001	6-1	.001	6-1	.001	6-1	.002	6-1	.002	6-1	.002
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 1967	6-1 1967	.006	6-1 1967	.001	6-1 1967	.001	6-1 1967	.001	6-1 1967	.001	6-1 1967	.002	6-1 1967	.002	6-1 1967	.002

NOTES: Watershed Conditions: Same as that described above under WATERSHED CONDITIONS. For Daily Maximum and Minimum Temperatures see Table for Watershed W-1, p. 68.1-1. 1/ Precipitation values are from gage 048029. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.

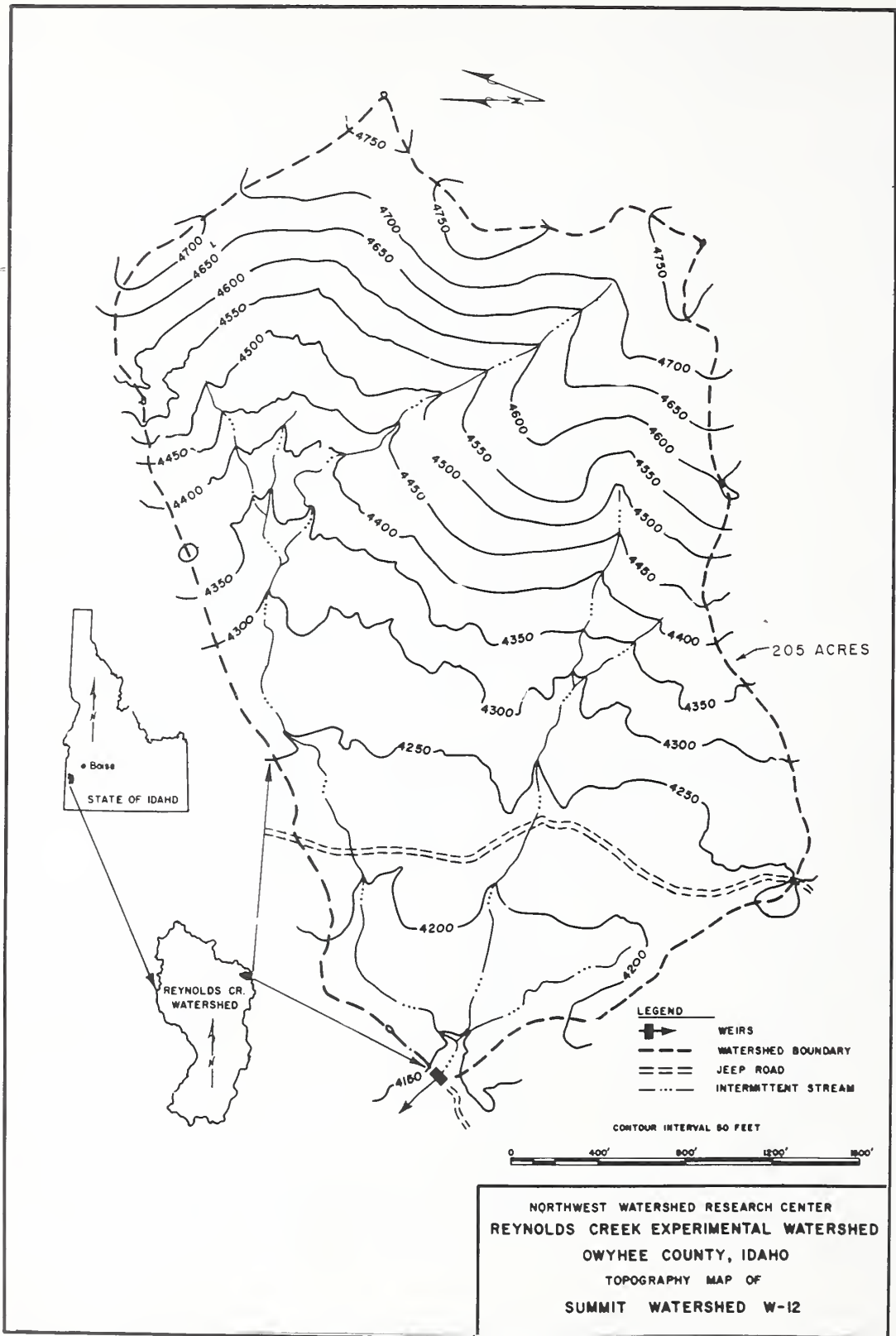
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.0	0.70	0.0	0.0	0.0	0.04	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.22	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.06	0.0	0.38	0.0	0.0	0.0	0.04	0.0	0.25
6	0.0	0.0	0.0	0.11	0.0	0.29	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.06
8	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.04	0.0
9	0.0	0.0	0.03	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.23	0.0
10	0.0	0.0	0.02	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.01	0.0
11	0.0	0.0	0.0	0.19	0.0	0.0	0.0	0.0	0.24	0.11	0.0	0.0
12	0.0	0.0	0.04	0.0	0.03	0.03	0.0	0.0	0.0	0.0	0.0	0.03
13	0.0	0.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05
18	0.0	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.78	0.0
19	0.0	0.0	0.0	0.03	0.0	0.04	0.0	0.0	0.0	0.0	0.08	0.0
20	0.0	0.0	0.0	0.0	0.0	0.04	0.0	0.0	0.0	0.0	0.0	0.03
21	0.37	0.0	0.0	0.04	0.0	0.23	0.0	0.0	0.0	0.05	0.0	0.0
22	0.02	0.0	0.0	0.09	0.0	0.46	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.34	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.02	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.03
26	0.08	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.03	0.14	0.0	0.0	0.0	0.0	0.0	0.22	0.05	0.0
29	0.04	---	0.0	0.0	0.30	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.12	---	0.0	0.04	0.12	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.13	---	0.06	---	1.03	---	0.0	---	---	0.0	---	0.03
TOTAL	0.81	0.35	0.29	1.20	1.52	2.24	0.03	0.0	0.24	0.68	1.19	0.48
STA AV	0.81	0.35	0.29	1.20	1.52	2.24	0.03	0.0	0.24	0.68	1.19	0.48
NOTES: PRECIPITATION VALUES FROM GAGE 048029. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE P. 68.12-5. TOTAL PRECIPITATION FOR YEAR = 9.03 INCHES.												
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.0	0.014	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
28	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.0	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.0	---	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.0	---	0.0	---	0.0	---	0.0	---	---	0.0	---	0.0
MEAN	0.0	0.0	0.0	0.0	0.0	0.000	0.0	0.0	0.0	0.0	0.0	0.0
INCHES	0.0	0.0	0.0	0.0	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0
NOTES: TO CONVERT CFS TO IN/OAY, MULTIPLY BY 0.116106.												

1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-12 (SUMMIT 68 048077)							
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 3, 1967.										
5-31	RG 048029 .00	.000	5-31	RG 0136	048029 .0000	.30	6- 1	0144	.0000	.000000
				0205	.0620	.03		0145	.0728	.000003
				0222	.2824	.11		0148	.0728	.000018
				0305	.1116	.19		0151	.0369	.000013
				0341	.3166	.38		0156	.0139	.000010
				0455	.0410	.48		0200	.0056	.000003
				0617	.0478	.60		0204	.0006	.000001
				0845	.0152	.04		0224	.0000	.000000
				0930	.1600	.76		0421	.0000	.000000
				1015	.0933	.83		0424	.2003	.000024
				1807	.0000	.83		0428	.0825	.000046
				1900	.0452	.97		0432	.0369	.000019
				1918	.1334	.91		0438	.0214	.000014
				2219	.0000	.91		0440	.0214	.000003
				2255	.1846	1.03		0444	.0161	.000006
			6- 1	0054	.0000	1.03		0448	.0186	.000006
				0128	.2648	1.13		0454	.0102	.000007
				0332	.0193	1.22		0458	.0086	.000003
				0354	.0818	1.25		0506	.0000	.000003
				0403	.2658	1.29		2120	.0000	.000000
				0428	.0950	1.33		2122	.1633	.000013
				1631	.0000	1.33		2123	.4807	.000026
				1648	.3177	1.42		2124	.9388	.000057
				1708	.1499	1.47		2126	1.2495	.000176
				2053	.0080	1.50		2132	.9388	.000529
				2113	.4504	1.65		2138	.4455	.000335
				2137	.2000	1.73		2144	.2003	.000156
								2149	.1176	.000064
								2152	.0641	.000022
								2156	.0247	.000014
								2200	.0120	.000006
								2206	.0056	.000004
								2208	.0006	.000001
								2216	.0000	.000000

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .004838.



REYNOLDS, IDAHO WATERSHED W-12 (68048077)



MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MOUNTAIN 68 166076) AREA—100 ACRES (0.16 SQ. MILES)									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ 6.35 .140	1.51 .134	1.53 .181	2.60 .212	2.10 10.998	3.08 8.190	.65 .658	.14 .095	.46 .074	1.86 .106	2.52 .148	2.08 .152	24.88 21.088		
STA AVG P (66-67)	4.62 .167	1.54 .136	1.72 .286	1.76 1.667	1.64 7.488	1.96 4.442	.33 .407	.09 .076	.54 .052	1.38 .077	3.33 .132	2.40 .147	21.31 15.077		
MEAN 28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43		

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
1967	5-22	.054	5-22	.052	5-22	.103	5-22	.294	5-22	.505	5-22	.815	5-22	1.594	5-17	5.113

MAXIMUMS FOR PERIOD OF RECORD																
1966 TO 1967	5-22 1967	.054	5-22 1967	.052	5-22 1967	.103	5-22 1967	.294	5-22 1967	.505	5-22 1967	.815	5-22 1967	1.594	5-17 1967	5.113

NOTES: Watershed conditions: WATERSHED CONDITIONS same as that described in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1966, USDA Misc. Pub. 1226, p. 68.13-1. 1/ Precipitation values are from gage 176107. 2/ Mean R based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 60 miles N.E. of watersheds.

1967 DAILY AIR TEMPERATURE (degrees F)												REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)												
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	27	16	27	22	39	26	31	17	32	17	47	32	73	59	77	55	81	63	49	37	49	27	17	14
2	23	15	29	24	26	16	34	19	37	23	50	32	77	62	75	59	75	60	51	34	33	22	28	16
3	31	24	31	26	22	13	37	26	40	30	52	39	77	61	80	63	75	59	45	31	40	25	30	24
4	34	23	34	29	23	09	36	27	43	30	53	39	73	58	80	62	73	63	55	35	38	28	30	26
5	23	11	31	20	38	15	31	24	42	27	46	37	73	59	77	57	65	57	47	31	43	27	29	12
6	19	10	31	20	38	21	34	24	45	34	47	38	71	57	74	59	65	50	47	33	45	34	24	9
7	22	16	31	19	29	15	36	28	51	39	49	40	70	53	65	47	73	57	55	37	53	38	26	14
8	25	15	32	21	37	21	35	27	53	44	52	41	71	53	75	49	67	56	63	47	54	40	17	10
9	36	19	32	28	37	29	37	27	46	34	50	40	70	52	74	53	71	51	60	49	40	29	20	10
10	40	34	29	23	35	29	39	29	45	35	53	41	77	55	79	60	66	50	64	49	41	31	30	20
11	39	29	33	24	31	19	35	27	29	21	51	39	77	58	77	63	51	36	64	49	49	40	26	9
12	30	23	39	24	24	17	35	26	31	21	48	38	83	67	80	62	44	32	62	38	51	35	9	-1
13	34	30	37	25	25	17	38	29	37	21	52	36	77	65	81	65	52	35	46	31	54	43	1	-4
14	35	30	27	15	23	17	30	20	49	30	55	38	75	61	80	64	59	40	55	32	46	36	7	-3
15	37	23	19	13	39	22	30	19	54	41	59	43	75	59	81	63	62	49	39	28	46	35	25	6
16	25	17	26	17	41	37	29	20	60	45	63	50	72	53	82	67	66	51	58	29	44	33	23	8
17	23	16	32	26	39	33	35	26	64	47	63	52	66	51	83	67	69	51	63	45	51	34	12	9
18	30	17	29	17	33	25	34	21	60	44	69	45	71	56	83	67	61	43	59	48	45	29	17	17
19	36	29	22	15	31	21	25	19	55	42	70	50	71	55	82	64	65	45	48	33	33	25	19	7
20	33	27	25	13	35	27	30	19	55	38	70	51	72	56	81	57	70	51	60	46	32	23	10	7
21	33	25	29	23	39	27	28	17	59	41	68	45	74	57	84	60	77	57	55	39	29	19	17	6
22	25	10	35	24	43	35	31	20	65	46	52	41	77	55	81	67	68	51	46	35	25	19	29	17
23	19	5	41	30	42	23	29	23	66	43	57	39	78	61	83	66	67	49	41	30	25	22	30	27
24	25	13	44	33	31	19	34	21	56	37	63	45	79	61	79	63	71	56	51	30	31	20	30	26
25	23	16	37	24	33	21	33	23	47	33	67	40	79	63	75	60	68	51	49	29	20	15	32	30
26	31	20	31	22	30	20	31	22	55	37	72	57	73	56	78	58	67	47	43	25	21	15	32	30
27	35	31	43	28	37	25	30	22	61	47	60	49	75	54	73	53	74	56	45	39	31	15	33	27
28	37	33	41	35	34	25	26	16	52	43	65	45	81	62	74	57	76	52	44	26	26	17	31	24
29	37	27	--	--	25	15	27	16	47	33	72	45	74	59	77	59	69	49	34	23	23	17	26	22
30	30	24	---	---	23	14	27	19	40	31	73	61	76	61	78	61	51	40	51	30	17	13	23	16
31	29	21	---	---	26	20	---	---	39	29	---	---	75	57	81	61	---	---	56	45	---	---	24	21
AV.	30	21	32	23	33	22	32	22	49	35	58	43	75	58	78	60	67	50	52	36	38	27	23	14
MEAN	25.4	27.5	27.1	27.3	41.5	50.8	66.3	69.3	58.4	43.8	32.5	18.6												
STA AV	30	21	32	23	33	22	38	24	54	36	62	43	74	55	76	55	67	49	51	35	39	28	27	18

NOTES: TEMPERATURE DATA READINGS TAKEN FROM HYGROTHERMOGRAPH RECORD. STA AV BASED ON 1966-67 RECORD PERIOD.

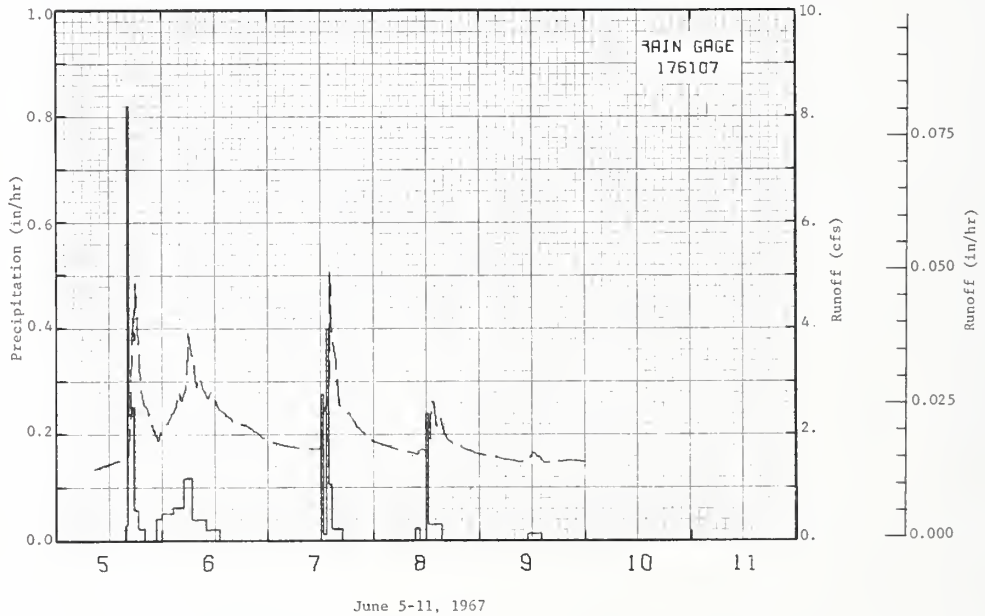
1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.02	0.0	0.0	0.0	0.01	0.19	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.0	0.0	0.0	0.32	0.14	0.0	0.0	0.61	0.0	0.0
3	0.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.04
4	0.09	0.0	0.0	0.03	0.21	0.0	0.0	0.0	0.0	0.0	0.0	0.02
5	0.08	0.0	0.0	0.21	0.0	0.59	0.0	0.0	0.0	0.14	0.0	0.39
6	0.28	0.0	0.0	0.03	0.0	0.72	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.06	0.0	0.45	0.0	0.0	0.0	0.0	0.0	0.44
8	0.0	0.0	0.0	0.0	0.0	0.20	0.0	0.0	0.09	0.0	0.0	0.0
9	0.0	0.0	0.02	0.0	0.06	0.04	0.0	0.0	0.0	0.0	0.26	0.0
10	0.0	0.0	0.03	0.0	0.37	0.02	0.0	0.0	0.0	0.0	0.10	0.0
11	0.0	0.0	0.27	0.16	0.10	0.0	0.0	0.0	0.37	0.16	0.0	0.0
12	0.31	0.0	0.08	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.21	0.29	0.02	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.20	0.03	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.32	0.0	0.14	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.46	0.0	0.0	0.0	0.0	0.49	0.0	0.0	0.0	0.0	0.10
17	0.0	0.11	0.0	0.07	0.0	0.0	0.02	0.0	0.0	0.0	0.0	0.05
18	0.0	0.10	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.77	0.57
19	0.03	0.0	0.02	0.13	0.0	0.06	0.0	0.0	0.0	0.0	0.28	0.0
20	1.03	0.0	0.05	0.21	0.0	0.17	0.0	0.0	0.0	0.0	0.05	0.05
21	2.26	0.0	0.02	0.12	0.0	0.28	0.0	0.0	0.0	0.21	0.0	0.10
22	0.10	0.0	0.0	0.24	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.05	0.39	0.0	0.0	0.0	0.0	0.0	0.02	0.03	0.04
24	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.07	0.0
25	0.02	0.03	0.0	0.19	0.0	0.0	0.0	0.0	0.0	0.01	0.0	0.08
26	0.54	0.0	0.0	0.08	0.0	0.0	0.0	0.08	0.0	0.0	0.0	0.06
27	0.17	0.0	0.0	0.13	0.0	0.04	0.0	0.0	0.0	0.02	0.0	0.08
28	0.11	0.0	0.34	0.26	0.05	0.0	0.0	0.06	0.0	0.69	0.09	0.0
29	0.10	---	0.23	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.87	0.0
30	0.10	---	0.08	0.09	0.10	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.72	---	0.23	---	1.07	---	0.0	0.0	---	0.0	---	0.06
TOTAL	6.35	1.51	1.53	2.60	2.10	3.08	0.65	0.14	0.46	1.86	2.52	2.08
STAAV	4.62	1.54	1.72	1.76	1.64	1.96	0.33	0.09	0.54	1.38	3.33	2.40
NOTES: PRECIPITATION AMOUNTS ARE FROM GAGE 176107. STA AV BASED ON 1966-67 RECORD PERIOD. FOR MAP OF WATERSHED SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 46-13. TOTAL PRECIPITATION FOR YEAR = 24.88 INCHES.												
1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.016	0.024	0.019	0.026	0.026	2.286	0.264	0.019	0.010	0.012	0.021	0.016
2	0.016	0.023	0.019	0.026	0.031	1.832	0.249	0.019	0.008	0.019	0.016	0.016
3	0.016	0.023	0.019	0.027	0.048	1.568	0.225	0.017	0.008	0.015	0.019	0.018
4	0.016	0.023	0.017	0.031	0.095	1.541	0.185	0.017	0.008	0.011	0.020	0.019
5	0.016	0.023	0.016	0.031	0.157	1.846	0.160	0.015	0.012	0.014	0.019	0.019
6	0.016	0.023	0.016	0.029	0.289	2.492	0.131	0.012	0.014	0.012	0.020	0.019
7	0.016	0.023	0.017	0.026	0.740	2.122	0.119	0.013	0.010	0.012	0.020	0.019
8	0.016	0.023	0.019	0.027	1.232	1.808	0.113	0.017	0.013	0.011	0.017	0.019
9	0.016	0.023	0.019	0.028	1.706	1.525	0.103	0.016	0.012	0.010	0.022	0.019
10	0.016	0.023	0.017	0.026	0.938	1.453	0.092	0.017	0.009	0.009	0.030	0.019
11	0.016	0.021	0.016	0.026	0.500	1.357	0.083	0.015	0.021	0.010	0.028	0.019
12	0.016	0.019	0.016	0.027	0.366	1.215	0.087	0.014	0.017	0.012	0.026	0.019
13	0.019	0.019	0.016	0.031	0.311	1.158	0.078	0.011	0.015	0.010	0.025	0.019
14	0.019	0.019	0.016	0.033	0.486	1.214	0.074	0.008	0.013	0.011	0.024	0.017
15	0.022	0.019	0.016	0.031	1.071	1.149	0.072	0.010	0.012	0.012	0.023	0.016
16	0.023	0.019	0.026	0.031	1.725	1.097	0.094	0.012	0.010	0.013	0.023	0.017
17	0.023	0.019	0.043	0.031	2.532	0.977	0.080	0.011	0.010	0.015	0.021	0.019
18	0.021	0.019	0.041	0.031	2.413	0.923	0.059	0.009	0.012	0.013	0.024	0.019
19	0.019	0.019	0.034	0.031	2.291	0.865	0.060	0.009	0.011	0.014	0.018	0.019
20	0.019	0.019	0.031	0.031	2.251	0.788	0.053	0.009	0.009	0.016	0.027	0.019
21	0.019	0.019	0.031	0.031	2.508	0.981	0.049	0.011	0.008	0.020	0.026	0.019
22	0.017	0.019	0.032	0.031	3.221	0.690	0.045	0.009	0.009	0.017	0.022	0.019
23	0.016	0.019	0.037	0.031	3.345	0.600	0.041	0.009	0.008	0.014	0.025	0.019
24	0.016	0.019	0.033	0.032	2.920	0.538	0.035	0.008	0.006	0.014	0.025	0.019
25	0.016	0.017	0.031	0.033	2.510	0.476	0.032	0.007	0.006	0.013	0.022	0.021
26	0.016	0.016	0.031	0.031	2.239	0.459	0.032	0.010	0.008	0.013	0.018	0.025
27	0.018	0.016	0.029	0.031	2.358	0.450	0.035	0.020	0.007	0.013	0.008	0.033
28	0.018	0.017	0.026	0.031	2.181	0.362	0.030	0.016	0.006	0.038	0.004	0.038
29	0.033	---	0.026	0.031	2.006	0.332	0.033	0.016	0.007	0.015	0.012	0.031
30	0.032	---	0.026	0.029	1.692	0.304	0.030	0.012	0.011	0.019	0.016	0.026
31	0.029	---	0.026	---	2.017	---	0.023	0.010	---	0.020	---	0.023
MEAN	0.019	0.020	0.025	0.030	1.490	1.147	0.089	0.013	0.010	0.014	0.021	0.021
INCHES	0.140	0.134	0.181	0.212	10.998	8.190	0.658	0.095	0.074	0.106	0.148	0.152
NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.238018.												

1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)								
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 5-11, 1967											
6-5	RG 176107 .00	1/1.1/1	6-5	RG 176107							
			6-5	1545	.0000	.00	6-5	0834	1.344	.0000	
				1626	.0292	.02		1410	1.522	.0796	
				1637	.8102	.17		1615	1.558	.1115	
				1715	.2354	.32		1540	1.664	.1182	
				1746	.2514	.45		1705	2.368	.1262	
				1847	.0550	.51		1710	3.521	.1291	
				2004	.0227	.54		1725	4.245	.1388	
				2250	.0000	.54		1740	3.753	.1487	
			6-6	2400	.0428	.59		1900	4.864	.1629	
				0232	.0513	.72		1334	3.994	.1878	
				0500	.0643	.88		1900	3.258	.2035	
				0701	.1190	1.12		1934	2.744	.2205	
				1602	.0397	1.24		1955	2.552	.2296	
				1315	.0217	1.31		2049	2.490	.2521	
			6-7	1212	.0000	1.31		2125	2.750	.2662	
				1238	.2767	1.43		2225	2.079	.2877	
				1325	.0127	1.44		2315	1.865	.3040	
				1352	.4002	1.62		2400	2.079	.3187	
				1443	.1058	1.71	6-8	0134	2.250	.3523	
				1703	.0214	1.76		0215	2.368	.3680	
			6-8	0547	.0000	1.74		0304	2.490	.3876	
				1030	.0247	1.78		0355	2.810	.4100	
				1204	.0000	1.78		0440	2.615	.4302	
				1224	.2398	1.86		0534	2.877	.4547	
				1404	.0300	1.91		0545	3.153	.4602	
			6-9	1538	.0319	1.95		0500	3.913	.4689	
				1105	.0000	1.96		0649	3.521	.4990	
				1403	.0134	2.00		0730	3.225	.5219	
								0800	2.877	.5370	
								0840	3.083	.5567	
								0919	2.877	.5759	
								1040	2.679	.6131	
								1130	2.810	.6358	
								1304	2.490	.6770	
								1510	2.250	.7498	
								1934	2.135	.8238	
								2400	1.865	.9117	
							6-7	0445	1.742	.9972	
								0349	1.712	1.0673	
								1204	1.712	1.1225	
								1240	2.079	1.1338	
								1249	2.368	1.1371	
								1300	2.490	1.1415	
								1345	2.615	1.1605	
								1404	3.225	1.1696	
								1410	3.833	1.1731	
								1415	5.050	1.1768	
								1430	4.077	1.1881	
								1455	3.753	1.2043	
								1530	3.371	1.2249	
								1604	2.810	1.2423	
								1525	2.552	1.2516	
								1719	2.490	1.2741	
								1810	2.424	1.2948	
								2025	2.135	1.3458	
							6-8	2400	1.865	1.4168	
								0500	1.712	1.5055	
								0955	1.615	1.5867	
								1045	1.712	1.5005	
								1225	1.664	1.6284	
								1300	1.917	1.6387	
								1304	2.368	1.6401	
								1334	2.615	1.6525	
								1419	2.135	1.6702	
								1519	2.308	1.6922	

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .009917. 1/ RUNOFF PRIOR TO 0834 ON 6-5-67.

1967 SELECTED RUNOFF EVENTS			REYNOLDS, IDAHO WATERSHED W-13 (REYNOLDS MTN 68 166076)							
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 5-11, 1967—Continued										
							6- 8	1410	2.024	1.7105
								1719	1.865	1.7327
								2045	1.712	1.7936
								2400	1.615	1.8472
							6- 9	0555	1.522	1.9393
								0910	1.476	1.9976
								1110	1.476	2.0160
								1215	1.664	2.0338
								1440	1.476	2.0714
								1845	1.522	2.1470
								2400	1.476	2.2102

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .009917.



REYNOLDS, IDAHO WATERSHED W-13 (68166076)

REYNOLDS, IDAHO WATERSHED W-14 (LOWER SHEEP CREEK 68 117066)

LOCATION: Owyhee County, Idaho; 40 miles south of Nampa, Idaho; a tributary to Reynolds Creek, a tributary to the Snake River.

AREA: 33 acres

SLOPES:	Slope-Percent	5-10	10-20	20-30
	Percent of area	15	83	2

SOILS: Residual, soils developed from basalt and rhyolitic volcanics.

Soil (Series)	Per-cent of area	Topsoil			Subsoil		Substratum		
		Avg. depth (in.)	Structure	Perme-ability	Structure	Perme-ability	Avg. depth to (in.)	Perme-ability	Internal drainage
Searla gravelly loam extremely stony gravelly loam	100.0	3	Weak very thin platy parting to weak very fine granular	Moderate	Moderate to weak fine and very fine sub-angular blocky parting to weak very fine and fine granular	Slow	60	Very slow or none	Slow

EROSION:	Erosion Class	1	2	3	4	5	+
	Percent of area	0	100	0	0	0	0

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	VIII
	Percent of area	0	0	0	0	0	100	0	0

GEOLOGY: The Lower Sheep Creek Watershed (W-14) occurs on a gently dipping rhyolite flow. No aquifers occur in the rhyolite, but ground water may occur beneath the rhyolite in the underlying basalt at unknown depth. For geologic map of Reynolds Creek watershed, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1963, USDA Misc. Pub. 1164, P. 68.1-10. Source of geologic data: Cenozoic Geology of Reynolds Creek Watershed, Owyhee Co., Idaho, by David H. McIntyre, Idaho Bureau of Mines and Geology Bulletin (In Print).

SURFACE DRAINAGE: Good; length of principal waterway 2100 feet; Overall slope 10-1/2%; a natural watershed with moderately defined channels and some vegetative growth in the stream channels.

CHARACTER OF FLOW: Ephemeral stream.

INSTRUMENTATION: Runoff: Precalibrated 40 c.f.s. capacity drop-box weir; FW-1 water level recorder; low-flow rating by volumetric measurement. Precipitation: One Belfort recording rain gage near the watershed boundary, 24-hour time scale.

WATERSHED CONDITIONS: The watershed is entirely sagebrush rangeland used almost exclusively for cattle grazing. Vegetation consists of bluebunch wheat grass, Sandberg bluegrass, cheatgrass, yarrow, and little sagebrush.

Vegetative Cover percentage	0-25	26-50	51-75	76-100
Percent of area	90	10	0	0

GENERALLY REPRESENTS: Small sagebrush rangeland watersheds of the Northwest with low water yield, less than 20 inches of annual precipitation and mild relief on rhyolite.

MONTHLY PRECIPITATION AND RUNOFF (inches)						REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P1/Q	2.79 .108	.66 .011	.80 .132	1.65 .015	1.49 .00	2.11 .007	.16 .00	.00 .00	.62 .00	1.33 .00	1.59 .00	1.54 .001	14.74 .275
STA AVG2/P 1967 Q	2.79 .108	.66 .011	.80 .132	1.65 .015	1.49 .00	2.11 .007	.16 .00	.00 .00	.62 .00	1.33 .00	1.59 .00	1.54 .001	14.74 .275
MEAN P 3/ 28 YR	1.32	1.33	1.32	1.16	1.29	.89	.21	.16	.39	.84	1.20	1.32	11.43

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
1967	1-21	.042	1-21	.029	1-21	.048	1-21	.062	1-21	.068	1-21	.070	1-21	.072	3-16	.090

MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 19 67	1-21 1967	.042	1-21 1967	.029	1-21 1967	.048	1-21 1967	.062	1-21 1967	.068	1-21 1967	.070	1-21 1967	.072	3-16 1967	.090

NOTES: Watershed Conditions: Same as that described above under WATERSHED CONDITIONS. 1/ Precipitation values are from page 137008. 2/ STA AVG P and Q based on 1967 data only. 3/ Mean P based on 28-yr (1939-66) U.S. Weather Bureau record period at Boise, Idaho; 50 miles N.E. of watershed.

1967 DAILY AIR TEMPERATURE (degrees F)														REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)										
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	36	27	33	24	45	31	35	20	41	23	54	42	84	60	82	59	90	69	59	42	55	31	38	18
2	28	19	37	27	31	21	43	24	49	29	60	43	89	68	85	62	85	66	59	42	39	25	39	22
3	37	23	41	32	30	17	49	27	54	38	62	43	90	63	89	67	81	62	55	38	41	25	40	25
4	41	35	44	36	31	15	47	34	52	35	63	44	81	63	90	64	79	66	59	42	38	31	41	33
5	37	16	36	25	41	21	37	29	54	34	53	46	84	64	83	61	74	63	52	34	47	32	35	19
6	24	17	41	25	49	28	43	29	62	37	56	45	78	59	83	63	73	58	53	35	48	32	25	17
7	26	21	36	23	39	22	42	31	68	46	58	47	78	58	73	51	79	61	60	36	54	41	29	20
8	33	22	40	25	47	29	46	31	72	48	59	47	82	63	79	53	72	59	66	37	63	44	25	16
9	33	25	41	34	46	33	47	34	57	40	54	37	75	54	83	59	78	60	65	35	46	34	33	18
10	42	23	37	30	43	33	46	34	48	30	55	40	81	59	88	62	75	59	66	39	51	37	44	29
11	40	31	43	27	40	22	39	31	42	29	58	41	87	64	86	66	58	40	64	37	55	45	40	16
12	37	27	48	32	31	21	48	31	40	29	55	38	94	71	88	67	53	37	65	38	57	47	16	5
13	40	37	43	23	33	23	51	34	50	31	56	40	89	76	94	67	59	39	67	32	58	48	13	3
14	43	25	23	17	33	25	35	24	60	37	62	43	84	65	90	68	64	45	52	39	56	43	20	4
15	45	28	25	18	45	25	34	25	72	49	66	45	85	63	83	69	69	50	58	36	50	39	26	8
16	31	24	30	21	48	36	37	22	78	53	73	53	81	60	93	73	70	50	63	47	50	37	29	7
17	31	23	39	31	50	36	40	31	70	45	75	57	75	57	94	74	76	56	64	50	43	32	20	16
18	39	21	37	20	41	29	39	27	79	47	80	57	83	61	92	72	72	51	69	50	53	32	25	15
19	43	36	39	17	40	26	27	22	74	52	79	62	78	57	92	70	76	56	53	36	37	31	30	7
20	39	31	35	18	47	32	36	24	80	56	75	56	79	57	91	71	83	61	65	43	40	32	26	6
21	38	30	37	28	49	34	34	19	83	58	67	50	80	58	83	66	73	55	61	45	35	27	26	14
22	30	15	45	29	55	41	35	23	75	54	59	46	87	60	85	62	74	54	57	42	38	27	41	25
23	20	15	42	32	49	28	34	26	66	41	64	43	90	68	90	70	78	58	49	32	37	27	40	33
24	29	17	48	33	39	23	42	25	57	35	71	49	90	68	84	63	70	55	57	33	43	32	41	33
25	31	23	44	30	44	25	40	29	50	33	75	54	88	64	81	52	77	52	57	30	32	24	41	39
26	37	25	41	26	40	27	38	27	47	31	84	60	84	62	80	51	74	51	46	26	29	20	44	39
27	43	37	47	32	48	30	43	29	52	36	67	57	84	56	82	56	79	59	53	37	31	20	47	37
28	45	39	53	40	43	30	43	18	60	38	74	49	92	67	81	50	84	61	52	32	31	24	48	29
29	43	33	---	---	30	19	42	17	55	39	81	59	82	67	87	66	80	54	43	27	33	25	35	25
30	36	30	---	---	33	19	31	23	57	36	83	64	85	67	86	65	60	45	55	39	29	21	32	23
31	34	25	---	---	32	22	---	---	49	30	---	---	85	64	90	67	---	---	65	51	---	---	35	26
AV.	36	26	39	27	41	27	40	27	60	39	66	49	84	63	86	63	74	55	58	38	44	32	33	20
MEAN	31	1	33	2	33	8	33	4	40	5	57	3	73	4	74	7	64	5	48	3	38	1	26	6
STA AV	36	26	39	27	41	27	40	27	60	39	66	49	84	63	86	63	74	55	58	38	44	32	33	20

NOTES: TEMPERATURE DATA READINGS TAKEN FROM HYGROTHERMOPHOTOGRAPH RECORD. STA AV BASED ONLY ON 1967 DATA.

1967 DAILY PRECIPITATION (inches)						REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.0	0.0	0.0	0.0	0.51	0.0	0.0	0.0	0.03	0.0	0.0
2	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.60	0.0	0.0
3	0.04	0.0	0.0	0.0	0.0	0.0	0.03	0.0	0.0	0.0	0.0	0.0
4	0.02	0.0	0.0	0.04	0.11	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.03	0.0	0.0	0.05	0.0	0.20	0.0	0.0	0.0	0.06	0.0	0.26
6	0.05	0.0	0.0	0.07	0.0	0.80	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.0	0.04	0.0	0.18	0.0	0.0	0.0	0.0	0.0	0.12
8	0.0	0.0	0.0	0.0	0.02	0.0	0.0	0.0	0.20	0.0	0.0	0.0
9	0.0	0.0	0.03	0.0	0.14	0.0	0.0	0.0	0.0	0.0	0.15	0.0
10	0.0	0.0	0.01	0.04	0.04	0.0	0.0	0.0	0.0	0.0	0.09	0.0
11	0.0	0.0	0.11	0.35	0.0	0.0	0.0	0.0	0.36	0.09	0.0	0.0
12	0.09	0.0	0.05	0.04	0.0	0.06	0.0	0.0	0.0	0.0	0.0	0.02
13	0.04	0.26	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.13	0.0	0.02	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.06	0.0	0.13	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.10	0.06	0.0	0.0	0.0	0.08	0.0	0.0	0.0	0.0	0.0
17	0.0	0.03	0.0	0.05	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.06
18	0.0	0.05	0.06	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.80	0.86
19	0.0	0.0	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.25	0.0
20	0.22	0.0	0.03	0.11	0.0	0.10	0.0	0.0	0.0	0.0	0.0	0.05
21	1.00	0.0	0.0	0.02	0.0	0.23	0.0	0.0	0.0	0.10	0.0	0.12
22	0.03	0.0	0.0	0.09	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.0	0.0	0.03	0.21	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.17	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.05
25	0.0	0.03	0.0	0.08	0.0	0.0	0.0	0.0	0.0	0.02	0.0	0.0
26	0.10	0.0	0.0	0.05	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27	0.06	0.0	0.0	0.03	0.0	0.03	0.0	0.0	0.0	0.07	0.0	0.0
28	0.0	0.0	0.07	0.12	0.03	0.0	0.0	0.0	0.0	0.36	0.06	0.0
29	0.25	---	0.01	0.0	0.03	0.0	0.0	0.0	0.03	0.0	0.24	0.0
30	0.23	-----	0.08	0.02	0.22	0.0	0.0	0.0	0.03	0.0	0.0	0.0
31	0.44	-----	0.26	-----	0.90	-----	0.0	0.0	-----	0.0	-----	0.0
TOTAL	2.79	0.66	0.80	1.65	1.49	2.11	0.16	0.0	0.62	1.33	1.59	1.54
STA AV	2.79	0.66	0.80	1.65	1.49	2.11	0.16	0.0	0.62	1.33	1.59	1.54

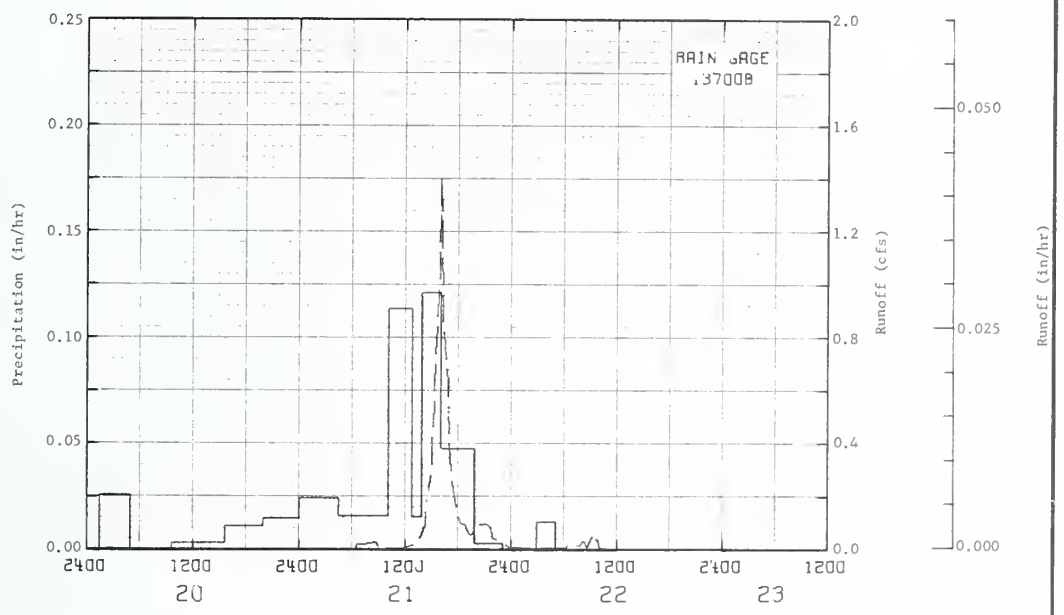
NOTES: PRECIPITATION VALUES ARE FROM GAGE 137008. STA AV BASED ON 1967 RECORD PERIOD ONLY. FOR MAP OF WATERSHED SEE P. 68.14-6. TOTAL PRECIPITATION FOR YEAR = 14.74 INCHES.

1967 MEAN DAILY DISCHARGE (cfs)						REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	0.0	0.001	0.005	0.002	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0
2	0.0	0.0	0.004	0.003	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0
3	0.0	0.0	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4	0.0	0.001	0.001	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	0.0	0.001	0.001	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
6	0.0	0.001	0.001	0.002	0.0	0.002	0.0	0.0	0.0	0.0	0.0	0.0
7	0.0	0.0	0.001	0.002	0.0	0.004	0.0	0.0	0.0	0.0	0.0	0.0
8	0.0	0.0	0.002	0.001	0.0	0.005	0.0	0.0	0.0	0.0	0.0	0.0
9	0.0	0.0	0.003	0.0	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0
10	0.0	0.0	0.005	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
11	0.0	0.0	0.004	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12	0.0	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
13	0.0	0.004	0.002	0.001	0.0	0.001	0.0	0.0	0.0	0.0	0.0	0.0
14	0.0	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15	0.0	0.0	0.002	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
16	0.0	0.001	0.045	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17	0.0	0.001	0.032	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18	0.0	0.001	0.010	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
19	0.0	0.001	0.008	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20	0.0	0.001	0.011	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
21	0.097	0.001	0.012	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22	0.004	0.001	0.012	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
23	0.001	0.001	0.008	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
24	0.001	0.001	0.005	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25	0.001	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
26	0.002	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001
27	0.037	0.001	0.003	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.002
28	0.005	0.004	0.003	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
29	0.006	-----	0.002	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30	0.001	-----	0.001	0.002	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
31	0.001	-----	0.0	-----	0.0	-----	0.0	0.0	-----	0.0	-----	0.0
MEAN	0.005	0.001	0.006	0.001	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCHES	0.108	0.011	0.132	0.015	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.001

NOTES: TO CONVERT CFS TO IN/DAY, MULTIPLY BY 0.721266.

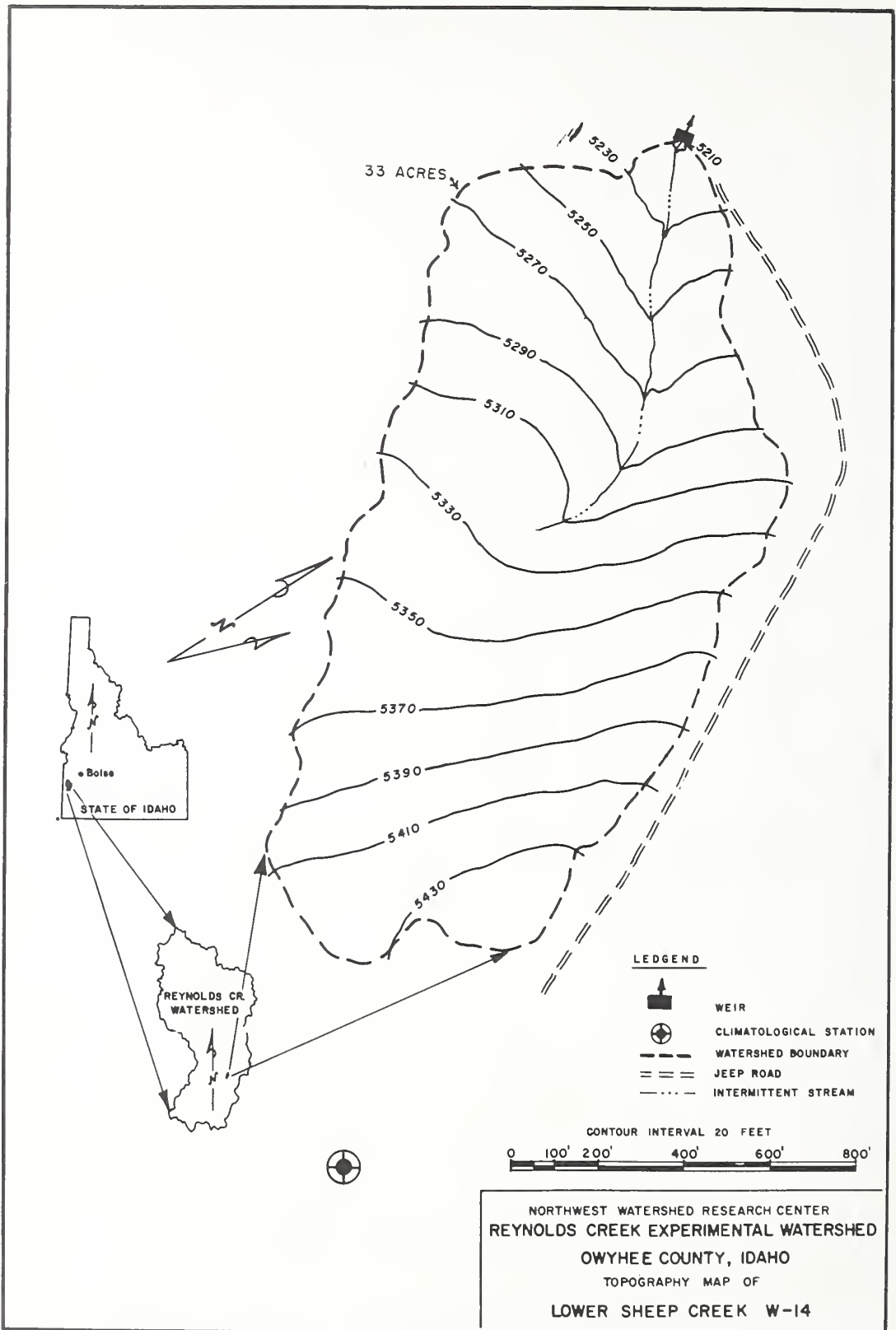
1967 SELECTED RUNOFF EVENT			REYNOLDS, IDAHO WATERSHED W-14 (SHEEP CREEK 68 117066)							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
Event of January 20-22, 1967										
1-20	RG 137008 .00	.000	1-20	RG 0125	137008 .0000	.00	1-21	0630	.008	.0000
				0453	.0259	.09		0840	.014	.0007
				0938	.0000	.09		0855	.006	.0008
				1538	.0033	.11		0930	.004	.0009
				1958	.0115	.16		1115	.003	.0010
			1-21	2400	.0149	.22		1245	.008	.0013
				0428	.0246	.33		1330	.014	.0015
				1608	.0158	.42		1355	.034	.0018
				1241	.1137	.71		1415	.099	.0025
				1351	.0154	.77		1425	.187	.0032
				1600	.1209	1.03		1455	.287	.0068
				1648	.0473	1.21		1515	.630	.0114
				2300	.0031	1.22		1545	.968	.0234
			1-22	0251	.0000	1.22		1600	.409	.0323
				0506	.0133	1.25		1615	.945	.0408
								1645	.630	.0518
								1700	.348	.0555
								1730	.209	.0597
								1755	.129	.0618
								1819	.060	.0630
								1840	.060	.0636
								1919	.027	.0644
								2019	.060	.0657
								2100	.099	.0674
								2140	.050	.0689
								2149	.022	.0690
								2304	.010	.0696
								2340	.005	.0698
								2400	.005	.0698
							1-22	0219	.004	.0701
								0404	.003	.0703
								0530	.005	.0705
								0610	.005	.0706
								0625	.008	.0706
								0710	.010	.0708
								0734	.006	.0709
								0810	.014	.0711
								0840	.006	.0713
								0910	.022	.0715
								0930	.010	.0716
								0949	.017	.0718
								1004	.004	.0718
								1040	.004	.0719
								1049	.001	.0719
								1210	.001	.0719
								1604	.000	.0720

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .030053.



January 20-22, 1967

REYNOLDS, IDAHO WATERSHED W-14 (68117066)



MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO AREA — 2,339,800 ACRES (3,656 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ /Q	.022	.019	.017	.097	.016	.026	.025	.010	.035	.012	.012	.015	.306			
STA AVG P ₁ /Q ₂	.044	.048	.053	.068	.067	.147	.031	.037	.134	.110	.113	.055	.907			
MEAN P ₃ /Q ₃	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-13	.0010	4-13	.0010	4-13	.0021	4-13	.006	4-13	.012	4-13	.022	4-12	.040	4-12	.068
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 61 TO 1967	9-23 1965	.0044	9-23 1965	.0044	9-23 1965	.0088	9-23 1965	.026	9-23 1965	.052	9-23 1965	.100	9-23 1965	.188	9-21 1965	.384
Notes: Watershed conditions not applicable. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. 1/ Since this is the inflow station to a study reach, these data are not applicable. 2/ Runoff records began Oct. 1961. 3/ Mean P based on 67-yr (1901-67) 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 (1967): Maximum — Apr. 14, 2,470 cfs (12.91 ft). Minimum — Aug. 17, 1.6 cfs (6.36 ft). PERIOD OF RECORD: Maximum — Sept. 23, 1965, 11,000 cfs (24.20 ft). Minimum — no flow. Period of record began Oct. 1, 1961. PEAK DISCHARGES: (Above base of 3,000 cfs) — none. DAILY TEMPERATURE: See page 69.7-3.																
1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 100 AT ANADARKO										
OAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1	78	<u>94</u>	56	58	* 56	44	97	18	* 28	<u>110</u>	35	44	44			
2	78	90	55	43	70	36	80	* 15	25	70	* 35	44	44			
3	76	84	53	<u>35</u>	65	30	95	14	23	58	36	43	43			
4	* 72	68	53	50	63	34	236	14	25	56	44	* 41	41			
5	74	55	56	53	63	45	<u>401</u>	14	119	31	<u>33</u>	41	41			
6	72	53	59	48	70	44	* 279	12	56	27	35	43	43			
7	70	<u>50</u>	55	50	78	43	171	11	39	39	36	<u>40</u>	40			
8	70	56	53	53	101	41	123	* 10	29	29	36	40	40			
9	66	68	56	48	<u>115</u>	40	88	9.0	28	* 23	40	43	43			
10	70	68	55	* 63	80	39	69	7.0	41	<u>20</u>	41	43	43			
11	70	68	53	45	56	37	* 53	* 6.0	* 45	36	41	41	41			
12	68	68	51	*1090	61	* 41	44	4.8	40	45	40	41	41			
13	68	* 68	* 50	*1920	58	43	39	4.8	26	44	41	44	44			
14	70	70	47	*1700	41	39	32	4.8	19	41	43	44	44			
15	72	70	45	527	32	196	31	4.0	<u>17</u>	39	43	45	45			
16	* 68	68	45	410	* 26	128	30	3.4	217	37	43	47	47			
17	63	70	43	350	<u>21</u>	88	41	* 1.6	<u>404</u>	36	41	50	50			
18	65	68	<u>37</u>	* 305	30	74	47	2.0	* 112	33	43	55	55			
19	61	63	39	288	37	72	50	* 27	51	31	41	53	53			
20	<u>59</u>	61	47	292	40	148	36	69	36	31	* 40	53	53			
21	66	63	45	309	39	93	36	79	34	31	40	55	55			
22	65	63	45	360	40	56	47	132	261	30	40	<u>56</u>	56			
23	66	63	48	447	40	30	45	<u>139</u>	197	30	41	53	53			
24	63	61	56	389	37	23	* 45	* 106	219	29	41	51	51			
25	70	61	51	218	35	21	51	57	* 157	22	41	51	51			
26	74	61	58	103	36	* 20	45	43	111	27	39	51	51			
27	72	* 59	* 86	84	37	82	37	41	146	28	40	51	51			
28	72	56	78	74	37	* 512	35	35	324	28	40	51	51			
29	* 70	-----	66	66	43	325	35	31	350	28	41	50	50			
30	* 86	-----	56	59	50	147	27	25	225	30	44	51	51			
31	<u>108</u>	-----	55	-----	* 50	-----	<u>25</u>	28	-----	36	-----	51	51			
MEAN	71	66	53	318	52	86	80	31	113	37	40	47	47			
INCHES	.022	.019	.017	.097	.016	.026	.025	.010	.035	.012	.012	.015	.306			
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, 82 CFS. YEARLY DISCHARGE, .306 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.																

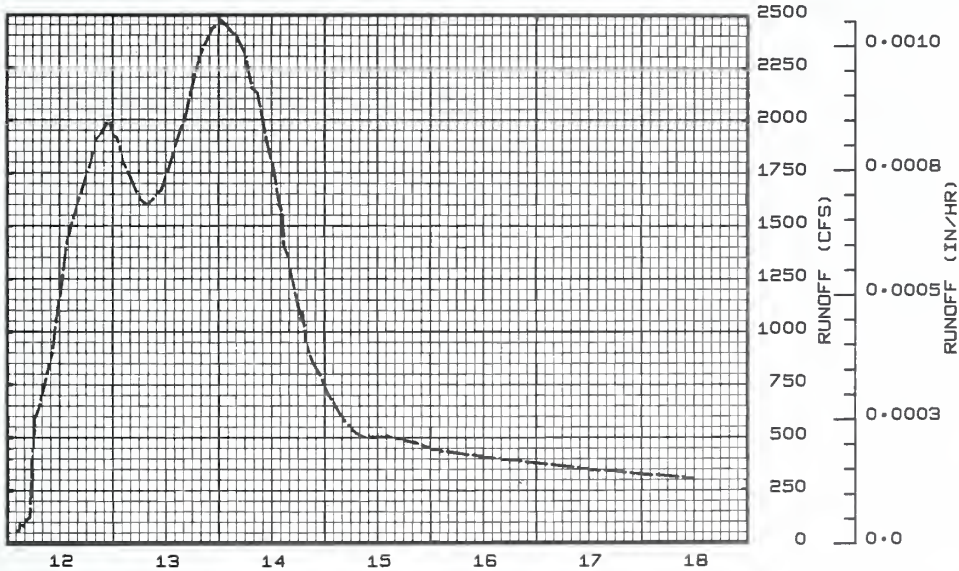
1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 100 AT ANADARKO				
ANTECEDENT CONDITIONS			RAINFALL $\frac{1}{}$				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
Watershed conditions: Not applicable.			<u>Event of April 12-18, 1967</u>								
			4-12	0200					42.0		
				0219						52.0	
				0236						57.9	
				0254						89.1	
				0312						94.3	
				0330						83.0	
				0348						79.4	
				0400						87.5	
				0424						108.5	
				0512						122.1	
				0542						356.1	
				0612						532.9	
				0618						590.8	
				0718						643.1	
				0830						750.2	
				0848						771.8	
				1018						905.2	
				1112						1064.7	
				1200						1190.6	
				1318						1399.1	
				1454						1538.8	
				1554						1596.9	
				1718						1698.4	
				1842						1789.3	
				2012						1912.0	
				2124						1941.5	
				2236						1990.7	
				2324						1984.2	
				2400						1933.5	
				0054		4-13				1922.9	
				0142						1868.5	
				0212						1815.4	
				0348						1739.3	
				0500						1634.3	
				0742						1603.4	
				0854						1626.4	
				0954						1650.0	
				1106						1650.7	
				1230						1767.8	
	1424						1903.1				
	1630						2024.8				
	1718						2104.7				
	1842						2255.3				
	1954						2322.3				
	2230						2437.9				
	2400		4-14				2463.9				
	0036						2474.6				
	0148						2450.8				
	0412						2390.6				
	0554						2316.5				
	0724						2155.2				
	0842						2121.3				
	1036						1916.5				
	1218						1774.4				
	1312						1644.8				
	1418						1559.0				
	1430						1415.4				
	1530						1364.4				
	1726						1190.1				
	1830						1002.7				
	1854						1095.5				
	1942						948.8				
	2112						854.0				
	2230						813.1				
	2400						736.7				

Continued on next page

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000004237. FOR 30-DAY ANTECEDENT Q, SEE P. 69.1-1. $\frac{1}{}$ NO PRECIPITATION RECORD IS SHOWN BECAUSE ALL OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

1967			SELECTED RUNOFF EVENT				CHICKASHA, OKLAHOMA				WATERSHED 100 AT ANADARKO			
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 April 12-18, 1967-Continued											
							4-15	0348	594.2					
								0648	523.9					
								0848	502.1					
								1424	504.4					
								2054	474.7					
								2400	446.5					
							4-16	1200	409.5					
							4-17	1200	350.3					
							4-18	1200	305.1					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000004237.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 100

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN AREA — 2,612,500 ACRES (4,082 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / O	.36 .022	.13 .019	1.83 .019	5.40 .110	2.60 .021	2.60 .026	2.17 .024	1.21 .009	5.59 .033	2.28 .014	.24 .012	1.13 .015	25.54 .324			
STA AVG P ₂ / O	.47 .050	.89 .051	1.22 .051	2.89 .066	2.98 .067	3.90 .145	1.50 .032	2.80 .034	4.93 .122	1.46 .109	1.72 .110	.97 .056	25.73 .893			
MEAN 67 YR P ₃ / O	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-14	.0009	4-14	.0009	4-14	.0019	4-14	.006	4-13	.011	4-13	.021	4-12	.039	4-12	.076
MAXIMUMS FOR PERIOD OF RECORD ⁴ / ₁																
19 61 TO 1967	9-24 1965	.0023	9-24 1965	.0023	9-24 1965	.0046	9-24 1965	.014	9-24 1965	.028	9-23 1965	.055	9-22 1965	.108	9-21 1965	.344
Notes: For the revised watershed conditions, see table on page 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21, and 1962, P. 69.7-9. 1/ Precipitation data obtained from a Thiessen weighted average of 66 gages for the reach between stations at Anadarko and Verden. 2/ Precipitation records began Oct. 1961; runoff records began Sept. 1961. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Sept. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 14, 2,470 cfs (18.07 ft). Minimum — Aug. 20, 4.8 cfs (7.49 ft). PERIOD OF RECORD: Maximum — Sept. 24, 1965, 8,410 cfs (27.93 ft). Minimum — Aug. 2, 1964, 1.2 cfs (7.10 ft). Period of record began Sept. 25, 1961. PEAK DISCHARGES: (Above base flow of 3,000 cfs) None. DAILY TEMPERATURES: See page 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.39	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.28	.03	1.37	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.48	.15	.00	.00	.04
5	.00	.00	.00	.00	.75	.00	.28	.00	.82	.00	.00	.00
6	.00	.00	.02	.00	.13	.00	.00	.00	.23	.00	.00	.00
7	.00	.00	.00	.12	.00	.00	.00	.00	.04	1.28	.00	.00
8	.00	.03	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.61	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.47	.00	.00	.00	.00	.00	.00	.00	.14
11	.00	.00	.00	.03	.00	.00	.03	.00	.00	.00	.00	.00
12	.00	.00	.09	2.94	.00	.18	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.44	.10	.00	.00	.00	.05	.00	.00	.01
14	.00	.00	.00	.00	.01	.00	.00	.00	.82	.00	.00	.06
15	.00	.00	.00	.00	.00	.00	.07	.00	.00	.11	.00	.07
16	.00	.00	.00	.07	.00	.08	.14	.00	.01	.00	.00	.59
17	.00	.00	.00	.00	.00	.23	.00	.23	.00	.00	.00	.02
18	.00	.00	.00	.00	.00	.13	1.11	.00	.00	.00	.00	.00
19	.00	.00	.45	.63	.01	.00	.14	.00	.00	.00	.00	.00
20	.00	.00	.01	.09	.58	.00	.00	.06	.86	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.03	.00	.00	.04
22	.00	.00	.68	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
25	.36	.00	.25	.00	.00	1.19	.00	.00	.00	.00	.00	.00
26	.00	.00	.03	.00	.00	.22	.00	.04	.82	.00	.00	.00
27	.00	.00	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.19	.00	.09	.00	.00	.00	.01	.00
29	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.05	.00
30	.00	.00	.04	.00	.50	.00	.00	.00	.00	.57	.00	.16
31	.00	.26	.26	.13	.13	.00	.35	.35	.32	.32	.00	.00
TOTAL	.36	.13	1.83	5.40	2.60	2.60	2.17	1.21	5.59	2.28	.24	1.13
STA AV	.47	.89	1.22	2.89	2.98	3.90	1.50	2.80	4.93	1.46	1.72	.97

NOTES:
 YEARLY PRECIPITATION 25.54 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 200 AT VERDEN						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	88	119	70	73	* 79	63	140	30	* 28	169	47	52
2	89	102	66	71	86	50	102	* 24	33	98	* 46	51
3	87	97	66	51	93	40	89	19	41	76	45	46
4	* 83	90	65	44	89	33	142	21	69	56	46	* 46
5	80	67	63	57	96	40	329	23	98	60	54	46
6	83	54	65	56	127	47	* 345	16	106	38	41	48
7	76	52	70	56	114	46	204	13	58	84	40	47
8	73	52	64	58	124	42	139	* 12	45	63	42	44
9	70	64	65	62	155	41	103	12	36	* 41	43	44
10	72	73	66	* 104	128	38	81	10	35	31	44	46
11	74	74	61	81	93	37	* 63	* 10	* 45	28	45	46
12	79	75	58	* 1530	74	* 36	49	9.7	45	53	46	44
13	73	* 75	* 58	* 2010	82	45	45	7.5	39	56	45	49
14	75	73	* 60	2170	88	41	40	7.2	34	53	44	54
15	78	78	56	857	58	85	35	6.8	31	52	43	56
16	* 81	78	50	554	* 49	216	34	* 6.2	37	47	43	58
17	78	76	52	456	39	119	33	6.8	401	44	42	64
18	72	75	49	* 365	33	100	49	7.5	* 243	42	41	66
19	79	72	44	330	45	84	62	5.3	82	40	42	65
20	72	69	54	399	55	116	58	* 28	53	38	* 42	60
21	78	70	58	394	70	157	42	70	52	37	42	61
22	75	76	58	370	52	95	45	104	172	35	45	61
23	72	76	85	512	55	64	50	127	186	33	46	62
24	73	77	71	471	50	40	* 48	* 122	269	33	46	60
25	69	74	76	390	42	39	49	78	* 176	33	45	57
26	85	72	77	176	38	* 46	55	41	144	27	44	56
27	83	* 73	* 89	125	37	35	50	28	135	30	41	56
28	84	72	106	105	38	* 324	42	33	251	31	43	55
29	83	.00	92	97	* 43	497	42	30	406	32	45	56
30	* 81	.00	76	91	55	244	41	26	290	33	47	54
31	114	.00	68	.00	77	.00	34	25	.00	43	.00	56
MEAN	79	75	66	404	73	95	85	31	121	50	44	54
INCHES	.022	.019	.019	.110	.21	.026	.024	.009	.033	.014	.012	.015

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/OAY, MULTIPLY BY .00009111. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 217,700. YEARLY MEAN DISCHARGE, 98 CFS. YEARLY DISCHARGE, 324 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

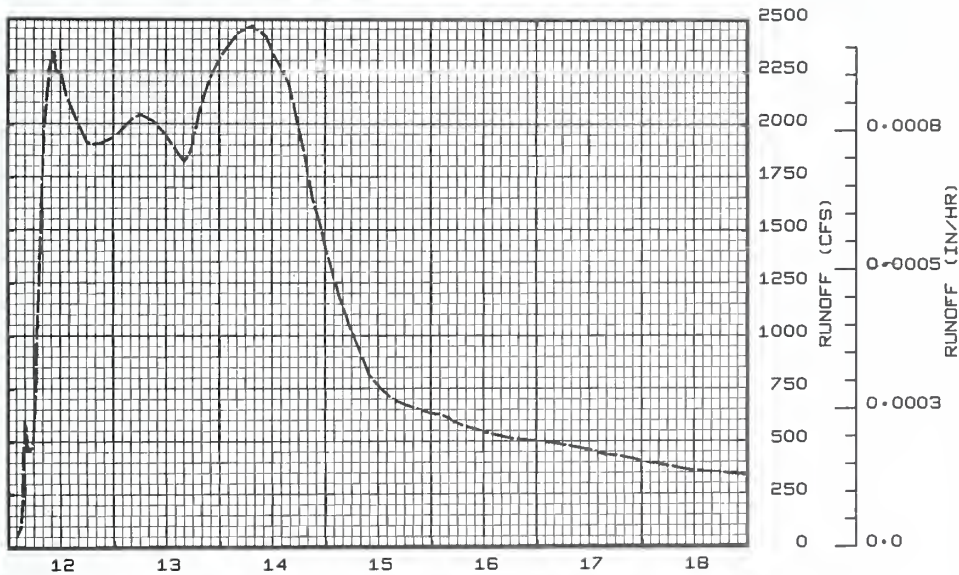
1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA			WATERSHED 200 AT VERDEN							
ANTECEDENT CONDITIONS			RAINFALL ^{1/}				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
<p>Watershed conditions: The land use of this 4,082 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12-18, 1967										
			4-12	0206	57.0								
				0242	79.4								
				0300	116.3								
				0318	187.2								
				0324	268.4								
				0330	355.3								
				0336	457.1								
				0348	553.1								
				0400	577.4								
				0430	462.8								
				0448	454.1								
				0506	464.5								
				0530	481.1								
				0548	502.3								
				0612	605.4								
				0630	817.5								
				0636	951.2								
				0648	1101.6								
				0706	1254.1								
				0718	1412.5								
				0736	1603.3								
				0754	1790.4								
				0812	1984.5								
				0842	2084.5								
				0918	2244.1								
				1024	2352.9								
				1054	2252.3								
	1206	2245.8											
	1318	2132.3											
	1530	2025.6											
	1754	1918.1											
	1924	1908.6											
	2048	1911.0											
	2400	1939.7											
	0406	2028.4	4-13										
	0554	2048.9											
	0854	2019.4											
	1154	1944.9											
	1442	1859.1											
	1548	1826.3											
	1618	1838.9											
	1724	1881.1											
	1918	2068.4											
	2148	2231.9											
	2400	2324.8											
	0400	2437.6	4-14										
	0712	2469.0											
	1018	2420.7											
	1200	2338.2											
	1530	2194.4											
	1712	2037.4											
	1918	1837.3											
	2054	1651.1											
	2254	1510.0											
	2400	1400.7											
	0048	1345.3	4-15										
	0254	1194.3											
	0454	1073.1											
	0724	939.3											
	0954	812.2											
	1200	759.8											
	1442	706.7											
	1754	674.9											
	2400	632.2											
	0218	527.1	4-16										

Continued on next page

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003796. FOR 30-DAY ANTECEDENT Q, SEE P. 69.2-2, THIS PUBLICATION. ^{1/} NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 200 AT VERDEN			
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 April 12-18, 1967-Continued							
							4-16	0600	584.2	
								1200	543.8	
								1906	509.7	
								2400	501.4	
							4-17	0406	491.2	
								1254	454.2	
								1542	434.4	
								1800	433.0	
								2400	435.0	
							4-18	0600	381.6	
								1106	360.0	
								1754	349.2	
								2400	337.9	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003796.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 200

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 500 NEAR CHICKASHA AREA — 2,768,000 ACRES (4,325 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P ¹ / _O	.44	.12	2.08	6.14	3.02	2.84	1.85	1.39	5.42	2.72	.26	1.04	27.32
	O	.020	.017	.017	.147	.023	.023	.023	.007	.031	.021	.011	.014	.354
STA AVG	P ² / _O	.59	.98	1.31	2.95	2.90	3.26	1.61	3.32	3.81	1.37	2.16	.90	25.16
	O	.039	.042	.046	.076	.056	.066	.016	.036	.107	.111	.098	.050	.743
MEAN 67 YR	P ³ / _O	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

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
1967	4-12	.0026	4-12	.0025	4-12	.0049	4-12	.015	4-12	.028	4-12	.044	4-12	.066	4-12	.110

MAXIMUMS FOR PERIOD OF RECORD ⁴ / _O																
19 64 TO	4-12	.0026	4-12	.0025	4-12	.0049	4-12	.015	4-12	.028	9-25	.052	9-25	.099	9-22	.284
1967	1967		1967		1967		1967		1967		1965		1965		1965	

Notes: For the revised watershed conditions, see table on page 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. ¹/ The station at Chickasha (4th St.) Watershed 400 was discontinued in 1967, therefore, causing a new Thiessen weighted average for this watershed. Precipitation data obtained from a Thiessen weighted average of 42 gages for the reach between Verden (200) and Chickasha (500). ²/ Precipitation records began Oct. 1961; runoff records began Jan. 1964. ³/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ⁴/ Period of record began Jan. 1964.

MISCELLANEOUS DATA

RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 7,150 cfs (22.77 ft). Minimum — Aug. 15, no flow (3.41 ft).
PERIOD OF RECORD: Maximum — Apr. 12, 1967, 7,150 cfs (22.77 ft). Minimum — no flow. Period of record began Jan. 1, 1964.
PEAK DISCHARGES: (Above base flow of 3,000 cfs) 1967 — Apr. 12, 7,150 cfs (22.77 ft).
DAILY TEMPERATURE: See page 69.7-3.

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 500 NEAR CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.09	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.76	.00	.18	.00
3	.00	.00	.00	.00	.00	.00	.22	.06	1.12	.00	.02	.00
4	.00	.00	.00	.00	.00	.00	.00	.64	.22	.00	.00	.06
5	.00	.00	.00	.00	1.04	.00	.34	.00	.79	.00	.00	.00
6	.00	.00	.03	.00	.02	.00	.00	.00	.10	.00	.00	.00
7	.00	.00	.00	.28	.00	.00	.00	.00	.01	1.52	.00	.00
8	.00	.03	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.90	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.58	.00	.00	.00	.00	.00	.00	.00	.06
11	.00	.00	.00	.00	.00	.04	.03	.01	.00	.00	.00	.00
12	.00	.00	.12	3.09	.00	.06	.00	.00	.00	.00	.00	.00
13	.00	.00	.01	.50	.05	.00	.00	.00	.08	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.02	.41	.00	.00	.09
15	.00	.00	.00	.00	.00	.00	.10	.00	.00	.26	.00	.08
16	.00	.00	.00	.06	.00	.03	.17	.00	.01	.00	.00	.53
17	.00	.00	.00	.00	.00	.15	.00	.32	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.03	.74	.00	.00	.00	.00	.00
19	.00	.00	.49	.41	.00	.00	.02	.00	.00	.00	.00	.00
20	.00	.00	.01	.32	.86	.00	.00	.00	.64	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.01	.00	.11	.00	.00	.01
22	.00	.00	.63	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.58	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
25	.39	.00	.32	.00	.00	1.42	.00	.00	.00	.00	.00	.00
26	.05	.00	.07	.00	.00	.40	.01	.00	1.17	.00	.00	.00
27	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.02	.00	.19	.00	.00	.00	.01	.00
29	.00		.00	.00	.38	.00	.00	.00	.00	.00	.05	.00
30	.00		.11	.00	.50	.00	.00	.00	.00	.56	.00	.18
31	.00		.29		.12		.00	.34		.38		.00
TOTAL	.44	.12	2.08	6.14	3.02	2.84	1.85	1.39	5.42	2.72	.26	1.04
ST. AV.	.59	.98	1.31	2.95	2.90	3.26	1.61	3.22	3.81	1.37	2.16	.90

NOTES: YEARLY PRECIPITATION 27.32 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 42 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 500 NEAR CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	84	107	62	64	100	73	204	26	15	241	35	46
2	84	103	61	59	84	58	139	22	23	138	37	47
3	84	88	55	58	88	48	114	18	34	87	39	47
4	85	82	55	41	95	39	99	16	86	75	37	45
5	83	76	57	28	104	30	202	18	164	66	37	42
6	81	57	57	43	392	31	344	20	130	65	47	43
7	78	50	57	44	178	43	290	16	98	537	39	44
8	76	47	60	48	133	44	183	6.0	57	333	37	45
9	75	49	58	74	137	43	133	2.6	45	82	41	42
10	75	55	57	251	173	40	100	1.8	36	60	42	41
11	74	67	58	139	138	40	78	.9	31	45	43	42
12	73	70	52	320	92	37	62	.6	41	37	45	44
13	73	72	50	2870	68	35	48	.3	43	50	45	41
14	73	71	45	2270	77	39	41	.1	44	52	45	46
15	73	67	45	1410	75	37	34	.1	36	54	43	50
16	73	72	43	649	55	101	31	.1	30	48	45	55
17	73	73	39	499	45	190	34	35	62	41	44	62
18	73	70	35	397	37	120	35	6.0	359	38	41	62
19	73	69	37	334	27	97	49	3.7	171	37	41	63
20	73	68	43	486	86	64	56	2.1	76	33	43	65
21	73	67	41	436	70	109	47	1.8	67	32	42	60
22	73	68	52	383	66	121	33	.50	57	30	42	58
23	73	73	57	416	51	79	31	.87	182	30	44	59
24	73	71	75	505	46	55	40	117	172	28	44	62
25	73	73	86	466	45	50	30	107	235	26	44	58
26	69	70	211	330	36	128	34	68	213	25	44	56
27	81	68	76	167	34	46	45	43	303	21	44	55
28	81	66	80	130	33	29	43	37	173	22	42	57
29	82		86	116	39	412	33	26	282	23	42	56
30	77		77	111	41	409	30	25	368	26	44	57
31	77		73		60		34	19		34		58
MEAN	76	70	63	571	87	88	86	25	121	78	42	52
INCHES	.020	.017	.017	.147	.023	.023	.023	.007	.031	.021	.011	.014

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000008599. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 230.700. YEARLY MEAN DISCHARGE, 113 CFS. YEARLY DISCHARGE, .354 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

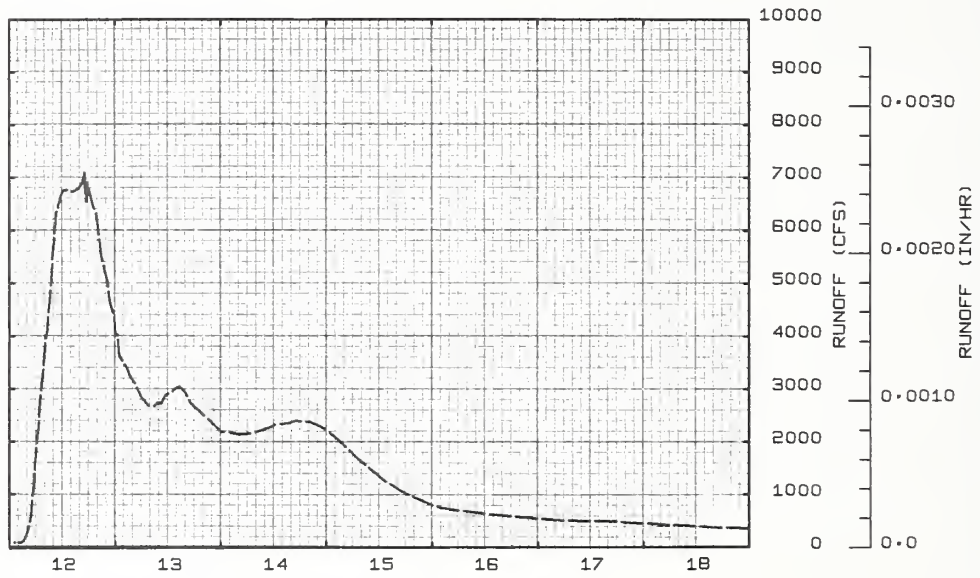
1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 500NEAR CHICKASHA				
ANTECEDENT CONDITIONS			RAINFALL $\frac{1}{2}$				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)	
<p>Watershed conditions: The land use of this 4,325 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12-18, 1967								
								4-12	0112	81.3	
									0212	79.2	
									0248	79.1	
									0312	110.1	
									0342	186.6	
									0406	267.1	
									0424	368.0	
									0442	450.5	
									0454	577.9	
									0506	715.1	
									0512	844.4	
									0518	983.5	
									0524	1068.1	
									0530	1185.0	
									0542	1361.5	
									0548	1543.7	
									0600	1742.7	
									0612	1943.6	
									0630	2183.5	
									0642	2379.5	
									0654	2609.5	
									0706	2845.0	
									0718	3086.4	
									0742	3332.9	
									0754	3617.5	
									0812	3887.2	
									0836	4112.3	
									0854	4466.4	
									0912	4766.7	
						0930	5052.1				
						0942	5366.4				
						1000	5682.3				
						1018	6004.7				
						1036	6338.7				
						1100	6426.2				
						1130	6615.8				
						1206	6751.9				
						1306	6767.3				
						1430	6735.9				
						1542	6800.0				
						1618	6880.0				
						1636	6924.4				
						1706	7113.9				
						1724	6552.8				
						1748	6903.2				
						1842	6538.5				
						1942	6320.4				
						2024	5863.4				
						2048	5532.3				
						2130	5293.2				
						2212	5036.3				
						2248	4633.2				
						2324	4464.8				
						2348	4418.1				
						2400	4011.3				
						4-13	0030	4029.4			
							0042	3723.1			
							0106	3600.3			
							0148	3500.8			
							0236	3404.6			
							0330	3222.5			
							0442	3071.7			
							0554	2848.7			
							0730	2689.2			
							0854	2674.8			

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NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003583. FOR 30-DAY ANTECEDENT Q, SEE P. 69.5-2, THIS PUBLICATION. $\frac{1}{2}$ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 500 NEAR CHICKASHA			
ANTECEDENT CONDITIONS			RAINFALL 1/				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 April 12-18, 1967-Continued</u>							
							4-13	0930	2743.2	
								1030	2734.7	
								1124	2684.0	
								1300	2962.1	
								1324	2998.2	
								1420	3052.8	
								1554	2944.7	
								1618	2861.6	
								1706	2735.8	
								1930	2549.4	
								2154	2365.3	
								2400	2190.3	
							4-14	0218	2175.0	
								0418	2141.6	
								0718	2163.1	
								0936	2234.6	
								1042	2242.8	
								1224	2324.9	
								1512	2354.0	
								1654	2401.8	
								2012	2375.6	
								2230	2301.0	
								2400	2213.1	
							4-15	0230	2054.7	
								0500	1857.7	
								0706	1676.7	
								0830	1590.2	
								1018	1455.8	
								1118	1402.3	
								1324	1250.7	
								1512	1159.9	
								1754	1015.5	
								2112	904.1	
								2400	795.1	
							4-16	0236	744.1	
								0600	698.9	
								1006	654.3	
								1748	594.3	
								2212	556.5	
								2400	542.8	
							4-17	0554	508.2	
								1042	504.8	
								1442	503.9	
								2130	464.6	
								2400	450.4	
							4-18	0654	418.0	
								1554	377.0	
								2030	363.1	
								2400	351.1	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000003583.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 500

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 600 NEAR TABLER AREA — 3,011,800 ACRES (4,706 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	$\frac{p1}{o}$.15 .022	.07 .019	2.46 .023	5.34 .180	3.81 .030	2.01 .024	2.59 .023	.94 .006	4.69 .030	3.17 .024	.33 .012	1.04 .015	26.60 .408			
STA AVG	$\frac{p2}{o}$.80 .042	1.14 .042	1.44 .049	3.26 .086	3.88 .068	1.97 .069	1.45 .017	4.33 .036	3.76 .091	1.46 .088	1.78 .086	.74 .045	26.01 .719			
MEAN 67 YR	$\frac{p3}{o}$ 1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.0026	4-12	.0026	4-12	.0051	4-12	.015	4-12	.029	4-12	.051	4-12	.079	4-10	.130
MAXIMUMS FOR PERIOD OF RECORD $\frac{4}{}$																
$\frac{19}{1967}$ 63 TO 1967	4-12 1967	.0026	4-12 1967	.0026	4-12 1967	.0051	4-12 1967	.015	4-12 1967	.029	4-12 1967	.051	9-25 1965	.087	9-22 1965	.256
Notes: For the revised watershed conditions, see table on P. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. $\frac{1}{}$ Precipitation data based on a Thiessen weighted average of 66 gages for the reach between stations at Chickasha (Turnpike) and Tabler, Okla. $\frac{2}{}$ Precipitation records began Oct. 1961; runoff records began July 1963. $\frac{3}{}$ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing estimated. $\frac{4}{}$ Period of record began July 1963.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 7,820 cfs (24.54 ft). Minimum — Aug. 18, no flow (10.15 ft).																
PERIOD OF RECORD: Maximum — Apr. 12, 1967, 7,820 cfs (24.54 ft). Minimum — no flow. Period of record began July 16, 1963.																
PEAK DISCHARGES: (Above base flow of 3,000 cfs) 1967 — Apr. 12, 7,820 cfs (24.54 ft).																
DAILY TEMPERATURE: See P. 69.7-3.																

1967 DAILY PRECIPITATION (inches)					CHICKASHA, OKLAHOMA WATERSHED 600 NEAR TABLER							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.02	.00	.29	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.49	.03	1.13	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.46	.24	.00	.00	.02
5	.00	.00	.00	.00	1.12	.00	.25	.00	.86	.00	.00	.00
6	.00	.00	.03	.00	.00	.00	.00	.00	.02	.00	.00	.00
7	.00	.00	.00	.36	.00	.00	.00	.00	.01	.74	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.57	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.49	.00	.00	.00	.00	.00	.00	.00	.06
11	.00	.00	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
12	.00	.00	.05	1.75	.00	.07	.21	.00	.00	.00	.00	.00
13	.00	.00	.01	.51	.03	.00	.00	.00	.06	.00	.00	.05
14	.00	.00	.00	.00	.02	.00	.00	.01	.52	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.09	.00	.00	1.02	.00	.07
16	.00	.00	.00	.00	.00	.00	.11	.00	.10	.00	.00	.57
17	.00	.00	.00	.00	.00	.01	.00	.18	.00	.00	.00	.01
18	.00	.00	.00	.01	.00	.10	.63	.00	.01	.00	.00	.00
19	.00	.00	.38	.18	.00	.00	.11	.00	.00	.00	.00	.00
20	.00	.00	.00	.47	1.09	.00	.00	.01	.45	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.01	.00	.06	.00	.00	.01
22	.00	.00	.65	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.15	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
25	.08	.00	.69	.00	.00	.62	.00	.00	.00	.00	.00	.00
26	.07	.00	.11	.00	.00	.91	.00	.00	.94	.00	.00	.00
27	.00	.00	.00	.00	.00	.13	.09	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.02	.00	.76	.00	.00	.00	.04	.00
29	.00	-----	.00	.00	.63	.00	.00	.00	.00	.01	.06	.00
30	.00	-----	.07	-----	.69	.00	.00	.00	.00	1.01	.00	.14
31	.00	-----	.47	-----	.21	.00	.00	.24	-----	.39	-----	.00
TOTAL	.15	.07	2.46	5.34	3.81	2.01	2.59	.94	4.69	3.17	.33	1.04
ST. AV.	.80	1.14	1.44	3.26	3.88	1.97	1.45	4.33	2.76	1.46	1.78	.74

NOTES:
 YEARLY PRECIPITATION 26.60 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 66 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)					CHICKASHA, OKLAHOMA WATERSHED 600 NEAR TABLER							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	84	97	84	134	* 123	94	255	25	* 18	294	82	55
2	115	129	76	110	113	84	157	19	15	204	* 64	57
3	100	118	73	103	111	71	139	18	32	135	63	57
4	* 94	106	64	97	127	58	128	17	94	99	58	* 55
5	97	102	66	74	137	50	152	16	223	77	54	51
6	91	91	74	70	589	40	* 298	20	166	63	55	49
7	84	73	74	80	333	43	346	20	143	94	62	49
8	82	67	77	84	173	50	236	13	94	525	51	49
9	74	63	80	101	145	49	160	* 8.2	59	* 152	49	51
10	64	59	71	* 1110	156	44	* 114	4.8	4.8	84	51	49
11	84	71	70	* 340	152	44	86	* 2.9	* 40	64	53	49
12	94	80	67	* 4710	116	* 42	67	2.5	37	48	50	53
13	89	* 82	* 67	* 4580	92	44	53	1.8	45	44	51	51
14	88	79	* 62	* 2520	91	41	41	* 1.4	51	62	50	50
15	83	79	58	1800	* 98	44	34	1.1	57	185	49	60
16	* 84	80	58	837	88	38	30	.8	53	147	49	69
17	84	88	53	* 614	71	166	* 34	.6	49	74	* 48	79
18	84	88	47	506	60	138	38	.0	* 203	57	48	80
19	77	88	48	407	50	108	48	.0	304	54	48	77
20	80	83	58	698	93	91	66	.0	147	50	48	77
21	102	83	64	* 870	231	73	57	.0	97	44	48	74
22	83	83	63	485	92	141	48	.0	86	43	49	71
23	91	88	98	425	83	111	35	.0	95	43	49	71
24	84	89	97	498	64	80	36	* 156	198	42	49	74
25	83	91	154	* 476	62	116	34	155	* 205	36	49	73
26	84	92	* 402	397	54	* 354	26	111	188	34	49	67
27	89	* 91	173	223	49	149	35	66	* 329	35	49	64
28	100	88	127	156	48	74	41	42	225	32	49	64
29	95	-----	129	141	55	171	71	32	211	35	49	63
30	* 95	-----	125	130	74	* 471	35	24	323	40	51	64
31	91	-----	122	-----	* 122	-----	* 31	21	-----	83	-----	67
MEAN	88	87	93	759	124	103	95	25	128	96	52	62
INCHES	.022	.019	.023	.180	.030	.024	.023	.006	.030	.024	.012	.015

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000007903. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 251,000. YEARLY MEAN DISCHARGE, 142 CFS. YEARLY DISCHARGE, .408 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

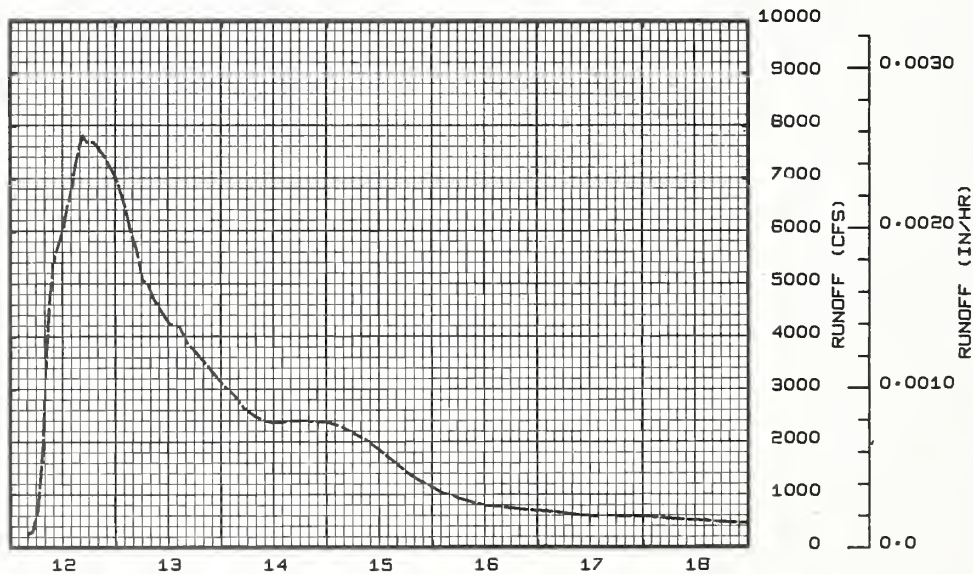
1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA			WATERSHED 600 NEAR TABLER							
ANTECEDENT CONDITIONS			RAINFALL ^{1/}			RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
<p>Watershed conditions: The land use of this 4,706 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12-18, 1967					4-12	0300	189.4			
										0342	214.1		
											0354	218.1	
											0418	273.2	
											0448	281.8	
											0500	285.6	
											0512	323.6	
											0606	588.5	
											0630	861.3	
											0642	1105.8	
											0700	1372.1	
											0712	1659.8	
											0724	1974.0	
											0736	2304.3	
											0742	2643.2	
											0754	2982.9	
											0806	3350.3	
											0812	3699.5	
											0830	4039.9	
											0842	4402.2	
								0900	4771.6				
								0918	4913.1				
								0942	5332.1				
								1012	5558.4				
								1100	5775.2				
								1200	6044.6				
								1254	6444.8				
								1354	6813.9				
								1448	7248.9				
								1542	7616.5				
								1630	7821.5				
								1730	7688.5				
								1848	7703.9				
								2012	7572.7				
								2142	7384.6				
								2336	7082.7				
								2400	7024.5				
							4-13	0206	6460.6				
								0330	5944.1				
								0436	5696.4				
								0542	5272.0				
								0600	5068.9				
								0706	5049.7				
								0830	4742.8				
								1012	4510.1				
								1206	4251.4				
								1424	4198.9				
								1624	3869.8				
								1830	3682.2				
								2130	3381.4				
								2400	3120.9				
							4-14	0306	2867.0				
								0506	2652.4				
								0748	2475.4				
								0948	2407.8				
								1154	2363.9				
								1300	2373.0				
								1500	2394.6				
								1754	2403.4				
								2100	2404.0				
								2400	2376.6				
							4-15	0354	2355.6				
								0300	2298.3				
								0600	2174.9				
								0900	2076.2				

Continued on next page

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003293. FOR 30-DAY ANTECEDENT Q, SEE P. 69.6-2, THIS PUBLICATION. 1/ NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 600 NEAR TABLER			
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)
			Event of April 12-18, 1967-Continued							
							4-15	1200	1835.9	
								1500	1635.8	
								1800	1432.1	
								2054	1269.1	
								2400	1135.3	
							4-16	0206	1033.0	
								0418	965.4	
								0900	847.6	
								1200	794.9	
								1800	737.8	
							4-17	2400	692.3	
								0600	642.1	
								1048	600.5	
								1200	594.5	
								1754	587.1	
							4-18	2054	584.7	
								2400	576.2	
								0554	537.0	
								1200	505.5	
								1754	472.7	
								2400	447.4	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003293.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 600

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 AT ALEX AREA — 3,061,120 ACRES (4,783 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/} Q	.12 .021	.06 .019	2.23 .023	5.24 .187	4.73 .038	1.91 .023	2.02 .024	.77 .005	5.64 .028	2.68 .023	.36 .013	.98 .016	26.74 .420		
STA AVG	P ^{2/} Q	.95 .053	1.28 .052	1.41 .056	3.16 .088	4.22 .079	1.88 .150	1.69 .034	3.62 .042	3.74 .106	1.12 .099	1.98 .110	.73 .058	25.78 .927		
MEAN 67 YR	P ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.0024	4-12	.0024	4-12	.0048	4-12	.014	4-12	.028	4-12	.051	4-12	.080	4-10	.138
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1961 to 1967	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	9-22 1965	.241
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, P. 69.7-21 and 1962, P. 69.7-9. ^{1/} Precipitation data based on a Thiessen weighted average of 21 gages on the reach from Tabler to Alex, Okla. ^{2/} Precipitation records began Oct. 1961; runoff records began Sept. 1961. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Sept. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 7,440 cfs (15.52 ft). Minimum — Aug. 22, 0.1 cfs (2.14 ft). PERIOD OF RECORD: Maximum — Sept. 20, 1962, 9,750 cfs (16.18 ft). Minimum — no flow. Period of record began Sept. 13, 1961. PEAK DISCHARGES: (Above base flow of 3,000 cfs) 1967 — Apr. 12, 7,440 cfs (15.52 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 700 AT ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.06	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.00	.54	.00	.18
3	.00	.00	.00	.00	.01	.00	.61	.00	1.36	.00	.04	.00
4	.00	.00	.00	.00	.00	.00	.00	.36	.78	.00	.00	.00
5	.00	.00	.00	.00	1.26	.00	.29	.01	.78	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.01	.00	.00	.00
7	.00	.00	.00	.32	.00	.00	.00	.00	.02	.50	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.17	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.96	.00	.00	.00	.00	.00	.00	.00	.04
11	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
12	.00	.00	.05	1.81	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.08	.46	.02	.00	.00	.00	.05	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.01	.45	.00	.00	.15
15	.00	.00	.00	.00	.00	.00	.01	.03	.00	1.20	.00	.05
16	.00	.00	.00	.00	.00	.00	.17	.00	.22	.00	.00	.58
17	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.06	.37	.00	.01	.00	.00	.00
19	.00	.00	.34	.22	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.30	1.41	.00	.00	.00	.38	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.02	.00	.11	.00	.00	.00
22	.00	.00	.68	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.58	.00	.00	.61	.00	.00	.00	.00	.00	.00
26	.12	.00	.11	.00	.00	1.05	.00	.00	.93	.00	.00	.00
27	.00	.00	.00	.00	.00	.04	.03	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.52	.00	.00	.00	.05	.00
29	.00	-----	.00	.00	.81	.00	.00	.00	.00	.03	.08	.00
30	.00	-----	.01	.00	.93	.00	.00	.11	.00	.67	.00	.14
31	.00	-----	.34	-----	.27	-----	.00	.12	-----	.28	-----	.00
TOTAL	.12	.06	2.23	5.24	4.73	1.91	2.02	.77	5.64	2.68	.36	.98
ST. AV.	.95	1.28	1.41	3.16	4.22	1.88	1.69	3.62	3.74	1.12	1.98	.73

NOTES: YEARLY PRECIPITATION 26.74 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 21 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 700 AT ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	88	90	82	141	* 132	119	280	29	* 18	317	80	56
2	<u>125</u>	<u>132</u>	73	114	108	105	168	22	<u>16</u>	200	* 64	57
3	117	130	71	104	96	87	163	19	29	123	65	57
4	* 102	117	62	94	102	74	146	19	90	91	62	* 57
5	104	110	57	68	138	61	141	16	253	77	60	55
6	100	98	68	<u>57</u>	<u>803</u>	51	* 273	17	193	71	58	<u>53</u>
7	94	79	73	68	511	48	<u>380</u>	* 19	137	79	62	54
8	82	70	71	79	264	55	272	15	97	<u>520</u>	57	54
9	82	62	82	91	199	53	181	* 9.7	65	* 171	<u>52</u>	55
10	<u>64</u>	<u>59</u>	75	* 1180	207	49	* 127	5.1	52	93	54	53
11	82	64	70	* 419	223	46	98	* 3.5	* 41	70	54	54
12	94	81	73	* 4170	165	* 44	80	2.8	35	56	54	54
13	92	* 86	* 73	* <u>5330</u>	123	41	64	2.4	39	48	56	54
14	92	82	70	* 2760	113	37	49	* 1.7	51	58	56	55
15	84	81	56	2170	* 113	35	41	1.8	49	156	54	61
16	* 82	81	57	1070	103	<u>32</u>	37	1.3	50	188	53	71
17	82	84	57	677	86	108	* 35	1.1	46	73	* 53	79
18	81	86	59	* 517	73	142	40	.9	112	58	54	<u>80</u>
19	79	84	56	408	62	106	45	.4	* 288	52	54	<u>78</u>
20	68	81	<u>52</u>	561	100	84	57	.2	132	50	53	76
21	100	79	61	* 1150	266	65	60	* .2	86	46	53	75
22	82	75	62	486	126	108	50	<u>.1</u>	76	43	53	72
23	84	79	100	364	106	105	38	.1	71	42	53	71
24	86	81	113	453	84	76	34	74	196	41	54	71
25	79	81	131	478	76	68	* 39	* <u>137</u>	* 192	39	55	75
26	79	84	* <u>443</u>	427	70	* 329	29	94	220	<u>35</u>	55	71
27	79	* 88	214	225	62	179	29	62	* 309	35	55	70
28	94	88	123	141	61	87	40	44	227	35	55	70
29	94	-----	118	137	* 72	98	65	35	159	35	55	69
30	* 92	-----	128	137	92	<u>416</u>	45	25	288	41	55	70
31	90	-----	<u>121</u>	-----	<u>153</u>	-----	30	20	-----	64	-----	74
MEAN	89	86	95	803	158	97	101	22	121	97	57	65
INCHES	.021	.019	.023	.187	.038	.023	.024	.005	.028	.023	.013	.019

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .000007776. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 255,100. YEARLY MEAN DISCHARGE, 148 CFS. YEARLY DISCHARGE, .420 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

CLIMATOLOGICAL DATA APPLICABLE TO ENTIRE EXPERIMENTAL WATERSHED (ANADARKO TO ALEX)

1967 DAILY AIR TEMPERATURE (degrees F)		CHICKASHA, OKLAHOMA																											
		CRS																											
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	MAX	MIN	MAX	MIN	
1	55	25	71	38	79	39	79	65	68	42	76	65	85	72	96	77	82	51	87	60	59	43	67	46					
2	44	33	40	32	84	50	78	64	67	38	74	60	92	69	101	70	79	57	82	60	65	36	59	29					
3	48	21	54	31	74	44	78	61	75	46	82	57	86	69	100	76	82	56	87	66	49	31	57	20					
4	59	23	65	26	73	35	87	67	69	54	90	65	85	69	78	71	82	62	87	69	53	28	63	38					
5	64	23	65	28	50	37	89	64	70	59	90	69	86	68	90	73	70	57	89	67	48	31	66	42					
6	65	26	39	19	51	33	86	63	67	49	92	70	79	64	97	74	74	64	89	67	62	33	70	39					
7	39	20	44	18	51	17	73	60	81	46	87	68	79	64	99	77	79	59	74	52	63	28	59	30					
8	40	14	49	29	45	12	78	63	80	54	90	71	98	72	100	80	84	64	69	49	58	36	69	33					
9	48	12	61	28	72	28	95	61	86	55	90	73	94	76	87	70	87	63	81	46	62	51	49	39					
10	51	22	68	25	86	56	67	59	103	70	87	70	104	74	86	65	86	60	64	49	73	47	40	36					
11	62	18	52	27	94	49	75	59	81	59	89	72	103	73	84	64	85	61	72	50	76	42	58	34					
12	66	28	64	20	92	52	71	60	69	56	80	68	94	74	84	53	90	66	83	53	81	38	54	31					
13	49	28	72	36	92	56	66	55	57	51	88	69	92	68	89	52	79	71	81	59	81	45	41	34					
14	52	26	74	50	68	48	78	50	65	48	92	73	85	58	86	62	79	67	86	57	66	40	35	31					
15	47	28	63	28	54	35	85	54	73	42	93	70	83	60	91	66	76	65	73	55	73	36	32	30					
16	63	30	37	23	65	30	86	66	86	48	92	69	73	65	91	66	83	67	65	43	77	46	36	32					
17	37	19	45	23	56	33	68	53	86	53	93	68	86	65	91	67	85	66	77	39	64	39	52	36					
18	33	11	54	18	52	35	63	49	97	61	93	67	70	64	93	65	98	69	72	43	64	37	55	36					
19	51	12	64	38	62	51	66	55	83	62	98	70	79	68	87	67	89	69	83	45	67	34	66	36					
20	63	27	48	26	70	45	72	65	69	50	96	72	87	65	89	66	88	68	74	45	78	40	68	50					
21	72	47	55	14	70	35	81	56	68	51	94	69	91	69	88	69	84	63	82	43	68	34	60	26					
22	81	49	46	23	66	42	76	49	78	48	91	62	95	70	91	61	83	57	80	58	50	32	45	22					
23	73	50	46	24	80	53	78	43	84	52	97	69	98	71	90	65	90	56	77	61	62	31	59	26					
24	71	42	46	16	80	57	66	41	90	58	99	68	99	72	91	64	89	63	70	43	63	38	56	31					
25	69	34	50	18	75	56	80	60	89	63	68	61	99	75	93	63	88	66	74	37	71	37	45	24					
26	43	28	58	46	63	48	66	47	86	66	79	63	99	77	92	64	81	58	75	45	60	37	44	20					
27	49	20	61	35	79	44	68	38	87	65	92	70	98	74	88	62	64	48	67	37	51	36	38	31					
28	65	24	74	25	82	54	61	52	88	68	95	71	102	72	94	57	67	42	76	40	43	36	43	25					
29	69	37	---	---	91	53	81	60	83	65	89	70	93	69	98	68	76	47	76	48	45	38	46	23					
30	73	32	---	---	80	63	84	50	76	63	89	70	93	64	94	65	89	56	58	41	51	44	42	35					
31	63	37	---	---	70	62	---	---	79	61	---	---	100	69	75	58	---	---	47	44	---	---	41	23					
AV.	57	27	56	27	71	44	76	56	79	55	89	68	91	69	91	66	82	61	76	51	63	37	52	32					
MEAN	42+0		41+5		57+4		66+0		66+8		78+4		79+8		78+5		71+4		63+3		50+1		41+9						
STA AV	50	24	53	27	64	37	75	52	81	58	89	67	95	72	91	68	83	62	77	50	64	40	51	29					

NOTES: AVERAGE AND STATION AVERAGE ARE ROUNDED TO NEAREST DEGREE. MEAN ROUNDED TO THE NEAREST TENTH OF A DEGREE. STATION AVERAGE BASED ON RECORDS FROM SEPT. 1962 THROUGH DEC. 1967.

1967 MONTHLY EVAPORATION AND WIND

MONTH	EVAPORATION (INCHES)	TOTAL WIND (MILES)
APRIL	8.10	4467
MAY	9.78	3383
JUNE	10.66	3256
JULY	9.63	2048
AUGUST	10.07	1821
SEPTEMBER	5.50	1674
OCTOBER	6.78	3480

EVAPORATION DATA ARE BASED ON CHICKASHA EXPERIMENT STATION RECORDS PUBLISHED IN U. S. WEATHER BUREAU CLIMATOLOGICAL DATA FOR OKLAHOMA.

CHICKASHA, OKLAHOMA WATERSHED 700 AT ALEX

Revised Watershed Conditions
Land Use Inventory
1967 Survey

Watershed number	Percent cultivation in			Percent pasture and range	Percent miscellaneous ^{1/}
	Sowed crop	Row crop	Alfalfa		
110	27	6	10	33	24
111	14	4	2	72	8
121	9	13	3	53	22
131	8	4	2	71	15
100-200 ^{2/}	24	5	7	49	15
311	31	3	3	51	12
411	29	4	7	51	9
200-500 ^{2/}	33	4	7	45	11
511	21	5	3	63	8
512	5	1	4	84	6
513	5	1	2	90	2
522	12	3	3	66	16
500-600 ^{2/}	20	6	12	52	10
611	3	5	2	90	--
612	--	--	17	83	--
621	5	1	2	82	10
600-700 ^{2/}	11	9	7	66	7

^{1/} Miscellaneous category includes dense timber with little or no forage growth, farmsteads, stomp lots, farm ponds, detention reservoirs, creeks, farm roads, private roads, highways, urban developments, and rocks.

^{2/} Ungaged area between river gaging stations.

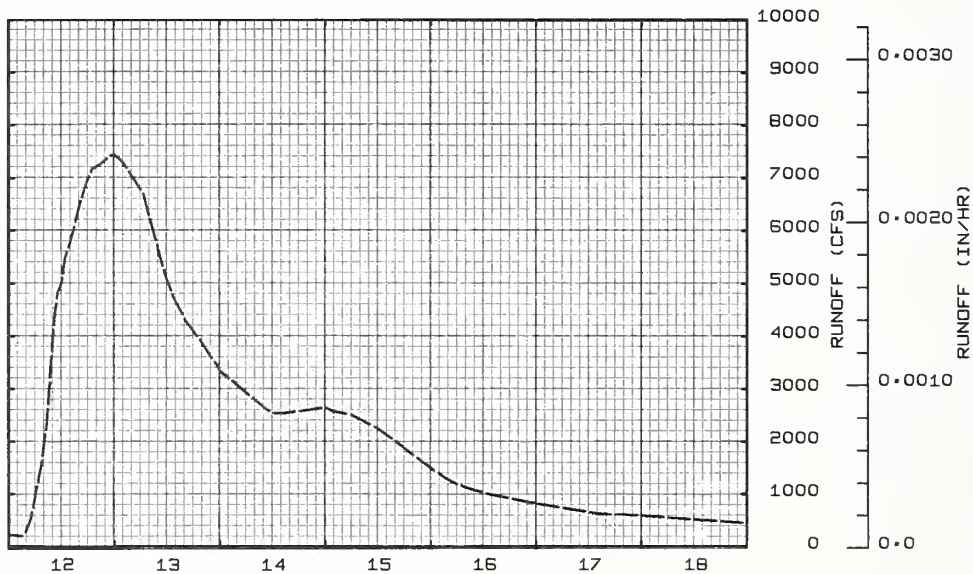
1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 700 AT ALEX					
ANTECEDENT CONDITIONS			RAINFALL ^{1/}				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
<p>Watershed conditions: The land use of this 4,783 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			<u>Event of April 12-18, 1967</u>									
			4-11						2400		227.7	
			4-12						0230		197.2	
									0312		200.9	
									0342		245.4	
									0500		526.9	
									0548		825.6	
									0618		1073.3	
									0654		1311.2	
									0718		1490.2	
									0754		1678.3	
									0830		2249.6	
									0900		2778.1	
									0918		3048.6	
									0930		3389.8	
									0954		3804.8	
									1012		4218.2	
									1036		4510.5	
									1106		4816.9	
									1200		5005.9	
									1242		5468.2	
									1348		5741.9	
									1500		6117.7	
									1612		6532.5	
									1736		6902.4	
									1900		7176.8	
									1930		7187.7	
									2054		7268.5	
									2306		7428.8	
									2400		7445.0	
			4-13			0100		7375.6				
						0200		7291.6				
						0430		7044.5				
						0630		6710.6				
						0824		6128.9				
						1000		5625.6				
						1136		5140.7				
						1336		4708.0				
						1630		4260.9				
						2006		3893.2				
						2324		3431.5				
						2400		3341.3				
			4-14			0306		3127.6				
						0712		2838.7				
						1030		2620.0				
						1200		2544.1				
						1430		2535.9				
						1712		2558.1				
						2054		2610.1				
						2400		2649.2				
			4-15			0142		2577.6				
						0554		2514.7				
						0854		2380.4				
						1200		2242.5				
						1530		2037.3				
						1954		1751.2				
						2400		1497.1				
			4-16			0312		1314.3				
						0542		1200.5				
						0842		1107.9				
						1200		1024.4				
						1418		976.2				
						2400		819.5				
			4-17			1142		652.0				
						1512		517.6				
						2400		595.8				

Continued on next page

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000003240. FOR 30-DAY ANTECEDENT Q, SEE P. 69.7-2, THIS PUBLICATION. ^{1/} NO PRECIPITATION RECORD IS SHOWN BECAUSE MOST OF THE WATERSHED LIES OUTSIDE OF THE AREA IN WHICH PRECIPITATION IS MEASURED.

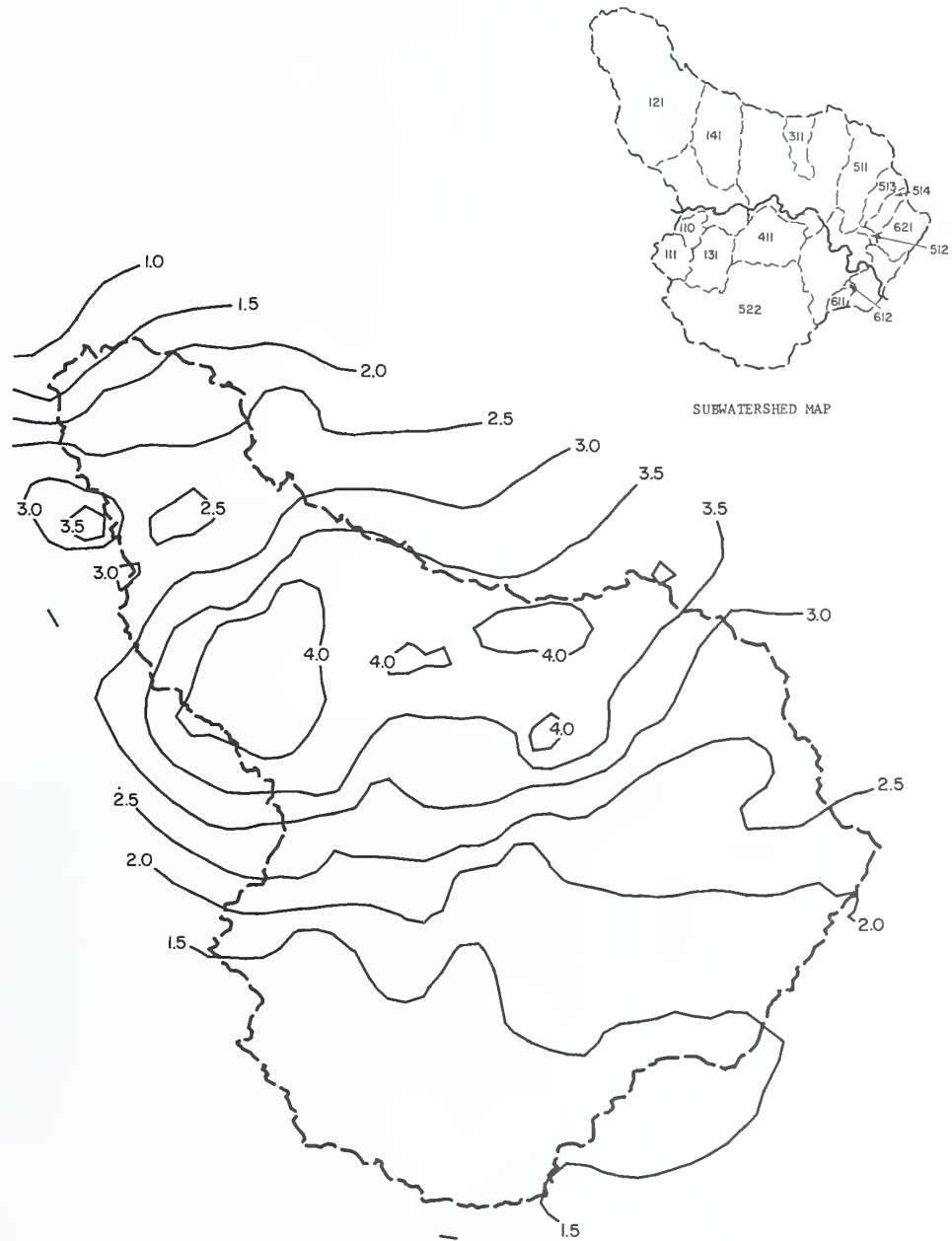
1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 700 AT ALEX			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
			Event of April 12-18, 1967-Continued							
							4-18		555.42	
									1136	817.1
									2470	449.9

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0000003240.



APRIL 12-18, 1967

CHICKASHA, OKLAHOMA WATERSHED 700



SUBWATERSHED MAP

STORM OF APRIL 12, 1967

LEGEND

- WATERSHED BOUNDARY
- SUBWATERSHED BOUNDARY
- ISOHYETS (INCHES OF PRECIPITATION)

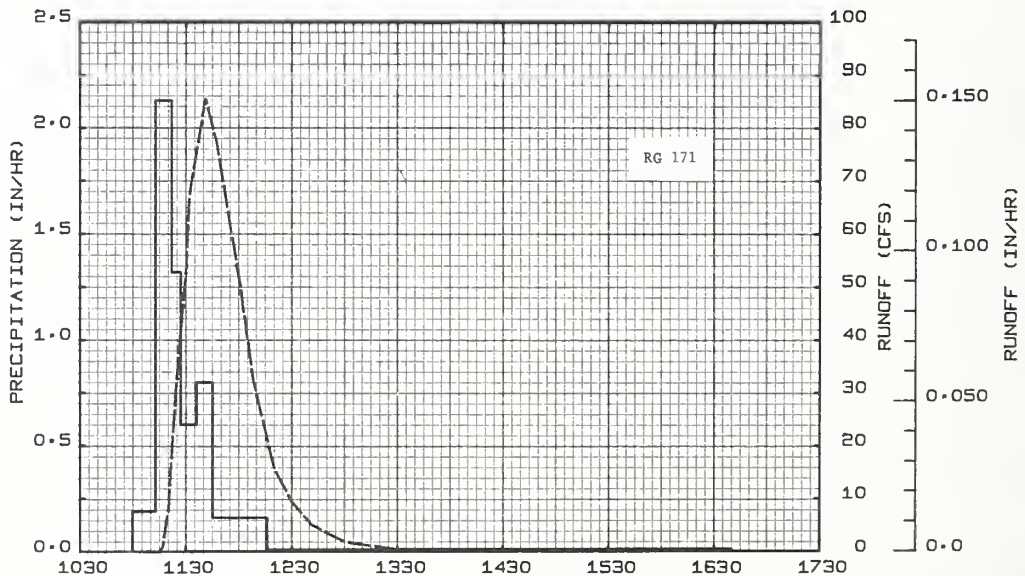
CHICKASHA, OKLAHOMA
 ISOHYETAL MAP OVERLYING
 ENTIRE WATERSHED

1966 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 612			
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 July 24, 1966</u>							
Watershed conditions: The land use of this .88 sq. mi. watershed is not monitored seasonally. For a general description of the watershed cover see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.9-1.			7-24	RG	171		7-24			
				1100	.00	.00		1109	.0	.0000
				1113	.19	.04		1115	.0	.0000
				1122	2.13	.36		1118	.9	.0000
				1127	1.32	.47		1121	7.8	.0004
				1136	.60	.56		1124	24.1	.0018
				1145	.80	.68		1127	38.1	.0046
				1216	.16	.76		1130	52.5	.0086
				1640	.01	.79		1133	67.7	.0139
								1142	85.5	.0341
								1148	77.6	.0485
								1200	51.4	.0712
								1209	32.1	.0822
								1221	15.6	.0906
			1230	9.4	.0939					
			1242	5.1	.0965					
			1300	1.8	.0983					
			1330	.4	.0933					
			1400	.1	.0995					
			1430	.0	.0995					

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NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR MULTIPLY BY .001762. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.9-2, THIS PUBLICATION.



JULY 24, 1966

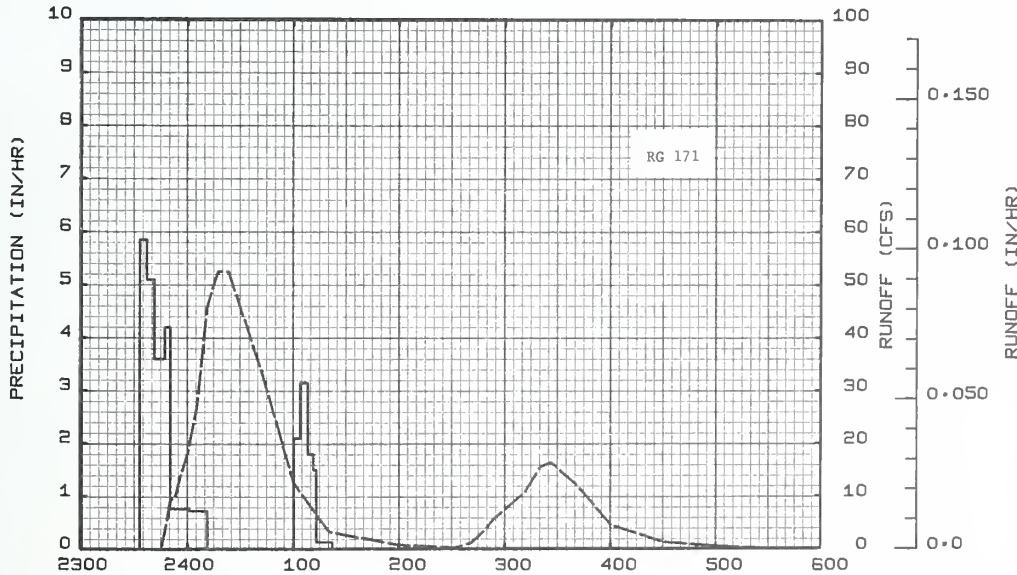
CHICKASHA, OKLAHOMA WATERSHED 612

1966 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 612					
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 13-14, 1966											
<p>Watershed conditions: The land use of this .88 sq. mi. watershed is not monitored seasonally. For a general description of the watershed cover see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.9-1.</p>			9-13	RG	171						
			2333		.00	.00	9-13	2345		.0	.0000
			2337		5.85	.39	2348		3.3	.0001	
			2341		5.10	.73	2351		9.1	.0007	
			2347		3.60	1.09	2354		10.0	.0015	
			2350		4.20	1.30	2357		14.0	.0026	
			9-14	0001		.76	1.44	2400		18.1	.0040
			0011		.72	1.56	0006		26.8	.0080	
			0100		.00	1.56	0012		46.0	.0144	
			0104		2.10	1.70	0018		52.5	.0230	
			0108		3.15	1.91	0024		52.5	.0323	
			0111		1.80	2.00	0042		34.6	.0553	
			0113		1.50	2.05	0100		12.6	.0678	
			0122		.13	2.07	0121		3.3	.0727	
							0200		.7	.0750	
							0233		.2	.0754	
							0242		1.2	.0756	
							0251		4.1	.0763	
							0254		5.5	.0767	
							0312		10.6	.0810	
				0321		15.6	.0844				
				0327		16.4	.0873				
				0342		11.9	.0935				
				0400		4.5	.0978				
				0430		1.2	.1003				
				0500		.4	.1010				
				0530		.1	.1013				

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NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR MULTIPLY BY .001762. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.9-2, THIS PUBLICATION.



SEPTEMBER 13-14, 1966

CHICKASHA, OKLAHOMA WATERSHED 612

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX AREA — 563 ACRES (0.88 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / Q	.08 .000	.04 .000	2.25 .000	5.27 .241	4.28 .030	1.58 .000	2.08 .017	.53 .000	5.19 .046	3.01 .021	.41 .000	.81 .000	25.53 .355			
STA AVG P ₂ / Q	.65 .130	1.02 .091	1.48 .089	3.16 .266	3.18 .106	2.95 .288	2.17 .068	2.92 .013	3.70 .125	1.48 .013	2.04 .032	.86 .159	25.61 1.380			
MEAN P ₃ / 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.3011	4-12	.1333	4-12	.1444	4-12	.156	4-12	.157	4-11	.157	4-10	.207	4-9	.204
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1961 TO 1967	6-23 1963	.4014	6-23 1963	.3454	6-23 1963	.5487	6-23 1963	.733	6-23 1963	.756	6-23 1963	.756	6-23 1963	.756	6-23 1963	.785
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.8-5 and Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21 and 1962, p. 69.7-9. 1/ Precipitation data obtained from a Thiessen weighted average of 2 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Nov. 1961. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Nov. 1961.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 123 cfs (2.67 ft). Minimum — no flow (0.39 ft). PERIOD OF RECORD: Maximum — June 23, 1963, 231 cfs (2.26 ft). Minimum — no flow. Period of record began Nov. 14, 1961.																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.25	.00	.23	.00
3	.00	.00	.00	.00	.04	.00	.80	.00	1.39	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.31	.79	.00	.00	.00
5	.00	.00	.00	.00	1.24	.00	.23	.08	.90	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.00	.00	.00	.00
7	.00	.00	.00	.23	.00	.00	.00	.00	.02	.57	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.38	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	1.08	.00	.00	.00	.00	.00	.00	.00	.03
11	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.13	1.76	.00	.06	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.46	.03	.00	.00	.00	.04	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.36	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	1.44	.00	.04
16	.00	.00	.00	.00	.00	.00	.13	.00	.14	.00	.00	.49
17	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.04	.47	.00	.00	.00	.00	.00
19	.00	.00	.42	.20	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.16	1.22	.00	.00	.00	.20	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.09	.00	.00	.00
22	.00	.00	.73	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.51	.00	.00	.58	.00	.00	.00	.00	.00	.00
26	.08	.00	.04	.00	.00	.83	.00	.00	1.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.07	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.43	.00	.00	.00	.06	.00
29	.00	-----	.00	.00	.79	.00	.00	.00	.00	.03	.06	.00
30	.00	-----	.03	.00	.69	.00	.00	.01	.00	.69	.00	.11
31	.00	-----	.35	-----	.25	-----	.00	.13	-----	.28	-----	.00
TOTAL	.08	.04	2.25	5.27	4.28	1.58	2.08	.53	5.19	3.01	.41	.81
STA AV	.65	1.02	1.48	3.16	3.18	2.95	2.17	2.92	3.70	1.48	2.04	.86

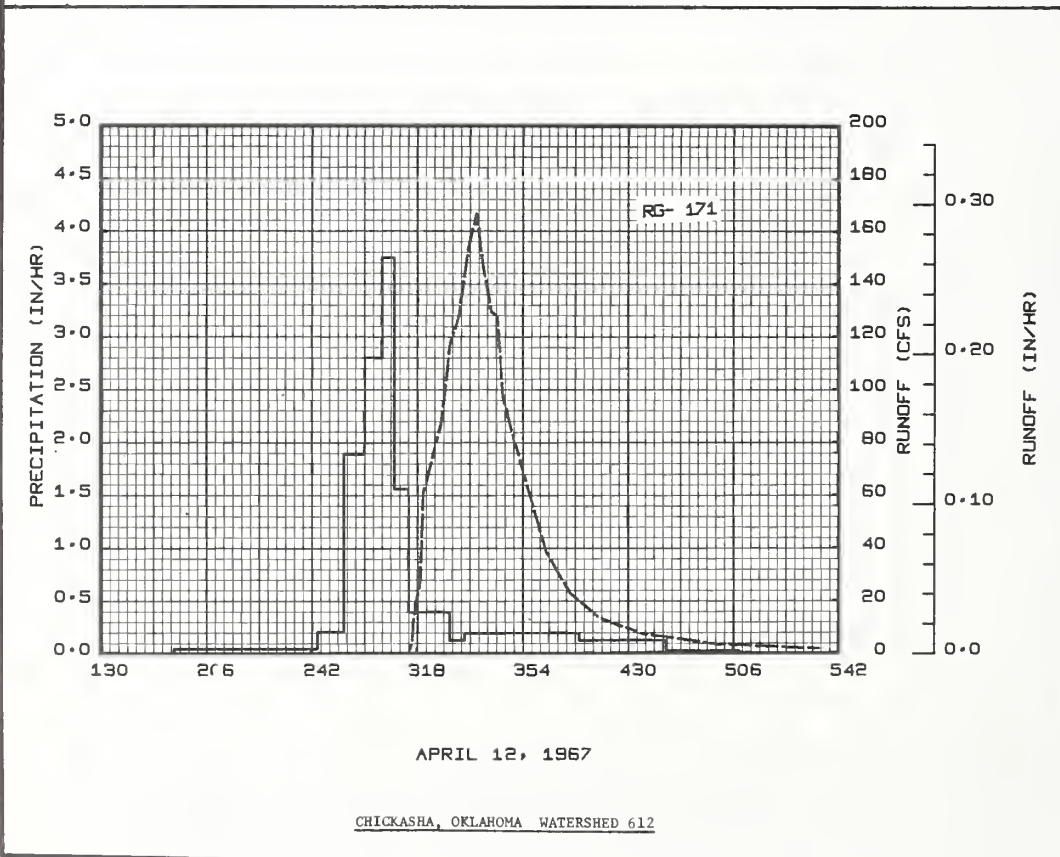
NOTES:
 YEARLY PRECIPITATION 25.53 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 2 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 612 NEAR ALEX						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	*.4	.0	.3	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
5	.0	.0	.0	.0	.5	.0	.0	.0	.6	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	1.4	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	3.8	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.3	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.5	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.1	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	-----	.0	-----	.0	-----	.0	.0	-----	.0	-----	.0
MEAN	.0	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0	.0
INCHES	.000	.000	.000	.24	.030	.000	.017	.000	.046	.021	.000	.000

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, .0 CFS. YEARLY DISCHARGE, .355 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA			WATERSHED 612 NEAR ALEX							
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)			
<p>Watershed conditions: The land use of this .88 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12, 1967										
			4-12						4-12				
							RG	1.71					
							0155	.00	.00		0314	.0	.0000
							0244	.04	.03		0315	.2	.0000
							0253	.20	.06		0316	3.4	.0001
							0300	1.89	.28		0317	15.6	.0004
							0306	2.80	.56		0319	28.3	.0016
							0310	3.75	.81		0321	61.0	.0039
							0315	1.56	.94		0327	86.9	.0169
							0329	.29	1.03		0329	117.5	.0241
							0334	.12	1.04		0333	127.9	.0371
							0413	.19	1.16		0335	152.3	.0470
							0443	.12	1.22		0338	166.7	.0610
							0508	.02	1.23		0340	148.4	.0694
											0343	129.6	.0816
											0345	127.9	.0884
											0347	96.9	.0963
											0351	84.2	.1059
											0356	61.0	.1174
								0403	38.2	.1270			
								0410	22.8	.1335			
								0420	13.4	.1389			
								0435	7.3	.1435			
								0500	3.4	.1473			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001762. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.9-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO AREA — 16,634 ACRES (26.0 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ /	.43	.08	1.49	4.52	2.68	1.68	3.12	1.17	4.93	2.90	.27	1.12	24.39		
	Q	.047	.042	.061	.230	.054	.014	.014	.000	.015	.019	.015	.026	.537		
STA AVG	P ₂ /	.48	.95	1.17	2.75	3.39	3.16	1.76	2.64	3.76	1.45	1.97	.81	24.29		
	Q	.091	.094	.104	.154	.159	.057	.042	.022	.068	.030	.082	.072	.975		
MEAN 67 YR	P ₃ /	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.0381	4-12	.0338	4-12	.0554	4-12	.080	4-12	.087	4-12	.094	4-12	.114	4-9	.180
MAXIMUMS FOR PERIOD OF RECORD ⁴ /																
19 62 TO 1967	5-10 1964	.0460	5-10 1964	.0439	5-10 1964	.0796	5-10 1964	.135	5-10 1964	.149	5-9 1964	.234	5-9 1964	.295	5-9 1964	.320
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21 and 1962, p. 69.7-9. (Geologic) and p. 69.10-4 (Topography). 1/ Precipitation data obtained from a Thiessen weighted average of 6 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began June 1962. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began June 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 639 cfs (5.12 ft). Minimum — June 24, no flow (1.00 ft). PERIOD OF RECORD: Maximum — May 10, 1964, 772 cfs (5.75 ft). Minimum — no flow. Period of record began June 27, 1962. PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 — Apr. 12, 639 cfs (5.12 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.18	.00	.19	.00
3	.00	.00	.00	.00	.00	.00	1.17	.00	1.25	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.31	.17	.00	.00	.09
5	.00	.00	.00	.00	.87	.00	.16	.00	.97	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.18	.00	.00	.00	.00	.01	1.44	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.29	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.54	.00	.00	.00	.00	.00	.00	.00	.17
11	.00	.01	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
12	.00	.00	.01	1.70	.00	.14	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.46	.05	.00	.00	.00	.35	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.04	.53	.00	.00	.06
15	.00	.00	.00	.00	.00	.00	.02	.00	.00	.11	.00	.07
16	.00	.00	.00	.00	.00	.00	.06	.00	.01	.00	.00	.53
17	.00	.00	.00	.00	.00	.01	.00	.13	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.20	.89	.00	.00	.00	.00	.00
19	.00	.00	.49	.14	.05	.00	.10	.00	.00	.00	.00	.00
20	.00	.00	.00	.21	.71	.00	.00	.03	.43	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.04	.00	.00	.00
22	.00	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	.00
25	.43	.00	.19	.00	.00	.55	.00	.00	.00	.00	.00	.00
26	.00	.00	.04	.00	.00	.62	.00	.01	.95	.00	.00	.00
27	.00	.02	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.70	.00	.00	.00	.05	.00
29	.00	-----	.00	.00	.26	.00	.00	.00	.00	.00	.02	.00
30	.00	-----	.01	.00	.47	.00	.00	.00	.00	.95	.00	.16
31	.00	-----	.17	-----	.25	-----	.00	.28	-----	.60	-----	.00
TOTAL	.43	.08	1.49	4.52	2.68	1.68	3.12	1.17	4.93	2.90	.27	1.12
STAAV	.48	.95	1.17	2.75	3.39	3.16	1.76	2.64	3.76	1.65	1.97	.81

NOTES:

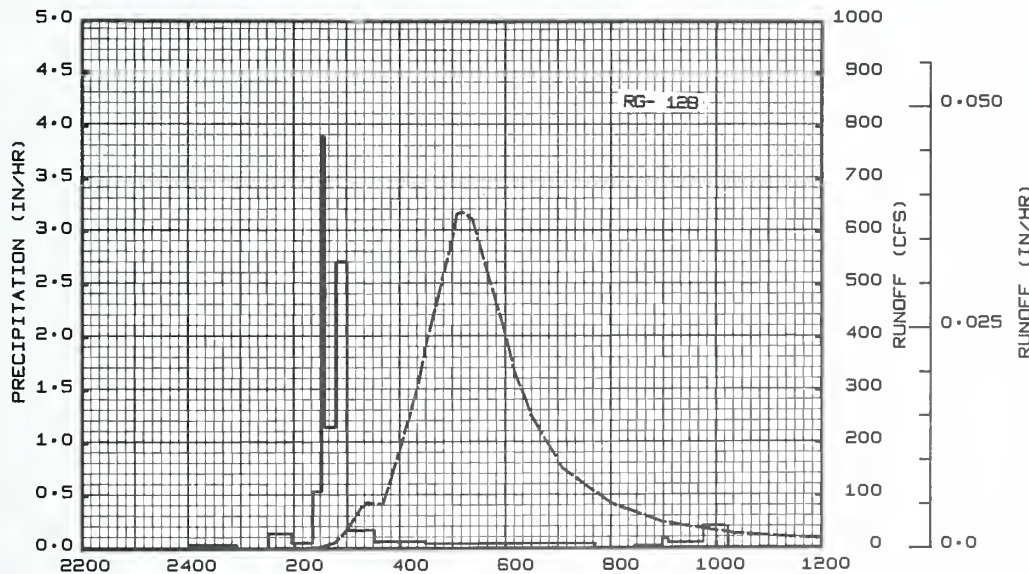
YEARLY PRECIPITATION 24.39 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 6 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 111 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.2	1.1E	1.1	1.6	1.1	.8	.1	.0	.0	.0	.6	.5
2	.6	.9E	1.1	1.3	1.1	.8	.1	.0	.0	.0	.4	.4
3	.9	1.0E	1.1	1.2	1.1	.8	5.0	.0	.2	.0	.3	.4
4	1.1	.8E	1.1	1.2	1.1	.6	.9	.0	4.4	.0	.3	.4
5	1.1	.8E	1.1	1.2	1.4	.5	.5	.0	1.9	.0	.3	.4
6	1.1	1.0E	1.2	1.1	7.3	.4	.2	.0	1.4	.0	.3	.4
7	.9	.9	1.2	1.2	1.7	.3	.2	.0	.1	9.0	.3	.4
8	.8	1.1	1.2	1.5	1.3	.2	.2	.0	.0	.5	.3	.4
9	.9	1.1	1.2	1.4	1.1	.2	.1	.0	.0	.3	.4	.4
10	1.0	1.1	1.1	1.1	.9	.2	.0	.0	.0	.2	.4	.4
11	1.1	1.1	1.1	2.6	.9	.1	.0	.0	.0	.1	.4	.6
12	1.1	1.1	1.2	7.2	.8	.2	.0	.0	.0	.1	.4	.6
13	1.1	1.1	1.3	15	.9	.3	.0	.0	.0	.1	.4	.5
14	1.1	1.0	1.3	5.2	1.1	.2	.0	.0	.4	.1	.3	.5
15	1.1	1.0	1.2	2.8	1.1	.1	.0	.0	.3	.1	.3	.6
16	1.1	1.0	1.1	2.5	.8	.1	.0	.0	.0	.2	.3	.8
17	1.0	1.1	1.1	2.0	.7	.1	.0	.0	.0	.2	.3	1.2
18	.8	1.1	1.2	1.8	.6	.1	.4	.0	.0	.1	.3	1.0
19	.9	1.1	1.3	2.4	.5	.3	.6	.0	.0	.1	.3	.8
20	1.1	1.1	2.4	4.2	2.7	.1	.4	.0	.0	.1	.3	.7
21	1.2	1.1	1.4	2.4	1.7	.0	.2	.0	.0	.1	.3	.7
22	1.1	1.1	1.1	1.7	.9	.0	.1	.0	.0	.1	.4	.6
23	1.1	1.1	1.9	1.5	.9	.0	.0	.0	.0	.1	.4	.6
24	1.1	1.0	1.4	1.3	.7	.0	.0	.0	.0	.1	.4	.6
25	1.1	1.0	1.5	1.4	.5	.3	.0	.0	.0	.1	.4	.6
26	1.8	1.1	1.8	1.4	.4	1.8	.0	.0	.0	.1	.4	.6
27	1.3	1.1	1.4	1.3	.4	.6	.0	.0	1.3	.1	.4	.6
28	1.2	1.2	1.4	1.3	.4	.3	.5	.0	.1	.1	.4	.6
29	1.1E	-----	1.3	1.4	.7	.2	.6	.0	.1	.1	.4	.6
30	1.1E	-----	1.2	1.3	.9	.1	.0	.0	.0	.2	.4	.7
31	1.0E	-----	1.4	-----	1.7	-----	.0	.0	-----	.9	-----	.8
MEAN	1.1	1.0	1.4	5.4	1.2	.3	.3	.0	.3	.4	.4	.6
INCHES	.047	.042	.061	.230	.054	.014	.014	.000	.015	.019	.015	.026

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001431. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.386. YEARLY MEAN DISCHARGE, 1.0 CFS. YEARLY DISCHARGE, .537 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 111 NEAR ANADARKO				
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 April 12, 1967											
			4-12	RC	128		4-12				
				0000	.00	.00		0218	2.0	.0000	
				0055	.03	.03		0230	2.5	.0000	
				0131	.03	.03		0248	11.4	.0007	
				0157	.14	.09		0300	35.3	.0004	
				0221	.08	.11		0318	78.7	.0014	
				0231	.54	.20		0324	86.8	.0019	
				0235	1.90	.46		0330	85.6	.0025	
				0247	1.16	.69		0342	84.4	.0035	
				0300	2.72	1.28		0354	149.1	.0049	
				0331	.17	1.37		0412	249.5	.0084	
				0429	.06	1.43		0424	323.0	.0118	
				0537	.04	1.47		0430	386.6	.0140	
				0623	.04	1.50		0500	586.7	.0295	
				0742	.04	1.55		0506	634.3	.0321	
				0827	.00	1.55		0512	638.8	.0359	
				0858	.02	1.56		0524	625.5	.0434	
				0905	.09	1.57		0530	582.4	.0470	
				0945	.05	1.60		0600	409.5	.0618	
				1013	.21	1.70		0612	334.5	.0663	
								0630	251.9	.0715	
								0706	152.5	.0787	
								0800	85.6	.0851	
								0900	49.5	.0892	
								1024	27.4	.0924	
								1200	18.0	.0945	

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00005962. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.10-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 11-12, 1967

CHICKASHA, OKLAHOMA WATERSHED 111

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO AREA — 25,660 ACRES (40.1 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	¹ / ₀	.38	.07	1.56	5.53	3.09	2.43	2.67	1.43	4.81	3.03	1.18	26.53			
		.011	.013	.021	.196	.028	.004	.001	.000	.008	.002	.004	.303			
STA AVG	² / ₀	.57	1.03	1.18	2.97	3.50	3.04	1.85	2.90	3.84	1.65	2.29	25.68			
MEAN	³ / ₀	.056	.066	.070	.117	.096	.018	.001	.004	.016	.011	.034	.529			
67 YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	31.02			
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
1967	4-12	.0132	4-12	.0127	4-12	.0273	4-12	.052	4-12	.066	4-12	.074	4-12	.090	4-9	.134
MAXIMUMS FOR PERIOD OF RECORD ⁴ / ₁																
¹⁹ 62 to ¹⁹ 67	5-9 1965	.0177	5-9 1965	.0171	5-9 1965	.0327	5-9 1965	.078	5-9 1965	.096	5-9 1965	.106	5-9 1965	.112	5-9 1965	.135
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.7-9, p. 69.11-4 and Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Aug. 1962. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Aug. 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 340 cfs (4.62 ft). Minimum — no flow (1.00 ft) June 9.																
PERIOD OF RECORD: Maximum — May 9, 1965, 459 cfs (5.06 ft). Minimum — no flow. Period of record began Aug. 15, 1962.																
PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 — None.																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.02	.00
2	.00	.00	.00	.00	.00	.00	.04	.00	.22	.00	.22	.00
3	.00	.00	.00	.00	.00	.00	.50	.00	1.59	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.29	.09	.00	.00	.08
5	.00	.00	.00	.00	.84	.00	.33	.00	.80	.00	.00	.00
6	.00	.00	.05	.00	.00	.00	.00	.00	.05	.00	.00	.00
7	.00	.00	.00	.21	.00	.00	.00	.00	.01	1.33	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.67	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.53	.00	.00	.00	.00	.00	.00	.00	.14
11	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	1.77	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.51	.04	.00	.00	.00	.16	.00	.00	.01
14	.00	.00	.00	.00	.03	.00	.00	.00	.53	.00	.00	.08
15	.00	.00	.00	.00	.00	.00	.14	.00	.00	.19	.00	.09
16	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.84	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.54	1.04	.00	.00	.00	.00	.00
19	.00	.00	.49	.12	.00	.00	.17	.00	.00	.00	.00	.00
20	.00	.00	.00	.72	1.07	.00	.00	.02	.29	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.05	.00	.00	.00
22	.00	.00	.54	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.38	.00	.13	.00	.00	.53	.00	.00	.00	.00	.00	.00
26	.00	.00	.07	.00	.00	.69	.00	.00	1.02	.00	.00	.00
27	.00	.00	.00	.00	.00	.03	.03	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.34	.00	.00	.00	.05	.00
29	.00	-----	.00	.00	.35	.00	.00	.00	.00	.00	.03	.00
30	.00	-----	.05	.00	.49	.00	.00	.00	.00	1.06	.00	.15
31	.00	-----	.23	-----	.27	-----	.00	.28	-----	.65	-----	.00
TOTAL	.38	.07	1.56	5.53	3.09	2.43	2.67	1.43	4.81	3.03	.35	1.18
STA AV	.57	1.03	1.18	2.97	3.50	3.04	1.85	2.90	3.84	1.65	2.29	.86

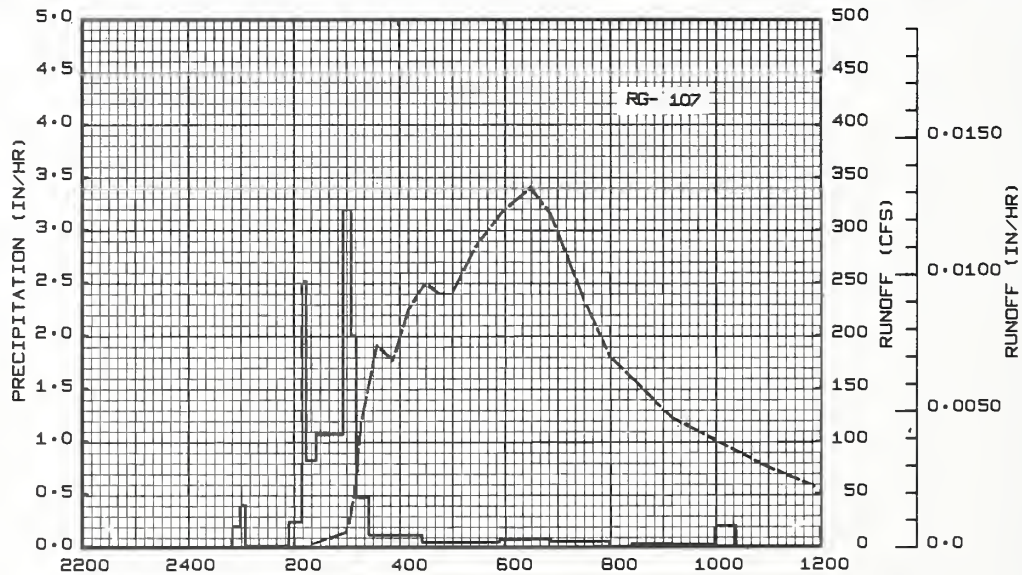
NOTES: YEARLY PRECIPITATION 26.53 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 10 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 131 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.3	.6	.6	1.0	.9	.6	.0	.0	.0	.0	.4	.1
2	.3	.6	.4	.8	.8	.5	.0	.0	.0	.0	.3	.2
3	.2	.5	.4	.7	.9	.4	.2	.0	.6	.0	.3	.2
4	.3	.5	.5	.6	.9	.3	.1	.0	4.9	.0	.2	.2
5	.3	.5	.5	.7	1.5	.1	.1	.0	.3	.0	.2	.2
6	.3	.5	.5	.5	5.4	.1	.1	.0	2.1	.0	.1	.3
7	.2	.5	.5	.6	2.2	.0	.0	.0	.1	.9	.1	.3
8	.2	.5	.3	.9	1.7	.0	.0	.0	.0	.1	.1	.3
9	.2	.5	.5	14	1.1	.0	.0	.0	.0	.0	.1	.3
10	.3	.5	.5	14	.8	.0	.0	.0	.0	.0	.1	.4
11	.3	.5	.5	3.4	.7	.0	.0	.0	.0	.0	.1	.5
12	.4	.5	.5	82	.7	.0	.0	.0	.0	.0	.1	.5
13	.4	.5	.5	19	.8	.0	.0	.0	.0	.0	.1	.6
14	.4	.4	.6	5.3	1.0	.0	.0	.0	.0	.0	.1	.6
15	.4	.4	.7	3.4	.8	.0	.0	.0	.0	.0	.1	.7
16	.4	.4	.6	3.2	.6	.0	.0	.0	.0	.0	.1	.8
17	.3	.5	.7	2.3	.5	.0	.0	.0	.0	.0	.1	1.0
18	.2	.5	.7	2.1	.3	.1	.1	.0	.0	.0	.1	.9
19	.2	.5	1.1	2.4	.2	.0	.2	.0	.0	.0	.1	.8
20	.4	.5	1.8	33	1.2	.0	.0	.0	.0	.0	.1	.8
21	.6	.5	.8	7.7	1.7	.0	.0	.0	.0	.0	.1	.7
22	.5	.6	1.0	1.9	.9	.0	.0	.0	.0	.0	.1	.7
23	.5	.5	1.4	1.9	.7	.4	.0	.0	.0	.0	.1	.6
24	.5	.5	.8	1.5	.5	1.0	.0	.0	.0	.0	.1	.5
25	.5	.5	.9	1.7	.3	.1	.0	.0	.0	.0	.1	.5
26	.8	.5	1.2	1.5	.2	.9	.0	.0	.0	.0	.1	.4
27	.5	.6	.8	1.3	.3	.2	.0	.0	.9	.0	.1	.5
28	.5	.5	.7	1.4	.2	.0	.0	.0	.0	.0	.1	.6
29	.5	-----	.7	1.5	.3	.0	.0	.0	.0	.0	.1	.6
30	.5	-----	.7	1.2	.5	.0	.0	.0	.0	.0	.1	.7
31	.5	-----	.8	-----	1.5	-----	.0	.0	-----	1.0	-----	.7
MEAN	.4	.5	.7	7.1	1.0	.2	.0	.0	.3	.1	.1	.5
INCHES	.011	.013	.021	.196	.028	.004	.001	.000	.008	.002	.004	.015

NOTES: 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. YEARLY MEAN DISCHARGE, .9 CFS. YEARLY DISCHARGE, .303 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA			WATERSHED 131 NEAR ANADARKO							
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)			
<p>Watershed conditions: The land use of this 40.1 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12, 1967										
			4-12						4-12				
							RG	1.07					
							0050	.00	.00		0224	3.4	.0000
							0059	.20	.03		0300	14.5	.0002
							0105	.40	.07		0306	29.9	.0003
							0214	2.52	.35		0312	65.0	.0005
							0225	.82	.50		0318	119.2	.0008
							0256	1.07	1.05		0330	171.8	.0020
							0305	3.20	1.53		0336	190.9	.0027
							0311	2.00	1.73		0354	176.9	.0048
							0325	.47	1.84		0412	225.2	.0071
							0426	.11	1.95		0430	250.0	.0099
							0554	.04	2.01		0448	239.5	.0127
							0652	.07	2.08		0500	239.5	.0146
							0759	.05	2.13		0530	288.2	.0197
							0824	.00	2.13		0600	319.8	.0255
							0910	.03	2.15		0630	340.3	.0319
							0959	.02	2.17		0654	314.8	.0370
							1023	.20	2.25		0730	235.3	.0434
								0800	180.3	.0474			
								0912	121.9	.0544			
								1100	75.3	.0612			
								1154	57.2	.0635			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00003865. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.11-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 11-12, 1967

CHICKASHA, OKLAHOMA WATERSHED 131

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA AREA — 33,300 ACRES (52.0 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P 1/	.19	.05	1.62	5.84	3.27	2.01	2.47	1.22	5.01	2.44	.29	1.00	25.41		
	Q	.000	.000	.000	.280	.008	.001	.001	.003	.018	.006	.000	.000	.317		
STA AVG	P 2/	.53	.95	1.18	2.86	2.98	3.13	1.76	3.18	3.80	1.32	2.15	.88	24.72		
	Q	.003	.005	.006	.085	.026	.031	.012	.070	.037	.002	.041	.008	.326		
MEAN	P 3/	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.0259	4-12	.0255	4-12	.0491	4-12	.105	4-12	.141	4-12	.182	4-12	.212	4-9	.240
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 62 TO	8-28	.0598	8-28	.0532	8-28	.0962	8-28	.204	8-28	.274	8-28	.302	8-28	.316	8-27	.318
19 67	1965		1965		1965		1965		1965		1965		1965		1965	
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, p. 69.12-4, p. 69.7-9 and Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21. 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 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Sept. 1962.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — Apr. 12, 869 cfs (17.29 ft). Minimum — Jan. 1, no flow (10.00 ft). PERIOD OF RECORD: Maximum — Aug. 28, 1965, 2,008 cfs (19.45 ft). Minimum — no flow. Period of record began Sept. 1, 1962. PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 — Apr. 12, 869 cfs (17.29 ft).																
<u>DAILY TEMPERATURE:</u> See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 411 AT CHICKASHA						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.01	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.66	.00	.19	.00
3	.00	.00	.00	.00	.00	.00	.49	.00	1.28	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.38	.11	.00	.00	.05
5	.00	.00	.00	.00	.88	.00	.48	.01	.43	.00	.00	.00
6	.00	.00	.03	.00	.00	.00	.00	.00	.06	.00	.00	.00
7	.00	.00	.00	.22	.00	.00	.00	.00	.00	1.07	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.37	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.75	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	.00	.00
12	.00	.00	.00	1.99	.00	.02	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.46	.04	.00	.00	.00	.17	.00	.00	.04
14	.00	.00	.00	.00	.03	.00	.00	.00	.46	.00	.00	.09
15	.00	.00	.00	.00	.00	.00	.14	.00	.00	.27	.00	.09
16	.00	.00	.00	.00	.00	.00	.10	.00	.01	.00	.00	.52
17	.00	.00	.00	.00	.00	.16	.00	.51	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.01	.89	.00	.00	.00	.00	.00
19	.00	.00	.39	.29	.00	.00	.10	.00	.00	.00	.00	.00
20	.00	.00	.00	.75	1.14	.00	.00	.01	.46	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.09	.00	.00	.00
22	.00	.00	.53	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.13	.00	.16	.00	.00	.73	.00	.00	.00	.00	.00	.00
26	.06	.00	.11	.00	.00	.80	.00	.00	1.28	.00	.00	.00
27	.00	.00	.00	.00	.00	.02	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.01	.00	.25	.00	.00	.00	.02	.00
29	.00	-----	.00	.00	.47	.00	.00	.00	.00	.00	.04	.00
30	.00	-----	.11	.00	.50	.00	.00	.00	.00	.68	.00	.15
31	.00	-----	.29	-----	.20	-----	.00	.31	-----	.42	-----	.00
TOTAL	.19	.05	1.62	5.84	3.27	2.01	2.47	1.22	5.01	2.44	.29	1.00
ST. AV.	.53	.95	1.18	2.86	2.98	3.13	1.76	3.18	3.80	1.32	2.15	.88

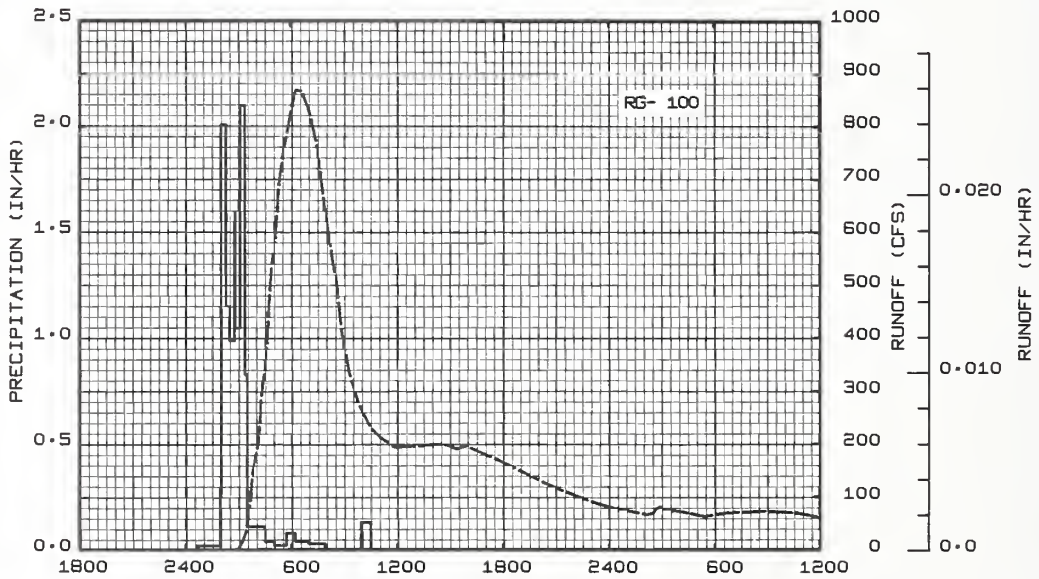
NOTES: YEARLY PRECIPITATION 25.41 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 13 GAGES ON THE WATERSHED.

1967 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	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.7	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.6	.0	.6	.0	.1	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	6.0	.0	.0	.0
5	.0	.0	.0	.0	.8	.0	.2	.0	2.2	.0	.0	.0
6	.0	.0	.0	.0	1.7	.0	.0	.0	.1	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	4.9	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	2.1	.0	.0
9	.0	.0	.0	.0	2.7	.0	.0	.0	.0	.1	.0	.0
10	.0	.0	.0	* 41	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	1.5	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	* 2.44	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	51	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	4.0	.0	.0	.0	.0	.3	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.3
17	.0	.0	.0	.0	.0	.0	.0	* 4.9	.0	.0	.0	.3
18	.0	.0	.0	.0	.0	.0	.3	.1	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	* 47	5.8	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	* 10	1.7	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.1	.5	.1	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.4	.0	.0	.3	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	1.3	.0	.0	1.5	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	13	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.6	.0	1.2	.0	.0	.0
29	.0	-----	.0	.0	.2	.0	.0	.0	.0	.0	.0	.0
30	.0	-----	.0	.0	.3	.0	.0	.0	.0	.3	.0	.0
31	.0	-----	.2	-----	.2	-----	.0	.0	-----	.6	-----	.0
MEAN	.0	.0	.0	13	.3	.1	.1	.2	.9	.3	.0	.0
INCHES	.000	.000	.000	.280	.008	.001	.001	.003	.018	.006	.000	.000

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0007148. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2.775. YEARLY MEAN DISCHARGE, 1.2 CFS. YEARLY DISCHARGE, .317 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 411 AT CHICKASHA				
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)	
<p>Watershed conditions: The land use of this 52 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12, 1967								
			4-12	06	1.00	.30		4-12	0254	.0	.0000
				0040	.00	.30			0300	1.5	.0000
				0159	.02	.30			0318	18.2	.0001
				0202	.30	.35			0330	41.5	.0003
				0219	2.01	.62			0336	61.6	.0004
				0231	1.15	.85					
				0248	.99	1.13			0342	94.2	.0007
				0251	1.60	1.21			0348	137.9	.0010
				0307	1.05	1.49			0354	157.0	.0014
				0323	2.18	2.55			0412	212.3	.0031
				0331	.03	2.16			0418	279.4	.0038
				0432	.11	2.27			0430	338.5	.0057
				0502	.04	2.29			0442	414.6	.0079
				0543	.02	2.30			0448	483.6	.0092
				0614	.08	2.34			0454	530.1	.0108
				0700	.04	2.37			0506	575.9	.0140
				0755	.03	2.40			0518	682.1	.0178
				0957	.00	2.40			0536	754.1	.0242
				1030	.13	2.47			0600	830.3	.0336
									0618	869.1	.0412
									0636	868.4	.0490
									0642	859.6	.0516
									0700	835.2	.0591
									0730	757.6	.0710
									0754	649.8	.0794
									0818	562.3	.0866
									0836	505.3	.0914
									0854	409.3	.0955
									0918	337.8	.0999
						0948	278.9	.1045			
						1030	230.7	.1095			
						1100	214.4	.1131			
						1142	197.1	.1174			
						1200	194.3	.1192			
						1324	197.2	.1273			
						1418	199.6	.1327			
						1454	198.2	.1362			
						1512	193.2	.1380			
						1524	191.2	.1391			
						1554	195.6	.1420			
						1624	189.3	.1448			
						1742	169.7	.1518			
						2018	127.5	.1633			
						2154	104.7	.1688			
						2318	87.7	.1728			
						2400	81.0	.1746			
						4-13	0148	69.4	.1786		
						0206	66.5	.1792			
						0224	67.6	.1798			
						0230	69.3	.1800			
						0242	78.1	.1805			
						0254	81.2	.1810			
						0300	81.5	.1812			
						0312	76.0	.1817			
						0342	74.5	.1828			
						0418	70.8	.1841			
						0512	64.5	.1859			
						0530	63.2	.1865			
						0542	64.2	.1869			
						0606	66.3	.1876			
						0648	69.8	.1890			
						0742	71.1	.1909			
						0848	72.6	.1933			
						0948	71.0	.1954			
						1042	68.8	.1973			
						1148	62.5	.1995			
						1242	57.1	.2011			
						1330	52.1	.2024			
						1500	41.8	.2045			
						1630	33.8	.2061			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00002978.
 FOR 30 DAY ANTECEDENT P AND Q, SEE P. 69.12-2. FOR ISOHYETAL
 MAP, SEE P. 69.7-7, THIS PUBLICATION.

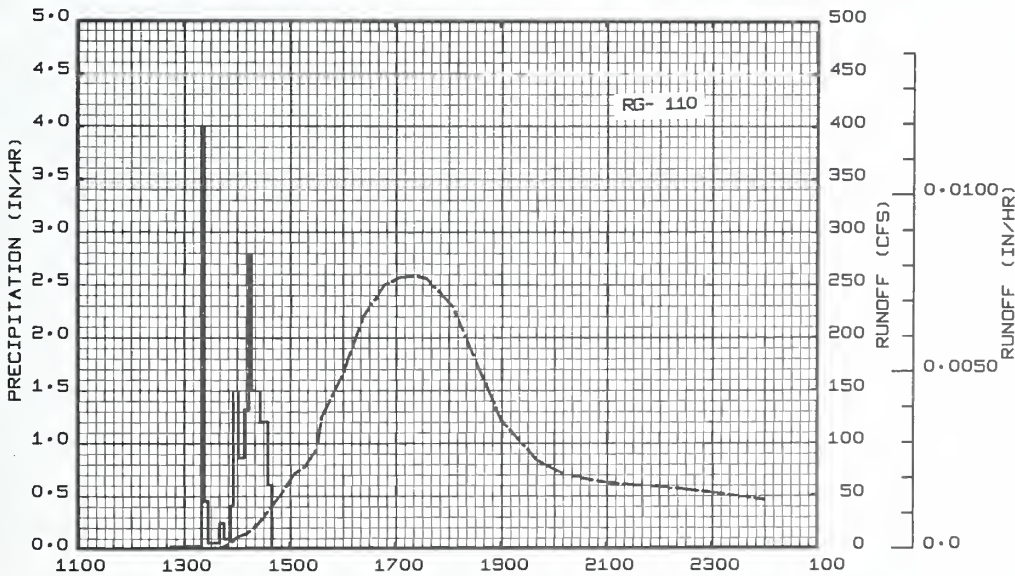


APRIL 11-13, 1967

CHICKASHA, OKLAHOMA WATERSHED 411

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 411 AT CHICKASHA			
ANTECEDENT CONOITIONS			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 (cfs)	ACC. (inches)
Event of April 20, 1967										
			4-20	RG	1.10					
				1245	.00	.00	4-20	1342	.0	.0000
				1320	.02	.01		1354	6.1	.0000
				1323	4.00	.21		1400	10.7	.0000
				1327	.45	.24		1412	14.2	.0001
				1340	.05	.25		1424	22.4	.0002
				1345	.24	.27		1448	48.4	.0005
				1352	.09	.28		1506	71.2	.0012
				1355	.40	.30		1518	78.0	.0016
				1401	1.50	.45		1530	94.7	.0021
				1408	.86	.55		1536	123.5	.0025
				1413	1.32	.66		1600	156.7	.0042
				1416	2.80	.80		1624	220.2	.0065
				1426	1.50	1.05		1648	249.9	.0093
				1434	1.20	1.21		1706	257.5	.0116
				1439	.60	1.26		1724	258.1	.0139
								1736	256.0	.0154
								1806	229.0	.0190
								1836	170.5	.0220
								1900	121.6	.0237
								1942	83.4	.0259
								2012	70.3	.0270
								2100	61.9	.0286
								2230	55.5	.0312
								2400	45.7	.0335
							4-21	0130	34.7	.0353

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00002978. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.12-2, THIS PUBLICATION.



APRIL 20-21, 1967

CHICKASHA, OKLAHOMA WATERSHED 411

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER AREA — 38,020 ACRES (59.4 SQ. MILES)										
MCNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁	.24	.10	3.21	6.21	3.45	2.58	1.37	1.37	5.09	2.26	.29	1.10	27.27			
Q	.026	.022	.109	1.147	.122	.066	.004	.000	.049	.017	.009	.012	1.583			
STA AVG P ₂	.62	1.00	1.74	3.24	2.65	3.05	1.68	3.86	3.46	1.31	2.14	.95	25.70			
O	.046	.045	.096	.402	.092	.066	.017	.238	.184	.014	.103	.050	1.353			
MEAN P ₃	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.0860	4-12	.0857	4-12	.1693	4-12	.460	4-12	.606	4-12	.670	4-12	.784	4-9	.896
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
19 62 TO	4-12	.0860	4-12	.0857	4-12	.1693	4-12	.460	4-12	.606	4-12	.670	4-12	.784	4-9	.896
19 67	1967		1967		1967		1967		1967		1967		1967		1967	
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, Topography, p. 69.13-4 and Geologic, p. 69.7-9; 1965, Composite, p. 69.7-21.																
^{1/} Precipitation data obtained from a Thiessen weighted average of 15 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Oct. 1962. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Oct. 1962.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 3,298 cfs (16.21 ft). Minimum — Aug. 1, no flow (1.00 ft). PERIOD OF RECORD: Maximum — Apr. 12, 1967, 3,298 cfs (16.21 ft). Minimum — no flow. Period of flow began Oct. 19, 1962.																
PEAK DISCHARGES: (Above base flow of 600 cfs) 1967 — Apr. 12, 3,298 cfs (16.21 ft); Apr. 20, 1,594 cfs (10.84 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.62	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.16	.08	1.00	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.78	.31	.00	.00	.03
5	.00	.00	.00	.00	1.14	.00	.22	.00	.72	.00	.00	.00
6	.00	.00	.03	.00	.01	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.41	.00	.00	.00	.00	.01	1.01	.00	.00
8	.00	.03	.00	.00	.00	.03	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.97	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.52	.00	.00	.00	.00	.00	.00	.00	.04
11	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
12	.00	.00	.11	2.62	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.47	.05	.00	.00	.00	.06	.00	.00	.04
14	.00	.00	.00	.00	.02	.00	.00	.02	.33	.00	.00	.15
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.39	.00	.06
16	.00	.00	.00	.00	.00	.01	.23	.00	.10	.00	.00	.55
17	.00	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.02	.39	.00	.00	.00	.00	.00
19	.00	.00	.52	.46	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.01	.76	.90	.00	.00	.00	.71	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.11	.00	.00	.02
22	.00	.00	.72	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.38	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00	.00
25	.11	.00	1.01	.00	.00	1.67	.00	.00	.00	.00	.00	.00
26	.13	.00	.09	.00	.00	.36	.00	.00	1.08	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.01	.00	.33	.00	.00	.00	.01	.00
29	.00	-----	.00	.00	.58	.00	.00	.00	.00	.00	.07	.00
30	.00	-----	.16	.00	.58	.00	.00	.00	.00	.53	.00	.20
31	.00	-----	.53	-----	.16	.00	.00	.26	-----	.33	-----	.00
TOTAL	.24	.10	3.21	6.21	3.45	2.58	1.37	1.37	5.09	2.26	.29	1.10
STA AAV	.62	1.00	1.74	3.24	2.65	3.05	1.68	3.86	3.46	1.31	2.14	.95

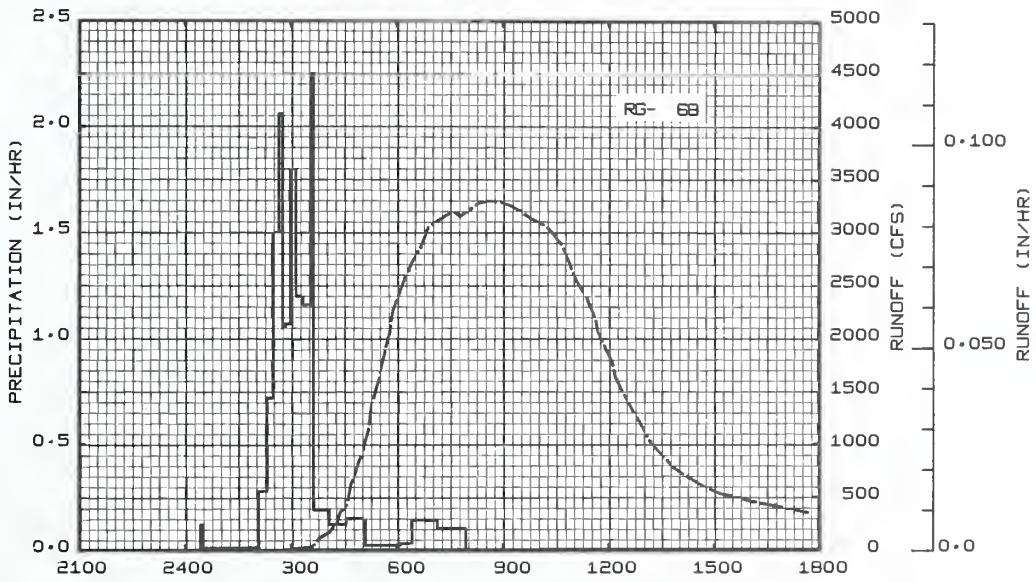
NOTES: YEARLY PRECIPITATION 27.27 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 15 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 511 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	<u>1.5</u>	<u>1.4</u>	<u>1.2</u>	<u>7.1</u>	<u>3.0</u>	<u>2.0</u>	.5	.0	.0	.3	<u>1.2</u>	.5
2	<u>1.5</u>	<u>1.4</u>	<u>1.1</u>	<u>3.3</u>	<u>2.5</u>	<u>1.1</u>	.4	.0	.0	.2	<u>1.2</u>	.4
3	<u>1.4</u>	<u>1.4</u>	<u>1.1</u>	<u>2.1</u>	<u>2.3</u>	<u>1.0</u>	.8	.0	.0	.1	<u>1.0</u>	.4
4	<u>1.4</u>	<u>1.4</u>	<u>1.1</u>	<u>1.7</u>	<u>2.4</u>	.9	.5	.0	11	.1	.9	.3
5	<u>1.4</u>	<u>1.3</u>	<u>1.3</u>	<u>1.4</u>	<u>5.9</u>	.9	<u>1.1</u>	.0	15	.1	.9	.3
6	<u>1.3</u>	<u>1.1</u>	<u>1.3</u>	<u>1.3</u>	* <u>103</u>	.8	.6	.0	2.6	.1	.7	.4
7	<u>1.2</u>	<u>1.1</u>	<u>1.2</u>	<u>1.4</u>	<u>16</u>	.6	.4	.0	.5	<u>9.3</u>	.3	.4
8	<u>1.1</u>	<u>1.1</u>	<u>1.2</u>	<u>3.9</u>	<u>9.2</u>	<u>1.1</u>	.5	.0	.1	<u>4.3</u>	.3	.7
9	<u>1.1</u>	<u>1.2</u>	<u>1.1</u>	<u>12</u>	<u>5.3</u>	.6	.4	.0	.0	.8	.3	.7
10	<u>1.1</u>	<u>1.2</u>	<u>1.1</u>	* <u>104</u>	<u>3.9</u>	.5	.2	.0	.0	.4	.4	.7
11	<u>1.2</u>	<u>1.4</u>	<u>1.1</u>	<u>12</u>	<u>2.2</u>	.6	.1	.0	.0	.3	.4	.6
12	<u>1.3</u>	<u>1.4</u>	<u>1.1</u>	* <u>1050</u>	<u>1.7</u>	.5	.0	.0	.0	.2	.3	.4
13	<u>1.4</u>	<u>1.3</u>	<u>1.1</u>	<u>192</u>	<u>1.5</u>	.4	.0	.0	.0	.2	.3	.4
14	<u>1.4</u>	<u>1.1</u>	<u>1.3</u>	<u>43</u>	<u>1.5</u>	.4	.0	.0	.0	.2	<u>2</u>	.4
15	<u>1.4</u>	<u>1.2</u>	<u>1.4</u>	<u>26</u>	<u>1.5</u>	.2	.0	.0	.0	.3	<u>3</u>	.6
16	<u>1.3</u>	<u>1.1</u>	<u>1.3</u>	<u>16</u>	<u>1.3</u>	.2	.0	.0	.1	<u>1.1</u>	.3	.8
17	<u>1.2</u>	<u>1.2</u>	<u>1.1</u>	<u>9.2</u>	<u>1.2</u>	.2	.0	.7	.0	<u>1.1</u>	.2	<u>1.2</u>
18	<u>1.1</u>	<u>1.2</u>	<u>1.1</u>	<u>6.7</u>	<u>1.1</u>	.2	.1	.0	.0	<u>1.0</u>	.4	.9
19	<u>1.1</u>	<u>1.3</u>	<u>1.1</u>	<u>7.1</u>	.9	.2	.0	.0	.0	.6	.4	.9
20	<u>1.1</u>	<u>1.3</u>	<u>5.5</u>	* <u>243</u>	<u>12</u>	.1	.3	.0	.0	.5	.4	.8
21	<u>1.3</u>	<u>1.2</u>	<u>3.4</u>	<u>43</u>	<u>3.5</u>	.0	.2	.0	4.0	.5	.4	.9
22	<u>1.4</u>	<u>1.2</u>	<u>3.0</u>	<u>11</u>	<u>1.6</u>	.0	.1	.0	8.4	.6	.4	.7
23	<u>1.4</u>	<u>1.2</u>	<u>8.0</u>	<u>7.1</u>	<u>1.2</u>	.0	.0	.0	.3	.7	.4	.6
24	<u>1.4</u>	<u>1.2</u>	<u>3.2</u>	<u>5.2</u>	<u>1.0</u>	.0	.0	.0	.2	.4	.4	.6
25	<u>1.4</u>	<u>1.2</u>	* <u>74</u>	<u>4.5</u>	.8	<u>69</u>	.0	.0	.1	.4	.4	.7
26	<u>1.4</u>	<u>1.2</u>	<u>40</u>	<u>4.3</u>	.7	<u>14</u>	.0	.0	15	.7	.4	.6
27	<u>1.4</u>	<u>1.3</u>	<u>4.6</u>	<u>3.9</u>	<u>.6</u>	<u>5.2</u>	.0	.0	<u>19</u>	.4	.4	.6
28	<u>1.4</u>	<u>1.3</u>	<u>2.8</u>	<u>3.6</u>	.7	<u>2.9</u>	.0	.0	<u>1.4</u>	.6	.3	.6
29	<u>1.4</u>	-----	<u>2.2</u>	<u>3.7</u>	<u>1.1</u>	.9	.0	.0	.6	.4	.4	.6
30	<u>1.4</u>	-----	<u>1.9</u>	<u>3.7</u>	<u>2.3</u>	.5	.0	.0	.4	.5	.5	.9
31	<u>1.4</u>	-----	<u>3.6</u>	-----	<u>3.7</u>	-----	.0	.0	-----	<u>1.1</u>	-----	<u>1.2</u>
MEAN	1.3	1.2	5.6	61	6.3	3.5	.2	.0	2.6	.9	.5	.6
INCHES	.026	.022	.109	1.147	.122	.066	.004	.000	.049	.017	.009	.012

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006260. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 3.168. YEARLY MEAN DISCHARGE, 6.9 CFS. YEARLY DISCHARGE, 1.583 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 511 NEAR TABLER					
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)	
<p>Watershed conditions: The land use of this 59.4 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			4-12	Event of April 12, 1967			4-12				
				RG	68						
				0025	.00	.00		0254		6.7	.0030
				0030	.12	.01		0318		13.4	.0031
				0204	.01	.02		0336		32.5	.0003
				0219	.28	.09		0342		63.8	.0004
				0229	.72	.21		0348		110.2	.0006
				0239	1.50	.46		0406		169.5	.0017
				0246	2.06	.70		0418		253.0	.0028
				0250	1.05	.77		0424		355.9	.0036
				0259	1.07	.93		0436		429.9	.0057
				0308	1.80	1.20		0442		612.4	.0070
				0320	1.20	1.44		0448		697.6	.0087
				0334	1.16	1.71		0454		813.8	.0107
				0338	2.25	1.86		0500		902.4	.0130
				0404	.19	1.94		0506		1012.6	.0155
				0434	.12	2.00		0512		1137.2	.0183
				0506	.15	2.08		0518		1370.4	.0215
				0605	.02	2.10		0524		1500.0	.0253
				0625	.03	2.11		0530		1634.3	.0294
				0708	.14	2.21		0536		1776.0	.0338
				0757	.10	2.29		0542		1916.6	.0386
								0548		2049.5	.0438
								0554		2260.0	.0494
								0600		2373.2	.0555
								0612		2530.7	.0682
								0624		2695.6	.0819
								0642		2871.4	.1037
								0654		3051.8	.1191
								0736		3204.2	.1762
								0742		3182.7	.1846
								0748		3154.2	.1928
								0806		3222.1	.2178
								0818		3276.1	.2347
								0830		3294.2	.2518
			0836		3297.8	.2604					
			0848		3294.2	.2776					
			0854		3290.5	.2862					
			0912		3261.7	.3119					
			0924		3222.1	.3288					
			0948		3136.5	.3619					
			1012		3065.8	.3943					
			1024		3006.3	.4101					
			1042		2871.4	.4331					
			1054		2705.6	.4477					
			1106		2540.4	.4614					
			1124		2376.3	.4806					
			1136		2216.6	.4926					
			1142		2064.4	.4982					
			1154		1919.5	.5086					
			1206		1773.2	.5182					
			1212		1637.1	.5226					
			1224		1497.4	.5308					
			1236		1372.9	.5383					
			1248		1250.4	.5451					
			1300		1130.1	.5513					
			1312		1010.3	.5569					
			1330		900.2	.5644					
			1348		791.2	.5710					
			1412		697.6	.5788					
			1442		601.4	.5873					
			1500		552.8	.5918					
			1512		524.8	.5946					
			1530		509.3	.5986					
			1600		462.3	.6050					
			1624		433.1	.6096					
			1742		348.3	.6229					
			1918		261.9	.6356					

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .00002608. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.13-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.

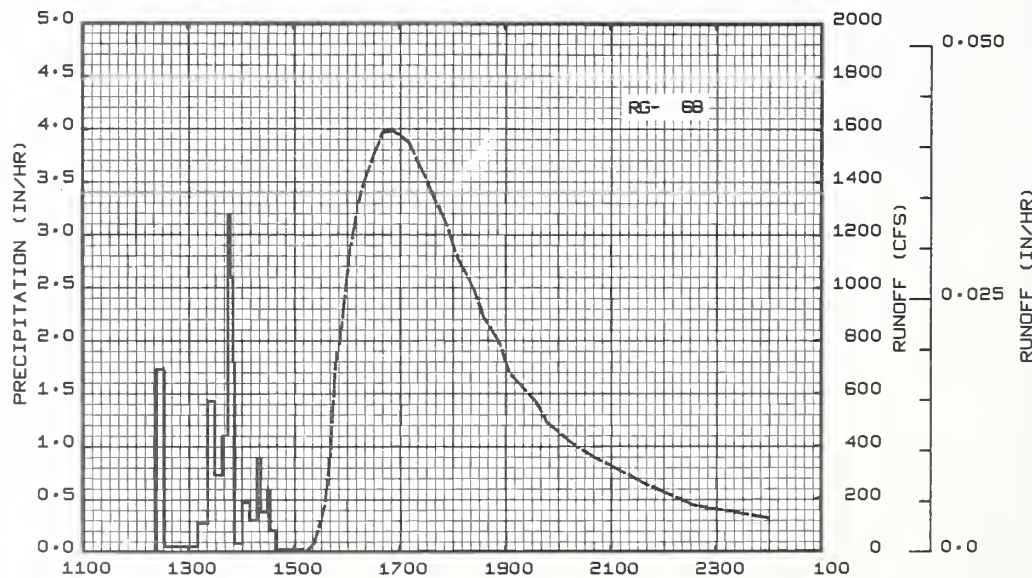


APRIL 11-12, 1967

CHICKASHA, OKLAHOMA WATERSHED 511

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 511 NEAR TABLER			
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 April 20, 1967										
			4-20	RC	.68					
				1224	.80	.80	4-20	1442	9.5	.0000
				1233	1.73	.26		1454	11.0	.0001
				1211	.05	.29		1518	11.0	.0002
				1222	.27	.34		1524	32.0	.0002
				1230	1.43	.53		1530	114.6	.0004
				1239	.73	.64		1536	175.1	.0008
				1245	1.10	.75		1542	355.9	.0015
				1248	3.20	.91		1548	713.2	.0029
				1251	2.60	1.34		1554	815.8	.0049
				1253	1.80	1.10		1600	1042.0	.0073
				1401	.08	1.11		1606	1163.3	.0102
				1410	.47	1.15		1612	1234.9	.0134
				1418	.30	1.22		1618	1372.9	.0168
				1422	.90	1.28		1630	1500.0	.0243
				1430	.28	1.23		1642	1590.9	.0324
				1433	.60	1.36		1654	1593.6	.0407
				1439	.20	1.38		1712	1547.9	.0320
								1718	1500.0	.0570
								1736	1370.4	.0682
								1754	1240.6	.0784
								1806	1116.0	.0846
								1824	1001.3	.0928
								1836	887.3	.0975
								1854	791.2	.1043
								1906	674.4	.1082
								1936	567.0	.1162
								1948	490.6	.1190
								2018	407.7	.1249
								2042	358.9	.1289
								2142	254.7	.1369
								2236	175.1	.1419
								2400	126.0	.1474

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00002608. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.13-2, THIS PUBLICATION.



April 20-21, 1967

CHICKASHA, OKLAHOMA WATERSHED 511

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 110 NEAR ANADARKO AREA — 25,020 ACRES (39.1 SQ. MILES)										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ^{1/} Q	.48 .000	.07 .000	1.50 .000	4.80 .000	2.67 .000	1.80 .000	2.94 .000	1.09 .000	5.00 .000	2.82 .000	.27 .000	1.11 .000	24.55 .000		
STA AVG	P ^{2/} Q	.50 .000	.94 .003	1.20 .007	2.83 .027	3.28 .036	3.17 .003	1.69 .000	2.68 .001	3.78 .000	1.41 .000	1.95 .004	.81 .000	24.24 .081		
MEAN 67 YR	P ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS ^{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	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
MAXIMUMS FOR PERIOD OF RECORD ^{5/}																
1963 TO 1967	5-11 1964	.0037	5-11 1964	.0037	5-11 1964	.0074	5-11 1964	.021	5-11 1964	.038	5-11 1964	.061	5-11 1964	.087	5-11 1964	.114
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, Topography, p. 69.10-4 and Geologic, p. 69.7-9; 1965, Composite, p. 69.7-9. ^{1/} Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Apr. 1963. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} No runoff, so maximum volumes could not be computed. ^{5/} Period of record began Apr. 1963.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — no flow. Minimum — no flow.																
PERIOD OF RECORD: Maximum — May 11, 1964, 95 cfs (8.18 ft). Minimum — no flow. Period of record began Apr. 1, 1963.																
PEAK DISCHARGES: (Above base flow of 100 cfs) None.																
DAILY TEMPERATURE: See p. 69.7-3.																
NO SELECTED RUNOFF EVENT REPORTED FOR 1967.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 110 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.29	.00	.20	.00
3	.00	.00	.00	.00	.00	.00	.98	.00	1.29	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.33	.23	.00	.00	.09
5	.00	.00	.00	.00	.84	.00	.26	.00	.89	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.06	.00	.00	.00
7	.00	.00	.00	.15	.00	.00	.00	.00	.01	1.50	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.14	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.67	.00	.00	.00	.00	.00	.00	.00	.15
11	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
12	.00	.00	.02	2.00	.00	.13	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.48	.05	.00	.00	.00	.30	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.03	.48	.00	.00	.07
15	.00	.00	.00	.00	.00	.00	.03	.00	.00	.11	.00	.08
16	.00	.00	.00	.00	.00	.00	.07	.00	.01	.00	.00	.53
17	.00	.00	.00	.00	.00	.01	.00	.15	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.32	.96	.00	.00	.00	.00	.00
19	.00	.00	.51	.18	.04	.00	.13	.00	.00	.00	.00	.00
20	.00	.00	.00	.18	.73	.00	.00	.03	.45	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.00	.04	.00	.00	.00
22	.00	.00	.51	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.00
25	.48	.00	.19	.00	.00	.62	.00	.00	.00	.00	.00	.00
26	.00	.00	.06	.00	.00	.57	.00	.01	.95	.00	.00	.00
27	.00	.01	.00	.00	.00	.02	.02	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.49	.00	.00	.00	.04	.00
29	.00	-----	.00	.00	.25	.00	.00	.00	.00	.00	.02	.00
30	.00	-----	.01	.00	.48	.00	.00	.00	.00	.85	.00	.16
31	.00	-----	.16	-----	.26	-----	.00	.29	-----	.36	-----	.00
TOTAL	.48	.07	1.50	4.80	2.67	1.80	2.94	1.09	5.00	2.82	.27	1.11
STA AV	.50	.94	1.20	2.83	3.28	3.17	1.69	2.68	3.78	1.41	1.95	.81

NOTES:
 YEARLY PRECIPITATION 24.55 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 10 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 110 NEAR ANADARKO						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
3	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
4	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
5	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
7	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
8	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
9	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
10	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
11	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
12	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
13	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
14	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
15	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
16	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
17	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
18	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
19	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
20	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
21	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
22	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
23	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
24	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
25	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
26	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
27	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
28	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
29	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
30	.0	-----	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
31	.0	-----	.0	-----	.0	-----	.0	.0	-----	.0	-----	.0
MEAN	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0
INCHES	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/OAY, MULTIPLY BY .0009513. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 2.085. YEARLY MEAN DISCHARGE, .0 CFS; YEARLY DISCHARGE, .000 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 522 NEAR NINNEKAH AREA — 132,990 ACRES (207.8 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ¹ / _Q	.15 .049	.06 .039	2.08 .059	4.90 .259	3.82 .071	1.94 .026	3.18 .033	.81 .001	4.29 .022	3.72 .048	.35 .033	1.03 .045	26.33 .685			
STA AVG P ² / _Q	.62 .073	.97 .068	1.34 .081	2.94 .152	3.50 .233	2.90 .079	1.84 .027	2.86 .060	3.72 .050	1.72 .029	2.18 .114	.82 .054	25.41 1.020			
MEAN P ³ / _Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-10	.0127	4-10	.0126	4-10	.0242	4-10	.052	4-9	.075	4-9	.092	4-9	.099	4-9	.198
MAXIMUMS FOR PERIOD OF RECORD ⁴ / _Q																
1963 TO 1967	5-10 1964	.0564	5-10 1964	.0553	5-10 1964	.1076	5-9 1964	.253	5-9 1964	.316	5-9 1964	.365	5-9 1964	.476	5-6 1964	.532
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, Geologic; 1963, p. 69.15-4, Topography; and 1965, p. 69.7-21, Composite.																
1/ Precipitation data obtained from a Thiessen weighted average of 36 gages on the watershed. 2/ Precipitation records began Oct. 1961; runoff records began Apr. 1963. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Period of record began Apr. 1963.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 10, 1,710 cfs (13.77 ft). Minimum — June 24, no flow (8.81 ft).																
PERIOD OF RECORD: Maximum — May 10, 1964, 7,562 cfs (20.65 ft). Minimum — no flow. Period of record began Apr. 1963. U.S. Geological Survey records available back to Oct. 1, 1951.																
PEAK DISCHARGES: (Above base flow of 1,500 cfs) 1967 — Apr. 10, 1,710 cfs (13.77 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 522 NEAR NINNEKAH						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.06	.00	.00	.00	.00	.01	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.04	.00	.09	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.57	.02	1.21	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.35	.14	.00	.00	.02
5	.00	.00	.00	.00	1.15	.00	.24	.00	.91	.00	.00	.00
6	.00	.00	.03	.00	.00	.00	.00	.00	.01	.00	.00	.00
7	.00	.00	.00	.36	.00	.00	.00	.00	.01	.70	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.90	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.33	.00	.00	.00	.00	.00	.00	.00	.07
11	.00	.00	.00	.00	.00	.04	.04	.00	.00	.00	.00	.00
12	.00	.00	.02	1.35	.00	.08	.02	.00	.00	.00	.00	.00
13	.00	.00	.00	.52	.02	.00	.00	.00	.05	.00	.00	.05
14	.00	.00	.00	.00	.03	.00	.00	.01	.63	.00	.00	.09
15	.00	.00	.00	.00	.00	.00	.15	.00	.00	1.25	.00	.08
16	.00	.00	.00	.00	.00	.00	.05	.00	.01	.00	.00	.59
17	.00	.00	.00	.00	.00	.01	.00	.15	.00	.00	.00	.01
18	.00	.00	.00	.03	.00	.12	.74	.00	.01	.00	.00	.00
19	.00	.00	.40	.08	.00	.00	.20	.00	.00	.00	.00	.00
20	.00	.00	.00	.33	1.05	.00	.00	.01	.33	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00
22	.00	.00	.61	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.10	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00
25	.11	.00	.44	.00	.00	.26	.00	.00	.00	.00	.00	.00
26	.04	.00	.13	.00	.00	1.10	.00	.00	.86	.00	.00	.00
27	.00	.00	.00	.00	.00	.23	.14	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.03	.00	.98	.00	.00	.00	.06	.00
29	.00	-----	.00	.00	.62	.00	.00	.00	.00	.01	.06	.00
30	.00	-----	.03	.00	.70	.00	.00	.00	.00	1.33	.00	.12
31	.00	-----	.42	-----	.22	-----	.00	.26	-----	.43	-----	.00
TOTAL	.15	.06	2.08	4.90	3.82	1.94	3.18	.81	4.29	3.72	.35	1.03
ST. AV.	.62	.97	1.34	2.94	3.50	2.90	1.84	2.86	3.72	1.72	2.18	.82

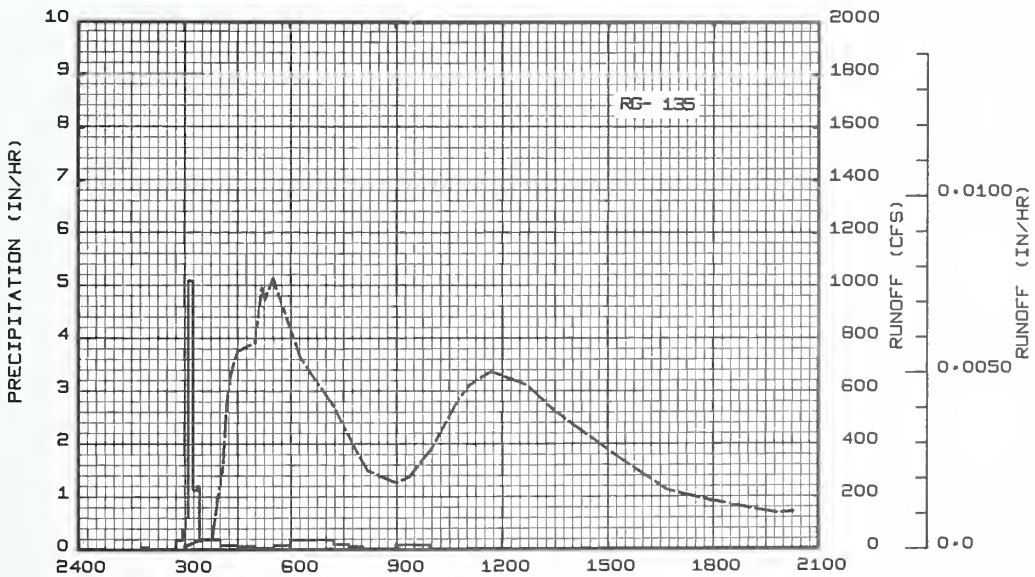
NOTES:
 YEARLY PRECIPITATION 26.33 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 36 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 522 NEAR NINNEKAH						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	<u>13</u>	8.4	7.8	23	* 7.8	13	.9	.9	.0	.5	* <u>18</u>	10
2	12	8.4	7.8	14	7.8	11	1.1	.5	.0	.2	5.3	8.4
3	* 8.9	<u>8.9</u>	7.8	7.3	8.4	10	10	.1	.5	.5	4.4	7.3
4	8.9	8.4	7.8	6.3	8.4	7.8	11	.7	<u>36</u>	* 1.1	4.4	* 6.3
5	8.9	8.4	7.3	5.3	19	5.3	8.4	2.5	* <u>19</u>	1.1	2.5	6.8
6	8.9	8.4	8.9	<u>4.9</u>	* <u>10.9</u>	5.3	8.4	<u>2.9</u>	7.8	.4	2.2	8.4
7	8.9	8.4	8.9	5.8	<u>10</u>	4.4	5.3	* <u>10</u>	4.9	1.9	2.5	9.5
8	6.3	8.4	7.8	11	7.8	3.6	5.3	* <u>10</u>	4.4	11	<u>1.9</u>	8.9
9	6.3	8.9	8.9	* <u>100</u>	6.3	2.9	4.0	.0	4.4	3.2	<u>3.2</u>	7.8
10	11	8.4	8.4	* <u>4.36</u>	5.8	2.5	* 1.9	.0	3.2	4.0	3.2	7.3
11	9.5	8.4	8.4	* 29	4.9	2.9	1.6	.0	* 2.2	3.6	2.9	7.3
12	10	8.4	8.4	* 318	5.3	* 2.9	1.4	.0	1.9	3.2	3.6	6.3
13	9.5	* 7.8	* 7.8	* 155	6.3	5.3	.9	.0	1.1	3.2	4.9	<u>5.3</u>
14	8.9	7.3	7.8	* 32	8.4	4.4	.7	* .0	4.9	3.2	5.3	5.8
15	7.8	7.3	6.8	19	E 8.9	2.9	.9	* .0	7.3	* <u>114</u>	6.3	8.4
16	* 7.8	7.3	5.8	17	7.8	1.9	4.4	.0	2.2	22	6.8	10
17	7.8	7.3	<u>5.3</u>	10	7.3	1.4	* 4.4	.0	.9	* 6.8	* 6.8	<u>13</u>
18	<u>5.3</u>	7.3	5.3	* 12	6.8	1.4	6.3	.0	.7	4.9	6.8	* 11
19	10	7.3	6.3	15	5.8	1.6	14	.0	.4	4.0	6.8	7.8
20	13	7.3	11	4.0	31	2.2	13	.0	.4	3.2	8.4	7.3
21	11	7.3	9.5	* 90	29	.7	11	* .0	1.4	2.9	8.9	7.8
22	9.5	7.8	7.8	20	* 11	.2	7.8	.0	1.9	2.9	8.9	8.4
23	7.8	<u>6.8</u>	18	10	5.3	.3	6.8	.0	.7	2.9	8.9	8.4
24	7.3	6.8	9.5	8.9	4.0	<u>10</u>	4.9	.0	.4	2.5	8.9	8.4
25	7.3	7.3	* <u>46</u>	8.9	2.5	.7	3.2	.0	.1	2.5	7.8	7.3
26	7.8	7.8	26	9.5	2.2	* <u>25</u>	.3	.0	.5	3.2	6.8	7.3
27	9.5	* 7.8	* 13	8.4	2.5	19	<u>1</u>	.0	* 11	3.6	5.8	8.4
28	8.4	7.8	9.5	8.4	3.2	2.5	6.6	* .0	5.3	4.9	5.3	7.8
29	8.4	-----	8.9	10	* 10	.7	<u>36</u>	.0	1.4	4.4	7.3	7.3
30	* 8.4	-----	8.9	11	16	.7	4.0	.0	.5	10	10	8.9
31	7.8	-----	17	-----	27	-----	1.6	* .0	-----	38	-----	9.5
MEAN INCHES	8.9	7.9	11	4.8	13	4.8	6.0	.2	4.2	8.7	6.2	8.1
	.049	.039	.059	.259	.071	.026	.033	.001	.022	.048	.033	.045

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0001790. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 11.082. YEARLY MEAN DISCHARGE, 10.5 CFS. YEARLY DISCHARGE, .685 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 522 NEAR NINNEKAH						
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: The land use of this 207.8 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.			Event of April 12, 1967										
			4-12	RG		135			4-12				
						0145		.30	.00	0300		11.1	.0000
						0200		.04	.01	0324		33.6	.0001
						0246		.01	.02	0348		38.0	.0002
						0256		.18	.05	0354		142.3	.0002
						0301		.36	.08	0406		318.8	.0006
						0306		.60	.13	0412		543.2	.0009
						0314		5.10	.81	0418		654.1	.0014
						0322		1.13	.96	0430		751.7	.0024
						0325		1.20	1.02	0500		785.7	.0053
						0400		.19	1.13	0512		992.9	.0066
						0430		.08	1.17	0518		949.0	.0073
						0500		.06	1.20	0530		1028.0	.0088
						0530		.02	1.21	0618		728.4	.0140
						0600		.08	1.25	0712		551.8	.0183
						0644		.18	1.38	0754		371.0	.0207
						0714		.18	1.47	0812		298.6	.0215
						0740		.09	1.51	0900		251.3	.0231
						0803		.05	1.53	0924		275.9	.0239
						0821		.00	1.53	1000		352.8	.0254
						0902		.00	1.53	1048		573.7	.0282
						0958		.08	1.60	1106		625.0	.0296
										1142		674.4	.0325
										1242		623.8	.0373
							1324		535.2	.0404			
							1506		367.3	.0461			
							1642		223.7	.0496			
							1800		181.4	.0516			
							1954		134.4	.0538			
							2018		140.7	.0542			
							2106		108.6	.0550			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000007458. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.15-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 522

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 512 AT TABLER AREA — 22,530 ACRES (35.2 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
YEAR													
1967	^{1/} .09	.10	2.39	6.57	4.29	2.16	1.66	1.50	5.48	2.48	.31	1.11	28.14
	^o .054	.050	.068	1.169	.212	.063	.019	.001	.091	.039	.037	.050	1.853
STA AVG	^{2/} .71	1.11	1.57	3.29	3.12	3.42	1.82	4.07	3.86	1.51	2.22	.93	27.63
MEAN	^o .100	.104	.139	.429	.236	.074	.031	.293	.156	.051	.196	.081	1.890
67 YR	^{3/} 1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

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
1967	4-12	.1096	4-12	.1083	4-12	.2090	4-12	.428	4-12	.499	4-12	.534	4-12	.610	4-9	.742
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1963 TO	8-8	.1343	8-8	.1294	8-8	.2441	8-7	.472	8-7	.523	8-7	.543	4-12	.610	4-9	.742
1967	1965		1965		1965		1965		1965		1965		1967		1967	

Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, (Geologic); 1963, p. 69.16-4, (Topography); 1965, p. 69.7-21, (Revised Composite). ^{1/} Precipitation data obtained from a Thiessen weighted average of 10 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began July 1963. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began July 1963.

MISCELLANEOUS DATA	
RUNOFF PEAK DATA:	YEAR (1967): Maximum — Apr. 12, 2,490 cfs (9.99 ft). Minimum — July 15, no flow (1.00 ft). PERIOD OF RECORD: Maximum — Aug. 8, 1965, 3,050 cfs (10.73 ft). Minimum — no flow. Period of record began July 18, 1963. PEAK DISCHARGES: (Above base flow of 600 cfs) 1967 — Apr. 12, 2,490 cfs (9.99 ft); Apr. 20, 1,690 cfs (8.72 ft).
DAILY TEMPERATURE:	See p. 67.7-3.

1967 DAILY PRECIPITATION (inches)						CHICKASHA OKLAHOMA WATERSHED 512 AT TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.68	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.22	.01	1.19	.00	.04	.00
4	.00	.00	.00	.00	.00	.00	.00	.82	.40	.00	.00	.00
5	.00	.00	.00	.00	1.17	.00	.29	.00	.69	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.37	.00	.00	.00	.00	.01	.89	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.08	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.03	2.52	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.51	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.01	.44	.00	.00	.13
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.61	.00	.06
16	.00	.00	.00	.00	.00	.00	.25	.00	.18	.00	.00	.60
17	.00	.00	.00	.00	.00	.00	.00	.41	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.09	.45	.00	.00	.00	.00	.00
19	.00	.00	.27	.32	.01	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.97	1.31	.00	.00	.00	.68	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.06	.01	.11	.00	.00	.02
22	.00	.00	.82	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.49	.00	.00	1.02	.00	.00	.00	.00	.00	.00
26	.09	.00	.08	.00	.00	.73	.00	.00	1.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.37	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.68	.00	.00	.00	.00	.02	.07	.00
30	.00	-----	.13	.00	.83	.00	.00	.00	.00	.65	.00	.21
31	.00	-----	.50	-----	.23	-----	.00	.22	-----	.31	-----	.00
TOTAL	.09	.10	2.39	6.57	4.29	2.16	1.66	1.50	5.48	2.48	.31	1.11
ST. AV.	.71	1.11	1.57	3.29	3.12	3.42	1.82	4.07	3.86	1.51	2.22	.93

NOTES: YEARLY PRECIPITATION 28.14 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 31 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA OKLAHOMA WATERSHED 512 AT TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	1.8E	2.0	1.6	3.6	4.0	3.8	.8	.0	.0	.5	1.2	1.4
2	1.7E	1.9	1.5	2.2	3.5	2.9	.8	.0	.0	.4	1.3	1.3
3	1.6E	1.8	1.5	1.9	3.1	2.5	1.8	.0	4.6	.3	1.3	1.0
4	1.6	1.8	1.5	1.8	3.1	2.4	1.3	.0	13	.3	1.3	1.0
5	1.5	1.8	1.8	1.5	20	2.1	2.5	.4	27	.3	1.1	1.3
6	1.5	1.5	1.6	1.5	4.9	1.8	1.2	.2	2.2	.3	1.0	1.3
7	1.5	1.6	1.6	1.7	6.1	1.8	.8	.1	.8	8.7	1.0	1.3
8	1.3	1.7	1.5	2.6	4.4	1.6	.9	.0	4.4	2.4	1.0	1.3
9	1.2	1.7	1.5	2.1	3.4	1.3	.7	.0	.2	1.0	1.0	1.5
10	1.4	1.7	1.6	7.5	3.5	1.2	.5	.0	.2	.7	1.1	1.3
11	1.6	1.8	1.6	6.4	3.3	1.2	.3	.0	.2	.7	1.2	1.4
12	1.6	1.7	1.5	5.0	3.3	1.3	.3	.0	.1	.6	1.1	1.3
13	1.7	1.6	1.5	7.6	3.3	1.4	.2	.0	.1	.6	1.1	1.3
14	1.8	1.5	1.5	1.4	3.2	1.2	.0	.0	.5	.5	1.0	1.5
15	1.8	1.6	1.5	8.8	3.1	.9	.0	.0	1.0	6.4	1.1	1.7
16	1.6	1.6	1.3	6.8	2.9	1.1	.0	.0	1.0	2.2	1.1	2.0
17	1.6	1.7	1.3	5.6	2.7	.9	.5	.0	.8	.9	1.0	2.4
18	1.3	1.7	1.3	5.3	2.4	.8E	.9	.0	.6	.6	1.0	2.9
19	1.3	1.7	1.3	6.3	2.3	.7	1.5	.0	.4	.6	1.0	1.7
20	1.6	1.6	1.9	2.2	2.6	.6	.9	.0	.4	.5	1.1	1.6
21	1.8	1.6	1.9	5.8	8.3	.4	.6	.0	7.4	.5	1.2	1.7
22	1.9	1.7	2.8	17	3.6	.4	.5	.0	1.2	.5	1.2	1.3
23	1.8	1.6	6.4	9.2	3.2	.6	.4	.0	.6	.5	1.3	1.3
24	1.8	1.6	2.4	6.6	2.6	.7	.2	.0	.5	.5	1.3	1.4
25	1.8	1.5	5.5	6.1	2.2	9.1	.1	.0	.4	.4	1.3	1.5
26	1.8	1.5	4.4	5.8	1.9	9.9	.1	.0	4.0	.4	1.3	1.4
27	1.8	1.8	2.4	5.1	1.8	3.2	.0	.0	16	.4	1.2	1.5
28	1.8	1.8	2.0	4.8	2.0	1.7	.3	.0	1.4	.4	1.2	1.5
29	1.8	-----	1.8	5.0	4.3	1.1	.2	.0	.7	.6	1.2	1.5
30	1.8	-----	1.6	5.0	6.2	.9	.0	.0	.5	.9	1.5	1.6
31	1.9	-----	3.1	-----	12	-----	.0	.0	-----	3.1	-----	2.1
MEAN	1.6	1.7	2.1	37	6.5	2.0	.6	.0	2.9	1.2	1.2	1.5
INCHES	.054	.050	.068	1.169	.212	.063	.019	.001	.091	.039	.037	.050

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001056. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.877. YEARLY MEAN DISCHARGE, 4.8 CFS. YEARLY DISCHARGE, 1.853 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

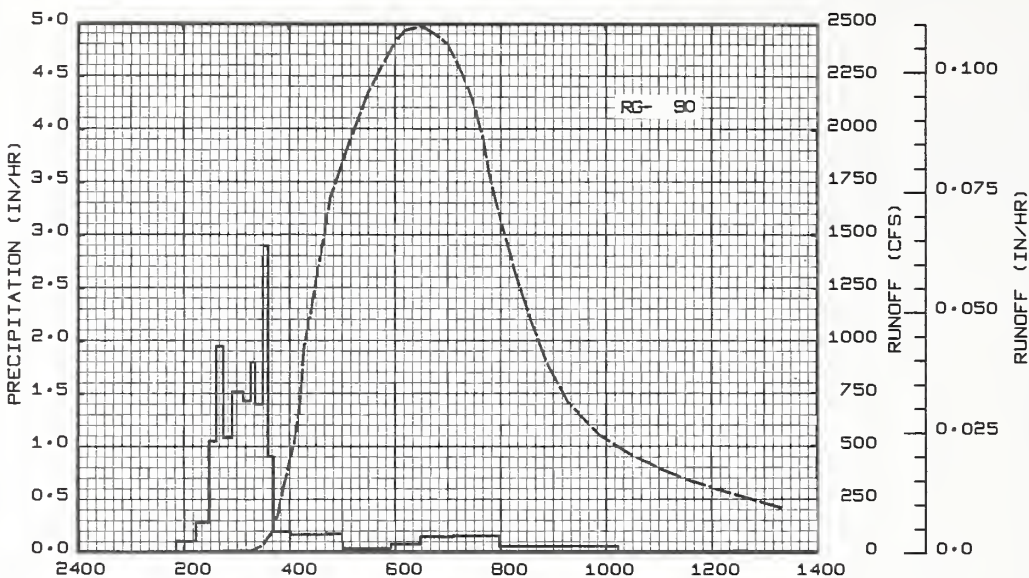
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 512 AT TABLER						
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
<p>Watershed conditions: The land use of this 35.2 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12, 1967									
			4-12	RG	90				4-12			
				0151	.00	.00			0236	3.5	.0000	
				0214	.10	.04			0300	4.1	.0001	
				0229	.28	.11			0318	5.8	.0001	
				0237	1.05	.25			0324	15.5	.0002	
				0245	1.95	.51			0330	32.2	.0005	
				0255	1.08	.69			0336	62.5	.0005	
				0308	1.52	1.02			0342	95.5	.0008	
				0316	1.43	1.21			0348	171.4	.0014	
				0321	1.80	1.36			0354	297.9	.0025	
				0330	1.40	1.57			0400	421.9	.0040	
				0336	2.90	1.86			0406	505.9	.0061	
				0342	.90	1.95			0412	659.2	.0086	
				0401	.19	2.01			0418	977.1	.0122	
				0442	.16	2.12			0424	1106.2	.0168	
				0500	.17	2.17			0430	1278.1	.0221	
				0555	.03	2.20			0442	1533.1	.0344	
				0628	.07	2.24			0448	1685.4	.0415	
				0706	.14	2.33			0500	1840.7	.0570	
				0758	.15	2.46			0512	1973.5	.0738	
				0902	.05	2.51			0530	2183.3	.1013	
				1014	.05	2.57			0600	2420.3	.1519	
									0612	2469.5	.1734	
									0630	2490.8	.2062	
									0648	2448.3	.2387	
									0700	2399.4	.2601	
									0718	2256.2	.2908	
									0730	2111.9	.3100	
									0742	1930.6	.3278	
						0748	1782.2	.3360				
						0800	1570.4	.3507				
						0818	1316.2	.3698				
						0836	1089.0	.3857				
						0854	891.3	.3987				
						0918	707.4	.4128				
						0954	551.7	.4294				
						1030	455.9	.4427				
						1100	396.8	.4521				
						1130	345.1	.4603				
						1206	297.9	.4687				
						1324	201.7	.4830				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00004400. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.16-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 512 AT TABLER				
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 April 20, 1967</u>										
			4-20	PG	.67	.00	4-20	1430	5.9	.0000
				1240	.00	.00		1436	6.3	.0000
				1247	.09	.01		1442	6.3	.0001
				1324	.00	.01		1448	6.6	.0001
				1339	.12	.04		1518	6.8	.0002
				1345	1.10	.15		1530	7.2	.0003
				1349	3.90	.41		1554	10.6	.0004
				1352	4.80	.65		1618	12.9	.0007
				1353	5.40	.74		1624	45.5	.0008
				1357	.75	.79		1630	136.7	.0012
				1401	1.20	.87		1636	411.7	.0024
				1409	.68	.90		1642	799.7	.0051
				1412	3.80	1.15		1648	895.1	.008
				1416	3.60	1.39		1700	1089.0	.0175
				1420	1.35	1.48		1712	1330.7	.0282
				1421	4.80	1.56		1724	1379.7	.0401
				1435	.56	1.69		1742	1581.1	.0590
				1436	.60	1.72		1748	1668.7	.0668
				1439	7.80	1.85		1800	1668.7	.0815
				1446	.69	1.93		1806	1679.8	.0889
				1454	1.05	2.07		1812	1685.4	.0962
				1501	.09	2.08		1830	1613.6	.1180
								1842	1486.1	.1316
								1854	1330.7	.1440
								1906	1240.6	.1554
								1924	1110.5	.1709
								1936	895.1	.1797
								1942	789.1	.1834
								1948	720.7	.1867
								2018	568.8	.2009
								2054	424.4	.2140
								2112	370.4	.2198
								2142	299.9	.2280
								2330	208.1	.2400
								2400	181.7	.2510
							4-21	0142	127.0	.2620

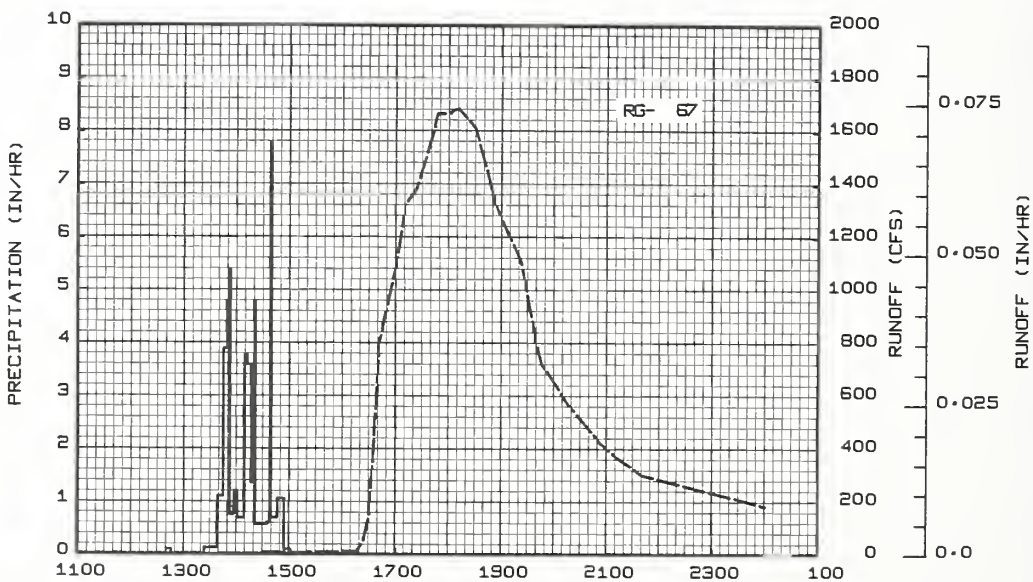
Watershed conditions: The land use of this 35.2 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00004400. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.16-2, THIS PUBLICATION.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 512



APRIL 20-21, 1967

CHICKASHA, OKLAHOMA WATERSHED 512

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 621 NEAR TABLER AREA — 21,310 ACRES (33.3 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/}	.11	.08	2.21	5.57	5.03	2.04	1.75	.85	5.64	2.54	.34	1.05	27.21		
	O	.071	.059	.073	.619	.345	.088	.030	.003	.091	.050	.040	.050	1.519		
STA AVG	P ^{2/}	.84	1.11	1.41	3.21	3.58	3.22	1.71	3.45	4.02	1.48	2.18	.92	27.13		
	O	.125	.132	.141	.299	.414	.084	.027	.186	.214	.063	.213	.091	1.989		
MEAN 67 YR	P ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.0621	4-12	.0568	4-12	.0890	4-12	.137	4-12	.159	4-12	.188	4-12	.243	4-9	.351
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
19 63 TO 19 67	5-10 1964	.2074	5-10 1964	.1790	5-10 1964	.2690	5-10 1964	.337	5-10 1964	.350	5-9 1964	.618	5-9 1964	.672	5-5 1964	.790
Notes: For the revised watershed conditions, see table on p. 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, (Geologic); 1965, p. 69.17-8 (revised Topography) and p. 69.7-21 (revised Composite). ^{1/} Precipitation data obtained from a Thiessen weighted average of 9 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Oct. 1963. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Oct. 1963.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — Apr. 12, 1,334 cfs (5.91 ft). Minimum — Aug. 7, no flow (1.00 ft). PERIOD OF RECORD: Maximum — May 10, 1964, 4,460 cfs (8.62 ft). Minimum — no flow. Period of record began Oct. 1963.																
PEAK DISCHARGES: (Above base flow of 500 cfs) 1967 — Apr. 12, 1,334 cfs (5.91 ft).																
<u>DAILY TEMPERATURE:</u> See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)					CHICKASHA, OKLAHOMA WATERSHED 621 NEAR TABLER							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.73	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.26	.00	1.37	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.46	.79	.00	.00	.00
5	.00	.00	.00	.00	1.30	.00	.45	.00	.56	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.02	.00	.00	.00
7	.00	.00	.00	.38	.00	.00	.00	.00	.02	.56	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.03	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.98	.00	.00	.00	.00	.00	.00	.00	.03
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.02	2.12	.00	.06	.01	.00	.00	.00	.00	.00
13	.00	.00	.15	.48	.03	.00	.00	.00	.03	.00	.00	.02
14	.00	.00	.00	.00	.02	.00	.00	.00	.44	.00	.00	.16
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	1.11	.00	.06
16	.00	.00	.00	.00	.00	.00	.26	.00	.25	.00	.00	.61
17	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.03	.31	.00	.02	.00	.00	.00
19	.00	.00	.27	.32	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.26	1.73	.00	.00	.00	.50	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.05	.01	.11	.00	.00	.00
22	.00	.00	.73	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.54	.00	.00	.79	.00	.00	.00	.00	.00	.00
26	.11	.00	.10	.00	.00	.99	.00	.00	.80	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.70	.00	.00	.00	.00	.02	.09	.00
30	.00	-----	.00	.00	.99	.00	.00	.00	.00	.56	.00	.17
31	.00	-----	.36	-----	.26	-----	.00	.12	-----	.29	-----	.00
TOTAL	.11	.08	2.21	5.57	5.03	2.04	1.75	.85	5.64	2.54	.34	1.05
ST. ANV.	.84	1.11	1.41	3.21	3.58	3.22	1.71	3.45	4.02	1.48	2.18	.92

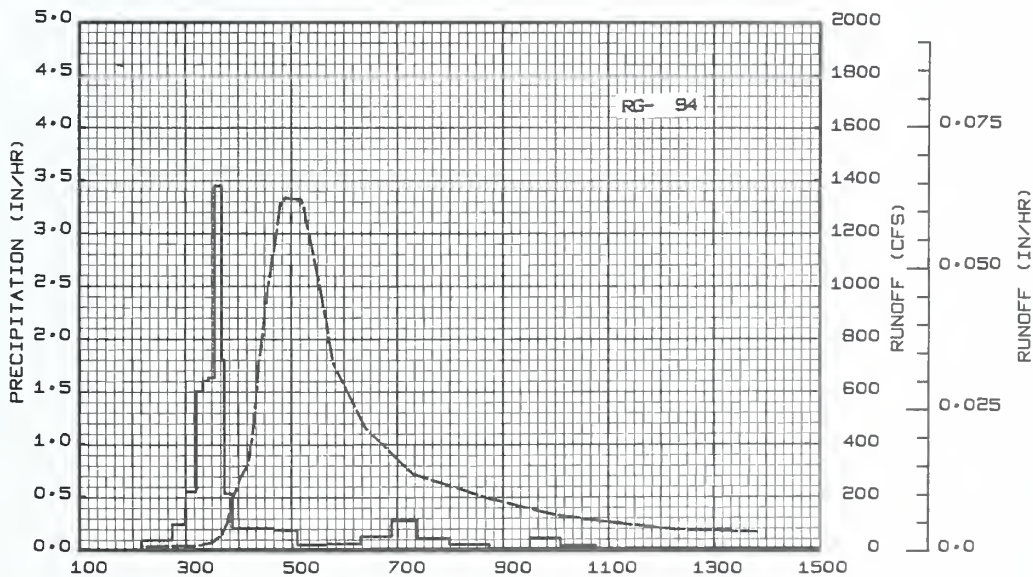
NOTES:
 YEARLY PRECIPITATION 27.21 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 9 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)					CHICKASHA, OKLAHOMA WATERSHED 621 NEAR TABLER							
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	2.6	2.0	1.6	2.8	9.0	13	.4	.3	.0	.4	2.0	1.5
2	2.6	2.1	1.4	1.5	6.2	11	.7	.3E	.7	.5	1.4	1.3
3	2.1	1.8	1.6	1.0	5.6	9.2	2.5	.2E	12	.4	2.2	1.0
4	2.2	2.2	1.7	.7	5.6	7.3	1.3	.8	7.9	.4	1.2	1.2
5	2.1	2.2	1.7	.6	32	3.7	2.1	.7	2.0	.4	1.1	1.2
6	2.0	1.5	2.1	.7	22	2.6	1.6	.3E	5.6	.4	1.1	1.1
7	1.6	2.1	1.7	1.2	13	2.1	1.4	.0E	2.4	1.8	1.0	1.1
8	1.5	2.4	1.5	1.6	11	1.5	1.1	.0	1.6	.8	1.0	1.1
9	1.5	2.1	1.8	1.4	8.4	1.1	.7	.0	1.0	.6	1.1	1.1
10	2.1	2.1	1.5	58	7.3	1.2	1.0	.0	.7	.5	1.1	1.1
11	2.4	2.1	1.2	17	6.2	1.0	.5	.0	.5	.5	1.1	1.4
12	2.1	2.0	1.1	16.2	5.9	1.3	.4	.0	.3	.5	1.0	1.3
13	2.1	1.7	3.0	52	5.9	1.0	.4E	.0	.3	.5	1.0	1.0
14	2.1	1.4	1.3	31	5.6	.6	.4E	.0	3.3	.5	1.0	1.6
15	2.1	1.5	1.0	26	5.2	.5	.5E	.0	1.0	17	1.0	1.5
16	2.1	1.6	1.0	22	4.7	.5	.6E	.0	1.4	3.1	1.0	3.1
17	1.6	1.8	.9	18	4.5	.6	.6E	.0	1.3E	2.1	1.0	3.1
18	1.2	2.1	.8	17	3.3	.7	1.2	.0	1.1E	1.5	1.0	1.7
19	2.0	2.1	1.1	17	2.8	.5	1.5	.0	.7	1.1	1.0	1.5
20	2.5	1.7	2.5	15	35	.3	1.0	.0	.9	.9	1.1	1.4
21	2.4	1.6	1.3	11	16	.3	.8	.0	3.5	.8	1.1	1.4
22	2.1	2.0	4.9	11	12	.3	.5	.0	1.0	.6	1.2	1.1
23	2.1	1.7	4.7	9.0	8.1	.3	.3	.0	.7	.6	1.2	1.4
24	1.8	1.6	2.2	7.9	7.9	.3	.3	.0	.6	.5	1.1	1.4
25	1.7	2.0	6.3	7.9	5.6	1.7	.2	.0	.5	.5	1.1	1.3
26	2.4	1.7	6.2	7.3	5.2	13	.2	.0	5.3	.5	1.1	1.2
27	2.1	2.0	2.6	6.7	5.4	1.4E	.3	.0	3.7	.5	1.1	1.4
28	2.1	1.6	1.8	8.1	5.2	1.0E	.6	.0	1.5	.7	1.1	1.4
29	2.1	-----	1.5	13	8.9	.6	.5	.0	1.0	1.0	1.5	1.4
30	2.0	-----	1.2	13	17	.5	.3	.0	.7	2.2	1.7	2.0
31	2.0	-----	2.5	-----	18	-----	.4	.0	-----	2.8	-----	1.4
MEAN	2.0	1.9	2.1	18	10	2.6	0.9	0.1	2.7	1.4	1.2	1.4
INCHES	.071	.059	.073	.619	.345	.088	.030	.003	.091	.050	.040	.050

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/OAY, MULTIPLY BY .001117. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.776. YEARLY MEAN DISCHARGE, 3.7 CFS. YEARLY DISCHARGE, 1.519 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA			WATERSHED 621 NEAR TABLER							
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF							
DATE MO-DAY	RAINFALL (inches)	RUNOFF (mcbs)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
<p>Watershed conditions: The land use of this 33.3 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 12, 1967										
			4-12						4-12	0210	12.4	.000	
											0306	14.2	.008
											0318	16.1	.007
											0330	27.0	.009
											0342	58.0	.013
											0348	100.7	.017
											0354	185.2	.023
											0400	299.7	.034
											0412	325.7	.038
											0418	465.3	.0579
											0424	710.2	.087
											0426	1020.9	.088
											0448	1309.1	.097
											0454	1334.3	.098
											0512	1325.9	.094
											0530	1023.9	.078
											0548	704.7	.0829
											0624	461.2	.0991
											0718	285.5	.114
								0842	194.2	.150			
								1000	126.9	.1001			
								1112	95.9	.1469			
								1218	72.0	.1606			
								1348	62.5	.1553			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00004654. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.17-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 621

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 121 AT GRACEMONT AREA — 131,780 ACRES (205.9 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / _o	.35 .030	.16 .034	2.02 .050	5.05 .334	2.50 .056	2.68 .018	1.93 .004	1.35 .001	5.55 .023	1.89 .009	.23 .012	1.16 .022	24.87 .593			
STA AVG P ₂ / _o	.44 .040	.85 .050	1.19 .061	2.60 .131	2.90 .118	4.17 .056	1.48 .001	2.62 .024	5.87 .344	1.48 .034	1.53 .019	1.04 .041	26.17 .919			
MEAN P ₃ / _o 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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	
1967	4-12	.0409	4-12	.0388	4-12	.0737	4-12	.148	4-12	.195	4-12	.219	4-12	.243	4-12	.289
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																
1963 TD 1967	9-21 1965	.0640	9-21 1965	.0622	9-21 1965	.1220	9-21 1965	.318	9-21 1965	.497	9-21 1965	.653	9-21 1965	.815	9-21 1965	1.238
Notes: For the revised watershed conditions, see table on p. 69.7-4, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, p. 69.7-9, (Geologic); 1963, p. 69.18-4, (Topography); and 1965, p. 69.7-21, (revised Composite). The stream gaging station was maintained from Oct. 1955 to Oct. 1963 by the U.S. Geological Survey. ^{1/} Precipitation data obtained from a Thiessen weighted average of 32 gages on the watershed. ^{2/} Precipitation records began Oct. 1961; runoff records began Oct. 1963. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Oct. 1963.																
MISCELLANEOUS DATA																
<p>RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 5,430 cfs (16.96 ft). Minimum — July 1, no flow (5.05 ft). PERIOD OF RECORD: Maximum — Sept. 21, 1965, 8,500 cfs (10.77 ft). Minimum — no flow. Period of record began Oct. 1, 1963. PEAK DISCHARGES: (Above base flow of 900 cfs) Apr. 12, 5,430 cfs (16.96 ft). DAILY TEMPERATURE: See p. 69.7-3.</p>																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 121 AT GRACEMONT						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.10	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.01	.00	.20	.00	.15	.00
3	.00	.00	.00	.00	.01	.00	.10	.07	1.16	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.55	.17	.00	.00	.01
5	.00	.00	.01	.00	.74	.00	.20	.00	.71	.00	.00	.00
6	.00	.00	.01	.00	.22	.01	.00	.00	.25	.01	.00	.00
7	.00	.00	.00	.03	.00	.00	.00	.00	.08	1.08	.00	.00
8	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.23	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.39	.00	.00	.00	.00	.00	.00	.00	.19
11	.00	.00	.00	.06	.00	.00	.05	.00	.00	.00	.00	.00
12	.00	.00	.06	2.91	.00	.25	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.43	.13	.00	.00	.00	.00	.00	.00	.00
14	.00	.00	.00	.00	.01	.00	.00	.00	1.17	.00	.00	.04
15	.00	.00	.00	.00	.00	.00	.05	.00	.00	.08	.00	.04
16	.00	.00	.00	.06	.00	.14	.17	.00	.00	.00	.00	.64
17	.00	.00	.00	.00	.00	.31	.00	.21	.00	.00	.00	.03
18	.00	.00	.00	.00	.00	.02	1.14	.00	.00	.00	.00	.00
19	.00	.00	.40	.94	.00	.00	.15	.00	.00	.00	.00	.00
20	.00	.00	.02	.00	.35	.00	.00	.09	1.14	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.06
22	.00	.00	.76	.00	.00	.00	.00	.01	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.57	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.35	.00	.38	.00	.00	1.34	.00	.00	.00	.00	.00	.00
26	.00	.00	.01	.00	.00	.04	.00	.07	.67	.00	.00	.00
27	.00	.01	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.32	.00	.03	.00	.00	.00	.01	.00
29	.00	-----	.00	.00	.17	.00	.00	.00	.00	.00	.06	.00
30	.00	-----	.07	.00	.50	.00	.00	.00	.00	.43	.00	.15
31	.00	-----	.30	.00	.05	-----	.00	.35	-----	.29	-----	.00
TOTAL	.35	.16	2.02	5.05	2.50	2.68	1.93	1.35	5.55	1.89	.23	1.16
STATION	.44	.85	1.19	2.60	2.90	4.17	1.48	2.62	5.87	1.48	1.53	1.04

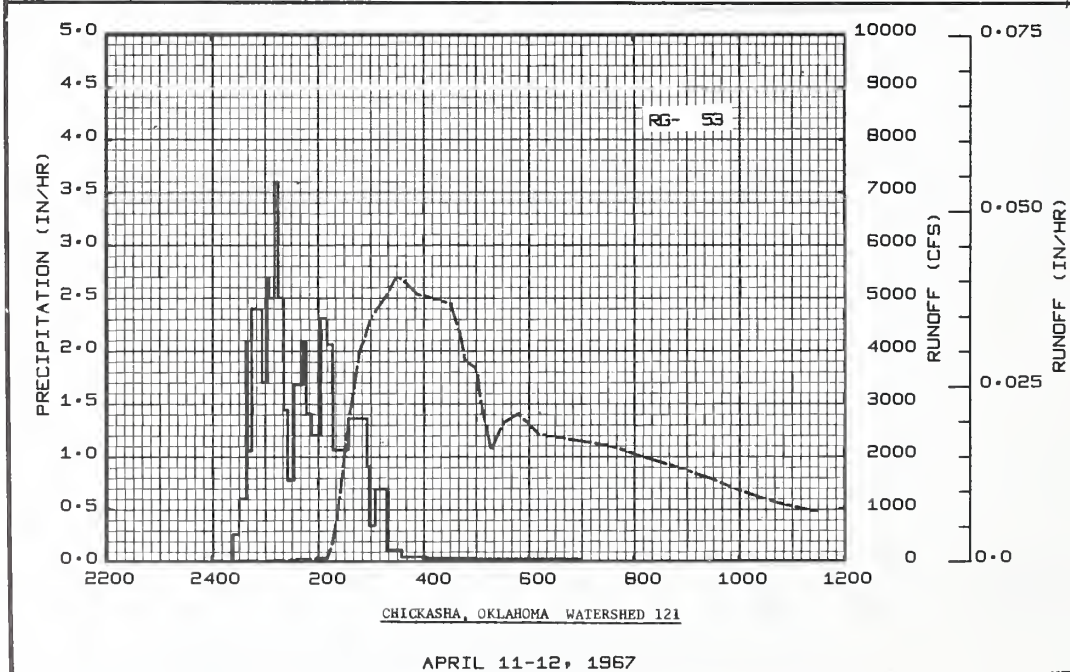
NOTES: YEARLY PRECIPITATION 24.87 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 32 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 121 AT GRACEMONT						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	3.9	6.9	7.4	13.	* 12.	6.9E	1.1	.1	.1	1.1	3.9	3.5
2	3.9	6.4	7.4	11.	11.	5.1E	1.1	.1	1.3	.7	2.1	3.1
3	4.6	5.9	7.4	* 6.4	12.	3.9E	1.1	.2	9.1	* 2.1	2.1	2.5
4	* 4.6	5.9	5.1	3.1	23.	3.5E	1.1	.5	2.4	.3	2.1	* 2.5
5	4.6	5.9	5.9	3.1	4.7	* 3.1E	1.3	.1	3.5	1.1	1.6	2.8
6	4.6	4.2E	6.4	1.1	39.	3.1E	.2	.2	.7	.5	1.3	2.8
7	4.2	5.1	4.6	1.1	19.	2.8E	.3	* .1	.3	8.9	1.6	2.8
8	3.7E	5.5	3.1	2.1	* 12.	2.5E	.3	* .1	.9	5.0	1.6	2.8
9	3.4E	5.1	4.2	2.5	7.4	1.9E	.9	.1	.2	1.6	1.9	2.8
10	3.2E	4.6	2.1	15.	6.9E	1.9E	.7	.1	.1	.7	2.8	2.5
11	3.7E	5.5	1.6	* 9.5	6.4E	1.6	* .7	.1	.1	1.1	2.5	3.5
12	4.6	4.6	4.6	* 1200.	6.4E	2.5	.3	.1	.5	1.3	2.1	3.5
13	5.5	* 4.6	* 5.1	* 144.	5.9E	2.1	.1	.3	.9	1.3	2.1	2.5
14	5.5	9.5	3.1	* 72.	5.5E	2.1	.1	.1	7.4	1.3	1.9	3.1
15	5.5	14.	3.1	4.4	5.1E	2.1	.2	.1	7.9	1.3	1.9	2.1
16	* 5.5	11.	4.2	30.	* 4.6E	2.1	.2	.1	.2	1.1	2.1	2.5
17	5.2	5.9	3.9	* 22.	5.1E	2.1	.1	.3	.5	1.1	1.9	5.1
18	4.6E	4.6	3.5	16.	* 5.5E	2.1	.9	.1	.3	1.1	1.9	6.9
19	4.0E	5.1	5.5	37.	5.5E	2.1	1.1	.1	.1	* 1.1	1.9	5.1
20	4.6E	3.9	16.	43.	5.1E	1.9	1.1	.1	.3	1.1	2.1	5.1
21	5.1	* 8.4	11.	22.	4.2E	1.6	4.6	* .1	18.	1.1	2.5	4.6
22	5.9	7.9	29.	14.	* 3.9E	1.6	1.6	.1	2.8	1.1	2.8	4.2
23	5.5	* 8.4E	19.	13.	3.9E	2.1	.1	.1	.7	1.3	3.1	4.6
24	5.5	7.9E	13.	14.	3.9E	2.5	* .1	.1	.1	1.1	2.5	4.2
25	5.1	7.9E	10.	12.	3.5E	9.5	.1	.1	.1	.9	2.5	4.2
26	7.9	7.4E	24.	12.	3.5E	8.4	.1	.1	* 7.6	1.1	2.5	4.2
27	7.9	* 6.9E	16.	11.	3.5E	7.4	.1	.1	20.	1.1	2.1	4.6
28	7.9	* 5.9E	14.	11.	3.5E	3.1	.1	.1	12.	1.1	2.1	4.2
29	7.9	-----	11.	11.	3.5E	2.8	.1	.1	3.9	1.3	2.5	4.2
30	* 7.9	-----	6.9	11.	12.	E 1.6	.1	.1	2.1	1.3	3.1	5.1
31	7.4	-----	11.	-----	* 14.	E	.1	.3	-----	2.8	-----	8.4
MEAN	5.3	6.6	8.7	36	9.8	3.2	.6	.1	4.2	1.5	2.2	3.9
INCHES	.030	.034	.050	.334	.056	.018	.004	.001	.023	.009	.012	.022

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0001806. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 10,980. YEARLY MEAN DISCHARGE, 8.8 CFS. YEARLY DISCHARGE, .593 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA			WATERSHED 121 AT GRACEMONT				
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 April 12, 1967							
			4-12	RG	53		4-12	0000		
				0024	.00	.00		0036	6.9	.0000
				0031	.26	.03		0100	6.9	.0000
				0039	.60	.11		0130	11.2	.0001
				0041	2.10	.18		0212	25.6	.0001
				0045	1.05	.25		0218	73.7	.0004
				0051	2.40	.49		0224	392.3	.0006
				0057	2.40	.73		0230	950.9	.0011
				0103	1.70	.90		0236	2020.6	.0022
				0105	2.70	.99		0242	2715.3	.0040
				0111	2.50	1.24		0248	3297.5	.0062
				0115	3.60	1.48		0300	3955.7	.0090
				0121	2.50	1.73		0306	4631.7	.0154
				0126	1.44	1.85		0318	5034.1	.0263
				0133	.77	1.94		0330	5432.2	.0342
				0143	1.68	2.22		0348	5170.2	.0462
				0147	2.10	2.36		0354	5067.3	.0500
				0153	1.40	2.50		0430	4904.1	.0726
				0203	1.20	2.70		0442	4365.3	.0795
				0210	2.31	2.97		0448	3826.2	.0826
				0217	2.06	3.21		0500	3664.7	.0882
				0234	1.06	3.51		0506	3037.8	.0908
				0256	1.36	4.01		0512	2561.9	.0929
				0258	.90	4.04		0518	2110.4	.0946
				0305	.34	4.08		0530	2624.2	.0982
				0318	.69	4.23		0548	2804.2	.1043
				0335	.11	4.26		0600	2617.8	.1094
				0403	.04	4.28		0612	2417.4	.1122
				0504	.03	4.31		0730	2205.4	.1348
				0702	.02	4.35		0830	1888.7	.1502
								0930	1558.1	.1532
								1000	1346.0	.1686
								1042	1120.9	.1751
								1130	931.4	.1813

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000007525. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.18-2. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.



MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 513 NEAR TABLER AREA — 12,314 ACRES (19.24 SQ. MILES)											
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ^{1/}	.10	.11	2.61	7.02	3.89	2.28	1.53	1.78	5.43	2.41	.32	1.08	28.56			
	O	.062	.053	.073	1.618	.240	.082	.024	.001	.076	.032	.038	.056	2.355			
STA AVG	P ^{2/}	.74	1.03	1.70	4.46	2.54	2.11	1.61	5.46	3.84	1.29	.39	.84	26.01			
	O	.109	.101	.169	.723	.173	.067	.036	.433	.253	.040	.051	.068	2.223			
MEAN 67 YR	P ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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		
1967		4-12	.1451	4-12	.1415	4-12	.2682	4-12	.515	4-12	.597	4-12	.642	4-12	.754	4-9	.875
MAXIMUMS FOR PERIOD OF RECORD ^{4/}																	
19 65 TO 19 67	8-8 1965	.1692	8-8 1965	.1637	8-8 1965	.3070	8-7 1965	.562	4-12 1967	.597	4-12 1967	.642	4-12 1967	.754	4-9 1967	.875	
NOTES: For the revised watershed conditions, see table on page 69.7-4 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, this publication. For maps, see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, pp. 69.16-8 and 69.7-21. ^{1/} Precipitation data obtained from a Thiessen weighted average of 18 gages on the watershed. ^{2/} Precipitation records began Jan. 1965; runoff records began Jan. 1965. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. ^{4/} Period of record began Jan. 1965.																	
MISCELLANEOUS DATA																	
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 20, 1,860 cfs (8.77 ft). Minimum — July 26, no flow (1.00 ft).																	
PERIOD OF RECORD: Maximum — Aug. 8, 1965, 2,100 cfs (9.15 ft). Minimum — no flow.																	
PEAK DISCHARGES: (Above base flow of 500 cfs) 1967 — Apr. 12, 1,800 cfs (8.67 ft); Apr. 20, 1,860 cfs (8.77 ft).																	
DAILY TEMPERATURE: See p. 69.7-3.																	

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 513 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NDV	DEC
1	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.15	.02	1.17	.00	.06	.00
4	.00	.00	.00	.00	.00	.00	.00	.97	.32	.00	.00	.00
5	.00	.00	.00	.00	1.07	.00	.23	.00	.69	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.41	.00	.00	.00	.00	.00	.95	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.05	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.66	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.04	2.60	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.01	.51	.04	.00	.00	.00	.07	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.01	.41	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.02	.00	.00	.46	.00	.06
16	.00	.00	.00	.00	.00	.00	.26	.00	.12	.00	.00	.59
17	.00	.00	.00	.00	.00	.00	.00	.50	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.12	.47	.00	.00	.00	.00	.00
19	.00	.00	.31	.35	.01	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	1.44	1.16	.00	.00	.00	.80	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.04	.02	.12	.00	.00	.02
22	.00	.00	.90	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.47	.00	.00	1.28	.00	.00	.00	.00	.00	.00
26	.10	.00	.11	.00	.00	.55	.00	.00	1.07	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.02	.00
29	.00	-----	.00	.00	.62	.00	.00	.00	.00	.01	.07	.00
30	.00	-----	.21	.00	.77	.00	.00	.00	.00	.70	.00	.21
31	.00	-----	.52	-----	.20	-----	.00	.24	-----	.29	-----	.00
TOTAL	.10	.11	2.61	7.02	3.89	2.28	1.53	1.78	5.43	2.41	.32	1.08
ST. AV.	.74	1.03	1.70	4.46	2.54	2.11	1.61	5.46	3.84	1.29	.39	.84

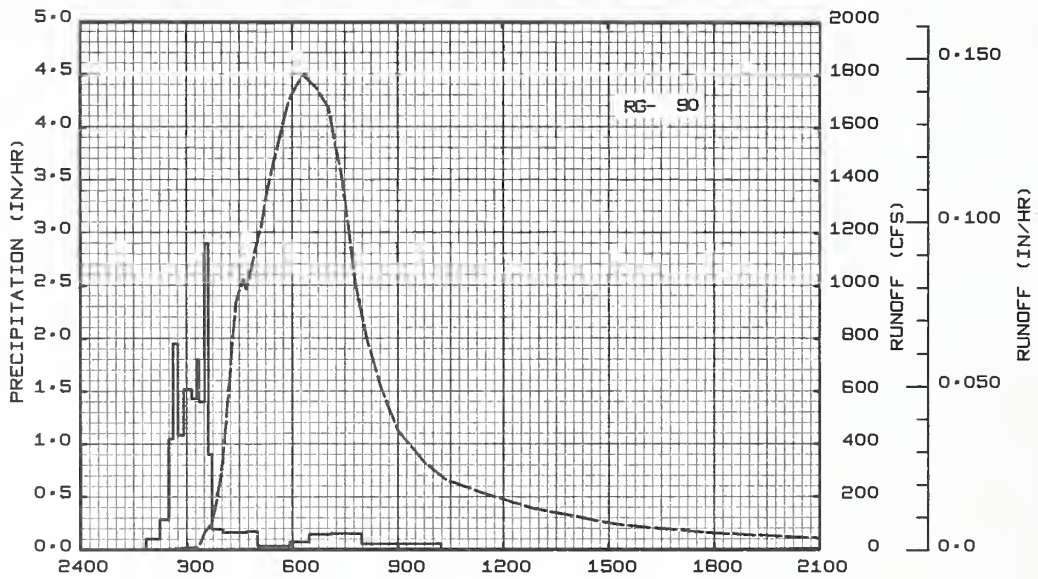
NOTES: YEARLY PRECIPITATION 28.56 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 18 GAGES ON THE WATERSHED.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 513 NEAR TABLER						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NDV	DEC
1	<u>1.2</u>	1.1	1.0	1.9	3.2	2.5	.7	<u>0</u>	<u>0</u>	<u>2</u>	.9	.9
2	1.1	1.1	.8	1.1	2.9	2.0	.7	.0	.0	.2	.6	.7
3	1.0	1.1	.9	1.0	2.8	1.9	.9	.0	.1	.2	.7	.7
4	1.0	1.1	1.1	.9	2.7	1.8	.9	.0	4.8	.2	.7	<u>6</u>
5	1.0	1.0	1.1	<u>8</u>	6.6	1.5	<u>1.2</u>	<u>4</u>	<u>9.9</u>	.2	.6	.7
6	1.0	.9	1.0	.8	<u>3</u>	1.3	.8	.2	.9	.2	.6	.8
7	.9	.9	1.0	1.0	5.2	1.2	.6	.3	<u>5.6</u>	.6	.6	.8
8	.9	1.0	.9	1.5	3.5	1.0	.7	.0	.2	1.0	.6	.9
9	<u>8</u>	1.0	.9	1.3	2.9	.8	.6	.0	.1	.6	.6	.8
10	1.0	1.0	1.0	3.2	2.6	.9	.5	.0	.1	.4	.6	.8
11	1.0	1.0	.9	3.2	2.4	1.0	.3	.0	.0	.4	.6	.8
12	1.1	1.0	.9	<u>3.8</u>	2.2	1.0	.2	.0	.0	.3	.6	.8
13	1.1	.9	.9	6.0	2.4	1.1	.2	.0	.0	.3	<u>5</u>	.8
14	1.1	.9	.9	1.2	2.8	.9	.1	.0	.1	.3	.6	.8
15	1.0	1.0	<u>7</u>	6.6	2.3	.7	.1	.0	.4	.4	.6	1.0
16	1.0	.9	.7	4.9	2.1	.7	.2	.0	.4	.6	.6	1.2
17	.9	1.0	.7	3.5	1.9	.6	.4	.0	.3	.4	.6	1.1
18	1.0	1.0	.7	3.0	1.9	.6	.6	.0	.2	.3	.6	<u>2.1</u>
19	1.0	1.0	.8	3.9	1.7	.6	.9	.0	.2	.3	.6	1.0
20	1.1	1.0	1.1	* 26.2	9.5	.5	.6	.0	.3	.2	.6	1.0
21	1.2	.9	1.0	4.5	5.0	<u>4</u>	.4	.0	6.1	.3	.7	1.0
22	1.1	1.0	2.6	1.3	2.4	<u>4</u>	.4	.0	.6	.2	.7	.9
23	1.1	.9	<u>3.8</u>	7.2	2.1	.4	.2	.0	.3	.2	.7	.9
24	1.1	.9	1.3	5.4	1.9	.6	.1	.0	.2	.2	.7	.9
25	1.0	.9	1.9	5.1	1.6	<u>9.2</u>	<u>0</u>	.0	.2	.2	.8	.9
26	1.1	.9	2.2	4.6	<u>1.4</u>	4.3	.0	.0	4.7	.2	.7	.9
27	1.1	1.0	1.2	4.0	1.5	1.8	.0	.0	7.5	.2	.7	1.0
28	1.0	<u>1.2</u>	1.0	3.9	1.5	1.1	.0	.0	.6	.2	.7	.9
29	1.0	-----	.9	4.0	2.9	.9	.0	.0	.4	.3	.8	.9
30	1.0	-----	.9	3.9	3.4	.7	.0	.0	.3	.5	1.0	1.1
31	1.1	-----	2.8	-----	6.1	-----	.0	.0	-----	1.8	-----	1.1
MEAN	1.0	1.0	1.2	2.8	4.0	1.4	.4	.0	1.3	.5	.7	.9
INCHES	.062	.053	.073	1.618	.240	.082	.024	.001	.076	.032	.038	.056

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001933. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.026. YEARLY MEAN DISCHARGE, 3.3 CFS. YEARLY DISCHARGE, 2.355 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED. * DISCHARGE MEASUREMENTS.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 513 NEAR TABLER				
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 April 12, 1967										
			4-12	PC	.90		4-12			
				0151	.30	.30		0230	2.2	.0000
				0214	.10	.40		0300	4.0	.0001
				0229	.28	.68		0318	8.9	.0003
				0237	1.05	.25		0324	26.2	.0004
				0245	1.95	.51		0330	63.8	.0004
				0255	1.08	.69		0342	95.6	.0021
				0308	1.52	1.21		0348	148.2	.0031
				0316	1.43	1.21		0354	226.8	.0040
				0321	1.80	1.36		0400	325.7	.0068
				0330	1.40	1.57		0406	454.1	.0099
				0336	2.90	1.86		0412	616.3	.0142
				0342	.30	1.95		0418	790.9	.0189
				0401	.19	2.01		0424	935.4	.0269
				0442	.16	2.12		0436	1021.7	.0424
				0500	.17	2.17		0442	988.3	.0507
				0555	.03	2.20		0506	1217.5	.0612
				0620	.7	2.24		0518	1368.1	.0711
				0706	.14	2.33		0536	1540.2	.0822
				0758	.15	2.46		0554	1707.7	.0814
				0902	.05	2.51		0618	1801.2	.0880
				1014	.05	2.57		0642	1749.2	.0951
								0700	1679.0	.0945
								0724	1419.0	.0965
								0736	1217.5	.0977
								0748	1004.9	.0950
								0806	809.1	.0975
								0830	616.3	.0975
								0900	448.6	.0919
								0943	325.7	.0968
								1024	262.4	.0911
								1142	202.6	.0954
								1254	153.7	.0926
								1518	93.6	.0955
								1748	63.0	.0923
								1924	51.1	.0996

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .00008054. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.19-2. FOR ISORHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION.

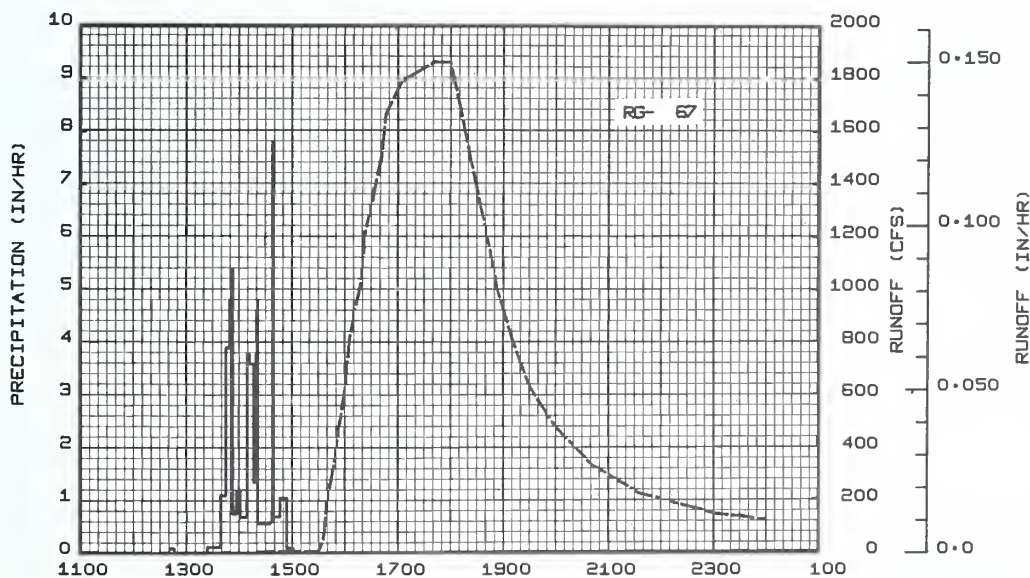


APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 513

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 513 NEAR TABLER				
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)	
<p>Watershed conditions: The land use of this 19.24 sq. mi. watershed is not monitored seasonally. For revised watershed conditions, see p. 69.7-4, this publication.</p>			Event of April 20, 1967								
			4-20	RG	67	.30	4-20	1424	3.6	.0000	
				1240	.00	.01		1448	5.7	.0001	
				1247	.09	.01		1530	6.6	.0005	
				1324	.00	.01		1536	48.4	.	
				1339	.12	.04		1542	1.6.0	.018	
				1345	1.10	.15					
				1349	3.90	.41			325.7	.0041	
				1352	4.80	.65			475.3	.0073	
				1353	5.40	.74			1600	.0117	
				1357	.75	.79			1606	.0175	
				1401	1.20	.87			1612	.0244	
				1409	.68	.96			1618	.0322	
				1412	3.80	1.15			1624	.0412	
				1416	3.60	1.39			1642	.0739	
				1420	1.35	1.48			1648	.0866	
				1421	4.80	1.56			1706	.1284	
				1435	.56	1.69			1742	.2166	
				1438	.60	1.72			1800	.2616	
				1439	7.80	1.85			1806	.2763	
				1446	.69	1.93			1824	.3159	
				1454	1.05	2.07			1842	.3486	
				1501	.09	2.08			1854	.3664	
									1912	.3883	
									1930	.4057	
						2000	.4280				
						2042	.4507				
						2136	.4710				
						2300	.4919				
						2400	.5027				
						0154	.5189				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0008054. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.19-2, THIS PUBLICATION.



APRIL 20-21, 1967

CHICKASHA, OKLAHOMA WATERSHED 513

CHICKASHA, OKLAHOMA WATERSHED 514 NEAR TABLER

LOCATION: WATERSHED — 514 near Highway 62 in the vicinity of Tabler, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

CAGING STATION — NW¼ sec. 26, T. 7 N., R. 6 W., lat. 35°03'25", long. 97°48'31".

AREA: 7,225.6 acres (11.29 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12+
Percent of area	9	4	25	39	22	1

1/

SOILS: Residual, derived from siltstone, shale, sandstone, and terrace and flood-plain alluvium.

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to(in.)	Permea- bility	
Grant-Kingfisher Zaneis silt loams	31	45	Moderate medium granular	Moderately slow	Moderate medium blocky	Moderately slow	45	Moderately slow	Slow
Nash-Quinlan loams	53	22	Moderate medium granular	Moderate	Moderate medium subangular blocky	Moderate	22	Moderate	Medium
Port silt loams	8	60+	Moderate fine granular	Moderate	Moderate granular	Moderate	7	Moderate	Medium
Renfrow silt loams	8	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow

EROSION:

Erosion class	1	2	3	4
Percent of area	28	18	41	13

1/

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII
Percent of area	9	4	27	26	4	28	2

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, 8.0, Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek, Blaine and Marlow, 0.0; and Chickasha, 92.0. The tributary contains only two geologic formations, therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, 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 8.55 miles.

CHARACTER OF FLOW: Spring fed intermittent interrupted.

INSTRUMENTATION: **Precipitation:** Twenty-two recording weighing type gages, 4 of which have a 24-hour time scale and 18 which have a 12-hour time scale. **Runoff:** The headwater gage consists of a Stevens A-35 water level recorder with bubble gage and servomanometer with 9.6 inches per day time scale. High flow measurements are made by lowering a current meter from a cableway which is operated from the left bank of the stream. Low flow measurements are made with a current meter by wading. Staff gages placed in the stream channel are used for outside reference points for the headwater and tailwater gages. The tailwater gage consists of a Stevens A-35 water level recorder with a 9.6 inches per day time scale.

WATERSHED CONDITIONS: Crop land is alfalfa, small grains, and row crop rotation. The remaining is used for pasture or range. Approximately 43% is thin steep land that has been overgrazed.

Percent of watershed in						
Cultivation - 4					Pasture or range - 96	
Alfalfa - 44	Sowed crops - 33			Row crops - 23		Classification of range 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. - 4% Good - 55%
						Fair - 36% Poor - 5%
3-4	35	45	50	30	300	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 Regio. specifically the Central Rolling Red Prairies land resource area (H-80) in Kansas, Oklahoma, and Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 514 NEAR TABLER AREA — 7,225.6 ACRES (11.29 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ₁ / Q	.09	.08	2.07	6.25	4.60 .201	2.05 .051	1.60 .022	1.30 .003	5.47 .157	2.71 .073	.31 .091	1.11 .117	27.64		
	STA AVG P ₂ / Q															
	MEAN P ₃ / 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	5-5	.0082	5-5	.0134	5-5	.0220	5-5	.047	5-5	.057	5-5	.062	9-3	.101	9-2	.108
MAXIMUMS FOR PERIOD OF RECORD																
19 67 TO 19 --	5-5 1967	.0082	5-5 1967	.0134	5-5 1967	.0220	5-5 1967	.047	5-5 1967	.057	5-5 1967	.062	9-3 1967	.101	9-2 1967	.108
<p>NOTES: Watershed conditions same as that described on previous page under <u>WATERSHED CONDITIONS</u>. For maps see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, pp. 69.16-8 and 69.7-21.</p> <p>1/ Precipitation records obtained from a Thiessen weighted average of 22 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began May 1967. 3/ Mean P based on 67-yr (1901-1967) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated.</p>																
MISCELLANEOUS DATA																
<p><u>RUNOFF PEAK DATA</u>: YEAR (1967): Maximum — May 5, 111.7 cfs (7.22 ft). Minimum — No flow - periodically.</p> <p><u>PERIOD OF RECORD</u>: Maximum — May 5, 1967, 111.7 cfs (7.22 ft). Minimum — No flow.</p> <p><u>PEAK DISCHARGES</u>: (Above base flow of 100 cfs) 1967 — 111.7 cfs (7.22 ft).</p> <p><u>DAILY TEMPERATURE</u>: See p. 69.7-3.</p>																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA		WATERSHED 514 NEAR TABLER				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.73	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.19	.00	1.20	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.74	.48	.00	.00	.00
5	.00	.00	.00	.00	1.23	.00	.33	.00	.67	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.36	.00	.00	.00	.00	.01	.90	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.09	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.96	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.49	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.06	.52	.04	.00	.00	.00	.05	.00	.00	.03
14	.00	.00	.00	.00	.01	.00	.00	.00	.49	.00	.00	.13
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.82	.00	.07
16	.00	.00	.00	.00	.00	.00	.26	.00	.14	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.08	.45	.00	.00	.00	.00	.00
19	.00	.00	.22	.30	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.53	1.46	.00	.00	.00	.56	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.10	.00	.11	.00	.00	.01
22	.00	.00	.78	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.41	.00	.00	.82	.00	.00	.00	.00	.00	.00
26	.09	.00	.07	.00	.00	.86	.00	.00	.99	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.71	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.05	.00	.90	.00	.00	.00	.00	.63	.00	.20
31	.00	-----	.44	-----	.25	-----	.00	.21	-----	.34	-----	.00
TOTAL	.09	.08	2.07	6.25	4.60	2.05	1.60	1.30	5.47	2.71	.31	1.11
STA AV												

NOTES:

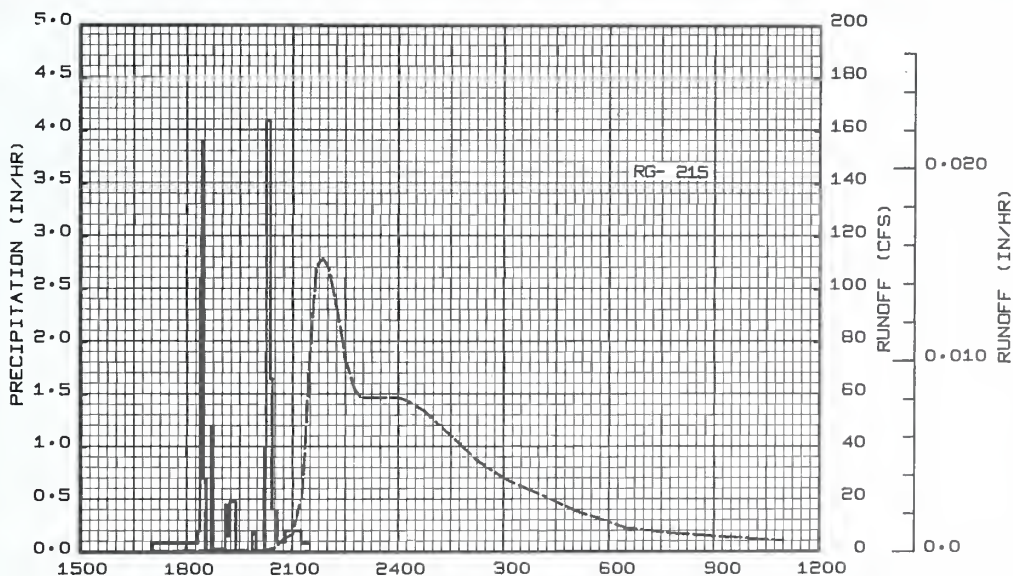
YEARLY PRECIPITATION 27.64 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 22 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA		WATERSHED 514 NEAR TABLER				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1					.268	.838	.155	.022	.029	.195	.835	1.28
2					.319	.609	.155	.023	.191	.184	.670	1.22
3					.324	.565	.223	.023	6.61	.216	.691	.922
4					.319	.420	.268	.023	6.87	.197	.680	.962
5					6.49	.384	.670	.033	17.7	.162	.665	1.16
6					12.8	.378	.271	.034	.674	.177	.647	1.05
7					.948	.378	.184	.024	.373	3.65	.630	1.07
8					.607	.354	.209	.024	.226	.545	.704	1.02
9					.518	.262	.121	.028	.166	.345	.751	1.18
10					.427	.257	.275	.027	.122	.282	.818	1.05
11					.416	.253	.323	.025	.096	.281	.784	1.09
12					.415	.272	.443	.025	.080	.307	.767	1.13
13					.469	.274	.407	.025	.074	.281	.809	.980
14					.572	.266	.520	.025	.437	.301	.852	.979
15					.545	.242	.516	.025	.391	7.17	.843	1.05
16					.534	.235	.299	.026	.397	.959	.893	1.28
17					.533	.157	.198	.026	.306	.448	.889	1.70
18					.537	.067	.267	.026	.254	.359	.905	1.49
19					.489	.038	.410	.026	.220	.354	1.00	1.38
20					15.5	.021	.263	.026	.230	.327	1.05	1.33
21					2.53	.019	.167	.027	.929	.338	1.04	1.13
22					.962	.024	.133	.027	.352	.348	1.07	.833
23					.644	.032	.105	.027	.256	.396	1.13	.931
24					.467	.421	.075	.027	.242	.385	1.16	1.07
25					.384	2.41	.026	.028	.226	.353	1.18	1.07
26					.302	4.69	.022	.028	3.18	.410	1.17	1.09
27					.325	.733	.022	.028	5.96	.351	1.13	1.09
28					.356	.360	.022	.028	.437	.432	1.36	1.16
29					1.09	.253	.022	.028	.264	.463	1.25	1.16
30					3.12	.197	.022	.029	.244	.640	1.28	1.30
31					7.69	-----	.022	.029	-----	1.18	-----	1.20
MEAN					1.96	.514	.220	.027	1.58	.711	.925	1.14
INCHES					.201	.051	.022	.003	.157	.073	.091	.117

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/OAY, MULTIPLY BY .003294. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 602.1. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA				WATERSHED 514 NEAR TABLER				
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)	
Watershed conditions: See p. 69.20-1, this publication.			Event of May 5, 1967								
			5- 5	RG	215			5- 5	1700	.34	1/.0000
				1703	.00	.00		1842	.66	.0001	
				1820	.08	.10		2030	1.50	.0003	
				1823	.20	.11		2045	4.76	.0004	
				1826	2.60	.24		2100	6.80	.0006	
				1828	3.90	.37					
				1834	.70	.44		2115	20.46	.0011	
				1841	.00	.44		2120	34.75	.0014	
				1845	1.20	.52		2125	58.83	.0019	
				1906	.03	.53		2130	78.49	.0027	
				1910	.45	.56		2140	108.40	.0048	
				1914	.15	.57		2150	111.74	.0074	
				1924	.48	.65		2200	108.40	.0099	
				1952	.00	.65		2230	72.97	.0162	
				1958	.20	.67		2245	61.91	.0185	
				2012	.00	.67		2255	58.83	.0199	
				2015	1.00	.72		2300	58.83	.0205	
				2021	4.10	1.13	5- 6	0000	58.83	.0286	
				2025	1.65	1.24		0015	57.63	.0306	
				2034	.40	1.30		0045	53.50	.0344	
				2047	.09	1.32		0145	41.05	.0409	
				2114	.20	1.41		0215	34.75	.0435	
				2130	.08	1.43		0300	28.15	.0468	
								0415	20.81	.0509	
					0500	15.94	.0528				
					0630	9.00	.0554				
					1100	3.95	.0592				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0001372. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.20-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 514

CHICKASHA, OKLAHOMA WATERSHED 5141 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — NE $\frac{1}{4}$ sec. 13, T. 7 N., R. 6 W., lat. 35°04'49", long. 97°46'33", at artificial control.

AREA: 4,064 acres (6.35 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	10	5	40	33	12	0	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to (in.)	Permea- bility	
Nash-Quinlan loam	46	8	Moderate medium granular	Moderate	Moderate medium granular	Moderate	30	Moderate	Medium
Kingfisher Grant-Zaneis light silt loam	25	14	Moderate medium granular	Moderate	Moderate fine subangular hlocky	Moderate	43	Moderately slow	Slow
Renfrow Kirkland silt loam	19	16	Moderate fine granular	Moderate	Moderate fine hlocky	Moderately slow	50	Moderately slow	Slow
Port silt loam	10	20	Moderate fine	Moderate	Moderate medium granular	Moderate	45	Moderate	Medium

EROSION:	Erosion class	1	2	3	4	
	Percent of area	10	14	61	15	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	10	4	16	8	7	55	0	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, 5.0; Cloud Chief 0.0; Rush Springs, 0.0; Dog Creek, Blaine and Marlow, 0.0; and Chickasha, 95.0. The tributary contains only two geologic formations; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, 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.

CHARACTER OF FLOW: Perennial.

INSTRUMENTATION: **Precipitation:** Seventeen recording weighing type gages of which 3 have a 24-hour time scale and 14 have a 12-hour time scale. **Runoff:** The headwater gage consists of a Stevens 2A-35 water level recorder with 9.6 inches per day time scale. The 2A-35 recorder installed on an 18" well is used to record both the headwater and tail-water elevations. Artificial control consists of a "V" notch weir with 3:1 side slopes of reinforced concrete. High flow measurements are made from a bridge just upstream from the weir. Low flow measurements are made with a current meter by wading. Measurements are made during extreme low flow by attaching a portable flume to the weir. Tape down for the headwater is made from an outside gage reference point on the hridge. Tape downs are also made from reference points inside the gage wells for both the headwater and tailwater gages.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture or range. Approximately 40% is thin steep land that has been grazed heavily. Tall, intermediate, and short grasses are prevalent. There are 23 farm ponds in this watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 5%	Good - 60%
Fair - 30%	Poor - 5%
The general practice for good range utilization is 1 animal unit per 12 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 5141 NEAR MIDDLEBURG AREA — 4,064 ACRES (6.35 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ Q	.09 .048	.09 .040	1.97 .044	6.47 .853	4.35 .151	2.13 .032	1.60 .012	1.42 .001	5.36 .087	2.87 .054	.32 .037	1.11 .051	27.78 1.410			
STA AVG P ₂ Q																
MEAN P ₃ 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.2760	4-12	.2456	4-12	.3895	4-12	.511	4-12	.554	4-12	.573	4-12	.624	4-9	.756
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 19--	4-12 1967	.2760	4-12 1967	.2456	4-12 1967	.3895	4-12 1967	.511	4-12 1967	.554	4-12 1967	.573	4-12 1967	.624	4-9 1967	.756
Notes: Watershed conditions same as that described on previous page under <u>WATERSHED CONDITIONS</u> . For Watershed map, see p. 69.21-6. For composite map see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. <u>1/</u> Precipitation data obtained from a Thiessen weighted average of 17 gages on the watershed. <u>2/</u> Precipitation records began Jan. 1967; runoff records began Jan. 1967. <u>3/</u> Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
<p><u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — April 12, 1,131 cfs (7.47 ft). Minimum — No flow - periodically.</p> <p><u>PERIOD OF RECORD:</u> Maximum — April 12, 1967, 1,131 cfs (7.47 ft). Minimum — No flow.</p> <p><u>PEAK DISCHARGES:</u> (Above base flow of 100 cfs) 1967 — April 12, 1,131 cfs (7.47 ft).</p> <p><u>DAILY TEMPERATURE:</u> See p. 69.7-3.</p>																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5141 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.08	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.62	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.14	.00	1.17	.00	.04	.00
4	.00	.00	.00	.00	.00	.00	.00	.87	.46	.00	.00	.00
5	.00	.00	.00	.00	1.14	.00	.22	.00	.59	.00	.00	.00
6	.00	.00	.04	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.40	.00	.00	.00	.00	.02	.99	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.06	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.94	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.58	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.54	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.48	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.84	.00	.07
16	.00	.00	.00	.00	.00	.00	.28	.00	.12	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.15	.49	.00	.00	.00	.00	.00
19	.00	.00	.21	.30	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.65	1.33	.00	.00	.00	.59	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.17	.01	.12	.00	.00	.01
22	.00	.00	.80	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.00
25	.00	.00	.33	.00	.00	.97	.00	.00	.00	.00	.00	.00
26	.09	.00	.08	.00	.00	.73	.00	.00	1.09	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.28	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.66	.00	.00	.00	.00	.02	.09	.00
30	.00	-----	.06	.00	.93	.00	.00	.00	.00	.68	.00	.21
31	.00	-----	.42	-----	.23	-----	.00	.21	-----	.34	-----	.00
TOTAL	.09	.09	1.97	6.47	4.35	2.13	1.60	1.42	5.36	2.87	.32	1.11
STA AV												

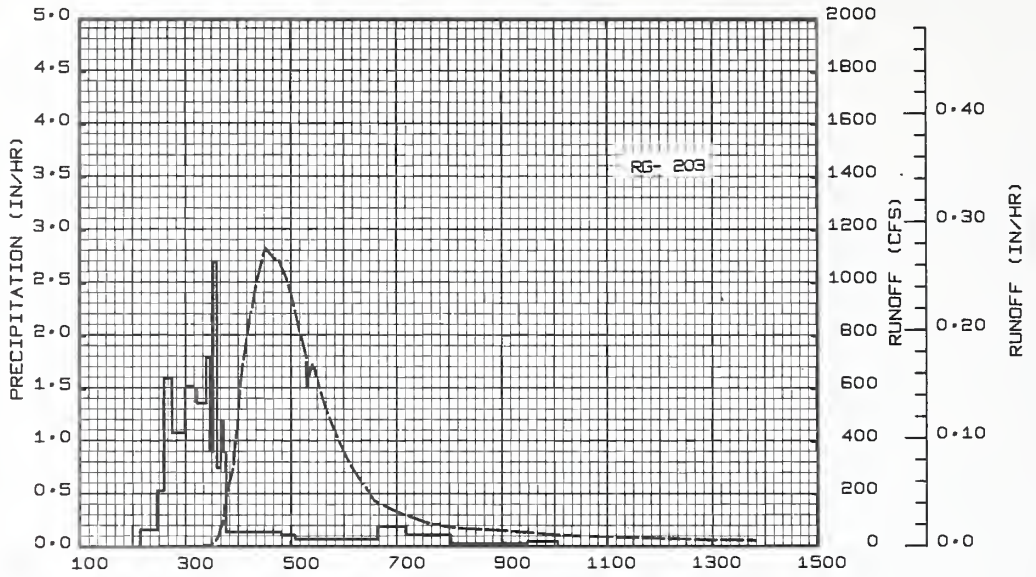
NOTES: YEARLY PRECIPITATION 27.78 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 17 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5141 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.314	.324	.191	.345	.292	.371	.080	.002	.000	.079	.308	.297
2	.294	.272	.169	.269	.267	.267	.088	.005	.038	.070	.199	.212
3	.267	.262	.164	.248	.267	.255	.137	.003	1.19	.075	.210	.176
4	.267	.280	.161	.214	.312	.233	.151	.029	1.50	.080	.238	.216
5	.267	.282	.161	.194	2.02	.182	.266	.048	3.84	.080	.267	.300
6	.279	.236	.192	.174	8.39	.153	.152	.017	.237	.074	.260	.235
7	.267	.248	.213	.277	.594	.135	.108	.005	.131	1.58	.196	.237
8	.255	.262	.208	.352	.463	.117	.091	.005	.115	.268	.169	.232
9	.255	.263	.247	4.87	.351	.092	.066	.006	.098	.150	.210	.321
10	.267	.262	.227	14.1	.327	.094	.049	.012	.072	.121	.215	.255
11	.273	.260	.233	.583	.279	.100	.027	.009	.053	.121	.205	.253
12	.277	.246	.197	97.4	.281	.126	.014	.002	.042	.120	.200	.253
13	.287	.240	.205	8.94	.346	.135	.012	.001	.041	.106	.195	.243
14	.282	.246	.205	1.58	.409	.089	.011	.001	.341	.087	.190	.282
15	.267	.203	.185	.914	.303	.059	.009	.001	.181	3.50	.190	.338
16	.290	.205	.161	.669	.258	.049	.046	.000	.178	.439	.165	.399
17	.342	.221	.165	.544	.215	.039	.049	.011	.154	.168	.161	.579
18	.186	.237	.180	.481	.165	.039	.161	.004	.123	.138	.160	.366
19	.205	.253	.217	.705	.139	.038	.177	.001	.099	.126	.159	.299
20	.242	.218	.373	6.41	4.53	.032	.069	.001	.117	.111	.172	.272
21	.265	.224	.248	1.84	.883	.013	.057	.005	.587	.090	.186	.252
22	.256	.245	.505	.807	.382	.015	.098	.005	.137	.075	.189	.230
23	.243	.223	.491	.561	.267	.045	.030	.004	.106	.110	.197	.243
24	.241	.210	.265	.473	.202	.032	.012	.008	.093	.091	.215	.262
25	.217	.210	.315	.486	.143	.404	.005	.005	.078	.114	.209	.258
26	.237	.230	.399	.458	.114	1.66	.005	.002	3.45	.104	.204	.249
27	.238	.260	.285	.403	.126	.336	.003	.003	1.47	.090	.213	.271
28	.243	.245	.324	.429	.137	.224	.005	.000	.199	.122	.286	.267
29	.263	-----	.228	.481	.491	.091	.004	.000	.140	.149	.254	.267
30	.285	-----	.161	.417	.920	.086	.001	.000	.110	.329	.266	.316
31	.302	-----	.321	-----	1.99	-----	.003	.000	-----	.534	-----	.316
MEAN	.264	.245	.245	4.85	.834	.184	.064	.006	.497	.300	.210	.281
INCHES	.048	.040	.044	.853	.151	.032	.012	.001	.087	.054	.037	.051

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .005857. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 338.7 MEAN YEARLY DISCHARGE, 0.659 CFS. YIELD, 1.410 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

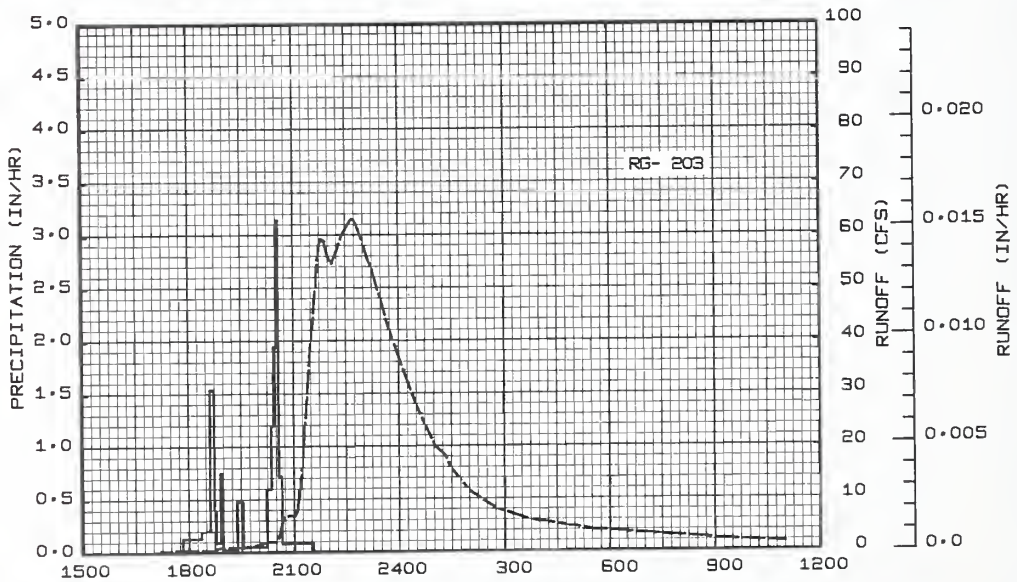
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5141 NEAR MIDDLEBURG						
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)			
Watershed conditions: See p. 69.21-1, this publication.			<u>Event of April 12, 1967</u>										
			4-12	RG		203		4-12					
				0209	.00	.00		0225	.37	1/0000			
				0228	.16	.05		0335	22.39	.0009			
				0236	.53	.12		0339	51.17	.0015			
				0245	1.60	.36		0351	253.06	.0086			
				0300	1.08	.63		0355	313.19	.0132			
				0313	1.52	.96		0401	559.25	.0236			
				0324	1.36	1.21		0407	725.91	.0394			
				0328	1.80	1.33		0421	996.35	.0687			
				0332	.90	1.39		0431	1131.02	.1319			
				0336	2.70	1.57		0447	1084.94	.2038			
				0340	.75	1.62		0455	1018.06	.2380			
				0344	1.20	1.70		0511	806.36	.2977			
				0346	.90	1.73		0517	729.46	.3165			
				0449	.14	1.88		0519	605.46	.3219			
				0505	.11	1.91		0525	694.52	.3380			
				0638	.07	2.01		0542	501.15	.3792			
				0710	.19	2.11		0601	354.51	.4121			
				0801	.11	2.20		0635	173.68	.4480			
				0929	.03	2.24		0708	120.75	.4676			
				1003	.05	2.27		0800	73.94	.4876			
								0911	58.91	.5065			
								1140	32.36	.5321			
								1349	22.39	.5462			
						<u>Event of May 5, 1967</u>							
						5- 5	RG		203	5- 5	1713	.34	1/.0000
							1750	.00	.00		1839	.40	.0004
							1822	.13	.07		1849	.74	.0002
							1837	.20	.12		1858	.89	.0002
							1844	1.54	.30		1924	.89	.0003
							1847	.40	.32		1940	.99	.0003
							1854	.09	.33		1950	1.04	.0004
							1858	.75	.38		2001	1.48	.0004
							1923	.02	.39		2017	1.87	.0006
				1933	.48	.47		2030	2.04	.0007			
				2013	.05	.50		2042	6.56	.0009			
				2021	.60	.58		2058	6.93	.0013			
				2026	1.20	.68		2101	6.93	.0014			
				2030	1.95	.81		2113	13.99	.0019			
				2034	3.15	1.02		2129	38.22	.0036			
				2039	.72	1.08		2145	58.18	.0067			
				2132	.08	1.15		2150	59.65	.0079			
								2152	59.65	.0084			
								2157	57.45	.0096			
								2200	56.02	.0103			
								2206	54.60	.0116			
								2214	56.73	.0135			
								2223	59.65	.0156			
								2234	61.90	.0183			
								2242	63.43	.0203			
								2250	61.90	.0224			
							5- 6	0007	34.95	.0375			
								0033	27.09	.0438			
								0102	20.06	.0436			
								0120	18.24	.0450			
								0129	15.87	.0456			
								0201	11.45	.0474			
								0247	8.11	.0492			
								0341	6.03	.0508			
								0532	4.04	.0531			
								0729	3.05	.0548			
								1000	1.87	.0563			
								1100	1.55	.0567			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .000244. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.21-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5141



MAY 5-6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5141



LEGEND

- WATERSHO BOUNDARY
- 1200 — CONTOUR LINES
- ALL WEATHER ROADS - HIGHWAYS
- COUNTY ROADS - GRADED
- FARM ROADS
- CLOSED SECTION LINES
- WATERWAYS
- LAKES AND PONDS
- 5141 — STREAM GAGING STATION-(WEIR) FIELD RATED
- 122 — RECORDING RAIN GAGE
- — HOUSE OR BUILDING



CONTOUR INTERVAL 20 FEET

SPRING CREEK WATERSHO
 WASHITA RIVER EXPERIMENTAL WATERSHED
CHICKASHA, OKLAHOMA
 TOPOGRAPHY OF
WATERSHED 5141 Thru 5146

BASED ON 1965 U.S. GEOLOGICAL SURVEY MAP OF DIBBLE, OKLAHOMA QUADRANGLE,
 1965 U.S. GEOLOGICAL SURVEY MAP OF BLANCHARD, OKLAHOMA QUADRANGLE,
 AND 1966 U.S. GEOLOGICAL SURVEY MAP OF TABLER, OKLAHOMA QUADRANGLE

CHICKASHA, OKLAHOMA WATERSHED 5142 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 7, T. 7 N., R. 5 W., lat. 35°05'39", long. 97°46'26", at artificial control.

AREA: 360.3 acres (.563 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:	Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
	Percent of area	0	5	60	35	0	0	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Nash-Quinlan loam	72	8	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Grant light silt loam	20	14	Medium fine granular	Moderate	Moderate medium subangular blocky	Moderate	45	Moderate	Medium
Kingfisher light silt loam	8	13	Moderate medium granular	Moderate	Moderate fine medium subangular blocky	Moderate	34	Moderately slow	Slow

EROSION:	Erosion class	1	2	3	4	
	Percent of area	0	0	65	35	1/

LAND CAPABILITY:	Class	I	II	III	IV	V	VI	VII	
	Percent of area	0	0	22	6	0	72	0	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 entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, 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 1.15 miles.

CHARACTER OF FLOW: Spring fed intermittent.

INSTRUMENTATION: **Precipitation:** Three recording weighing type gages with a 12-hour time scale. **Runoff:** The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge, and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture or range. Approximately 25% is severely eroded, but these gullies are healing with tall grasses. There are 4 farm ponds in the watershed. The following table shows the land use.

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 3%	Good - 20%
Fair - 55%	Poor - 22%
The general practice for good range utilization is 1 animal unit per 12 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 5142 NEAR MIDDLEBURG AREA — 360.3 ACRES (.563 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	^{1/} .09	.10	2.02	6.56	4.46	2.09	1.39	1.30	5.24	2.60	.29	1.10	27.24			
	_Q .037	.031	.032	.765	.185	.066	.038	.014	.116	.085	.030	.024	1.423			
STA AVG	^{2/}															
MEAN	^{3/}															
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.4669	4-12	.3317	4-12	.4077	4-12	.442	4-12	.449	4-12	.454	4-10	.561	4-9	.687
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO	4-12		4-12		4-12		4-12		4-12		4-12		4-10		4-9	
19--	1967	.4669	1967	.3317	1967	.4077	1967	.442	1967	.449	1967	.454	1967	.561	1967	.687
<p>Notes: Watershed conditions same as that described on previous page under <u>WATERSHED CONDITIONS</u>. For watershed map, see p. 69.21-6. For composite map see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. ^{1/} Precipitation data obtained from a Thiessen weighted average of 3 gages on the watershed. ^{2/} Precipitation records began Jan. 1967; runoff records began Jan. 1967. ^{3/} Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.</p>																
MISCELLANEOUS DATA																
<p>RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 169.7 cfs (4.88 ft). Minimum — No flow - periodically. PERIOD OF RECORD: Maximum — Apr. 12, 1967, 169.7 cfs (4.88 ft). Minimum — No flow. PEAK DISCHARGES: (Above base flow of 50 cfs) 1967 — Apr. 10, 59.6 cfs (3.57 ft); Apr. 12, 169.7 cfs (4.88 ft).</p>																
<p>DAILY TEMPERATURE: See p. 69.7-3</p>																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5142 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.67	.00	.18	.00
3	.00	.00	.00	.00	.00	.00	.15	.00	1.21	.00	.02	.00
4	.00	.00	.00	.00	.00	.00	.00	.71	.37	.00	.00	.00
5	.00	.00	.00	.00	1.09	.00	.28	.00	.62	.00	.00	.00
6	.00	.00	.05	.00	.01	.00	.00	.00	.05	.00	.00	.00
7	.00	.00	.00	.42	.00	.00	.00	.00	.00	.96	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.08	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	1.02	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.51	.00	.09	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.57	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.44	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00	.07
16	.00	.00	.00	.00	.00	.00	.25	.00	.08	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.31	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.00	.58	.00	.00	.00	.00	.00
19	.00	.00	.22	.27	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.69	1.42	.00	.00	.00	.51	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.00	.00	.14	.00	.00	.02
22	.00	.00	.71	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.26	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.35	.00	.00	.95	.00	.00	.00	.00	.00	.00
26	.09	.00	.10	.00	.00	.79	.00	.00	1.09	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.13	.00	.00	.00	.02	.00
29	.00	-----	.00	.00	.70	.00	.00	.00	.00	.01	.07	.00
30	.00	-----	.16	.00	.96	.00	.00	.00	.00	.69	.00	.19
31	.00	-----	.40	-----	.22	-----	.00	.26	-----	.31	-----	.00
TOTAL	.09	.10	2.02	6.56	4.46	2.09	1.39	1.30	5.24	2.60	.29	1.10
STA AV												

NOTES: YEARLY PRECIPITATION 27.24 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 3 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5142 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.023	.020	.019	.013	.046	.036	.020	.005	.005	.015	.013	.012
2	.020	.019	.020	.012	.046	.033	.022	.005	.024	.024	.015	.011
3	.019	.019	.020	.011	.047	.032	.036	.004	.460	.035	.021	.011
4	.018	.019	.021	.011	.047	.030	.036	.019	.029	.041	.019	.012
5	.018	.019	.022	.011	.843	.030	.040	.011	.374	.047	.021	.011
6	.017	.018	.019	.011	.060	.027	.016	.010	.021	.052	.021	.010
7	.017	.019	.016	.017	.046	.027	.017	.003	.019	.396	.022	.010
8	.017	.019	.015	.014	.043	.025	.017	.004	.030	.025	.019	.010
9	.017	.019	.017	.745	.039	.023	.019	.005	.014	.017	.014	.011
10	.021	.019	.015	2.12	.040	.024	.014	.009	.013	.024	.016	.011
11	.021	.019	.015	.027	.036	.025	.013	.010	.015	.038	.018	.011
12	.020	.019	.015	6.82	.037	.029	.018	.011	.015	.026	.018	.011
13	.020	.019	.015	.589	.040	.025	.021	.011	.022	.019	.019	.010
14	.020	.018	.013	.027	.038	.021	.019	.009	.027	.020	.016	.012
15	.019	.015	.012	.027	.036	.019	.030	.004	.015	.052	.015	.012
16	.018	.013	.012	.031	.031	.020	.024	.003	.038	.101	.012	.019
17	.016	.014	.012	.044	.028	.019	.014	.010	.009	.015	.012	.024
18	.015	.015	.012	.072	.027	.022	.030	.004	.008	.015	.012	.013
19	.016	.019	.015	.068	.026	.019	.016	.004	.012	.016	.012	.011
20	.017	.014	.016	.054	.590	.016	.014	.006	.013	.020	.013	.011
21	.018	.014	.012	.433	.037	.014	.014	.008	.046	.019	.014	.011
22	.018	.014	.033	.044	.035	.013	.013	.005	.016	.020	.013	.010
23	.017	.013	.014	.042	.031	.022	.014	.004	.019	.022	.014	.010
24	.017	.013	.012	.044	.030	.023	.012	.006	.017	.026	.013	.011
25	.017	.013	.015	.047	.028	.083	.011	.007	.016	.028	.013	.011
26	.017	.016	.015	.044	.028	.250	.011	.008	.425	.029	.013	.011
27	.017	.017	.011	.046	.029	.025	.010	.009	.015	.029	.013	.011
28	.017	.018	.011	.054	.028	.022	.011	.006	.012	.026	.013	.011
29	.018	-----	.011	.057	.071	.020	.012	.001	.013	.024	.013	.011
30	.018	-----	.011	.049	.261	.021	.013	.001	.012	.046	.012	.011
31	.020	-----	.019	-----	.084	-----	.011	.006	-----	.025	-----	.011
MEAN	.018	.017	.016	.386	.091	.033	.018	.007	.058	.042	.015	.012
INCHES	.037	.031	.032	.765	.185	.066	.038	.014	.116	.085	.030	.024

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .06606. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 30.02 MEAN YEARLY DISCHARGE, 0.059 CFS. YIELD, 1.423 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

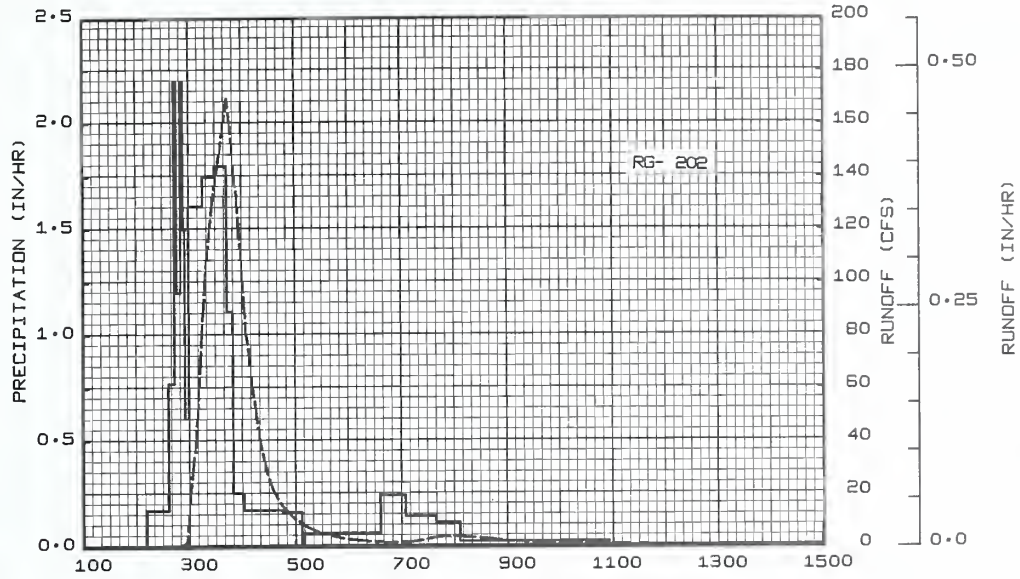
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5142 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)
<u>Event of April 12, 1967</u>										
			4-12	RG	202		4-12	0220	.02	1/.0000
				0212	.00	.00		0241	.06	.0000
				0237	.17	.07		0253	.55	.0002
				0244	.77	.16		0256	.93	.0003
				0247	2.20	.27		0257	1.41	.0003
				0251	1.20	.35				
				0254	2.20	.46		0258	3.00	.0004
				0256	1.50	.51		0301	15.29	.0017
				0300	.60	.55		0311	55.58	.0174
				0316	1.61	.98		0319	103.93	.0468
				0329	1.75	1.36		0327	130.24	.0898
				0343	1.80	1.78		0336	150.56	.1477
				0350	1.11	1.91		0344	169.68	.2065
				0402	.25	1.96		0355	130.52	.2822
				0445	.17	2.08		0400	103.85	.3091
				0507	.16	2.14		0405	80.40	.3302
				0510	.00	2.14		0420	40.36	.3714
				0636	.06	2.22		0428	27.79	.3839
				0704	.24	2.33		0435	21.13	.3918
				0739	.14	2.41		0445	15.21	.4001
				0806	.11	2.46		0458	10.56	.4078
				0948	.02	2.49		0506	8.70	.4113
				1055	.02	2.51		0515	6.60	.4145
								0536	4.12	.4198
								0559	2.44	.4233
								0630	1.43	.4260
								0700	1.15	.4278
								0725	2.16	.4295
								0736	3.05	.4300
								0743	3.43	.4319
								0754	3.67	.4337
								0830	2.80	.4391
								0900	1.81	.4423
								1000	.76	.4455
								1130	.31	.4476
								1400	.10	.4489

Watershed conditions: See p. 69.22-1, this publication.

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .002752. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.22-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

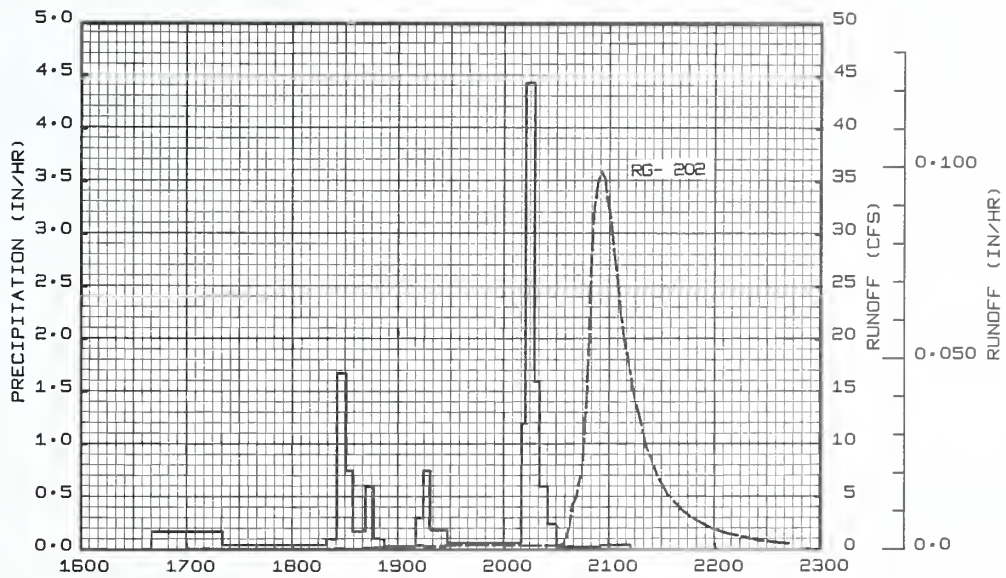
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 5142 NEAR MIDDLEBURG						
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
<p>Watershed conditions: See p. 69.22-1, this publication.</p>			Event of May 5, 1967									
			5- 5	RG	202				5- 5	1700	.05	1/.0000
				1640	.00	.00				1841	.07	.0003
				1720	.17	.11				1911	.33	.0006
				1819	.04	.15				1921	.30	.0008
				1825	.10	.16				1929	.34	.0009
				1830	1.68	.30				1940	.42	.0011
				1834	.75	.35				2032	.39	.0020
				1841	.17	.37				2034	.50	.0020
				1846	.60	.42				2037	1.99	.0022
				1852	.10	.43				2039	4.22	.0025
				1910	.03	.44				2041	5.02	.0029
				1914	.30	.46				2042	5.95	.0031
				1918	.75	.51				2044	7.46	.0037
				1928	.18	.54				2045	9.13	.0041
				2010	.06	.58				2046	12.24	.0046
				2012	1.20	.62				2047	15.26	.0052
				2017	4.44	.99				2048	18.79	.0060
				2020	1.60	1.07				2051	32.50	.0097
				2025	.60	1.12				2053	35.05	.0128
				2030	.24	1.14				2055	35.95	.0161
				2055	.02	1.15				2057	35.39	.0194
				2112	.04	1.16				2058	33.78	.0210
										2100	31.90	.0240
										2102	28.76	.0268
										2106	22.66	.0315
										2108	20.00	.0335
										2113	15.47	.0376
										2115	13.82	.0389
										2121	9.58	.0422
							2127	7.00	.0445			
							2131	5.85	.0457			
							2133	5.19	.0462			
							2137	4.47	.0470			
							2142	3.61	.0480			
							2148	2.91	.0489			
							2153	2.40	.0495			
							2159	1.89	.0501			
							2214	1.21	.0511			
							2234	.65	.0520			
							2242	.55	.0522			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR. MULTIPLY BY .002752. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.22-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5142



MAY 5, 1967

CHICKASHA, OKLAHOMA WATERSHED 5142

CHICKASHA, OKLAHOMA WATERSHED 5143 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — NE $\frac{1}{4}$ sec. 7, T. 7 N., R. 5 W., lat. '35°05'36", long. 97°45'52", at artificial control.

AREA: 485.8 acres (.759 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above
Percent of area	0	4	58	38	0	0

1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Percent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Nash-Quinlan loam	38	8	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Chickasha-Kingfisher very fine sandy loam	32	13	Moderate medium granular	Moderate	Moderate fine medium subangular blocky	Moderate	34	Moderate moderately slow	Slow
Renfrow silt loam	20	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow
Port silt loam	10	20	Moderate fine	Moderate	Moderate medium granular	Moderate	45	Moderate	Medium

Erosion class	1	2	3	4
Percent of area	5	35	56	4

1/

Class	I	II	III	IV	V	VI	VII
Percent of area	5	0	55	0	0	36	4

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, 8.0; Cloud Chief, 0.0; Rush Springs, 0.0; Dog Creek, Blaine and Marlow, 0.0; and Chickasha, 92.0. The tributary contains only two geologic formations; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, 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 1.5 miles.

CHARACTER OF FLOW: Spring fed intermittent.

INSTRUMENTATION: Precipitation: Four recording weighing type gages with a 12-hour time scale. Runoff: The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "W" notch weir with 3:1 side slopes of reinforced concrete. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture. There is a good mixture of tall, intermediate, and short grasses. There is one farm pond in this watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 5%	Good - 25%
Fair - 50%	Poor - 20%
The general practice for good range utilization is 1 animal unit per 12 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 5143 NEAR MIDDLEBURG AREA — 485.8 ACRES (.759 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ Q	.08 .013	.10 .005	1.96 .007	6.29 .500	4.25 .074	2.03 .008	1.34 .000	1.29 .000	5.13 .008	2.74 .003	.30 .000	1.10 .002	26.61 .620			
STA AVG P ₂ Q																
MEAN P ₃ 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.2996	4-12	.2067	4-12	.2560	4-12	.289	4-12	.308	4-12	.330	4-12	.384	4-9	.457
MAXIMUMS FOR PERIOD OF RECORD																
19 67 TO 19 --	4-12 1967	.2996	4-12 1967	.2067	4-12 1967	.2560	4-12 1967	.289	4-12 1967	.308	4-12 1967	.330	4-12 1967	.384	4-9 1967	.457
Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69.21-6. For composite map see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 4 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 146.7 cfs (3.98 ft). Minimum — No flow - periodically.																
PERIOD OF RECORD: Maximum — Apr. 12, 1967, 146.7 cfs (3.98 ft). Minimum — No flow.																
PEAK DISCHARGES: (Above base flow of 50 cfs) 1967 — Apr. 12, 146.7 cfs (3.98 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5143 NEAR MIDOLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.63	.00	.17	.00
3	.00	.00	.00	.00	.00	.00	.15	.00	1.08	.00	.03	.00
4	.00	.00	.00	.00	.00	.00	.00	.80	.41	.00	.00	.00
5	.00	.00	.00	.00	1.09	.00	.21	.00	.57	.00	.00	.00
6	.00	.00	.05	.00	.00	.00	.00	.00	.04	.00	.00	.00
7	.00	.00	.00	.42	.00	.00	.00	.00	.00	1.06	.00	.00
8	.00	.01	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.06	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.93	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.00	2.45	.00	.08	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.51	.04	.00	.00	.00	.06	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.47	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.00	.00	.00	.71	.00	.06
16	.00	.00	.00	.00	.00	.00	.26	.00	.07	.00	.00	.62
17	.00	.00	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.04	.51	.00	.00	.00	.00	.00
19	.00	.00	.28	.28	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.64	1.32	.00	.00	.00	.56	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.03	.00	.13	.00	.00	.02
22	.00	.00	.77	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
25	.00	.00	.32	.00	.00	.99	.00	.00	.00	.00	.00	.00
26	.08	.00	.09	.00	.00	.71	.00	.00	1.11	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.18	.00	.00	.00	.02	.00
29	.00	-----	.00	.00	.65	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.12	.00	.91	.00	.00	.00	.00	.65	.00	.20
31	.00	-----	.38	-----	.22	-----	.00	.23	-----	.30	-----	.00
TOTAL	.08	.10	1.96	6.29	4.25	2.03	1.34	1.29	5.13	2.74	.30	1.10
STA AV												

NOTES: YEARLY PRECIPITATION 26.61 INCHES. PRECIPITATION VALUES ARE A THIEMSEN WEIGHTED AVERAGE OF 4 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5143 NEAR MIDOLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.021	.008	.001	.004	.013	.017	.000	.000	.000	.000	.000	.000
2	.019	.007	.001	.001	.012	.014	.000	.000	.000	.000	.000	.000
3	.017	.005	.001	.000	.013	.012	.000	.000	.000	.000	.000	.000
4	.016	.005	.002	.000	.014	.009	.000	.000	.000	.000	.000	.000
5	.014	.007	.002	.000	.472	.006	.000	.000	.050	.000	.000	.000
6	.011	.005	.004	.000	.076	.002	.000	.000	.000	.000	.000	.000
7	.009	.005	.003	.005	.034	.000	.000	.000	.000	.062	.000	.000
8	.009	.005	.003	.003	.020	.000	.000	.000	.000	.000	.000	.000
9	.009	.005	.004	.266	.018	.000	.000	.000	.000	.000	.000	.000
10	.009	.005	.002	.790	.024	.000	.000	.000	.000	.000	.000	.000
11	.009	.004	.000	.021	.025	.000	.000	.000	.000	.000	.000	.000
12	.009	.002	.000	6.62	.025	.000	.000	.000	.000	.000	.000	.000
13	.008	.003	.001	1.16	.043	.000	.000	.000	.000	.000	.000	.000
14	.008	.003	.000	.315	.055	.000	.000	.000	.000	.000	.000	.000
15	.008	.003	.000	.091	.039	.000	.000	.000	.000	.006	.000	.000
16	.008	.001	.000	.049	.019	.000	.000	.000	.000	.000	.000	.004
17	.007	.005	.000	.027	.007	.000	.000	.000	.000	.000	.000	.027
18	.005	.005	.000	.025	.004	.000	.000	.000	.000	.000	.000	.007
19	.005	.005	.000	.050	.000	.000	.000	.000	.000	.000	.000	.002
20	.005	.002	.007	.394	.266	.000	.000	.000	.000	.000	.000	.004
21	.005	.001	.002	.145	.030	.000	.000	.000	.000	.000	.000	.006
22	.005	.003	.050	.069	.016	.000	.000	.000	.000	.000	.000	.000
23	.005	.002	.013	.028	.010	.000	.000	.000	.000	.000	.000	.000
24	.005	.002	.003	.017	.006	.000	.000	.000	.000	.000	.000	.000
25	.004	.001	.013	.023	.004	.000	.000	.000	.000	.000	.000	.000
26	.008	.003	.009	.017	.001	.097	.000	.000	1.09	.000	.000	.000
27	.004	.004	.003	.017	.001	.001	.000	.000	.008	.000	.000	.000
28	.005	.001	.001	.020	.003	.000	.000	.000	.000	.000	.000	.000
29	.006	-----	.000	.026	.048	.000	.000	.000	.000	.000	.000	.000
30	.006	-----	.000	.020	.124	.000	.000	.000	.000	.000	.000	.000
31	.007	-----	.011	-----	.095	-----	.000	.000	-----	.000	-----	.000
MEAN	.009	.004	.004	.340	.049	.005	.000	.000	.006	.002	.000	.002
INCHES	.013	.005	.007	.500	.074	.008	.000	.000	.008	.003	.000	.002

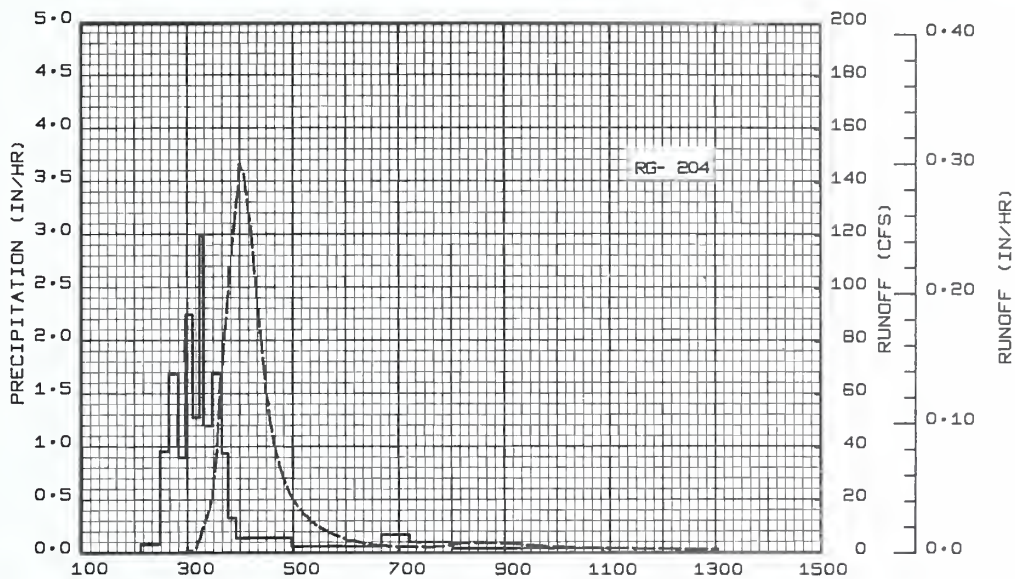
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .04899. TO CONVERT DISCHARGE IN INCHES TO AC-FT. MULTIPLY BY 40.08 MEAN YEARLY DISCHARGE, 0.035 CFS. YIELD, 0.620 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 5143 NEAR MIDDLEBURG				
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 April 12, 1967							
			4-12	RG	204		4-12	0213	.01	.140000
				0207	.00	.00		0300	.25	.0001
				0229	.08	.03		0305	.70	.0002
				0239	.96	.19		0310	2.01	.0004
				0250	1.69	.50		0319	10.73	.0022
				0258	.90	.62		0329	22.56	.0076
Watershed conditions: See p. 69.23-1, this publication.				0306	2.25	.92		0330	26.77	.0085
				0314	1.28	1.09		0335	49.84	.0147
				0318	3.00	1.29		0338	65.17	.0207
				0328	1.20	1.49		0340	71.65	.0254
				0339	1.69	1.80		0345	90.06	.0394
				0346	.94	1.91		0350	111.59	.0567
				0355	.33	1.96		0358	137.99	.0912
				0458	.14	2.11		0359	146.73	.0960
				0640	.06	2.21		0404	143.47	.1207
				0712	.17	2.30		0409	130.48	.1440
				0802	.10	2.38		0412	123.12	.1569
				1052	.04	2.49		0421	90.16	.1893
								0425	76.79	.2007
								0431	57.48	.2143
								0440	38.38	.2287
								0449	28.17	.2389
								0500	20.28	.2478
								0511	15.15	.2544
								0518	12.83	.2578
								0529	9.84	.2620
								0540	7.94	.2653
								0554	5.95	.2686
								0603	4.98	.2702
								0613	4.12	.2718
								0620	3.61	.2727
								0652	2.34	.2758
								0712	2.15	.2773
								0743	2.19	.2796
								0751	2.49	.2802
								0802	2.99	.2812
								0813	3.56	.2825
								0822	3.77	.2836
								0832	3.85	.2849
								0851	3.73	.2874
								0902	3.54	.2887
								0918	3.10	.2905
								0940	2.52	.2926
								0955	2.19	.2938
								1106	1.60	.2984
								1303	1.19	.3038

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .002041. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.23-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

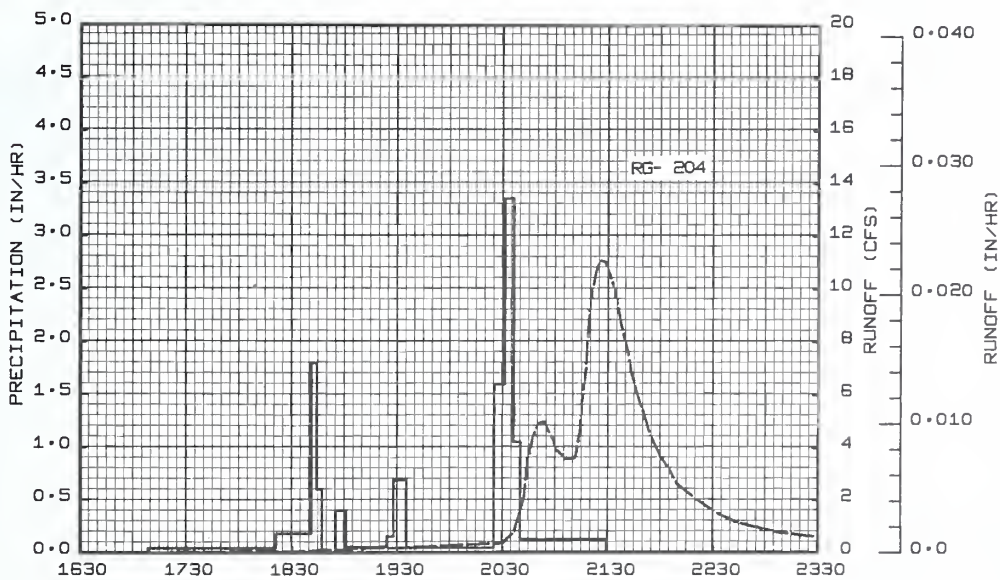
1967			SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 5143 NEAR MIDDLEBURG			
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF			RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Watershed conditions: See p. 69.23-1, this publication.			Event of May 5, 1967									
			5- 5		RG	204			5- 5	1722	.02	1/ .0000
					1708	.00	.00			1843	.05	.0001
					1821	.04	.05			2013	.30	.0006
					1841	.18	.11			2030	.34	.0008
					1844	1.80	.20			2036	.71	.0009
					1847	.60	.23					
					1855	.00	.23			2040	1.56	.0011
					1901	.40	.27			2043	2.82	.0013
					1924	.05	.29			2045	3.85	.0015
					1928	.15	.30			2047	4.41	.0018
					1935	.69	.38			2049	4.71	.0021
					2025	.04	.41			2050	4.84	.0023
					2031	1.60	.57			2051	4.92	.0024
					2036	3.36	.85			2053	4.95	.0028
					2040	1.05	.92			2055	4.74	.0031
					2045	.12	.93			2059	4.19	.0037
					2129	.12	1.02			2100	3.92	.0039
										2102	3.80	.0041
										2105	3.59	.0045
										2107	3.54	.0047
										2110	3.56	.0051
										2111	3.64	.0052
										2112	3.98	.0054
										2114	4.77	.0057
										2115	5.95	.0058
										2117	7.00	.0063
										2118	8.19	.0065
										2119	9.21	.0068
										2121	10.06	.0075
							2123	10.78	.0082			
							2125	11.08	.0089			
							2128	11.03	.0101			
							2131	10.50	.0112			
							2135	9.42	.0125			
							2137	8.67	.0131			
							2141	7.58	.0142			
							2149	5.48	.0160			
							2153	4.60	.0167			
							2200	3.63	.0177			
							2205	3.12	.0182			
							2209	2.62	.0186			
							2219	2.08	.0194			
							2230	1.57	.0201			
							2239	1.25	.0205			
							2248	1.06	.0209			
							2307	.76	.0215			
							2315	.71	.0217			
							2321	.64	.0218			
							2328	.59	.0220			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .002041. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.23-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5143



MAY 5, 1967

CHICKASHA, OKLAHOMA WATERSHED 5143

CHICKASHA, OKLAHOMA WATERSHED 5144 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — Center of sec. 5, T. 7 N., R. 5 W., lat. 35°05'58", long. 97°45'19", at artificial control.

AREA: 1,456 acres (2.28 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:	Slope — Percent							1/
	0-1	1-3	3-5	5-8	8-12	12 and above		
	0	6	63	25	6	0		

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to (in.)	Permea- bility	
Nash-Quinlan loam	50	6	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Zaneis Kingfisher silt loam	36	16	Moderate medium granular	Moderate	Moderate fine subangular blocky	Moderate	43	Moderately slow	Slow
Renfrow silt loam	8	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow
Stony Outcrop loam	6	10	Moderate weak fine granular	Moderate	Weak fine granular	Moderate	36	Moderately slow	Medium

EROSION:	Erosion class				1/
	1	2	3	4	
	0	10	70	20	

LAND CAPABILITY:	Class							1/
	I	II	III	IV	V	VI	VII	
	0	0	50	10	1	30	9	

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 entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, 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 3.6 miles.

CHARACTER OF FLOW: Perennial.

INSTRUMENTATION: **Precipitation:** Nine recording weighing type gages, of which 8 have a 12-hour time scale and 1 has a 24-hour time scale. **Runoff:** The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is used for pasture. At one time about 10% of the watershed was cultivated along the creek bottoms. There are 12 farm ponds in this watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 3%	Good - 32%
Fair - 50%	Poor - 15%
The general practice for good range utilization is 1 animal unit per 12 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 5144 NEAR MIDDLEBURG AREA—1,456 ACRES (2.28 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ₁ / Q	.08 .069	.09 .057	2.02 .062	6.61 1.050	3.99 .204	2.33 .063	1.76 .027	1.58 .004	5.33 .108	2.82 .061	.33 .053	1.11 .061	28.05 1.819		
STA AVG	P ₂ / Q															
MEAN 67 YR	P ₃ / Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.3280	4-12	.2962	4-12	.4650	4-12	.579	4-12	.617	4-12	.639	4-12	.712	4-9	.869
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 19	4-12 1967	.3280	4-12 1967	.2962	4-12 1967	.4650	4-12 1967	.579	4-12 1967	.617	4-12 1967	.639	4-12 1967	.712	4-9 1967	.869
Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69.21-6. For composite map, see 1965 edition of Hydrologic Data for Experimental Agricultural Watersheds in the United States, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 9 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
<u>RUNOFF PEAK DATA:</u> YEAR (1967): Maximum — Apr. 12, 481.8 cfs (6.84 ft). Minimum — No flow - periodically. PERIOD OF RECORD: Maximum — Apr. 12, 1967, 481.8 cfs (6.84 ft). Minimum — No flow. PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — Apr. 12, 481.8 cfs (6.84 ft). <u>DAILY TEMPERATURE:</u> See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5144 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.54	.00	.15	.00
3	.00	.00	.00	.00	.00	.00	.13	.00	1.18	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	.99	.42	.00	.00	.00
5	.00	.00	.00	.00	1.11	.00	.13	.00	.57	.00	.00	.00
6	.00	.00	.04	.00	.01	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.40	.00	.00	.00	.00	.04	.98	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.03	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.82	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.01	2.71	.00	.07	.00	.00	.00	.00	.00	.00
13	.00	.00	.03	.52	.03	.00	.00	.00	.05	.00	.00	.03
14	.00	.00	.00	.00	.01	.00	.00	.00	.45	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.02	.00	.00	.80	.00	.07
16	.00	.00	.00	.00	.00	.00	.28	.00	.14	.00	.00	.63
17	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.35	.47	.00	.00	.00	.00	.00
19	.00	.00	.21	.31	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.81	1.12	.00	.00	.00	.65	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.30	.02	.11	.00	.00	.00
22	.00	.00	.86	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.21	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00	.00
25	.00	.00	.30	.00	.00	1.10	.00	.00	.00	.00	.00	.00
26	.08	.00	.07	.00	.00	.60	.00	.00	1.15	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.41	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.62	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.05	.00	.88	.00	.00	.00	.00	.68	.00	.22
31	.00	-----	.45	-----	.21	-----	.00	.22	-----	.34	-----	.00
TOTAL	.08	.09	2.02	6.61	3.99	2.33	1.76	1.58	5.33	2.82	.33	1.11
STA AV												

NOTES: YEARLY PRECIPITATION 28.05 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 9 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5144 NEAR MIDDLEBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.121	.156	.125	.122	.218	.216	.084	.004	.000	.060	.117	.112
2	.124	.178	.105	.114	.212	.214	.113	.006	.044	.060	.152	.116
3	.128	.168	.105	.118	.210	.162	.139	.001	.490	.084	.147	.117
4	.125	.173	.112	.113	.227	.143	.073	.115	.272	.058	.101	.114
5	.123	.181	.112	.096	2.92	.142	.101	.046	1.11	.050	.109	.102
6	.123	.155	.127	.101	1.30	.096	.053	.026	.086	.047	.105	.093
7	.121	.146	.119	.193	.324	.091	.051	.009	.060	.595	.089	.091
8	.116	.144	.093	.168	.270	.067	.052	.001	.052	.085	.092	.092
9	.118	.145	.093	2.36	.276	.054	.081	.200	.054	.075	.085	.103
10	.126	.144	.093	4.88	.272	.073	.075	.000	.055	.063	.093	.096
11	.135	.138	.097	.297	.288	.075	.024	.000	.058	.065	.084	.101
12	.139	.128	.106	.38.9	.301	.095	.026	.000	.050	.067	.088	.135
13	.144	.109	.116	4.55	.300	.077	.024	.000	.040	.070	.091	.133
14	.147	.101	.118	.967	.278	.052	.012	.000	.165	.064	.098	.125
15	.140	.092	.104	.619	.265	.053	.025	.000	.081	.781	.103	.116
16	.143	.092	.103	.508	.247	.063	.065	.000	.096	.120	.105	.196
17	.116	.092	.106	.375	.181	.077	.046	.000	.087	.090	.108	.225
18	.098	.092	.107	.363	.119	.091	.123	.001	.080	.082	.110	.115
19	.107	.093	.107	.470	.098	.120	.078	.001	.069	.079	.113	.117
20	.125	.093	.110	5.02	1.25	.054	.051	.002	.071	.075	.117	.117
21	.136	.104	.114	1.02	.315	.051	.104	.006	.340	.077	.125	.116
22	.125	.115	.267	.478	.208	.064	.058	.009	.070	.073	.121	.117
23	.126	.106	.169	.377	.167	.079	.029	.002	.051	.067	.117	.117
24	.139	.102	.118	.316	.124	.058	.027	.000	.049	.055	.115	.117
25	.156	.107	.159	.337	.093	.362	.018	.000	.046	.059	.112	.117
26	.216	.107	.174	.285	.088	.788	.017	.000	2.42	.063	.106	.117
27	.164	.109	.123	.270	.090	.154	.023	.000	.365	.063	.104	.118
28	.156	.124	.113	.287	.126	.103	.027	.000	.080	.078	.104	.118
29	.159	-----	.113	.310	.309	.093	.035	.000	.082	.125	.103	.118
30	.160	-----	.108	.268	.648	.075	.017	.000	.083	.211	.103	.118
31	.162	-----	.174	-----	.753	-----	.010	.000	-----	.203	-----	.118
MEAN	.136	.125	.122	2.14	.402	.128	.054	.007	.220	.121	.107	.120
INCHES	.069	.057	.062	1.050	.204	.063	.027	.004	.108	.061	.053	.061

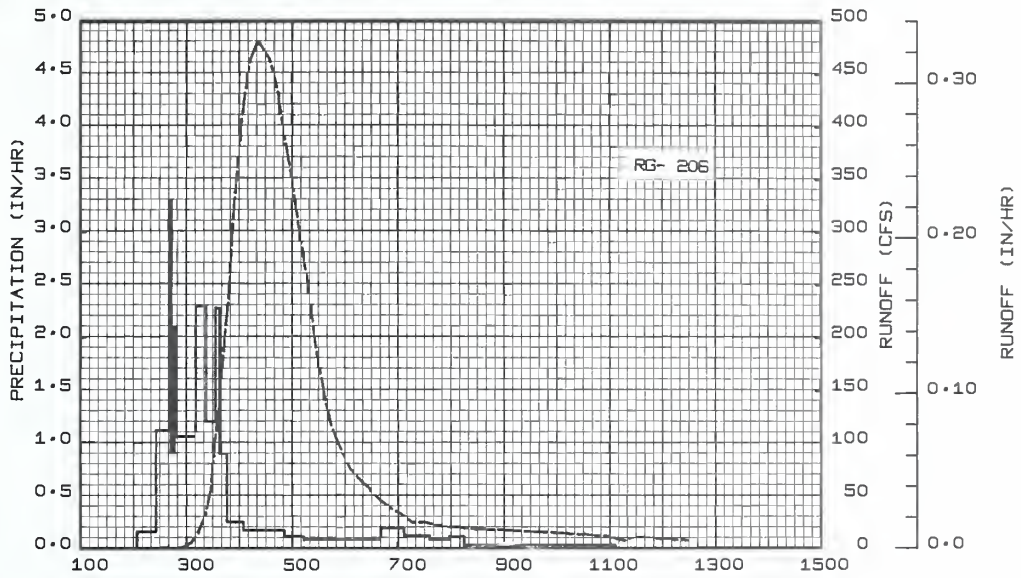
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .01634. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 121.4 MEAN YEARLY DISCHARGE. 0.304 CFS. YIELD. 1.819 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5144 NEAR MIDDLEBURG			
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 April 12, 1967</u>										
			4-12	RG	2.06					
				0204	.00	.00	4-12	0228	.23	1/.0000
				0226	.16	.06		0257	.99	.0002
				0241	1.12	.34		0306	5.51	.0005
				0243	3.30	.45		0314	15.52	.0015
				0247	.90	.51		0322	32.17	.0036
				0249	2.10	.58		0328	56.11	.0066
				0311	1.06	.97		0331	89.09	.0091
				0323	2.30	1.43		0337	131.55	.0166
				0333	1.20	1.63		0342	184.96	.0256
				0338	2.28	1.82		0349	248.34	.0428
				0346	.90	1.94		0354	323.54	.0590
				0405	.25	2.02		0404	413.29	.1008
				0451	.17	2.15		0407	432.47	.1152
				0513	.11	2.19		0410	452.79	.1303
				0641	.08	2.30		0413	464.80	.1455
				0707	.19	2.38		0421	481.81	.1889
				0736	.12	2.44		0434	464.59	.2587
				0758	.08	2.47		0438	452.79	.2795
				0815	.11	2.50		0444	432.47	.3096
				1106	.03	2.57		0451	390.57	.3423
								0518	248.48	.4408
								0528	184.85	.4654
								0540	131.93	.4869
								0545	115.40	.4940
								0552	100.28	.5025
								0559	89.09	.5100
								0606	75.74	.5166
								0628	56.29	.5330
								0705	32.13	.5508
								0716	24.54	.5543
								0731	24.51	.5585
								0750	21.30	.5634
								0830	18.21	.5724
								0944	15.42	.5865
								1030	12.88	.5939
								1058	11.26	.5978
								1117	7.32	.5998
								1126	10.67	.6007
								1130	11.16	.6012
								1148	9.64	.6033
								1228	7.48	.6072

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0006808. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.24-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

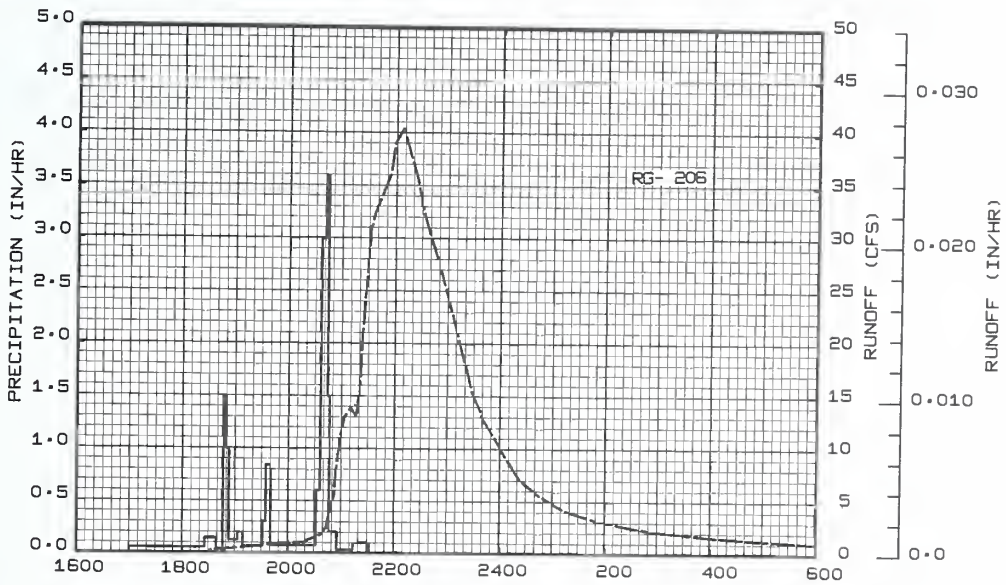
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 5144 NEAR MIDDLEBURG						
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
<p>Watershed conditions: See p. 69.24-1, this publication.</p>			Event of May 5, 1967									
			5- 5	RG	206				5- 5	1833	.27	1/ .0000
					1700	.00	.00			1955	.94	.0006
					1826	.05	.07			2018	1.05	.0009
					1839	.14	.10			2038	1.78	.0012
					1846	.00	.10			2043	2.40	.0013
					1850	1.50	.20			2048	4.21	.0015
					1853	1.00	.25			2052	5.52	.0017
					1903	.12	.27			2053	7.02	.0018
					1909	.20	.29			2058	10.71	.0023
					1931	.06	.31			2103	12.97	.0029
					1935	.30	.33			2110	13.86	.0040
					1940	.84	.40			2116	13.06	.0049
					2032	.07	.46			2120	15.55	.0056
					2036	.60	.50			2129	27.88	.0079
					2041	3.00	.75			2132	31.01	.0089
					2044	3.60	.93			2136	32.41	.0103
					2046	1.50	.98			2153	36.08	.0169
					2055	.20	1.01			2158	39.11	.0190
					2114	.03	1.02			2207	40.45	.0231
					2132	.10	1.05			2233	31.93	.0339
										2300	24.27	.0425
										2327	15.52	.0486
										2341	12.69	.0509
									5- 6	0022	7.07	.0554
										0045	5.49	.0571
										0112	4.17	.0586
										0150	3.11	.0601
							0247	2.21	.0619			
							0411	1.49	.0636			
							0557	.99	.0651			

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .0006808. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.24-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5144



MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5144

CHICKASHA, OKLAHOMA WATERSHED 5145 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Grady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — SE¼ sec. 5, T. 7 N., R. 5 W., lat. 35°06'25", long. 97°44'31", at artificial control about 400 feet downstream from county road bridge.

AREA: 252.8 acres (.395 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above	
Percent of area	0	0	35	12	33	20	1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permeability	Structure	Permeability	Avg. depth to (in.)	Permeability	
Nash-Quinlan loam	50	8	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Zaneis loam	34	16	Moderate medium granular	Moderate	Moderate fine subangular blocky	Moderate	43	Moderate	Slow
Renfrow silt loam	16	14	Moderate fine granular	Moderate	Moderate fine blocky	Moderately slow	50	Moderately slow	Slow

Erosion class	1	2	3	4	
Percent of area	0	35	50	15	1/

Class	I	II	III	IV	V	VI	VII	
Percent of area	0	0	40	0	0	60	0	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 entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, 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 1.3 miles.

CHARACTER OF FLOW: Ephemeral.

INSTRUMENTATION: Precipitation: Four recording weighing type gages with a 12-hour time scale. Runoff: The head-water gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of reinforced concrete. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs for the headwater are made from an outside gage reference point on the bridge and from a reference point inside the gage well. The tailwater gage consists of one FW-1 water level recorder with a 12-hour chart installed on an 18" gage well. Tape down for the tailwater gage is made inside the gage well from a reference point.

WATERSHED CONDITIONS: 100% of the watershed is presently in pasture or range, however, several years ago 25% of the watershed was terraced and farmed. There are still some active gullies, but healing is apparent. There are 3 farm ponds on the watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Exc. - 10%	Good - 15%
Fair - 20%	Poor - 55%
The general practice for good range utilization is 1 animal unit per 15 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 5145 NEAR MIDDLEBURG AREA — 252.8 ACRES (.395 SQ. MILES)										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ₁ Q	.09 .000	.07 .000	2.09 .000	6.97 1.826	4.49 .268	2.21 .028	2.21 .011	1.62 .000	5.73 .240	2.91 .084	.38 .000	1.18 .000	29.95 2.457		
STA AVG	P ₂ Q															
MEAN 67 YR	P ₃ Q	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.7513	4-12	.5613	4-12	.7308	4-12	1.024	4-12	1.294	4-12	1.306	4-12	1.431	4-9	1.748
MAXIMUMS FOR PERIOD OF RECORD																
19 67 TD	4-12		4-12		4-12		4-12		4-12		4-12		4-12		4-9	
19 --	1967	.7513	1967	.5613	1967	.7308	1967	1.024	1967	1.294	1967	1.306	1967	1.431	1967	1.748
Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69.21-4. 1/ Precipitation data obtained from a Thiessen weighted average of 4 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 191.5 cfs (5.00 ft). Minimum — No flow - periodically.																
PERIOD OF RECORD: Maximum — Apr. 12, 1967, 191.5 cfs (5.00 ft). Minimum — No flow.																
PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — Apr. 12, 191.5 cfs (5.00 ft).																
DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA		WATERSHED 5145 NEAR MIDOLEBURG				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.59	.00	.15	.00
3	.00	.00	.00	.00	.00	.00	.17	.00	1.25	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	1.03	.49	.00	.00	.00
5	.00	.00	.00	.00	1.21	.00	.14	.00	.60	.00	.00	.00
6	.00	.00	.05	.00	.00	.00	.00	.00	.05	.00	.00	.00
7	.00	.00	.00	.43	.00	.00	.00	.00	.07	.86	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.04	.00	.00	.00	.00	.00	.00	.02	.00
10	.00	.00	.00	.94	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00
12	.00	.00	.00	3.00	.00	.09	.00	.00	.00	.00	.00	.00
13	.00	.00	.02	.54	.04	.00	.00	.00	.07	.00	.00	.03
14	.00	.00	.00	.00	.02	.00	.00	.00	.50	.00	.00	.12
15	.00	.00	.00	.00	.00	.00	.03	.00	.00	1.00	.00	.08
16	.00	.00	.00	.00	.00	.00	.33	.00	.23	.00	.00	.66
17	.00	.00	.00	.00	.00	.00	.00	.33	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.29	.54	.00	.00	.00	.00	.00
19	.00	.00	.22	.35	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.67	1.26	.00	.00	.00	.58	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.46	.02	.12	.00	.00	.00
22	.00	.00	.89	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.03	.00	.00	.00	.00	.00
25	.00	.00	.35	.00	.00	.95	.00	.00	.00	.00	.00	.00
26	.09	.00	.08	.00	.00	.68	.00	.00	1.18	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.51	.00	.00	.00	.04	.00
29	.00	-----	.00	.00	.66	.00	.00	.00	.00	.02	.12	.00
30	.00	-----	.00	.00	1.06	.00	.00	.00	.00	.68	.00	.24
31	.00	-----	.48	-----	.24	-----	.00	.21	-----	.35	-----	.00
TOTAL	.09	.07	2.09	6.97	4.49	2.21	2.21	1.62	5.73	2.91	.38	1.18
STA AV												

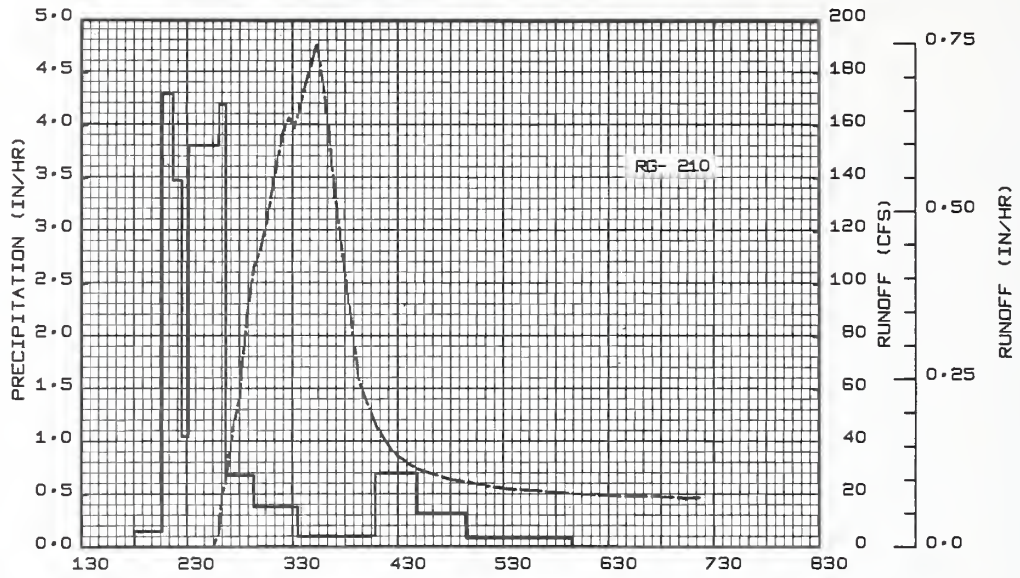
NOTES: YEARLY PRECIPITATION 29.95 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 4 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA		WATERSHED 5145 NEAR MIDOLEBURG				
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3	.000	.000	.000	.000	.000	.000	.000	.000	.602	.000	.000	.000
4	.000	.000	.000	.000	.000	.000	.000	.000	.041	.000	.000	.000
5	.000	.000	.000	.000	1.16	.000	.000	.000	.736	.000	.000	.000
6	.000	.000	.000	.000	.432	.000	.000	.000	.000	.000	.000	.000
7	.000	.000	.000	.000	.000	.000	.000	.000	.000	.189	.000	.000
8	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
9	.000	.000	.000	.896	.000	.000	.000	.000	.000	.000	.000	.000
10	.000	.000	.000	2.47	.000	.000	.000	.000	.000	.000	.000	.000
11	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
12	.000	.000	.000	13.2	.000	.000	.000	.000	.000	.000	.000	.000
13	.000	.000	.000	1.34	.000	.000	.000	.000	.000	.000	.000	.000
14	.000	.000	.000	.005	.000	.000	.000	.000	.009	.000	.000	.000
15	.000	.000	.000	.000	.000	.000	.000	.000	.000	.703	.000	.000
16	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
17	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
18	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
19	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
20	.000	.000	.000	1.41	.584	.000	.000	.000	.023	.000	.000	.000
21	.000	.000	.000	.069	.004	.000	.113	.000	.056	.000	.000	.000
22	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
23	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
24	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
25	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
26	.000	.000	.000	.000	.000	.293	.000	.000	1.07	.000	.000	.000
27	.000	.000	.000	.000	.000	.000	.000	.000	.009	.000	.000	.000
28	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
29	.000	-----	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
30	.000	-----	.000	.000	.410	.000	.000	.000	.000	.000	.000	.000
31	.000	-----	.000	-----	.259	-----	.000	.000	-----	.000	-----	.000
MEAN	.000	.000	.000	.646	.092	.010	.004	.000	.085	.029	.000	.000
INCHES	.000	.000	.000	1.825	.268	.028	.011	.000	.240	.084	.000	.000

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/OAY, MULTIPLY BY .09415. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 21.07 MEAN YEARLY DISCHARGE, 0.071 CFS. YIELD, 2.457 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

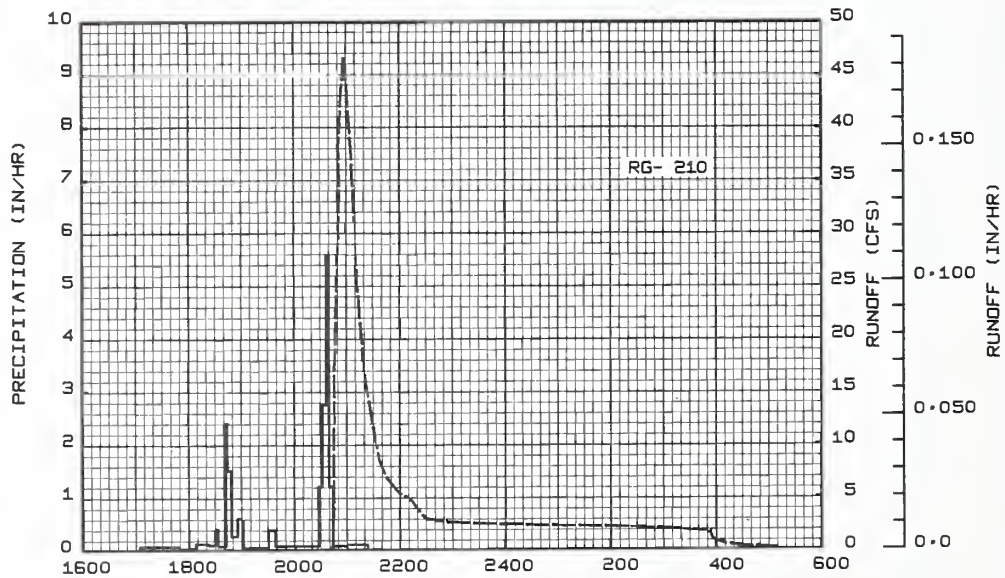
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5145 NEAR MIDDLEBURG					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (cfs)	ACC. (inches)		
Watershed conditions: See p. 69.25-1, this publication.			Event of April 12, 1967 ^{1/}									
			4-12	RG	210				4-12	0225	.00	2/0000
				0200	.00	.00				0245	.48	.0000
				0216	.15	.04				0248	5.36	.0006
				0222	4.30	.47				0250	19.72	.0022
				0227	3.48	.76				0252	24.99	.0052
				0231	1.05	.83						
				0248	3.81	1.91				0254	34.37	.0090
				0252	4.20	2.19				0256	43.64	.0141
				0308	.68	2.37				0300	56.61	.0273
				0333	.38	2.53				0302	73.05	.0357
				0417	.10	2.60				0304	85.97	.0461
				0441	.70	2.88				0308	106.27	.0713
				0509	.32	3.03				0312	113.35	.1000
				0609	.08	3.11				0316	125.45	.1312
										0320	141.40	.1661
										0324	156.34	.2051
										0328	163.02	.2468
										0331	159.10	.2784
										0336	172.20	.3326
							0344	191.51	.4277			
							0350	163.02	.4972			
							0354	135.29	.5362			
							0358	114.25	.5689			
							0404	82.99	.6076			
							0408	62.63	.6266			
							0418	45.66	.6620			
							0427	36.11	.6861			
							0440	29.84	.7141			
							0500	25.59	.7503			
							0530	22.16	.7972			
							0630	19.30	.8785			
							0706	19.09	.9237			
							0714	18.52	.9335			
							0724	18.97	.9458			
							5- 5	2042	.00	2/0000		
								2044	.92	.0006		
								2045	16.38	.0011		
								2051	33.57	.0109		
								2050	38.09	.0086		
								2053	43.07	.0166		
								2056	46.11	.0253		
								2057	46.75	.0283		
								2104	38.09	.0478		
								2109	29.18	.0587		
								2111	25.65	.0623		
								2120	16.32	.0747		
								2127	12.79	.0813		
								2136	6.57	.0876		
								2145	6.84	.0922		
								2159	5.33	.0977		
								2206	5.05	.1001		
								2214	4.59	.1026		
								2218	4.03	.1038		
								2229	2.95	.1063		
							5- 6	2250	2.61	.1101		
								0000	2.40	.1216		
								0150	2.21	.1382		
								0254	2.05	.1472		
								0322	1.90	.1508		
								0351	1.71	.1542		
								0353	1.61	.1544		
								0357	.90	.1548		
								0410	.52	.1554		
								0426	.34	.1558		
								0443	.25	.1562		
								0502	.17	.1564		
								0510	.16	.1565		

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .003923. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.25-3, THIS PUBLICATION. 1/ FOR ISOHYETAL MAP, SEE P. 69.7-7. 2/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5145



MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5145

CHICKASHA, OKLAHOMA WATERSHED 5146 NEAR MIDDLEBURG

LOCATION: WATERSHED — Small watershed near Highway 62 in the vicinity of Middleburg, in Crady County, Okla.; tributary of East Bitter Creek; Washita River; Red River Basin.

GAGING STATION — Ne $\frac{1}{2}$ sec. 5, T. 7 N., R. 5 W., lat. 35°06'50", long. 97°44'34", at artificial control about 600 feet downstream from county road bridge.

AREA: 762 acres (1.19 sq. miles). See composite map, page 69.7-21 of Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965 publication.

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8	8-12	12 and above
Percent of area	0	13	37	8	33	9

1/

SOILS: Residual, derived from fine grained sandstone and shale materials. They are deep, fine textured soils on gently rolling to rolling slopes with more shallow soils on the breaks. 1/

Soil	Per- cent of area	Topsoil			Subsoil		Substratum		Internal drainage
		Avg. depth (in.)	Structure	Permea- bility	Structure	Permea- bility	Avg. depth to(in.)	Permea- bility	
Nash-Quinlan loam	40	8	Weak fine	Moderate	Granular	Moderate	30	Moderate	Medium
Crant-Renfrow silt loam	36	12	Moderate medium fine granular	Moderate	Moderate medium coarse subangular blocky	Moderate	50	Moderately slow	Slow
Zaneis-Kingfisher silt loam	18	10	Moderate medium granular	Moderate	Moderate fine subangular blocky	Moderate	43	Moderately slow	Slow
Steep Stony loam	6	12	Moderate weak fine granular	Moderate	Weak fine granular	Moderate	36	Moderately slow	Medium

EROSION:

Erosion class	1	2	3	4
Percent of area	0	50	40	10

1/

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII
Percent of area	0	10	33	6	43	8	

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 entirely Chickasha. The tributary contains only one geologic formation; therefore, the geology is relatively simple. The quality of surface and ground water is relatively good. See description of hydrogeology and general geology map in Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1962, USDA Misc. Pub. 1070, 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 1.8 miles.

CHARACTER OF FLOW: Spring fed intermittent.

INSTRUMENTATION: **Precipitation:** Six recording weighing type gages, of which 5 have a 12-hour time scale and 1 has a 24-hour time scale. **Runoff:** The headwater gage consists of two FW-1 water level recorders, one with a 12-hour chart and one with a 192-hour chart, installed on an 18" gage well. Artificial control consists of a "V" notch weir with 2:1 side slopes made of steel sheet piling with a reinforced concrete cap. Low flow measurements are made with a current meter by wading. Measurements are made during periods of extreme low flow by attaching a portable flume to the weir. High flow measurements are made from a bridge just upstream from the weir. Tape downs are made from an outside gage reference point on the bridge and from a reference point inside the gage well. No tailwater gage.

WATERSHED CONDITIONS: 100% of the watershed is pasture or range. 20% of the area was farmed at one time. Some active gullies are still present. There are 6 farm ponds in the watershed. The following table shows the land use:

Percent of watershed in pasture or range - 100	
Classification of range site condition based on production	
Good - 20%	Fair - 30%
Poor - 50%	
The general practice for good range utilization is 1 animal unit per 12 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 5146 NEAR MIDDLEBURG AREA—762 ACRES (1.19 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P ^{1/} Q	.09 .000	.09 .000	2.18 .000	6.78 1.126	3.91 .148	2.52 .020	1.84 .000	1.71 .000	5.43 .047	2.67 .009	.33 .000	1.12 .000	28.67 1.350		
	STA AVG P ^{2/} Q															
	MEAN P ^{3/} 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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	
1967	4-12	.4914	4-12	.4202	4-12	.6123	4-12	.716	4-12	.746	4-12	.758	4-12	.827	4-9	.949
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO	4-12	.4914	4-12	.4202	4-12	.6123	4-12	.716	4-12	.746	4-12	.758	4-12	.827	4-9	.949
19--	1967		1967		1967		1967		1967		1967		1967		1967	
Notes: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map, see p. 69.21-4. 1/ Precipitation data obtained from a Thiessen weighted average of 6 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U.S. Weather Bureau period of record at Chickasha, Okla.; missing months estimated.																
MISCELLANEOUS DATA																
RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 377.4 cfs (6.13 ft). Minimum — No flow - periodically. PERIOD OF RECORD: Maximum — Apr. 12, 1967, 377.4 cfs (6.13 ft). Minimum — No flow. PEAK DISCHARGES: (Above base flow of 100 cfs) 1967 — Apr. 12, 377.4 cfs (6.13 ft). DAILY TEMPERATURE: See p. 69.7-3.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 5146 NEAR MIDDLBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.07	.00	.00	.00	.00	.00	.00	.00	.00	.01	.00
2	.00	.00	.00	.00	.00	.00	.00	.00	.49	.00	.15	.00
3	.00	.00	.00	.00	.00	.00	.13	.00	1.30	.00	.05	.00
4	.00	.00	.00	.00	.00	.00	.00	1.09	.42	.00	.00	.00
5	.00	.00	.00	.00	1.13	.00	.10	.00	.56	.00	.00	.00
6	.00	.00	.04	.00	.01	.00	.00	.00	.03	.00	.00	.00
7	.00	.00	.00	.40	.00	.00	.00	.00	.05	.95	.00	.00
8	.00	.02	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	1.01	.00	.00	.00	.00	.00	.00	.01	.00
10	.00	.00	.00	.75	.00	.00	.00	.00	.00	.00	.00	.05
11	.00	.00	.00	.00	.00	.00	.00	.02	.00	.00	.00	.00
12	.00	.00	.02	2.81	.00	.06	.00	.00	.00	.00	.00	.00
13	.00	.00	.02	.54	.03	.00	.00	.00	.05	.00	.00	.03
14	.00	.00	.00	.00	.01	.00	.00	.00	.44	.00	.00	.11
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.76	.00	.07
16	.00	.00	.00	.00	.00	.00	.27	.00	.18	.00	.00	.63
17	.00	.00	.00	.00	.00	.00	.00	.36	.00	.00	.00	.00
18	.00	.00	.00	.00	.00	.55	.46	.00	.00	.00	.00	.00
19	.00	.00	.21	.33	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.00	.94	1.04	.00	.00	.00	.68	.00	.00	.00
21	.00	.00	.00	.00	.00	.00	.38	.03	.11	.00	.00	.00
22	.00	.00	.96	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.24	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.00	.00
25	.00	.00	.31	.00	.00	1.11	.00	.00	.00	.00	.00	.00
26	.09	.00	.07	.00	.00	.56	.00	.00	1.12	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.00	.45	.00	.00	.00	.03	.00
29	.00	-----	.00	.00	.61	.00	.00	.00	.00	.02	.08	.00
30	.00	-----	.05	.00	.88	.00	.00	.00	.00	.64	.00	.23
31	.00	-----	.50	-----	.20	-----	.00	.21	-----	.30	-----	.09
TOTAL	.09	.09	2.18	6.78	3.91	2.52	1.84	1.71	5.43	2.67	.33	1.12
STA AV												

NOTES: YEARLY PRECIPITATION 28.67 INCHES. PRECIPITATION VALUES ARE A THIESSEN WEIGHTED AVERAGE OF 6 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE NO STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 5146 NEAR MIDDLBURG						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.000	.000	.000	.000	.080	.047	.000	.000	.000	.000	.000	.000
2	.000	.000	.000	.000	.069	.032	.000	.000	.000	.000	.000	.000
3	.000	.000	.000	.000	.063	.027	.000	.000	.126	.000	.000	.000
4	.000	.000	.000	.000	.060	.021	.000	.000	.033	.000	.000	.000
5	.000	.000	.000	.000	2.01	.015	.000	.000	.360	.000	.000	.000
6	.000	.000	.000	.000	.349	.009	.000	.000	.000	.000	.000	.000
7	.000	.000	.000	.000	.100	.008	.000	.000	.000	.066	.000	.000
8	.000	.000	.000	.000	.088	.011	.000	.000	.000	.000	.000	.000
9	.000	.000	.000	.928	.074	.003	.000	.000	.000	.000	.000	.000
10	.000	.000	.000	2.07	.068	.000	.000	.000	.000	.000	.000	.000
11	.000	.000	.000	.026	.051	.002	.000	.000	.000	.000	.000	.000
12	.000	.000	.000	24.2	.047	.001	.000	.000	.000	.000	.000	.000
13	.000	.000	.000	2.27	.054	.003	.000	.000	.000	.000	.000	.000
14	.000	.000	.000	.345	.055	.000	.000	.000	.000	.000	.000	.000
15	.000	.000	.000	.255	.045	.000	.000	.000	.000	.207	.000	.000
16	.000	.000	.000	.214	.042	.000	.000	.000	.000	.000	.000	.000
17	.000	.000	.000	.163	.064	.000	.000	.000	.000	.000	.000	.000
18	.000	.000	.000	.155	.083	.075	.000	.000	.000	.000	.000	.000
19	.000	.000	.000	.186	.072	.009	.000	.000	.000	.000	.000	.000
20	.000	.000	.000	3.65	.420	.001	.000	.000	.000	.000	.000	.000
21	.000	.000	.000	.331	.078	.000	.000	.000	.000	.000	.000	.000
22	.000	.000	.000	.183	.052	.000	.000	.000	.000	.000	.000	.000
23	.000	.000	.000	.158	.037	.000	.000	.000	.000	.000	.000	.000
24	.000	.000	.008	.138	.029	.000	.000	.000	.000	.000	.000	.000
25	.000	.000	.000	.146	.019	.132	.000	.000	.000	.000	.000	.000
26	.000	.000	.000	.124	.019	.254	.000	.000	.955	.000	.000	.000
27	.000	.000	.000	.129	.018	.005	.000	.000	.045	.000	.000	.000
28	.000	.000	.000	.117	.017	.000	.000	.000	.000	.000	.000	.000
29	.000	-----	.000	.127	.267	.000	.000	.000	.000	.000	.000	.000
30	.000	-----	.000	.112	.233	.000	.000	.000	.000	.000	.000	.000
31	.000	-----	.000	-----	.085	-----	.000	.000	-----	.000	-----	.000
MEAN	.000	.000	.000	1.20	.153	.022	.000	.000	.051	.009	.000	.000
INCHES	.000	.000	.000	1.126	.148	.020	.000	.000	.047	.009	.000	.000

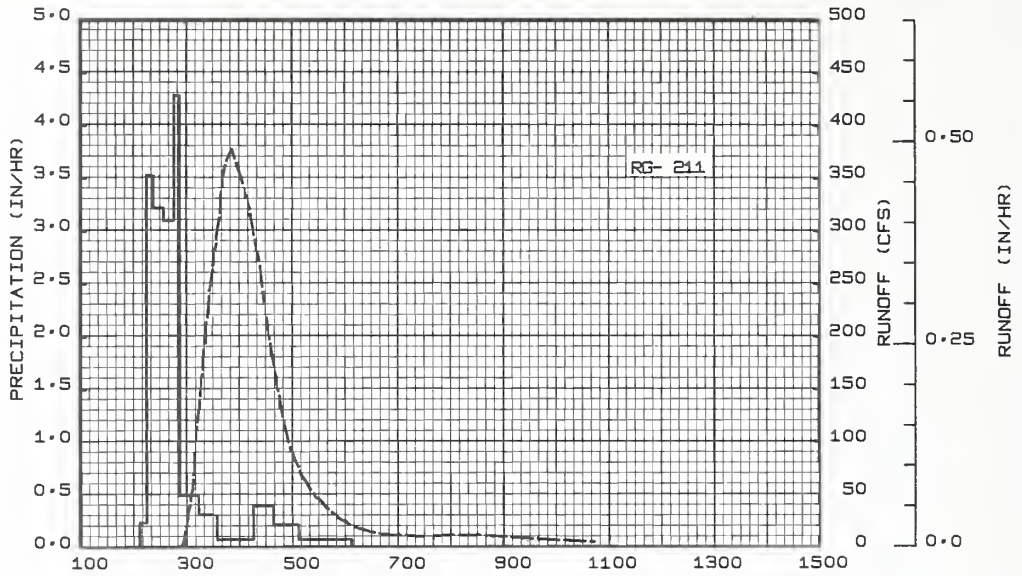
NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/OAY, MULTIPLY BY .03125. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 63.47 MEAN YEARLY DISCHARGE, 0.118 CFS. YIELD, 1.350 INCHES. MAXIMUM AND MINIMUM FLOWS EACH MONTH UNDERLINED.

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED 5146 NEAR MIDDLEBURG					
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: See p. 69.26-1, this publication.			Event of April 12, 1967								
			4-12	RG	211			4-12	0217	.04	1/.0000
				0207	.00	.00		0255	1.40	.0002	
				0215	.23	.03		0300	19.54	.0011	
				0223	3.53	.50		0301	25.84	.0016	
				0234	3.22	1.09		0304	39.23	.0038	
				0246	3.10	1.71		0305	46.34	.0047	
				0253	4.29	2.21		0338	312.54	.1413	
				0314	.49	2.38		0339	329.51	.1482	
				0335	.31	2.49		0341	342.66	.1628	
				0416	.07	2.54		0342	351.87	.1703	
				0439	.39	2.69		0344	360.25	.1858	
				0507	.21	2.79		0346	366.76	.2016	
				0607	.07	2.86		0349	372.95	.2257	
								0352	377.38	.2501	
								0359	359.85	.3061	
								0403	350.32	.3369	
								0412	318.86	.4021	
								0418	290.78	.4419	
								0422	274.62	.4665	
								0430	223.01	.5098	
								0451	116.73	.5864	
								0454	107.12	.5936	
								0458	93.49	.6023	
								0507	76.21	.6188	
								0511	67.46	.6250	
								0524	51.15	.6418	
								0527	46.96	.6450	
					0531	44.75	.6489				
					0535	41.33	.6527				
					0538	38.21	.6553				
					0542	35.28	.6585				
					0555	26.02	.6670				
					0614	17.87	.6760				
					0626	14.82	.6802				
					0629	13.93	.6812				
					0637	12.65	.6835				
					0648	11.50	.6864				
					0740	10.24	.6982				
					0809	10.96	.7049				
					0836	10.70	.7113				
					0853	9.93	.7151				
					0917	8.49	.7199				
					1043	4.55	.7317				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001302. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.26-3. FOR ISOHYETAL MAP, SEE P. 69.7-7, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.

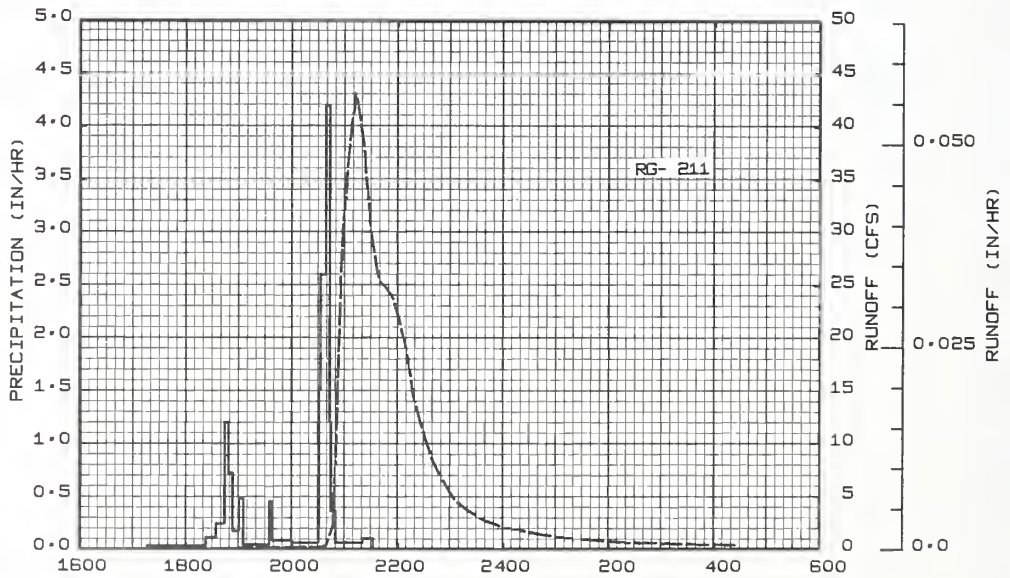
1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED 5146 NEAR MIDDLEBURG				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (cfs)	ACC. (inches)	
Watershed conditions: See p. 69.26-1, this publication.			Event of May 5, 1967								
			5- 5	RG	211			5- 5	1900	.11	1/.0000
				1717	.00	.00		2016	.18	.0002	
				1823	.03	.03		2034	.22	.0003	
				1834	.11	.05		2038	.29	.0004	
				1844	.24	.09		2048	6.07	.0007	
				1848	1.20	.17					
				1853	.72	.23		2055	26.28	.0031	
				1900	.17	.25		2057	30.00	.0044	
				1905	.48	.29		2100	32.82	.0064	
				1934	.04	.31		2105	38.35	.0103	
				1938	.45	.34		2107	40.13	.0120	
				2000	.08	.37		2110	41.86	.0147	
				2030	.06	.40		2111	43.14	.0156	
				2032	1.50	.45		2113	42.55	.0175	
				2038	2.60	.71		2121	38.02	.0245	
				2042	4.20	.99		2123	35.68	.0261	
				2044	1.20	1.03		2127	31.83	.0290	
				2049	.36	1.06		2130	29.41	.0310	
				2120	.06	1.09		2136	26.32	.0346	
				2132	.10	1.11		2139	25.30	.0363	
								2146	24.73	.0401	
								2153	23.92	.0438	
								2200	22.02	.0473	
								2208	19.35	.0509	
								2214	16.56	.0532	
								2217	14.66	.0542	
								2221	13.36	.0555	
								2236	9.28	.0591	
								2240	8.23	.0599	
					2252	6.40	.0618				
					2259	5.43	.0627				
					2305	4.64	.0633				
					2320	3.63	.0647				
					2338	2.73	.0659				
				5- 6	0000	2.08	.0671				
					0044	1.37	.0687				
					0133	.90	.0699				
					0207	.68	.0705				
					0240	.56	.0709				
					0427	.34	.0719				

NOTES: TO CONVERT RUNOFF IN CFS TO IN/HR, MULTIPLY BY .001302. FOR 30-DAY ANTECEDENT P AND Q, SEE P. 69.26-3, THIS PUBLICATION. 1/ SOME INTERMEDIATE BREAKPOINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED 5146



MAY 5- 6, 1967

CHICKASHA, OKLAHOMA WATERSHED 5146

CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSETT

LOCATION: WATERSHED — Salt Creek Watershed $\frac{1}{2}$ mile east of U. S. Highway 81 near Pocasset, in Grady County, Okla.; tributary to Washita River; Red River Basin.

GAGING STATION — NW $\frac{1}{4}$ sec. 28, T. 8 N., R. 7 W., lat. 35°08'44", long. 97°57'30".

AREA: 15,206 acres (23.76 sq. miles).

SLOPES:

Slope — Percent	0-1	1-3	3-5	5-8	8+
Percent of area	15.5	24	35	14	11.5

1/

SOILS: Residual, derived from siltstone, shale, sandstone, and terrace and flood plain materials. 1/

Soil	Per- cent of area	Avg. depth (in.)	Topsoil		Subsoil		Substratum		Internal drainage
			Structure	Permea- bility	Structure	Permea- bility	Avg. depth to(in.)	Permea- bility	
McLain Port-Yahola silt loam	15	16	Moderate medium granular	Moderately slow	Moderate medium granular	Moderately slow	60+	Moderate	Medium
Kingfisher Renfrow silt loam	60	10	Moderate medium granular	Moderately slow	Moderate medium granular	Moderately slow	46	Moderately slow	Slow
Nash-Grant loam	15	10	Moderate fine granular	Moderate	Moderate fine granular	Moderate	40	Moderate	Medium
Quinlan Lucien loam	10	5	Moderate fine	Moderately slow	Moderate medium granular	Moderate	20	Moderate	Medium

EROSION:

Erosion class	1	2	3	4
Percent of area	20	30	35	15

1/

LAND CAPABILITY:

Class	I	II	III	IV	V	VI	VII
Percent of area	15	20	46	4	0	15	0

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: Undifferentiated Dog Creek shale and Blaine formation, 82%, located over the greatest portion of the upland; Marlow formation, 8%, located on the highest elevations of the upper portion of the watershed; Chickasha formation, 6%, located on the side slopes of the major drainageways on the lower portion of the watershed; and alluvium, 4%, located on the bottoms of the major drainageways. The quality of the surface water is fair, while both quality and quantity of the ground water is poor due to shale and dissolved calcium sulfate. Source of data: Oklahoma Geological Survey, Norman, Okla., Bulletin 73.

SURFACE DRAINAGE: Fair; length of principal waterway 9.6 miles.

CHARACTER OF FLOW: Perennial, continuous.

INSTRUMENTATION: **Precipitation:** Nine recording weighing type gages, 8 of which have a 24-hour time scale and 1 which has a 12-hour time scale. **Runoff:** Staff gage, datum 1,097.00 ft. above m.s.l., Stevens A-35 recorder with 9.6 inches per day time scale installed in 24-inch well on downstream side of county road bridge. Slope station with same instrumentation and datum about 500 feet downstream. Stable channel with seasonal variation in amount of vegetation. Low flow current meter measurements made by wading. High flow current meter measurements made by crane from county road bridge. Measurements are made during each major event and periodically.

WATERSHED CONDITIONS: Cultivated land is mostly small grains, with alfalfa and row crops along creek bottoms. The pasture or range land is mostly short grass on moderately steep slopes. About 10% is severely eroded.

Percent of watershed in						
Cultivation - 36					Pasture or range - 64	
Alfalfa - 3	Sowed crops - 31			Row crops - 2		Classification or range 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 - 48%
						Fair - 40% Poor - 10%
2.5-3	26	38	37	27	200	The general practice for good range utilization is 1 animal unit per 14 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.

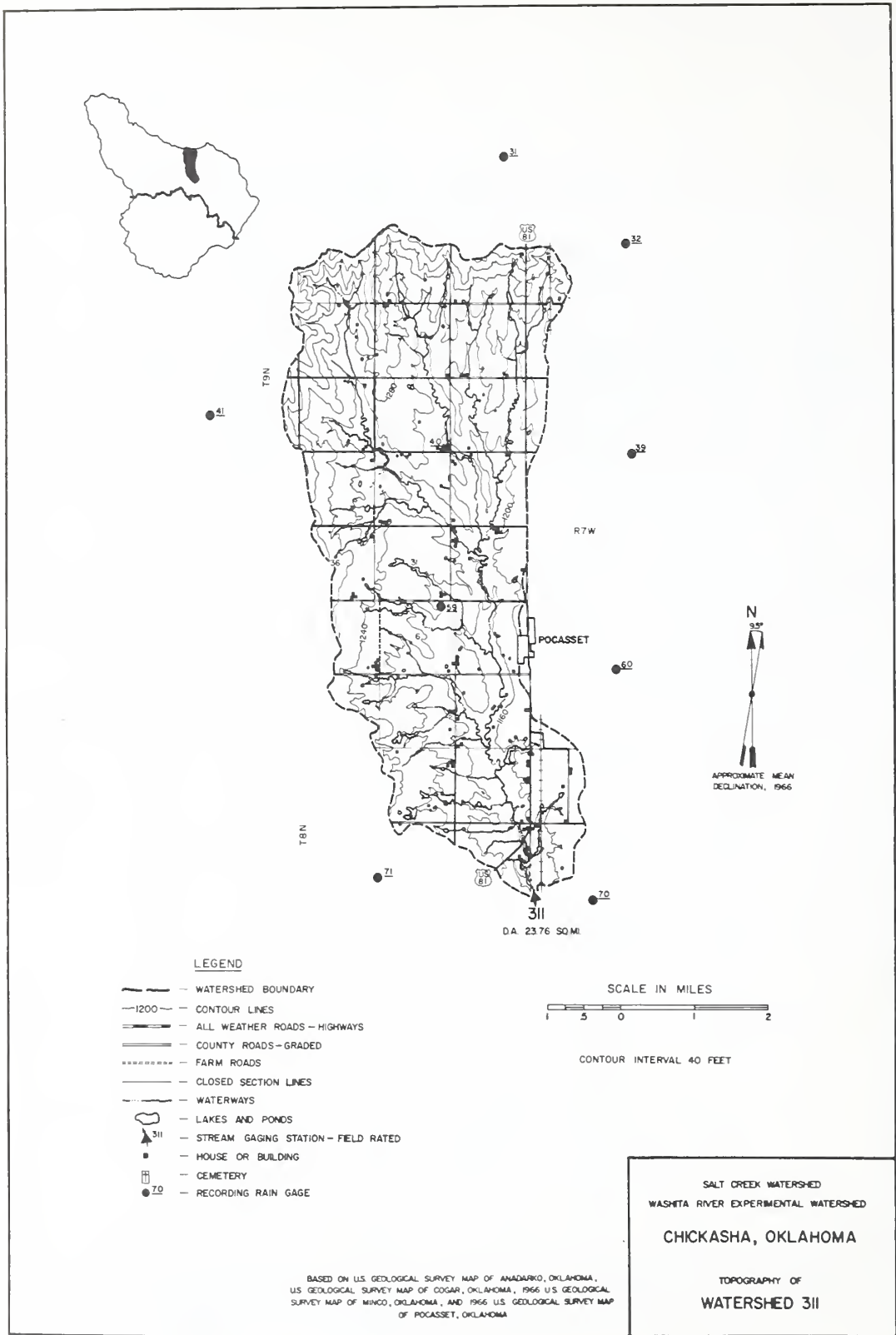
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSETT AREA — 15,206 ACRES (23.76 SQ. MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/ Q	.63 .000	.18 .001	2.03 .002	6.24 1.773	2.64 .079	3.48 .072	1.42 .002	1.33 .000	5.28 .070	3.39 .300	.23 .008	.99 .010	27.84 2.317		
	STA AVG P2/ Q															
67	MEAN P3/ YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.3196	4-12	.3140	4-12	.6000	4-12	1.201	4-12	1.310	4-12	1.338	4-12	1.424	4-9	1.720
MAXIMUMS FOR PERIOD OF RECORD 4/																
19 67 TO 19 --	4-12 1967	.3196	4-12 1967	.3140	4-12 1967	.6000	4-12 1967	1.201	4-12 1967	1.310	4-12 1967	1.338	4-12 1967	1.424	4-9 1967	1.720
<p>NOTES: Watershed conditions same as that described on previous page under WATERSHED CONDITIONS. For watershed map see p. 69.27-4; for composite map see Hydrologic Data for Experimental Agricultural Watersheds in the United States, 1965, p. 69.7-21. 1/ Precipitation data obtained from a Thiessen weighted average of 9 gages on the watershed. 2/ Precipitation records began Jan. 1967; runoff records began Jan. 1967. 3/ Mean P based on 67-yr (1901-67) U. S. Weather Bureau record period at Chickasha, Okla.; missing months estimated. 4/ Maximum for period of record same as annual maximum discharges and annual maximum volumes for selected time intervals because period of record began in 1967.</p>																
MISCELLANEOUS DATA																
<p>RUNOFF PEAK DATA: YEAR (1967): Maximum — Apr. 12, 4,900 cfs (16.10 ft). Minimum — Jan. 1 - no flow (1.60 ft). PERIOD OF RECORD: Maximum — Apr. 12, 1967, 4,900 cfs (16.10 ft). Minimum — No flow. Period of record began Jan. 1967. PEAK DISCHARGES: (Above base flow of 400 cfs) 1967 - Apr. 12, 4,900 cfs (16.10 ft); Oct. 7, 708 cfs (11.11 ft). DAILY TEMPERATURE: See p. 69.7-3.</p>																
NO SELECTED RUNOFF EVENT REPORTED.																

1967 DAILY PRECIPITATION (inches)						CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSET						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.12	.00	.00	.01	.00	.00	.00	.00	.00	.00	.00
2	.00	.00	.00	.00	.00	.00	.02	.00	.66	.00	.16	.00
3	.00	.00	.00	.00	.00	.00	.08	.08	1.30	.00	.01	.00
4	.00	.00	.00	.00	.00	.00	.00	.79	.19	.00	.00	.06
5	.00	.00	.00	.00	1.01	.00	.28	.00	.79	.00	.00	.00
6	.00	.00	.02	.00	.03	.00	.00	.00	.11	.00	.00	.00
7	.00	.00	.00	.26	.00	.00	.00	.00	.02	2.22	.00	.00
8	.00	.06	.00	.00	.00	.01	.00	.00	.00	.00	.00	.00
9	.00	.00	.00	.56	.00	.00	.00	.00	.00	.00	.00	.00
10	.00	.00	.00	.36	.00	.00	.00	.00	.00	.00	.00	.07
11	.00	.00	.00	.00	.00	.04	.00	.01	.00	.00	.00	.00
12	.00	.00	.19	3.91	.00	.10	.00	.00	.00	.00	.00	.00
13	.00	.00	.00	.61	.06	.00	.00	.00	.05	.00	.00	.02
14	.00	.00	.00	.00	.01	.00	.00	.04	.35	.00	.00	.06
15	.00	.00	.00	.00	.00	.00	.01	.00	.00	.32	.00	.06
16	.00	.00	.00	.08	.00	.11	.28	.00	.02	.00	.00	.51
17	.00	.00	.00	.00	.00	.05	.00	.05	.00	.00	.00	.01
18	.00	.00	.00	.00	.00	.02	.60	.00	.00	.00	.00	.00
19	.00	.00	.53	.40	.00	.00	.00	.00	.00	.00	.00	.00
20	.00	.00	.01	.04	.60	.00	.00	.00	.67	.00	.00	.00
21	.00	.00	.00	.00	.00	.01	.00	.01	.11	.00	.00	.03
22	.00	.00	.67	.00	.00	.00	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.96	.00	.00	.00	.00	.00	.00
24	.00	.00	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
25	.60	.00	.23	.00	.00	1.80	.00	.00	.00	.00	.00	.00
26	.03	.00	.02	.00	.00	.17	.02	.00	1.01	.00	.00	.00
27	.00	.00	.00	.00	.00	.01	.01	.00	.00	.00	.00	.00
28	.00	.00	.00	.02	.04	.00	.12	.00	.00	.00	.01	.00
29	.00	-----	.00	.00	.32	.00	.00	.00	.00	.00	.05	.00
30	.00	-----	.11	.00	.50	.00	.00	.00	.00	.47	.00	.17
31	.00	-----	.25	-----	.06	-----	.00	.35	-----	.38	-----	.00
TOTAL	.63	.18	2.03	6.24	2.64	3.48	1.42	1.33	5.28	3.39	.23	.99

NOTES: YEARLY PRECIPITATION 27.84 INCHES. PRECIPITATION VALUES ARE A THIENSEN WEIGHTED AVERAGE OF 9 GAGES ON THE WATERSHED. FIRST YEAR OF RECORD THEREFORE AT STA AV SHOWN.

1967 MEAN DAILY DISCHARGE (cfs)						CHICKASHA, OKLAHOMA WATERSHED 311 NEAR POCASSET						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.0	.0	.0	.1	1.1	.4	.1	.0	.0	.0	.2	.2
2	.0	.0	.0	.0	.9	.4	.1	.0	.1	.0	.2	.2
3	.0	.0	.0	.0	.9	.3	.1	.0	3.9	.0	.2	.1
4	.0	.0	.0	.0	.9	.3	.1	.0	1.3	.0	.2	.2
5	.0	.0	.0	.0	1.2	.3	.3	.0	5.3	.0	.1	.2
6	.0	.0	.0	.0	1.9	.3	.1	.0	1.8	.0	.1	.2
7	.0	.0	.0	.0	2.7	.3	.1	.0	.2	* 1.83	.1	.2
8	.0	.0	.0	.0	1.3	.2	.1	.0	.0	5.6	.1	.2
9	.0	.1	.0	* 3.1	1.0	.2	.0	.0	.0	.8	.2	.2
10	.0	.1	.0	* 9.0	.8	.2	.0	.0	.0	.3	.1	.2
11	.0	.1	.0	.6	.7	.2	.0	.0	.0	.2	.2	.2
12	.0	.1	.0	* 10.10	.6	.2	.0	.0	.0	.1	.1	.2
13	.0	.0	.0	.62	.9	.2	.0	.0	.0	.1	.1	.2
14	.0	.0	.0	9.0	.5	.2	.0	.0	.0	.1	.1	.2
15	.0	.0	.0	4.8	.5	.2	.0	.0	.0	.1	.2	.2
16	.0	.0	.0	3.8	.5	.1	.0	.0	.0	.1	.2	.3
17	.0	.0	.0	4.7	.5	.1	.0	.0	.0	.1	.2	.4
18	.0	.0	.0	3.3	.5	.2	.0	.0	.0	.1	.2	.2
19	.0	.0	.0	5.1	.4	.2	.0	.0	.0	.1	.2	.2
20	.0	.0	.1	4.5	.6	.1	.0	.0	.1	.1	.2	.2
21	.0	.0	.0	2.5	.6	.1	.0	.0	2.3	.1	.2	.2
22	.0	.0	.1	1.9	.4	.1	.0	.0	.2	.1	.2	.2
23	.0	.0	.3	1.6	.4	.2	.0	.0	.0	.1	.2	.2
24	.0	.0	.3	1.4	.3	.5	.0	.0	.0	.1	.2	.2
25	.0	.0	.2	1.3	.3	3.6	.0	.0	.0	.1	.2	.2
26	.0	.1	.1	1.3	.3	3.2	.0	.0	6.9	.1	.2	.2
27	.0	.0	.1	1.3	.3	.7	.0	.0	10	.1	.2	.2
28	.0	.0	.1	1.2	.3	.2	.0	.0	.8	.1	.2	.2
29	.0	-----	.1	1.2	.4	.1	.0	.0	.1	.1	.2	.2
30	.0	-----	.1	1.1	.4	.1	.0	.0	.0	.1	.2	.2
31	.0	-----	.1	-----	.4	-----	.0	.0	-----	.3	-----	.3
MEAN	.0	.0	.1	.38	1.6	1.5	.0	.0	1.5	6.2	.2	.2
INCHES	.000	.001	.002	1.773	.079	.072	.002	.000	.070	.300	.008	.010

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .001565. TO CONVERT DISCHARGE IN INCHES TO AC-FT, MULTIPLY BY 1.267. YEARLY MEAN DISCHARGE, 4.1 CFS. YEARLY DISCHARGE, 2.317 INCHES. 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
- LAKES AND PONDS
- ▲ 311 — STREAM GAGING STATION — FIELD RATED
- — HOUSE OR BUILDING
- — CEMETERY
- 70 — RECORDING RAIN GAGE

SCALE IN MILES



CONTOUR INTERVAL 40 FEET



SALT CREEK WATERSHED
 WASHITA RIVER EXPERIMENTAL WATERSHED
CHICKASHA, OKLAHOMA
 TOPOGRAPHY OF
WATERSHED 311

BASED ON U.S. GEOLOGICAL SURVEY MAP OF ANADARKO, OKLAHOMA,
 U.S. GEOLOGICAL SURVEY MAP OF COGAR, OKLAHOMA, 1966 U.S. GEOLOGICAL
 SURVEY MAP OF MINCO, OKLAHOMA, AND 1966 U.S. GEOLOGICAL SURVEY MAP
 OF POCASSET, OKLAHOMA

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-1 AREA - 17.8 ACRES								69.30		
YEAR	MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P1/Q	.26	.05	2.47	5.68	3.11	1.66	2.39	2.21	5.16	2.41	.26	1.10	26.76		
		.000	.000	.000	.068	.000	.000	.000	.000	.011	.000	.000	.000	.079		
STA AVG (65-67)	P2/O	.66	.82	1.61	4.09	2.13	2.07	1.82	6.34	3.71	1.30	.29	.74	25.58		
		.000	.000	.011	.084	.000	.002	.011	.977	.154	.000	.000	.000	1.239		
MEAN 67 YR	P3/A	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.081	4-12	.017	4-12	.028	4-12	.042	4-12	.045	4-12	.046	4-12	.053	4-10	.058
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO 19 67	4-12	.081	8-28 1965	.065	8-28 1965	.128	8-28 1965	.349	8-28 1965	.614	8-28 1965	.920	8-28 1965	1.049	8-23 1966	1.153
NOTES: Watershed conditions: Continuous cotton - tillage during fallow period consisted of shredding stalks, disking, chiseling, spring-tooth harrowing and spike-tooth harrowing. Cotton was planted during second week of June. Tillage during the growing season consisted of rotary hoeing and cultivating. Principal drain with less than 0.05-foot grade per 100 feet was maintained during the growing season by use of field cultivator. 1/ Monthly precipitation values obtained from one recording rain gage, No. 173, located near the 1.5-foot H-flume. 2/ Precipitation and runoff records began January 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma. NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.30-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.30-3 OF FOREGOING REFERENCE.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-2 AREA — 32.5 ACRES						69.31				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P <u>1</u> / a	.42 .000	.07 .000	1.67 .000	5.41 .139	3.14 .000	2.06 .000	1.94 .000	.72 .000	5.32 .000	2.99 .025	.26 .000	.85 .000	24.85 .164			
STA AVG P <u>2</u> / (62-67) o	.53 .000	.94 .000	1.47 .000	3.03 .034	2.76 .001	3.23 .061	1.38 .000	3.09 .004	3.58 .007	1.26 .004	1.70 .000	.80 .000	23.77 .111			
67 YR MEAN <u>3</u> / P	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.099	4-12	.075	4-12	.110	4-12	.139	4-12	.142	4-12	.142	4-12	.142	4-12	.142
MAXIMUMS FOR PERIOD OF RECORD																
19 62 To 19 67	4-12 1967	.099	4-12 1967	.075	4-12 1967	.110	6-1 1962	.208	6-1 1962	.246	6-1 1962	.246	6-1 1962	.246	6-1 1962	.332
<p>NOTES: Watershed conditions: This 32.5-acre watershed continued in mixed cropping. The north 15.5 acres and 0.2-acre drainage way was summer fallowed and planted to wheat in the fall of 1967. The south 16.8 acres were planted to cotton in June 1967. <u>1</u>/ Monthly precipitation values obtained from one weighing type rain gage, No. 174. <u>2</u>/ Precipitation and runoff records began May 1, 1962. <u>3</u>/ Mean P based on 67-yr (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.</p> <p>NO SELECTED RUNOFF EVENT REPORTED FOR 1967. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.30-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.31-3 OF FOREGOING REFERENCE.</p>																

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-3						69.32	
						AREA - 44.3 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P 1/	.24	.04	2.52	5.45	3.18	1.55	2.42	1.83	5.12	2.01	.25	.99	25.60
Q	.000	.000	.050	1.667	.062	.019	.164	.066	.466	.011	.000	.000	2.505
STA AVG P 2/	.37	.82	1.92	5.05	1.98	1.60	2.72	4.96	3.62	1.16	.34	.73	25.27
(65-67) O	.000	.002	.050	1.015	.031	.063	.420	1.454	.418	.004	.000	.000	3.457
MEAN P 3/													
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

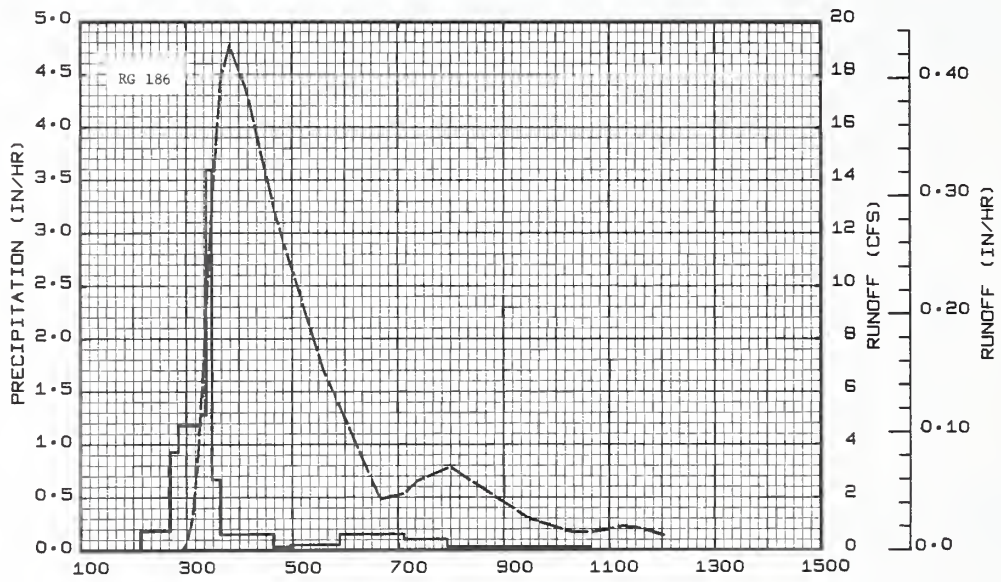
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.428	4-12	.373	4-12	.618	4-12	.926	4-12	1.010	4-12	1.110	4-12	1.333	4-9	1.571

MAXIMUMS FOR PERIOD OF RECORD																
1965 TO	4-12	.428	4-12	.373	4-12	.618	8-29	1.029	8-29	1.093	4-12	1.110	4-12	1.333	8-21	1.768
1967	1967		1967		1967		1966		1966		1967		1967		1966	

NOTES: Watershed conditions: Cropland, previously graded and smoothed for row irrigation. Entire watershed was mold-board plowed in mid-December 1966. Preplanting tillage operations included disking 5-6 inches and spike-tooth harrowing 4 inches to incorporate herbicide, and spring-tooth harrowing. Planted cotton in May. Tillage during growing season consisted of rotary hoeing and cultivating with sweep cultivator. Irrigation water was applied four times during the period July 25 to September 1, 1967. Exact application rates varied, however were slightly less than 7.0 inches. 1/ Monthly precipitation data obtained from two recording weighing type rain gages, No. 186 and Cotton Research Station gage. 2/ Precipitation and runoff records began September 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA			WATERSHED C-3			69.32	
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)
	2 RG 4/			Event of April 12, 1967						
3-19	.21	.000	4-12	RG	186		4-12	0253	.00000	.00000
3-22	.82	.005		0208	.00	.00		0256	.00049	.00001
3-25	.97	.044		0242	.18	.10		0300	.00645	.00024
3-26	.06	.001		0251	.93	.24		0306	.02343	.00173
3-30	.10	.000		0316	1.18	.73		0312	.06751	.00628
3-31	.34	.000		0323	1.28	.88		0320	.16445	.02175
4-07	.28	.000		0329	3.60	1.24		0328	.28076	.05143
4-09	1.06	.051		0338	.67	1.34		0339	.39930	.11377
4-10	.87	.187		0438	.15	1.49		0349	.42821	.18273
4-11	.00	T		0457	.03	1.50		0408	.38989	.31226
			0553	.05	1.55					
			0706	.15	1.73	0442	.28076	.50228		
			0755	.10	1.81	0534	.15385	.69062		
			1039	.01	1.86	0639	.04306	.79728		
						0706	.04790	.81775		
						0721	.05859	.83106		
						0759	.07065	.87199		
						0804	.06751	.87775		
						0928	.02677	.94375		
						1018	.01502	.96117		
						1038	.01502	.96618		

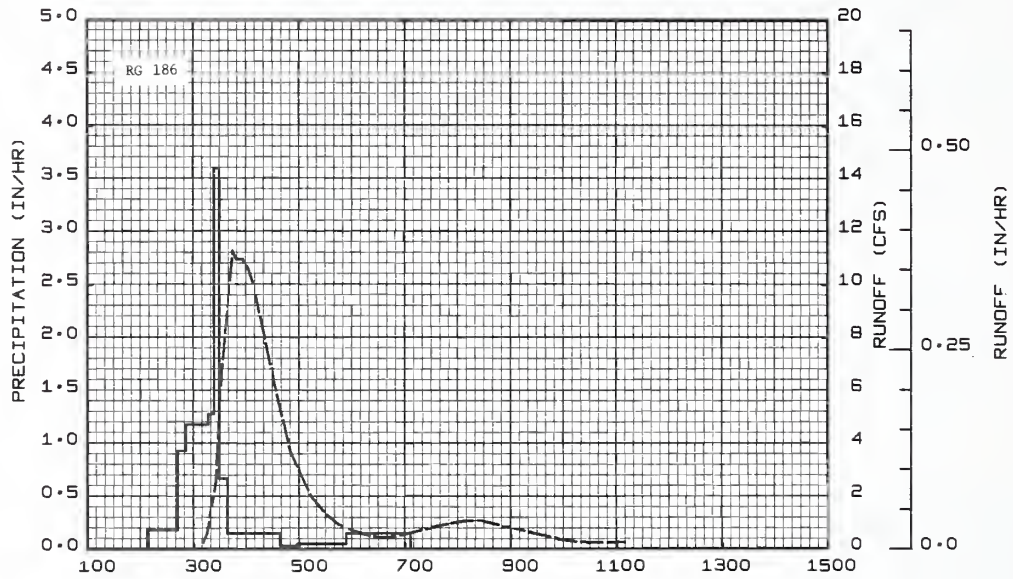
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 44.671. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.32-1. MAPS - REVISED COMPOSITE, P. 69.7-21, TOPOGRAPHY, P. 69.32-3, OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 186 AND CRS. 5/ RUNOFF ESSENTIALLY ENDED AT 0201 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF 1,01817 INCHES WHEN NEXT EVENT BEGAN.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-3

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-4 AREA - 29.9 ACRES							69.33			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ /O	.26 .000	.04 .000	2.53 .009	5.36 .875	3.14 .011	1.57 .000	2.39 .070	1.98 .007	4.97 .418	1.99 .000	.25 .000	1.07 .000	25.55 1.390			
STA AVG (65-67) _O P ₂ /	.39 .000	.80 .003	1.92 .049	4.91 .561	1.98 .006	1.70 .023	2.82 .408	5.09 1.085	3.57 .255	1.15 .000	.30 .000	.76 .000	25.39 2.390			
MEAN P ₃ /	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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	
1967	4-12	.374	4-12	.311	4-12	.425	4-12	.535	4-12	.574	4-12	.623	4-12	.749	4-9	.821
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO 19 67	4-12 1967	.374	4-12 1967	.311	8-29 1966	.496	8-29 1966	.813	8-29 1966	.849	8-29 1966	.856	8-29 1966	.858	8-21 1966	1.326
NOTES: Watershed conditions: Cropland, previously graded and smoothed for row irrigation. Watershed area was moldboard plowed 8-10 inches deep in mid-December 1966. Preplanting tillage included disking 3-5 inches deep, spike-tooth harrowing, use of land leveler to level and smooth area, incorporation of herbicide with disk and spring-tooth harrow, and additional spring-tooth harrowing for final seedbed preparation. Planted cotton in mid-May. Tillage during growing season consisted of rotary hoeing and cultivating with sweep type cultivator as needed. Irrigation water applied four times during the period July 25 to September 1, 1967. Application rates varied, however total quantity applied was slightly less than 7.0 inches. 1/ Monthly precipitation data obtained from Thiessen weighted rainfall values from two recording weighing type rain gages, Nos. 186 and 187. 2/ Precipitation and runoff records began September 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT						CHICKASHA, OKLAHOMA WATERSHED C-4							69.33			
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 April 12, 1967																
	2 RG 4/		4-12	RG	1.86		4-12									
3-19	.20	.000		0208	.00	.00		0303	.00000	.00000						
3-22	.77	.000		0242	.18	.10		0307	.00076	.00002						
3-25	1.00	.009		0251	.93	.24		0311	.00881	.00034						
3-26	.05	T		0316	1.18	.73		0315	.01945	.00128						
3-30	.11	.000		0323	1.28	.88		0325	.08533	.01001						
3-31	.38	.000		0329	3.60	1.24		0330	.19764	.02181						
4-07	.30	.000		0338	.67	1.34		0334	.25146	.03678						
4-09	1.06	.016		0438	.15	1.49		0344	.37381	.08888						
4-10	.86	.056		0457	.03	1.50		0348	.36353	.11346						
				0553	.05	1.55		0351	.36353	.13164						
				0706	.15	1.73		0355	.36353	.15587						
				0755	.10	1.81		0401	.35293	.19170						
				1039	.01	1.86		0407	.33305	.22600						
								0432	.20483	.33806						
								0449	.12331	.38454						
								0513	.06584	.42237						
								0530	.04367	.43789						
								0544	.03115	.44662						
								0601	.02297	.45429						
								0620	.01630	.46051						
								0632	.01484	.46363						
								0652	.01630	.46882						
								0737	.02896	.48579						
								0811	.03585	.50416						
								0826	.03585	.51312						
Watershed conditions: 100% of watershed in cultivation, continuous irrigated cotton. Entire watershed received normal tillage of disking and spring tooth harrowing. Entire watershed spring tooth harrowed 4" deep on April 6.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30.150. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.33-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.33-3 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 186 AND 187. 5/ RUNOFF ENDED AT 0202 ON APR. 13, 1967 WITH AN ACCUMULATED TOTAL OF 0.57481 INCHES.																



APRIL 12 1967

CHICKASHA, OKLAHOMA WATERSHED C-4

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-5 AREA - 12.8 ACRES								69.34
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1/	.26	.04	2.43	5.25	3.19	1.60	2.26	1.80	4.77	1.91	.25	1.04	24.80	
Q	.000	.000	.093	1.205	.000	.000	.000	.000	.017	.000	.000	.000	1.315	
STA AVG P 2/	.40	.78	1.86	4.74	2.23	1.97	2.18	6.14	3.54	1.12	.29	.75	26.00	
(65-67) O	.000	.000	.055	.624	.000	.000	.002	.135	.007	.000	.000	.000	.823	
MEAN P 3/														
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02	

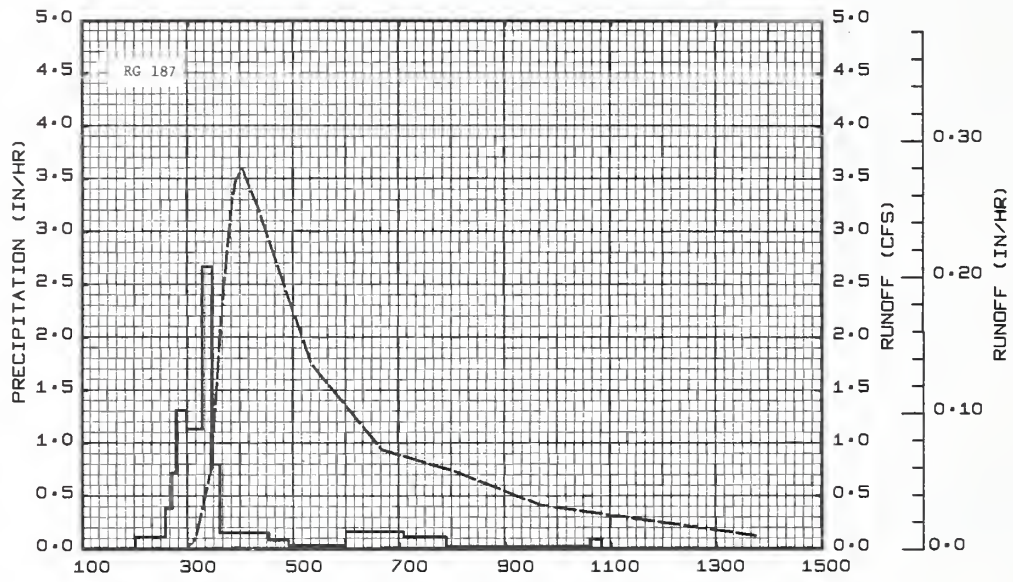
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.280	4-12	.250	4-12	.409	4-12	.673	4-12	.775	4-12	.812	4-12	.935	4-9	1.180

MAXIMUMS FOR PERIOD OF RECORD																
19 65 to	4-12	.280	4-12	.250	4-12	.409	4-12	.673	4-12	.775	4-12	.812	4-12	.935	4-9	1.180
19 67	1967		1967		1967		1967		1967		1967		1967		1967	

NOTES: Watershed conditions: Watershed planted to wheat in fall of 1966 and harvested for grain in June 1967. During the summer of 1967 the watershed was tandem disked 4-6 inches deep and chiseled 8 inches deep soon after harvest. The watershed was disked 6-8 inches deep with one-way disk on July 12 and August 2, and spring-tooth harrowed 4 inches deep on August 23 and September 13 and 3 inches deep on October 4. Watershed was spike-tooth harrowed on October 6 and October 10. Watershed was planted to wheat October 11, 1967. 1/ Monthly precipitation data obtained from Thiessen weighted rainfall values from two weighing recording type rain gages, Nos. 185 and 187. 2/ Precipitation and runoff records began May 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.

1967 SELECTED RUNOFF EVENT			CHICKASHA • OKLAHOMA WATERSHED C-5									69.34
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)		
			Event of April 12, 1967									
	2 RG 4/		4-12	RG	187		4-12	0300	0.0000	0.0000		
3-19	.19	.000		0200	.00	.00		0305	0.0042	0.0017		
3-22	.75	.000		0234	.11	.06		0309	0.00940	0.0062		
3-25	.96	.093		0242	.38	.11		0327	0.06066	0.1113		
3-26	.04	.000		0247	.72	.17		0337	0.16281	0.2975		
3-30	.11	.000		0258	1.31	.41						
3-31	.36	.000		0316	1.13	.75		0349	0.25176	0.7121		
4-07	.29	.000		0327	2.67	1.24		0354	0.27050	0.9297		
4-09	1.04	.035		0336	.80	1.36		0402	0.28022	1.2969		
4-10	.84	.210		0432	.15	1.50		0407	0.27050	1.5263		
				0454	.08	1.53		0419	0.25176	2.0486		
				0559	.03	1.56		0520	0.13614	4.0205		
				0705	.16	1.73		0640	0.07285	5.4139		
				0753	.11	1.82		0802	0.05689	6.3005		
				1036	.02	1.87		0940	0.03188	7.0255		
				1049	.09	1.89		1345	0.00940	5/0.78685		
Watershed conditions: 100% of watershed planted to wheat in fall of 1966. Normal growth during spring.												

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 12.907. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.34-1. MAPS - REVISED COMPOSITE P. 69.7-21; TOPOGRAPHY, P. 69.34-3 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 187. 5/ RUNOFF ESSENTIALLY ENDED AT 0203 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF 0.80209 INCHES WHEN NEXT EVENT BEGAN.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-5

MONTHLY PRECIPITATION AND RUNOFF (inches)							CHICKASHA, OKLAHOMA WATERSHED C-6 AREA - 13.0 ACRES							69.35
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 ^{1/}	.26	.04	2.41	5.23	3.20	1.60	2.24	1.77	4.74	1.88	.25	1.04	24.66	
₀	.000	.000	.106	1.058	.000	.000	.000	.000	.029	.000	.000	.000	1.193	
STA AVG (65-67) ^{2/}	.40	.78	1.84	4.77	2.23	1.97	2.18	6.13	3.54	1.11	.29	.75	25.99	
MEAN ₀	.000	.000	.085	.580	.000	.000	.003	.290	.028	.000	.000	.000	.986	
67 YR ^{3/}	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02	

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
1967	4-12	.295	4-12	.259	4-12	.398	4-12	.634	4-12	.744	4-12	.787	4-12	.895	4-9	1.050

MAXIMUMS FOR PERIOD OF RECORD

19 65 TO 19 67	8-28 1965	.305	4-12 1967	.259	4-12 1967	.398	4-12 1967	.634	4-12 1967	.744	4-12 1967	.787	4-12 1967	.895	4-9 1967	1.050
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NOTES: Watershed conditions: Watershed planted to wheat in fall of 1966 and harvested for grain in June 1967. During the summer of 1967 the watershed was tandem disked 4-6 inches deep and chiseled 8 inches deep soon after harvest. The watershed was disked 6-8 inches deep with one-way disk on July 12 and August 2, and spring-tooth harrowed 4 inches deep on August 23 and September 13 and 3 inches deep on October 4. Watershed was spike-tooth harrowed on October 6 and October 10. Watershed was planted to wheat October 11, 1967. ^{1/} Monthly precipitation data obtained from Thiessen weighted rainfall values from two weighing recording type rain gages, Nos. 185 and 187. ^{2/} Precipitation and runoff records began May 1, 1965. ^{3/} Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.

1967 SELECTED RUNOFF EVENT

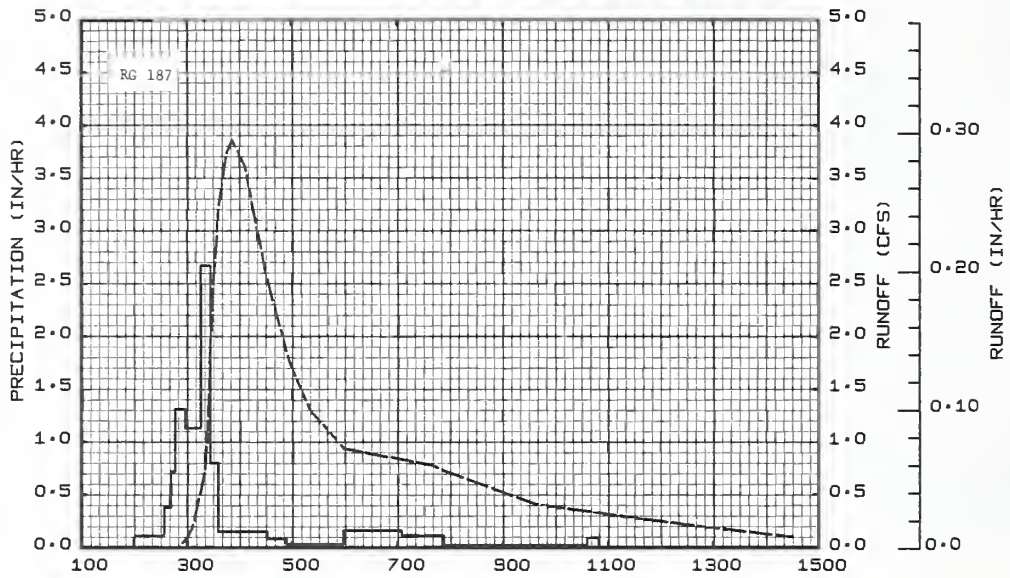
CHICKASHA, OKLAHOMA

WATERSHED C-6

69.35

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 April 12, 1967											
	2 RG ^{4/}		4-12	RG	187		4-12				
3-19	.19	.000		0200	.00	.00		0251	.00000	.00000	
3-22	.75	.000		0234	.11	.06		0258	.00533	.00031	
3-25	.95	.106		0242	.38	.11		0302	.00858	.00077	
3-26	.04	.000		0247	.72	.17		0306	.01326	.00150	
3-30	.11	.000		0258	1.31	.41		0309	.02012	.00233	
3-31	.35	.000		0316	1.13	.75		0320	.05227	.00897	
4-07	.29	.000		0327	2.67	1.24		0323	.07147	.01206	
4-09	1.03	.018		0336	.80	1.36		0329	.17383	.02433	
4-10	.84	.138		0432	.15	1.50		0337	.24698	.05238	
				0454	.08	1.53		0346	.28459	.09225	
				0559	.03	1.56		0352	.29458	.12121	
				0705	.16	1.73		0400	.28459	.15982	
				0753	.11	1.82		0407	.27490	.19246	
			1036	.02	1.87	0431	.19649	.28674			
			1049	.05	1.88	0458	.13356	.36100			
						0521	.09954	.40568			
						0600	.07147	.46126			
						0740	.05951	.57041			
						0752	.05581	.58194			
						0937	.03128	.65815			
						1144	.02012	.71255			
						1229	.01647	.72628			
						1429	.00762	.75038			

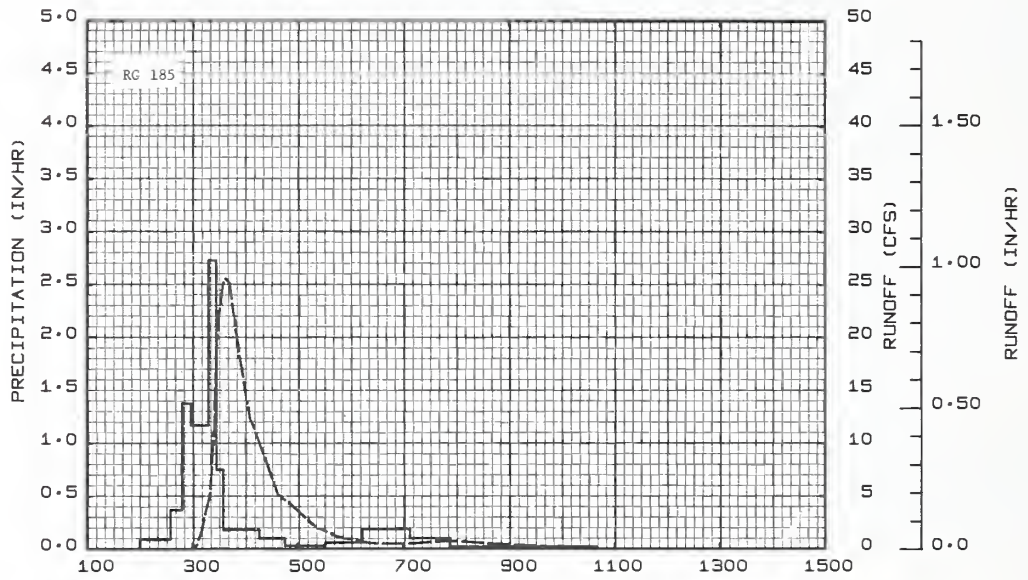
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 13.108. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.35-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.34-3 OF FOREGOING REFERENCE. ^{4/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 187. ^{5/} RUNOFF ESSENTIALLY ENDED AT 0200 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF .76800 INCHES WHEN NEXT RUNOFF BEGAN.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-6

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-7							69.36			
						AREA - 26.5 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P 1	.26	.04	2.36	5.18	3.18	1.61	2.22	1.70	4.71	1.83	.26	1.03	24.38		
	D	.000	.000	.007	1.779	.040	.002	.007	.003	.073	.000	.000	.000	1.911		
	STA AVG P 2	.40	.77	1.81	4.73	2.22	1.98	2.19	6.10	3.54	1.09	.29	.74	25.86		
(65-67)	D	.000	.028	.004	.979	.014	.083	.174	.861	.183	.000	.000	.000	2.326		
	MEAN P 3															
67-YR		1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02		
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
1967	4-12	.957	4-12	.637	4-12	.824	4-12	.944	4-12	.969	4-12	1.050	4-10	1.228	4-9	1.634
MAXIMUMS FOR PERIOD OF RECORD																
19 65 TO	4-12	.957	4-12	.637	4-12	.824	4-12	.944	4-12	.969	4-12	1.050	4-10	1.228	4-9	1.634
19 67	1967		1967		1967		1967		1967		1967		1967		1967	
NOTES: Watershed conditions: Cropland, normal spring tillage consisted of spike-tooth harrowing, spring-tooth harrowing, disking, spring-tooth harrowing, and spike-tooth harrowing. North field planted to cotton on June 5. South field planted to row crops, mostly grain sorghum and cotton. Some smaller plots of soy beans and alfalfa were also planted. Cotton was harvested in November. Cotton stubble was disked 4-5 inches deep followed by chiseling 8 inches deep during late December. Portion of watershed in sorghum was disked and then moldboard plowed 10-12 inches deep on October 20. 1/ Monthly precipitation data from Thiessen weighted rainfall values from two recording weighing type rain gages, Nos. 185 and 187. 2/ Precipitation and runoff records began May 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT				CHICKASHA, OKLAHOMA WATERSHED C-7							69.36					
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF									
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME DF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)						
	2 RG 4/			Event of April 12, 1967												
			4-12	RG	185	.00	4-12	0258	.00000	.00000						
3-19	.18	.000		0200	.00	.00		0300	.00123	.00002						
3-22	.75	.000		0239	.09	.05		0302	.00452	.00011						
3-25	.93	.007		0248	.37	.13		0305	.01297	.00055						
3-26	.04	.000		0258	1.38	.36		0306	.02736	.00088						
3-30	.10	.000		0318	1.17	.75										
3-31	.34	.000		0327	2.73	1.16		0309	.04880	.00279						
4-07	.29	.000		0335	.75	1.26		0311	.07169	.00480						
4-09	1.03	.099		0416	.18	1.38		0314	.11672	.00951						
4-10	.83	.336		0445	.10	1.43		0320	.19265	.02498						
				0531	.03	1.45		0322	.29382	.03309						
				0613	.06	1.49		0325	.46826	.05214						
				0707	.19	1.66		0326	.57373	.06082						
				0753	.10	1.74		0327	.69267	.07137						
				1039	.02	1.80		0330	.82507	.10932						
								0335	.94139	.18292						
								0337	.95672	.21456						
								0338	.95672	.23050						
								0342	.94139	.29377						
								0353	.69267	.44356						
								0405	.46826	.55966						
								0426	.29382	.69302						
								0437	.19265	.73762						
								0453	.15446	.78390						
								0520	.07831	.83628						
								0545	.04390	.86174						
								0618	.02235	.87996						
								0636	.01795	.88601						
								0651	.01795	.89050						
								0710	.01935	.89641						
								0742	.02736	.5/ .90886						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 26.721. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.36-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.36-3 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 187. 5/ RUNOFF ENDED AT 2156 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF 0.97124 INCHES.																



APRIL 12 1967

CHICKASHA, OKLAHOMA WATERSHED C-7

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED C-8 AREA - 27.3 ACRES							69.37
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P 1/	.24	.04	2.45	5.12	3.37	1.68	2.17	1.46	4.64	1.73	.24	1.05	24.19
Q	.000	.000	.020	.505	.014	.000	.000	.000	.034	.000	.000	.000	.573
STA AVG P 2/	.39	.78	1.81	3.72	2.31	2.01	2.21	6.02	3.54	1.06	.30	.75	24.90
(65-67) O	.000	.000	.031	.180	.005	.004	.126	.434	.258	.000	.000	.000	1.038
MEAN P 3/													
67-YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

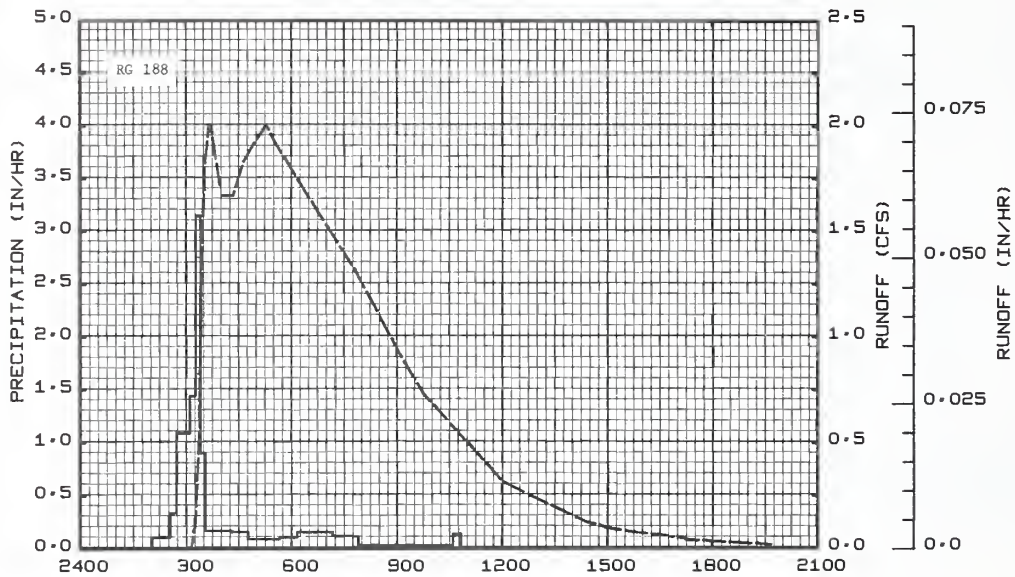
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	.073	4-12	.070	4-12	.134	4-12	.336	4-12	.414	4-12	.424	4-12	.475	4-9	.505

MAXIMUMS FOR PERIOD OF RECORD																
19 65 to 19 67	9-19 1965	.257	9-19 1965	.190	9-19 1965	.249	8-29 1966	.374	8-29 1966	.430	8-29 1966	.436	9-19 1965	.610	8-21 1966	.678

NOTES: Watershed conditions: Cropland, watershed was drilled to alfalfa in fall of 1965 and remained in alfalfa throughout 1967. Because of poor soil moisture conditions and a heavy infestation of aphids in the spring and army worms in the fall, alfalfa was harvested only two times during 1967 (May 11 and June 10). 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two recording weighing type rain gages, Nos. 185 and 188. 2/ Precipitation and runoff records began April 1, 1965. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.

1967 SELECTED RUNOFF EVENT			CHICKASHA, OKLAHOMA WATERSHED C-8							69.37
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)
			Event of April 12, 1967							
	2 RG 4/		4-12	RG	188		4-12			
3-12	.02	.000		0203	.00	.00		0310	.00000	.00000
3-19	.18	.000		0234	.10	.05		0312	.00119	.00001
3-22	.73	.020		0245	.33	.11		0314	.00283	.00008
3-25	1.02	.000		0307	1.09	.51		0316	.00439	.00020
3-26	.03	.000		0317	1.44	.75		0319	.00959	.00055
3-30	.08	.000		0325	3.15	1.17		0321	.01372	.00094
3-31	.37	.000		0333	.90	1.29		0323	.02024	.00151
4-07	.30	.000		0418	.16	1.41		0324	.02660	.00190
4-09	1.04	.008		0446	.15	1.48		0326	.04043	.00302
4-10	.78	.021		0540	.08	1.55		0327	.04744	.00375
Watershed conditions: 100% of watershed in alfalfa. Severe insect infestation in March; poor growth during spring. First harvest was on May 11.				0610	.10	1.60		0329	.05519	.00546
				0710	.15	1.75		0333	.06664	.00952
				0754	.11	1.83		0337	.06970	.01406
				1036	.02	1.89		0340	.07286	.01763
				1050	.13	1.92		0343	.07286	.02127
								0401	.06075	.04131
								0421	.06075	.06157
								0439	.06664	.08068
								0456	.06970	.09999
								0517	.07286	.12494
					0533	.06970	.14395			
					0645	.05792	.22052			
					0751	.04744	.27848			
					0901	.03406	.32603			
					0945	.02660	.34827			
					1200	.01154	.39120			
					1255	.00869	.40047			
					1427	.00439	.41051			
					1510	.00323	.41325			
					1714	.00163	5/.41828			

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 27.528. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.37-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.37-5 OF FOREGOING REFERENCE. 4/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 185 AND 188. 5/ RUNOFF ENDED AT 2359 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF 0.44217 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED C-8

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-1 AREA - 17.8 ACRES								69.38
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1	.75	.13	1.92	6.33	2.71	4.00	1.75	1.51	8.46	3.05	.21	1.10	31.92	
O	.0000	.0000	.0004	.0723	.0004	.0023	.0000	.0000	.0181	.0038	.0000	.0000	.0973	
STA AVG P 2	.51	.86	1.30	3.55	2.65	4.58	1.03	3.62	4.08	1.46	1.67	.78	26.08	
(62-67) O	.0000	.0001	.0002	.0262	.0077	.0042	.0000	.0069	.0069	.0011	.0027	.0004	.0564	
MEAN P 3														
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02	

Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-2, R-3, and R-4. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,300 pounds of grass, 800 pounds of weeds, and 1,600 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No. 189. 2/Precipitation records began Jan. 1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr. (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station
69.38-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-2 AREA - 24.1 ACRES								69.39
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1	.72	.13	1.72	6.22	2.46	4.05	1.79	1.55	8.22	2.92	.17	1.02	30.97	
O	.0000	.0000	.0009	.2111	.0080	.0286	.0000	.0000	.1509	.0381	.0000	.0000	.4376	
STA AVG P 2	.50	.84	1.27	3.53	2.61	4.55	1.03	3.54	4.02	1.44	1.66	.77	25.76	
(62-67) O	.0000	.0003	.0019	.0750	.0125	.0333	.0002	.0421	.0452	.0097	.0123	.0048	.2373	
MEAN P 3														
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02	

Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-1, R-3, and R-4. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,800 pounds of grass, 800 pounds of weeds and 2,000 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No. 190. 2/Precipitation records began Jan. 1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr. (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.

Cooperative research Project of USDA and Oklahoma Agricultural Experiment Station
69.39-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-3 AREA - 25.8 ACRES								69.40
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1	.65	.14	1.58	6.09	2.54	4.02	1.83	1.40	7.99	2.82	.19	1.04	30.29	
O	.0010	.0000	.0014	.0888	.0033	.0093	.0000	.0000	.0445	.0150	.0000	.0000	.1633	
STA AVG P 2	.49	.84	1.26	3.50	2.63	4.52	1.04	3.52	3.96	1.42	1.66	.77	25.61	
(62-67) O	.0003	.0003	.0011	.0343	.0066	.0131	.0000	.0195	.0221	.0043	.0066	.0012	.1094	
MEAN P 3														
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02	

Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-1, R-2, and R-4. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,600 pounds of grass, 500 pounds of weeds, and 2,000 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No. 191. 2/Precipitation records began Jan. 1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr. (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station
69.40-1

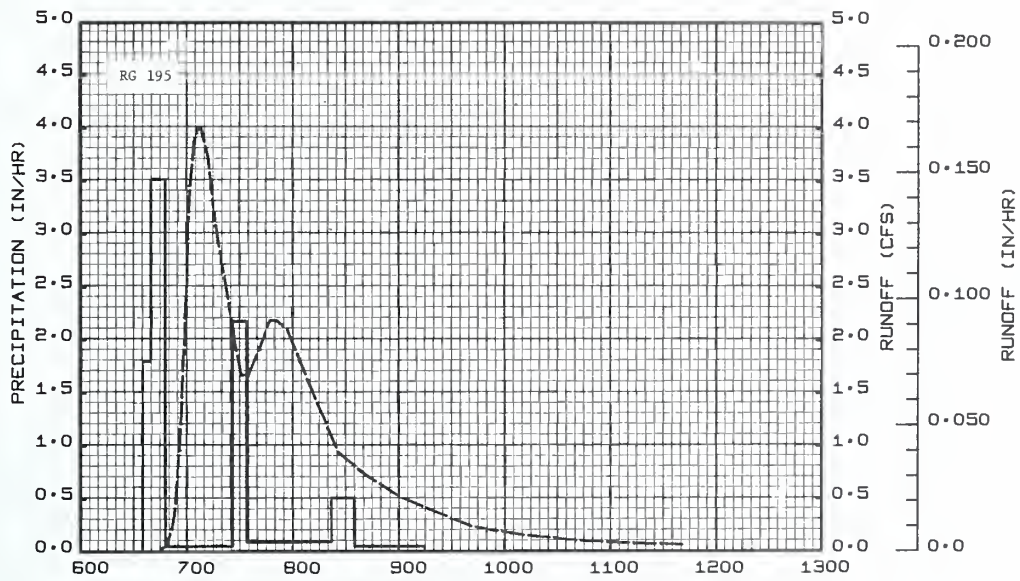
MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-4 AREA - 18.1 ACRES								69.41
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1967 P 1	.73	.16	1.77	6.35	2.66	4.19	1.80	1.58	8.07	3.47	.22	1.05	32.05	
O	.0000	.0000	.0008	.3049	.0001	.0082	.0000	.0000	.0908	.0183	.0000	.0000	.4231	
STA AVG P 2	.51	.83	1.28	3.55	2.65	4.62	1.03	3.60	4.02	1.52	1.67	.77	26.05	
(62-67) O	.0000	.0000	.0006	.1082	.0045	.0266	.0000	.0307	.0269	.0044	.0051	.0002	.2072	
MEAN P 3														
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02	

Notes: Watershed conditions: Watershed is in range and pasture grasses and within the same fence enclosure as Watersheds R-1, R-2, and R-3. All have essentially the same grazing management. There is a good hydrologic cover of weeds, annual grasses, low order perennial grasses and some climax grass species, however, the range condition class is poor. The watershed was overgrazed throughout the year. Average from 25 uniformly spaced clipped sites in Nov. 1967 was 1,600 pounds of grass, 500 pounds of weeds, and 1,500 pounds of mulch per acre. 1/Precipitation data obtained from recording rain gage No. 192. 2/Precipitation records began Jan. 1, 1962. Runoff records began July 1, 1962. Runoff measured by stage-volume change in a farm pond. 3/Mean P based on 67-yr. (1901-67) U.S. Weather Bureau record period at Chickasha, Okla.

NO SELECTED RUNOFF EVENTS REPORTED FOR R-1, R-2, R-3, AND R-4 FOR 1967. FOR GENERAL DESCRIPTIONS OF THE WATERSHEDS, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 69.38-2 (R-1); P. 69.39-1 (R-2); P. 69.40-1 (R-3); P. 69.41-1 (R-4). MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.38-2 (R-1); P. 69.39-2 (R-2 AND R-3); P. 69.41-2 OF FOREGOING REFERENCE

Cooperative Research Project of USDA and Oklahoma Agricultural Experiment Station
(See 69.38-1;-39-1;-40-1 above)
69.41-1

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-5 AREA - 23.7 ACRES								69.42		
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ^{1/}	.08	.10	2.34	6.62	4.54	2.07	1.57	1.20	5.65	2.51	.26	1.04	27.98			
o	.000	.000	.000	1.074	.045	.000	.000	.000	.000	.000	.000	.000	1.119			
STA AVG P ^{2/} (66-67)							2.46	3.64	3.94	1.48	.49	.70				
MEAN P ^{3/}							.070	.000	.000	.000	.000	.000				
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	.879	4-12	.577	4-12	.721	4-12	.790	4-12	.806	4-12	.810	4-10	.947	4-9	1.066
MAXIMUMS FOR PERIOD OF RECORD																
1966 TO	4-12	.879	4-12	.577	4-12	.721	4-12	.790	4-12	.806	4-12	.810	4-10	.947	4-9	1.066
1967	1967		1967		1967		1967		1967		1967		1967			
NOTES: Watershed conditions: Native grass rangeland, continuously grazed by beef cattle during recent years. Range condition class during 1967 was good, however, entire area was slightly overgrazed throughout the year. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 2,200 pounds per acre of standing vegetation and 2,800 pounds per acre of mulch. This watershed was within the same pasture area as Watershed R-6, however was subjected to a slightly heavier grazing rate. ^{1/} Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 195 and 196. ^{2/} Precipitation and runoff records began July 1, 1966. ^{3/} Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENT						CHICKASHA, OKLAHOMA WATERSHED R-5								69.42		
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 April 10, 1967																
	2 RG ^{4/}			RG	195											
			4-10	0635	.00	.00	4-10	0638	.0000	.0000						
				0640	1.80	.15		0643	.0000	.0000						
				0648	3.52	.62		0645	.0001	.0000						
				0726	.05	.65		0649	.0024	.0001						
				0734	2.18	.94		0651	.0073	.0002						
				0822	.09	1.01		0653	.0144	.0006						
				0835	.51	1.12		0655	.0304	.0014						
				0915	.75	1.15		0657	.0542	.0028						
								0659	.0868	.0051						
								0701	.1294	.0087						
								0702	.1442	.0110						
								0704	.1600	.0161						
								0706	.1655	.0215						
								0708	.1655	.0270						
								0712	.1546	.0377						
								0716	.1294	.0472						
								0728	.0796	.0680						
								0731	.0694	.0718						
								0733	.0694	.0741						
								0735	.0694	.0764						
								0741	.0796	.0838						
								0747	.0906	.0923						
								0751	.0906	.0984						
								0757	.0868	.1073						
								0811	.0630	.1247						
								0826	.0389	.1375						
								0841	.0304	.1462						
								0901	.0215	.1548						
								0941	.0100	.1653						
								1011	.0065	6/.1694						
Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-6.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 23.898. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.42-1. MAPS - TOPOGRAPHY, P. 69.42-3 OF FOREGOING REFERENCE; REVISED COMPOSITE, P. 69.7-21 (1965 PUBLICATION). ^{4/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 195 AND 196. ^{5/} RUNOFF PRIOR TO 0635. ^{6/} RUNOFF ENDED AT 0310 ON APR. 11, 1967 WITH ACCUMULATED TOTAL OF 0.1804 INCHES.																



APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-5

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED R-5		69.42		
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)
Event of April 12, 1967										
	2 RG ^{2/}		4-12	RG	1.95		4-12			
3-19	.19	.000		0210	.00	.00		0247	.0000	.0000
3-22	.87	.000		0226	.23	.06		0255	.0024	.0001
3-25	.44	.000		0233	.51	.12		0302	.0304	.0014
3-26	.08	.000		0245	1.70	.46		0309	.1827	.0128
3-30	.20	.000		0259	1.20	.74		0317	.3251	.0477
3-31	.53	.000		0317	1.37	1.15		0321	.3966	.0718
4-07	.44	.000		0337	2.13	1.86		0324	.4457	.0928
4-09	1.09	.009		0434	.20	2.05		0325	.4984	.1007
4-10	1.16	.190		0500	.14	2.11		0329	.5904	.1370
				0604	.01	2.12		0338	.7467	.2364
				0631	.16	2.19		0343	.8634	.3042
				0655	.18	2.26		0346	.8788	.3478
				0737	.20	2.40		0347	.8634	.3623
				0758	.09	2.43		0352	.7467	.4298
				1049	.03	2.50		0356	.6401	.4760
								0400	.5431	.5155
								0404	.4562	.5488
								0406	.3966	.5630
								0411	.3251	.5935
								0416	.2925	.6193
								0419	.2337	.6324
								0436	.1294	.6827
								0449	.0868	.7061
								0458	.0694	.7178
								0526	.0367	.7423
								0541	.0249	.7500
								0628	.0110	.7630
								0710	.0100	.7710
								0729	.0110	.7734

Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-6.

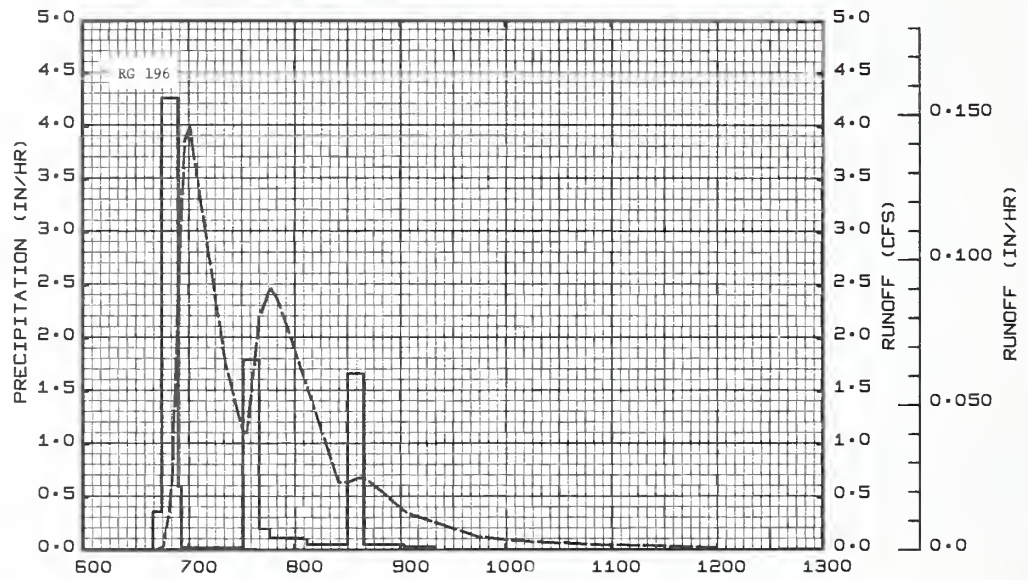
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 23.898. ^{1/} SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. ^{2/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 195 AND 196. ^{3/} RUNOFF ENDED AT 0038 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF .8089 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R-5

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-6							69.43			
						AREA - 27.2 ACRES										
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1	.08	.10	2.20	6.52	4.73	2.08	1.48	1.22	5.66	2.59	.24	1.04	27.94			
Q	.000	.000	.000	1.103	.070	.000	.000	.000	.030	.000	.000	.000	1.203			
STA AVG P 2							2.46	3.68	3.90	1.50	.48	.70				
(66-67) Q							.060	.018	.016	.000	.000	.000				
MEAN P 3																
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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			
1967	4-12	1.066	4-12	.658	4-12	.808	4-12	.879	4-12	.889	4-12	.892	4-11	.989	4-10	1.098
MAXIMUMS FOR PERIOD OF RECORD																
19 66 TO	4-12	1.066	4-12	.658	4-12	.808	4-12	.879	4-12	.889	4-12	.892	4-11	.989	4-10	1.098
19 67	1967		1967		1967		1967		1967		1967					
NOTES: Watershed conditions: Native grass rangeland, continuously grazed by beef cattle during recent years. Range condition class during 1967 was good, however 75 percent of the area was slightly overgrazed throughout the year. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 2,900 pounds per acre of standing vegetation and 2,500 pounds per acre of mulch. The watershed was within the same pasture area as Watershed R-5, however was subjected to a slightly lighter grazing rate. 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 196 and 197. 2/ Precipitation and runoff records began July 1, 1966. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENTS						CHICKASHA, OKLAHOMA WATERSHED R-6							69.43			
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)						
	2 RG 5/			Event of April 10, 1967												
3-19	.18	.000	4-10	RG	1.96		4-10	0642	.0000	.0000						
3-22	.81	.000		0640	.00	.00		0646	.0007	.0000						
3-25	.43	.000		0645	.36	.03		0649	.0125	.0002						
3-26	.08	.000		0654	4.27	.67		0651	.0263	.0009						
3-30	.18	.000		0656	.60	.69		0652	.0469	.0015						
				0731	.02	.70										
3-31	.49	.000		0740	1.80	.97		0654	.0819	.0037						
4-07	.46	.000		0746	.20	.99		0656	.1120	.0070						
4-09	1.10	.026		0807	.11	1.03		0658	.1386	.0112						
4-10	.00	.001		0830	.05	1.05		0701	.1434	.0183						
				0839	1.67	1.15		0703	.1339	.0229						
				0902	.05	1.17		0721	.0629	.0521						
				0920	.03	1.18		0731	.0400	.0605						
								0733	.0400	.0618						
								0740	.0785	.0688						
								0746	.0889	.0772						
								0750	.0853	.0830						
								0756	.0752	.0910						
								0825	.0231	.1133						
								0828	.0231	.1144						
								0830	.0231	.1152						
								0836	.0247	.1176						
								0838	.0247	.1184						
								0843	.0231	.1204						
								0904	.0125	.1267						
								0945	.0044	.1323						
								1013	.0024	.1339						
								1059	.0012	.1351						
								1200	.0004	.1358						
Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-5.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 27.427. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.43-1. MAPS - TOPOGRAPHY, P. 69.42-3 OF FOREGOING REFERENCE; REVISED COMPOSITE, P. 69.7-21 (1965 PUBLICATION). 4/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. 5/ THIESSEN WEIGHTED RAINFALL USING GAGES 196 AND 197. 6/ RUNOFF PRIOR TO 0640. 7/ RUNOFF ENDED AT 2045 ON APR. 10, 1967 WITH ACCUMULATED TOTAL OF 0.1365 INCHES.																

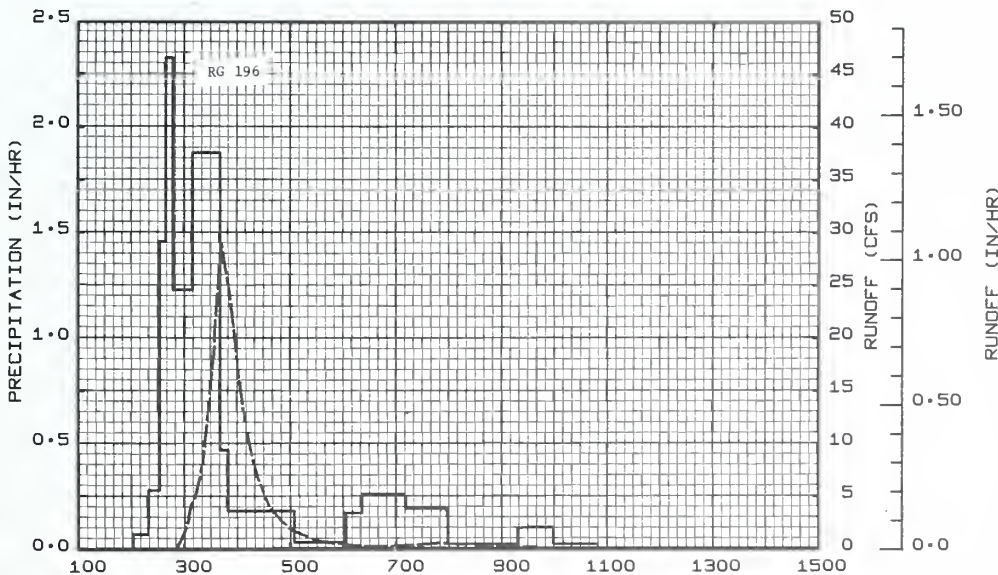


APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-6

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA			WATERSHED R=6			69.43	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF ^{1/}				
DATE MD-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 ^{2/}			Event of April 12, 1967							
			4-12	RG	1.96		4-12	0245	.0000	.0000
3-19	.18	.000		0202	.00	.00		0250	.0038	.0001
3-22	.81	.000		0219	.07	.02		0254	.0200	.0008
3-25	.43	.000		0232	.28	.08		0300	.0573	.0046
3-26	.08	.000		0239	1.46	.25		0305	.1120	.0112
3-30	.18	.000		0247	2.33	.56				
3-31	.49	.000		0309	1.23	1.01		0313	.1908	.0323
4-07	.46	.000		0340	1.88	1.98		0320	.2819	.0599
4-09	1.10	.026		0349	.47	2.05		0327	.7388	.1127
4-10	1.13	.142		0504	.18	2.27		0332	.6496	.1705
				0603	.03	2.30		0333	.6743	.1816
Watershed conditions: 100% of watershed in virgin native grassland. Continuous grazing slightly in excess of optimum. In same fence enclosure with Watershed R-5.				0621	.17	2.35		0335	.7928	.2060
				0711	.26	2.57		0337	.8784	.2339
				0759	.19	2.72		0342	1.0660	.3146
				0918	.02	2.75		0353	.8350	.4893
				0959	.10	2.82		0357	.7254	.5917
				1050	.02	2.84		0400	.6255	.5755
								0407	.4620	.6391
								0418	.2968	.7806
								0424	.2337	.7353
								0436	.1434	.7725
					0449	.0962	.7982			
					0502	.0629	.8155			
					0536	.0231	.8388			
					0627	.0078	.8502			
					0702	.0086	.8548			
					0726	.0148	.8611			
					0825	.0136	.8743			
					0940	.0038	.8839			

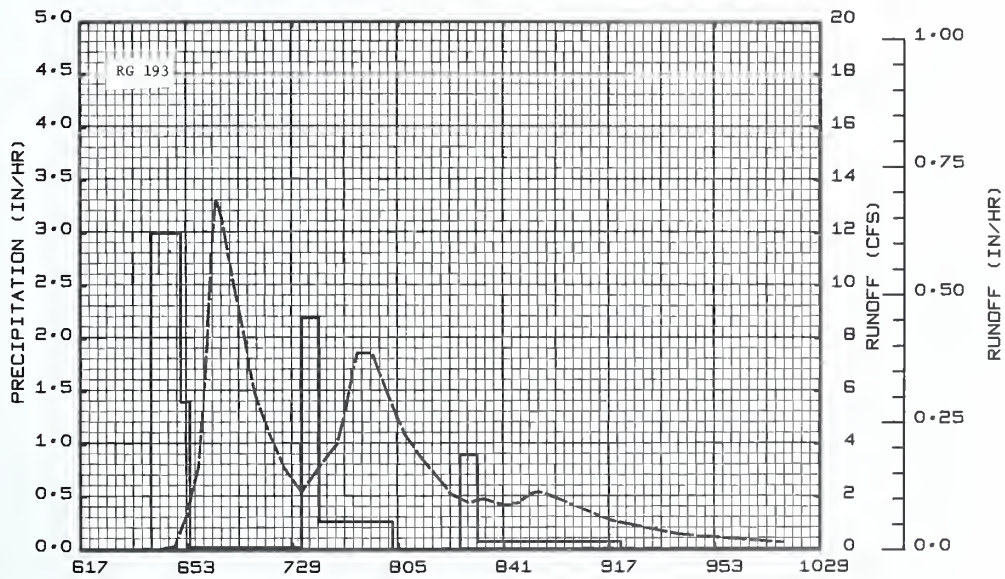
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 27.427. 1/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. 2/ THIENSEN WEIGHTED RAINFALL USING RAIN GAGES 196 AND 197. 3/ RUNOFF ENDED AT 2230 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF .8893 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R-6

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-7						69.44				
AREA - 19.2 ACRES																
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P ₁ / O	.08 .000	.08 .000	2.33 .000	6.14 2.310	4.51 .666	1.89 .031	1.56 .006	1.11 .000	5.85 .713	2.18 .046	.27 .000	1.01 .000	27.01 3.772			
STA AVG P ₂ / (66-67) ₃							2.37 .270	3.83 .308	3.72 .384	1.30 .023	.50 .000	.68 .000				
MEAN P ₃ / 67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02			
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
1967	4-12	1.512	4-12	.939	4-12	1.130	4-12	1.322	4-12	1.360	4-12	1.377	4-10	1.735	4-9	2.266
	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967
MAXIMUMS FOR PERIOD OF RECORD																
1966 TO	4-12	1.512	4-12	.939	4-12	1.130	4-12	1.322	4-12	1.360	4-12	1.377	4-10	1.735	4-9	2.266
1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967
NOTES: Watershed conditions: Formerly cultivated from about 1907 until about 1935 when the land use was changed to pasture because of severe erosion. Range condition class during the year was poor. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 1,800 pounds per acre of standing vegetation and 1,300 pounds per acre of mulch. This watershed was within the same pasture area as Watershed R-8, 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 193 and 194. 2/ Precipitation and runoff records began July 1, 1966, therefore station average for the period January through June was omitted. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.																
1967 SELECTED RUNOFF EVENTS				CHICKASHA, OKLAHOMA				WATERSHED R-7				69.44				
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{4/}									
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)						
	2 RC ^{5/}		4-10	Event of April 10, 1967			4-10									
3-19	.20	.000		RG	193											
3-22	.87	.000		0641	.00	.00	4-10	0643	.0000	.0000						
3-25	.48	.000		0651	3.00	.50		0649	.0062	.0001						
3-26	.07	.000		0654	1.40	.57		0653	.0664	.0024						
3-30	.17	.000		0732	.02	.38		0657	.1584	.0089						
				0738	2.20	.80		0701	.5106	.0299						
				0803	.26	.91		0702	.6124	.0393						
3-31	.50	.000		0826	.00	.91		0703	.6822	.0501						
4-07	.39	.000		0832	.90	1.00		0705	.6398	.0721						
4-09	1.07	.187		0921	.07	1.06		0713	.3989	.1411						
4-10	.00	6/ .002						0716	.3036	.1587						
								0726	.1584	.1962						
								0732	.1110	.2096						
								0741	.1829	.2324						
								0747	.2699	.2534						
								0750	.3588	.2697						
								0751	.3785	.2820						
								0801	.3036	.3357						
								0807	.2238	.3620						
								0812	.1829	.3790						
								0823	.1063	.4049						
								0829	.0889	.4145						
								0831	.0931	.4175						
								0834	.0974	.4223						
								0841	.0849	.4330						
								0846	.0889	.4401						
								0850	.1064	.4466						
								0853	.1110	.4521						
								0858	.1018	.4610						
								0917	.0565	.4856						
								0941	.0284	7/ .5020						
Watershed conditions: 100% of watershed in pasture, continuously grazed. Grass growth and ground cover considered poor. Majority of watershed formerly cultivated and severe erosion resulted.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.360. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGICAL DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.44-1. MAPS - REVISED COMPOSITE, P. 69.7-21; TOPOGRAPHY, P. 69.44-3 OF FORECOINC REFERENCE. 4/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 193 AND 194. 6/ RUNOFF PRIOR TO 0641. 7/ RUNOFF ENDED AT 2015 ON APR. 10, 1967 WITH ACCUMULATED TOTAL OF 0.5252 INCHES.																



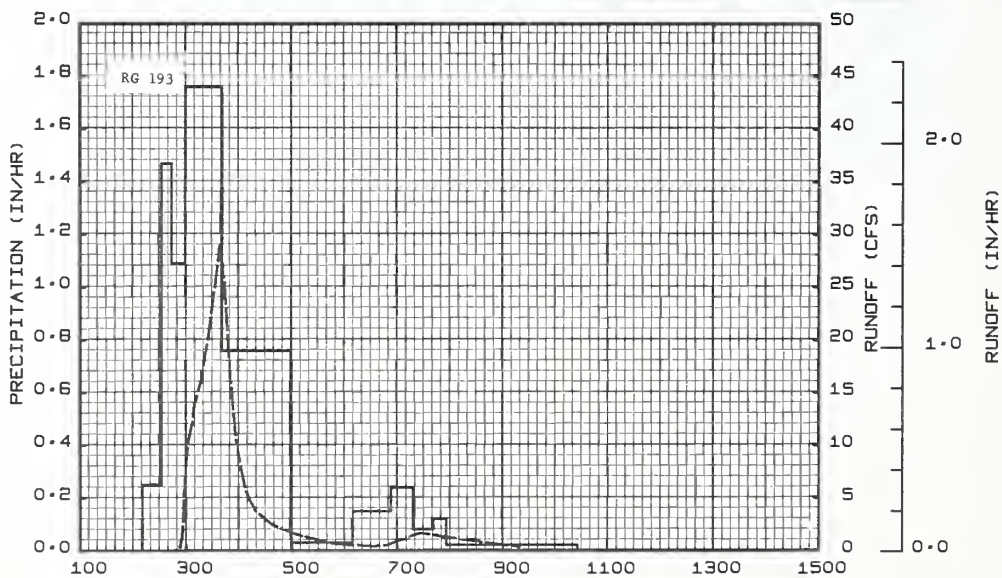
APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-7

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED R-7				
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)	
Event of April 12, 1967											
	2 RG ^{2/}		4-12	RG	193		4-12				
3-19	.20	.000		0210	.00	.00	0234	.0000	.0000		
3-22	.87	.000		0232	.25	.09	0246	.0001	.0000		
3-25	.48	.000		0243	1.47	.36	0249	.0016	.0000		
3-26	.07	.000		0259	1.09	.65	0253	.0176	.0006		
3-30	.17	.000		0340	1.76	1.85	0255	.0664	.0019		
3-31	.50	.000		0459	.76	2.09	0257	.2238	.0061		
4-07	.39	.000		0609	.03	2.13	0259	.3989	.0163		
4-09	1.07	.187		0653	.15	2.24	0303	.5473	.0487		
4-10	1.06	.539		0718	.24	2.34	0307	.6264	.0878		
				0741	.08	2.37	0316	.8196	.1995		
				0756	.12	2.40	0319	.9028	.2425		
				1025	.02	2.45	0324	1.0279	.3230		
							0333	1.3302	.4974		
							0338	1.5121	.6158		
							0343	1.9902	.7346		
							0348	.9550	.8305		
							0354	.6398	.9114		
							0357	.5106	.9401		
							0407	.3036	1.0073		
							0411	.2540	1.0259		
							0419	.1894	1.0550		
							0438	.1256	1.1028		
							0503	.0810	1.1446		
							0546	.0326	1.1853		
							0634	.0192	1.2041		
							0658	.0423	1.2150		
							0719	.0772	1.2352		
							0727	.0849	1.2460		
							0919	.0148	3/1.3310		

Watershed conditions: 100% of watershed in pasture, continuously grazed. Grass growth and ground cover considered poor. Watershed formerly cultivated and severe erosion resulted.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 19.360. ^{1/} SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN THE LISTING. ^{2/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 193 AND 194. ^{3/} RUNOFF ENDED AT 2355 ON APR. 12, 1967 WITH ACCUMULATED TOTAL OF 1.3610 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R-7

MONTHLY PRECIPITATION AND RUNOFF (inches)						CHICKASHA, OKLAHOMA WATERSHED R-8 AREA - 18.5 ACRES							69.45
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	.08	.10	2.15	6.23	4.80	2.02	1.45	1.20	5.59	2.41	.28	1.13	27.44
1966-67	.000	.000	.000	2.111	.467	.025	.002	.000	.315	.044	.000	.000	2.964
STA AVG							2.42	3.79	3.85	1.42	.50	.74	
MEAN							2.58	1.93	.174	.022	.000	.000	
67 YR	1.16	1.22	1.99	3.35	4.99	3.78	2.52	2.69	3.31	2.88	1.74	1.39	31.02

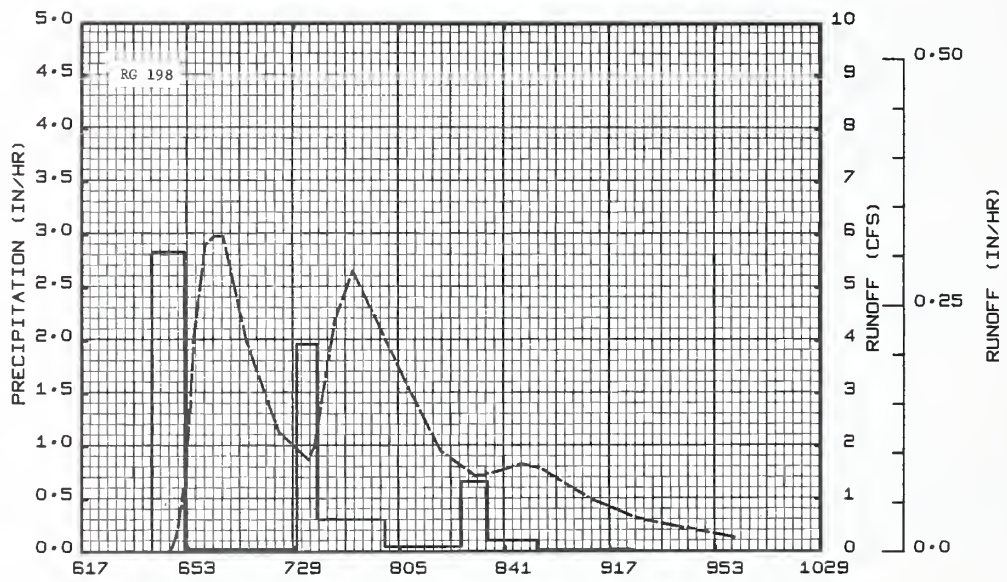
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1967	4-12	1.736	4-12	1.044	4-12	1.253	4-12	1.428	4-12	1.462	4-12	1.495	4-11	1.721	4-10	2.087

MAXIMUMS FOR PERIOD OF RECORD																
1966 TO 1967	4-12 1967	1.736	4-12 1967	1.044	4-12 1967	1.253	4-12 1967	1.428	4-12 1967	1.462	4-12 1967	1.495	4-11 1967	1.721	4-10 1967	2.087

NOTES: Watershed conditions: Eighty-six percent of the area was cultivated from about 1907 until about 1935 when the land use was changed to pasture because of severe erosion. Although the watershed has not been reseeded to grass, the predominant grass species is little bluestem. Range condition class during the year was poor. The vegetative cover in November 1967, based on 25 clipped samples uniformly spaced, averaged 2,200 pounds per acre of standing vegetation and 1,300 pounds per acre of mulch. This watershed was within the same pasture area as Watershed R-7. 1/ Monthly precipitation obtained from Thiessen weighted rainfall values from two gages, Nos. 197 and 198. 2/ Precipitation and runoff records began July 1, 1966, therefore station average for the period January through June was omitted. 3/ Mean P based on 67-year (1901-67) U. S. Weather Bureau record period at Chickasha, Oklahoma.

1967 SELECTED RUNOFF EVENTS						CHICKASHA, OKLAHOMA WATERSHED R-8						69.45
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)		
	2 RG 5/			Event of April 10, 1967								
3-19	.19	.000	4-10	RG	1.98	.00	4-10	0641	.0000	.0000		
3-22	.82	.000		0641	.00	.00		0645	.0001	.0000		
3-25	.44	.000		0652	2.84	.52		0647	.0011	.0000		
3-26	.07	.000		0730	.03	.54		0648	.0064	.0001		
3-30	.16	.000		0737	1.97	.77		0649	.0153	.0003		
				0800	.31	.89						
3-31	.43	.000		0826	.05	.91		0650	.0273	.0006		
4-07	.40	.000		0835	.67	1.01		0651	.0494	.0012		
4-09	1.10	.067		0852	.11	1.04		0652	.0688	.0022		
4-10	.00	6.003		0925	.02	1.05		0653	.1102	.0037		
								0654	.1465	.0059		
								0655	.2100	.0088		
								0659	.3054	.0262		
								0702	.3144	.0417		
								0705	.3144	.0574		
								0713	.2100	.0921		
								0724	.1199	.1221		
								0734	.0922	.1386		
								0736	.1055	.1420		
								0743	.2318	.1618		
								0749	.2795	.1882		
								0809	.1581	.2648		
								0819	.1009	.2862		
								0831	.0761	.3026		
								0838	.0799	.3115		
								0842	.0839	.3170		
								0847	.0880	.3242		
								0853	.0839	.3328		
								0911	.0523	.3533		
								0926	.0338	.3636		
								1000	.0140	.3763		
								1032	.0064	.3814		
								1103	.0036	7/.3839		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 18.654. FOR GENERAL DESCRIPTION OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 69.45-1. MAPS - TOPOGRAPHY, P. 69.45-3 OF FOREGOING REFERENCE, REVISED COMPOSITE, P. 69.7-21 (1965 PUBLICATION). 4/ SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN LISTING. 5/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 197 AND 198. 6/ RUNOFF PRIOR TO 0641. 7/ RUNOFF ENDED AT 0951 ON APR. 11, 1967 WITH ACCUMULATED TOTAL OF 0.3902 INCHES.

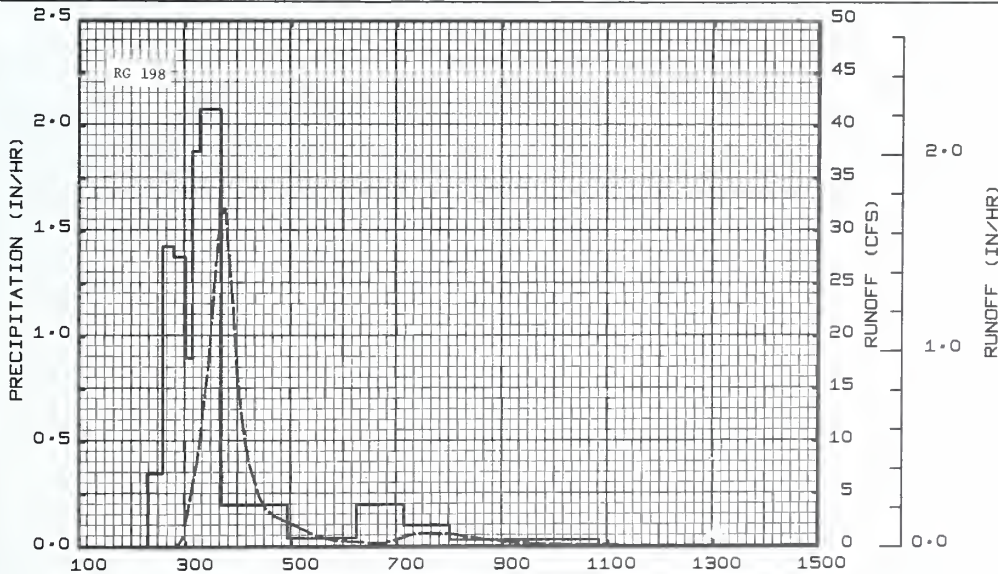


APRIL 10, 1967

CHICKASHA, OKLAHOMA WATERSHED R-8

1967 SELECTED RUNOFF EVENTS			CHICKASHA, OKLAHOMA				WATERSHED R-8 69.45			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF ^{1/}			
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 April 12, 1967										
	2 RC ^{2/}		4-12	RG	198		4-12			
3-19	.19	.000		0217	.00	.00	0241	.0000	.0000	
3-22	.82	.000		0234	.39	.10	0253	.0183	.0008	
3-25	.44	.000		0247	1.43	.41	0258	.0688	.0040	
3-26	.07	.000		0300	1.38	.71	0259	.1102	.0055	
3-30	.16	.000		0308	.90	.83	0302	.1641	.0124	
3-31	.43	.000		0316	1.88	1.08	0312	.4023	.0598	
4-07	.40	.000		0340	2.08	1.91	0319	.6338	.1185	
4-09	1.10	.067		0455	.20	2.16	0327	.9872	.2283	
4-10	1.08	.407		0614	.04	2.21	0331	1.2429	.3020	
4-11	.00	.001		0708	.20	2.39	0337	1.5846	.4443	
Watershed conditions: 100% of watershed in pasture, continuously grazed. Grass growth and ground cover considered poor. Majority of watershed formerly cultivated and severe erosion resulted.				0800	.10	2.48	0341	1.7102	.5547	
				1050	.03	2.55	0343	1.7300	.6121	
						0345	1.7360	.6700		
						0354	1.2220	.8938		
						0359	.8476	.9768		
						0407	.5285	1.0653		
						0412	.4130	1.1035		
						0423	.2550	1.1636		
						0431	.1895	1.1933		
						0441	.1523	1.2218		
			0531	.0494	1.2984					
			0551	.0294	1.3115					
			0631	.0168	1.3259					
			0639	.0168	1.3281					
			0646	.0168	1.3301					
			0722	.0653	1.3514					
			0731	.0653	1.3612					
			0742	.0653	1.3732					
			0804	.0619	1.3967					
			0825	.0438	3/1.4145					

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 18.654. ^{1/} SOME INTERMEDIATE BREAK POINTS HAVE BEEN REMOVED TO SHORTEN LISTING. ^{2/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 197 AND 198. ^{3/} RUNOFF ENDED AT 0221 ON APR. 13, 1967 WITH ACCUMULATED TOTAL OF 1.4649 INCHES.



APRIL 12, 1967

CHICKASHA, OKLAHOMA WATERSHED R-8

SONORA, TEXAS WATERSHED W-14

LOCATION: Sutton County, Tex.; gaging station on Water Street at Sonora city limit; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 30,720 acres (48.0 sq. miles)

<u>SLOPES:</u>	Slope—Percent	0-3	3-8	8-20
	Percent of area	54	43	3

SOILS: Residual, derived from highly calcareous limestones.

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
Tarrant stony clay	48	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Valera clay	26	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Kavett clay	11	9	Moderate to strong very fine subangular blocky	Moderate	Moderate very fine subangular blocky	Moderate	16	Moderate	Slow
Tobosa clay	9	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow
Knippa clay	5	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium
Randall clay	1	10	Moderate to strong coarse granular	Slow	Weak medium blocky	Slow	40	Slow	Slow

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	41	59

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	31	21	0	48

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 30 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 18 percent of the area where the plateau slopes steeper, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 15 percent of the area, thickness 0 to 20 ft. The lower 32 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 5 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For areal distribution of formations, see geology map. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April, 1966.

SURFACE DRAINAGE: Good; most of drainage well-defined; principal drainageway, 10 miles long with 5 major tributaries with lengths of 1, 4, 7, 3, and 1.5 miles. Drainage from 70 percent of area controlled by 5 floodwater detention reservoirs.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Current meter station, paved street dip control section, stripchart recorder with bubbler gage, 9.6 inches per day chart speed. Precipitation: 14 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche and paved roads - 0.4 percent; urban area - 0.3 percent; cropland - 0.3 percent; rangeland 99.0 percent. Cropland seeded to oats in fall for winter grazing. Rangeland moderately to severely overgrazed during the year depending upon climatic conditions and stocking rates. Reconnaissance type range survey made Dec. 10, 1963, based on percent of climax vegetation present. Survey accurately represents the year.

Range condition	Low Poor	Poor	Low Fair	Fair	High Fair
Percent climax vegetation	0-8	9-17	26-34	35-42	43-50
Percent of area	5	9	19	58	9

GENERALLY REPRESENTS: Rangeland of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS						WATERSHED W-14		70.01
						AREA — 30,720 ACRES (48.0 SQ. MILES)								
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1961 P ^{1/} Q ^{2/}						6.82 .00	2.66 .00	.88 .00	2.49 .00	3.64 .00	1.12 .00	.23 .00	17.84 .00	
1962 P ^{1/} Q ^{2/}	.14 .00	.42 .00	.29 .00	3.66 T	.78 .00	3.20 T	.32 .00	.33 .00	5.15 .01	2.13 .00	1.09 .00	.30 .00	17.81 .01	
1963 P ^{1/} Q ^{2/}	.07 .00	.83 .00	.09 .00	1.15 .00	5.16 .00	1.27 .00	1.02 .00	1.91 .00	1.94 .00	.48 .00	2.59 T	.76 .00	17.27 T	
1964 P ^{1/} Q	2.10 2/T	1.52 .00	1.13 .00	1.40 .00	2.18 2/T	.35 .00	2.23 .02	2.09 .00	10.86 .80	1.48 .00	.53 .00	.59 .00	26.46 .82	
1965 P ^{1/} Q	1.50 .00	2.64 .00	.30 .00	1.03 .00	6.49 .15	1.14 .00	1.72 .00	1.26 .00	1.02 .00	1.29 .00	.22 .00	1.18 .00	19.79 .15	
1966 P ^{1/} Q ^{2/}	.79 .00	1.28 .00	.87 .00	4.62 T	2.01 T	1.31 .00	.81 .00	2.03 .00	3.47 .00	1.17 .00	.11 .00	.06 .00	18.53 T	
1967 P ^{1/} Q ^{2/}	.04 .00	.36 .00	.98 .00	1.59 .00	3.08 T	2.77 .00	2.22 .00	.34 .00	5.59 .00	1.12 .00	3.11 .00	1.35 .00	22.55 T	
STA AVG ^{3/} (62-67) Q	.77 T	1.18 .00	.61 .00	2.24 T	3.28 .02	1.67 T	1.38 T	1.33 .00	4.67 .14	1.28 .00	1.28 T	.71 .00	20.40 .16	
MEAN P ^{2/} 45 YR	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48	

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 ^{2/}		.00		.00		.00		.00		.00		.00		.00		.00	
1962	9-7	T	9-7	T	9-7	T	9-7	T	9-7	.01	9-7	.01	9-7	.01	9-7	.01	
1963	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T	11-8	T	
1964	9-23	.06	9-23	.06	9-23	.12	9-23	.22	9-23	.27	9-23	.38	9-23	.61	9-21	.80	
1965	5-18	.01	5-18	.01	5-18	.02	5-18	.04	5-18	.06	5-18	.10	5-17	.13	5-16	.15	
1966	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	
1967	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T	5-29	T	

MAXIMUMS FOR PERIOD OF RECORD																	
1961 To	9-23	.06	9-23	.06	9-23	.12	9-23	.22	9-23	.27	9-23	.38	9-23	.61	9-21	.80	
1967	1964		1964		1964		1964		1964		1964		1964		1964		

NOTES: Watershed conditions: 0.4 percent caliche and paved roads; 0.3 percent urban area; 0.3 percent cropland; 99.0 percent rangeland. Cropland seeded to oats in fall for winter grazing. Rangeland moderately to severely overgrazed during the year depending on climatic conditions and stocking rates. ^{1/} Precipitation data by Thiessen method using rain gages 1, 1-A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, and 13. ^{2/} All runoff was from the 9,280-acre uncontrolled area below the reservoirs. No outflow from the reservoirs occurred. ^{3/} Precipitation and runoff records began May 1961; part-year amounts not included in averages. ^{4/} Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ^{5/} From personal observation, no runoff occurred prior to establishing station in May 1961.

1964 SELECTED RUNOFF EVENTS						SONORA, TEXAS						WATERSHED W-14		70.01
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 September 21-22, 1964														
8-22	14 RG 6/ .21	.0000		RG	1		9-21	0250	.0000	.0000				
8-24	.15	.0000	9-21	0040	.00	.00		0305	.0001	T				
9-11	.11	.0000		0100	.09	.03		0315	.0002	T				
9-12	.07	.0000		0140	.01	.04		0615	.0002	.0007				
9-13	.79	.0000		0150	.78	.17		0630	.0001	.0007				
9-14	.22	.0000		0200	.12	.19		0735	.0001	.0008				
9-19	3.00	.0000		0220	.00	.19		0740	.0024	.0009				
9-20	.66	.0000		0230	.12	.21		0750	.0099	.0020				
				0300	.06	.24		0800	.0139	.0040				
				0310	.96	.40		0810	.0173	.0066				
				0315	1.80	.55		0825	.0192	.0111				
				0320	.60	.60		0845	.0204	.0178				
				0330	.42	.67		0905	.0208	.0246				
				0340	.18	.70		0930	.0209	.0333				
				0345	.48	.74		0945	.0200	.0385				

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. ^{1/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13.

1964			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-14		70.01	
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 September 21-22, 1964 - Continued												
			9-21	0410	.31	.87	9-21	1000	.0191	.0433		
				0420	.06	.88		1030	.0166	.0523		
				0430	.54	.97		1050	.0146	.0575		
				0440	.24	1.01		1110	.0130	.0621		
				0600	.02	1.03		1130	.0115	.0662		
				0610	.18	1.06		1200	.0096	.0715		
				0640	.02	1.07		1230	.0082	.0759		
				0650	.48	1.15		1300	.0068	.0795		
				0800	.01	1.18		1400	.0051	.0854		
								1500	.0039	.0899		
				RG	.12							
				0030	.00	.00		1600	.0030	.0933		
				0040	.24	.04		1730	.0020	.0970		
				0050	.12	.06		1900	.0014	.0996		
				0115	.05	.08		2100	.0009	.1018		
				0120	2.04	.25		2400	.0005	.1038		
				0123	3.40	.42	9-22	0045	.0004	.1041		
				0127	1.50	.52		0515	.0004	.1061		
				0130	.80	.56		0900	.0002	.1071		
				0150	.12	.60		1200	.0001	.1076		
				0157	.40	.65		1300	<u>1/</u> .0001	.1078		
				0200	2.60	.78						
				0205	1.32	.89						
				0215	1.14	1.08						
				0220	.96	1.16						
				0230	.24	1.20						
				0248	.13	1.24						
				0252	.90	1.30						
				0300	.15	1.32						
				0310	.00	1.32						
				0320	.18	1.35						
				0330	.30	1.40						
				0340	.72	1.52						
				0345	.84	1.59						
				0400	.68	1.76						
				0410	.78	1.89						
				0415	.24	1.91						
				0525	.03	1.94						
				0540	.52	2.07						
				0550	.18	2.10						
				0610	.09	2.13						
				0618	.22	2.16						
				0625	1.37	2.32						
				0630	.24	2.34						
				0650	.06	2.36						
				RG	1A	2.16						
				RG	2	2.50						
				RG	3	2.26						
				RG	4	1.18						
				RG	5	2.04						
				RG	6	1.28						
				RG	7	2.10						
				RG	8	1.93						
				RG	9	1.56						
				RG	10	1.90						
				RG	11	1.70						
				RG	13	2.02						
				14 RG	AVG. <u>2/</u>	1.86						

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ BEGINNING OF NEXT EVENT. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13.

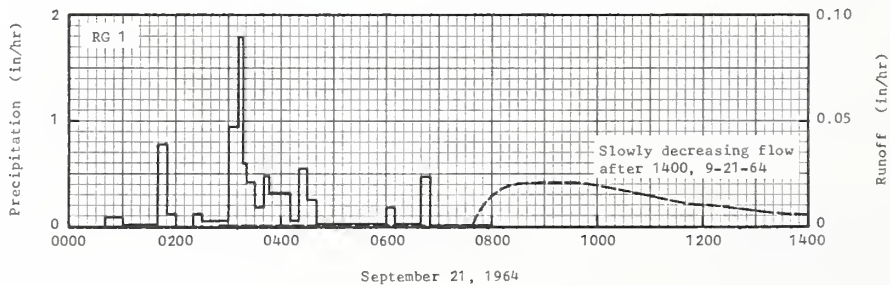
1964-65			SONORA, TEXAS				WATERSHED W-14				70,01
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF				
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)	
Event of September 23-24, 1964											
8-24	14 RG 1/ .15	.0000		RG	1		9-23	0500	T	.0000	
9-11	.11	.0000	9-23	0536	.00	.00		1000	T	.0001	
9-12	.07	.0000		0550	.26	.06		1020		.0001	
9-13	.79	.0000		0610	.12	.10		1040		.0002	
9-14	.22	.0000		0910	.02	.15		1045		.0011	
9-19	3.00	.0000		0930	.06	.17		1050		.0017	
9-20	.66	.0000		0945	.24	.23		1055		.0029	
9-21	1.86	.1038		0950	1.32	.34		1100		.0055	
9-22	.47	.0062		0955	1.56	.47		1110		.0066	
9-23	.00	2/.0002		1000	2.64	.69		1115		.0066	
				1005	1.68	.83		1120		.0064	
				1013	.82	.94		1130		.0056	
				1020	4.28	1.44		1140		.0053	
				1035	1.96	1.93		1145		.0053	
				1040	.60	1.98		1150		.0055	
				1100	.30	2.08		1200		.0069	
				1130	.06	2.11		1210		.0089	
				RG	12			1220		.0100	
				0500	.00	.00		1240		.0110	
				0520	.18	.06		1300		.0144	
				0910	.03	.17		1310		.0205	
				0934	.32	.30		1320		.0281	
				0940	1.90	.49		1330		.0372	
				0948	1.28	.66		1340		.0470	
				0954	3.60	1.02		1350		.0534	
				1000	5.70	1.59		1400		.0584	
				1008	.68	1.68		1420		.0627	
				1018	2.40	2.08		1425		.0635	
				1030	.75	2.23		1435		.0639	
				1036	.60	2.29		1440		.0639	
				1044	.38	2.34		1450		.0632	
				1050	.20	2.36		1505		.0612	
				1200	.02	2.39		1520		.0573	
				RG	1A	3.49		1535		.0530	
				RG	2	3.24		1550		.0479	
				RG	3	1.79		1600		.0436	
				RG	4	3.21		1610		.0386	
				RG	5	2.88		1620		.0356	
				RG	6	2.82		1630		.0324	
				RG	7	1.74		1650		.0269	
				RG	8	1.83		1710		.0222	
				RG	9	2.17		1745		.0188	
				RG	10	1.88		1820		.0143	
				RG	11	1.93		1905		.0120	
				RG	13	1.71		2005		.0100	
				14 RG	AVG. 1/	2.44		2150		.0082	
								2400		.0069	
								0020		.0069	
								0105		3/.0068	
										.2648	
										.2811	
										.2834	
										.2885	
Event of May 17-18, 1965											
4-25	.03	.0000	5-17	RG	1		5-17	2240	T	.0000	
4-26	.98	.0000		2049	.00	.00		2300		.0001	
5-10	.20	.0000		2156	.03	.03		2340		.0002	
5-14	.08	.0000		2214	.17	.08		2345		.0005	
5-15	.03	.0000		2219	.24	.10		2350		.0010	
5-16	2.50	.0117		2235	.17	.14		2400		.0012	
5-17	.00	2/.0105		2239	3.60	.38	5-18	0015		.0020	
				2244	2.64	.60		0025		.0024	
				2249	1.44	.72		0040		.0024	
				2257	.30	.76		0115		.0019	
										.0004	
										.0008	
										.0011	
										.0017	
										.0030	
<p>Watershed conditions: Roads 0.4% of the area; urban area 0.3%; cropland 0.3%; rangeland 99.0%. Poor range condition 10% of the area; fair condition 90%. Discharge from principal spillway of reservoir S-12.</p>											

Continued on next page

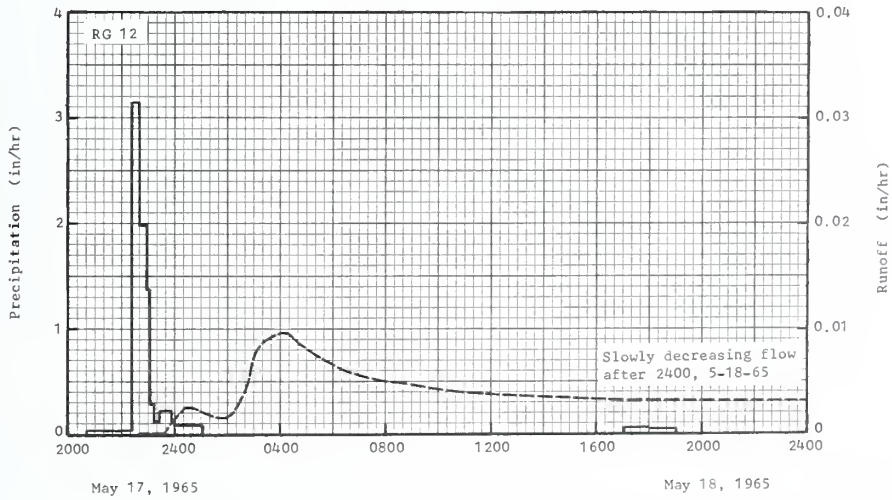
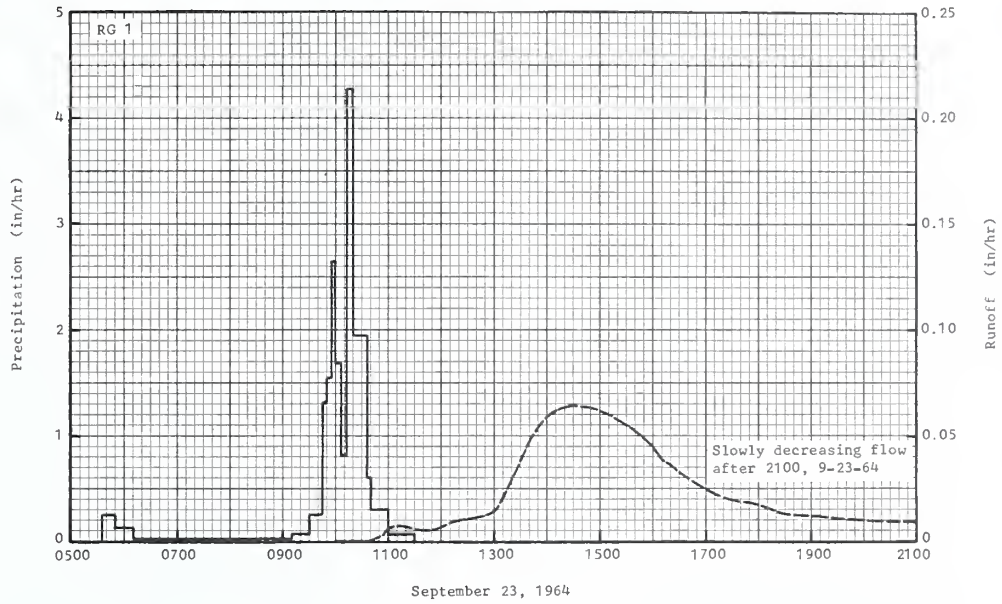
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13. 2/ RUNOFF PRIOR TO 0500. 3/ BEGINNING OF NEXT EVENT. 4/ RUNOFF PRIOR TO EVENT BEGINNING AT 2240.

1965			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-14		70.01	
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 17-18, 1965 - Continued												
			5-17	2309	.70	.90	5-18	0145	.0016	.0039		
				2319	.48	.98		0155	.0016	.0041		
				2400	.13	1.09		0220	.0024	.0049		
			5-18	0010	.30	1.14		0245	.0047	.0063		
				0100	.09	1.22		0300	.0074	.0079		
				0159	.01	1.23		0345	.0092	.0144		
				0500	.00	1.23		0400	.0096	.0168		
				0600	.01	1.24		0415	.0096	.0192		
				1129	.00	1.24		0430	.0091	.0215		
				1140	.17	1.27		0445	.0086	.0237		
				1700	.00	1.27		0500	.0082	.0258		
				1709	.27	1.31		0530	.0073	.0297		
				1830	.06	1.39		0600	.0065	.0332		
				1919	.03	1.43		0645	.0058	.0378		
				RG	1.2			0815	.0050	.0458		
			5-17	2040	.00	.00		0945	.0044	.0529		
				2223	.02	.04		1145	.0038	.0611		
				2239	3.15	.88		1645	.0032	.0784		
				2255	1.99	1.41		1955	.0032	.0885		
				2302	1.37	1.57		2400	.0029	.1008		
				2315	.28	1.63	5-19	0245	.0025	.1084		
				2325	.12	1.65		0545	.0019	.1150		
				2355	.22	1.76		0745	.0014	.1182		
				2400	.12	1.77		1045	.0009	.1216		
			5-18	0105	.08	1.86		1345	.0005	.1238		
				1705	.00	1.86		1745	.0002	.1252		
				1800	.05	1.91		2400	T	.1258		
				1905	.04	1.95	5-20	1000	.0000	.1259		
				RG	1A	2.43						
				RG	2	2.05						
				RG	3	1.82						
				RG	4	1.76						
				RG	5	2.22						
				RG	6	2.02						
				RG	7	2.04						
				RG	8	2.85						
				RG	9	2.19						
				RG	10	1.98						
				RG	11	2.42						
				RG	13	1.45						
				14 RG	AVG. 1/	2.08						

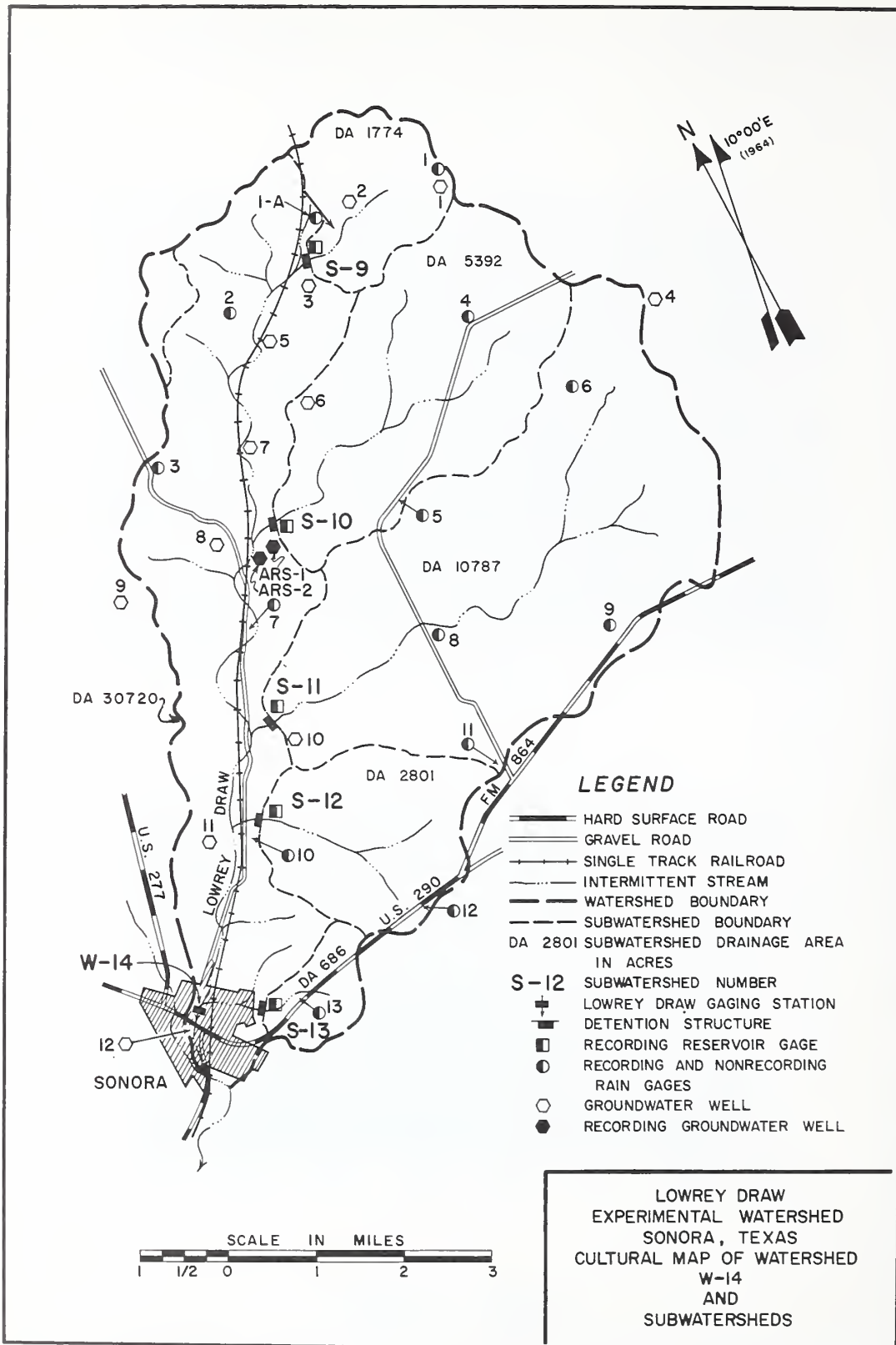
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 30975.90. 1/ THIESSEN METHOD USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, AND 13.



SONORA, TEXAS WATERSHED W-14



SONORA, TEXAS WATERSHED W-14



SONORA, TEXAS WATERSHED S-9

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 9 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 1,774 acres (2.77 sq. miles)

<u>SLOPES:</u>	Slope—Percent	0-3	3-8
	Percent of area	96	4

SOILS: Residual, derived from highly calcareous limestones.

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
Valera clay	76	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Tobosa clay	20	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow
Tarrant stony clay	4	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	96	4

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	76	20	0	4

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 74 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 22 percent of the area where the plateau slopes steepen, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the steeper slopes, 4 percent of the area, thickness 0 to 20 ft. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For areal distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of drainage poorly defined; two principal drainageways, each approximately 1 mile long.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 2 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche roads - 0.3 percent; rangeland - 99.7 percent. Rangeland fair condition to moderately overgrazed during a year depending on climatic conditions and stocking rates. Reconnaissance type range survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Fair	Fair	High Fair
Percent climax vegetation	26-34	35-42	43-50
Percent of area, 1963	--	47	53
Percent of area, 1964	4	96	--
Percent of area, 1965	17	--	83

GENERALLY REPRESENTS: Upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED S-9				70.02	
						AREA — 1,774 ACRES (2.77 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 P ^{1/} Q						8.01 .42E	2.49 .00	.92	2.72 T	4.21 .03	1.24 .00	.28 .00	19.87 .45
1962 P ^{1/} Q	.11 .00	.40 T	.25 .00	3.28 T	.92 T	2.62 T	.54 T	.24 .00	4.46 .01	2.77 .01	1.17 T	.26 .00	17.02 .02
1963 P ^{1/} Q	.07 .00	.87 .00	.07 .00	1.03 .00	5.05 .01	1.09 T	1.32 T	2.80 T	2.22 .01	.31 .00	.57 T	.81 .00	16.21 .02
1964 P ^{1/} Q	2.04 T	1.85 .01	1.08 T	1.60 T	1.77 T	.55 T	1.65 T	2.09 T	12.84 2.68	1.38 .00	.64 .00	.45 .00	27.94 2.69
1965 P ^{1/} Q	1.52 .00	2.82 .00	.30 .00	.94 .00	5.29 .05	1.28 .00	.87 T	.79 .00	.87 .00	1.74 T	.26 .00	1.24 .00	17.92 .05
1966 P ^{1/} Q	.78 .00	1.06 .00	.81 .00	3.88 .02	2.82 .01	1.80 T	.23 .00	1.12 .00	3.15 T	1.06 .00	.11 .00	.02 .00	16.84 .03
1967 P ^{1/} Q	.03 .00	.32 .00	.98 T	1.30 .01	2.87 .01	2.79 .09	2.10 T	.20 T	6.26 .02	.80 .00	3.05 .00	1.39 .00	22.09 .13
STA AVG ^{2/} (62-67) Q	.76 T	1.22 T	.58 T	2.00 T	3.12 .01	1.69 .02	1.12 T	1.21 T	4.97 .45	1.34 T	.97 T	.70 .00	19.68 .48
MEAN P ^{3/} 45 YR	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48

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 ^{4/}	6-15	.12E	6-15	.11E	6-15	.19E	6-15	.21E	6-15	.22E	6-15	.25E	6-15	.32E	6-15	.42E
1962	10-20	.02	10-20	.01	10-20	.01	10-20	.01	10-20	.01	10-20	.01	10-20	.01	10-12	.01
1963	9-12	.01	9-12	T	9-12	T	5-22	.01	5-22	.01	5-22	.01	5-22	.01	9-14	.01
1964	9-23	1.19	9-23	.57	9-23	.80	9-23	1.04	9-23	1.07	9-23	1.27	9-22	1.45	9-19	2.68
1965	5-17	.04	5-17	.02	5-17	.03	5-17	.04	5-17	.04	5-17	.04	5-16	.04	5-16	.04
1966	4-30	.03	4-30	.01	4-30	.01	4-30	.01	4-30	.01	4-30	.01	4-30	.01	4-25	.02
1967	6-1	.06	6-1	.04	6-1	.05	6-1	.07	6-1	.08	6-1	.08	6-1	.08	6-1	.08
MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	1.19	9-23 1964	.57	9-23 1964	.80	9-23 1964	1.04	9-23 1964	1.07	9-23 1964	1.27	9-22 1964	1.45	9-19 1964	2.68

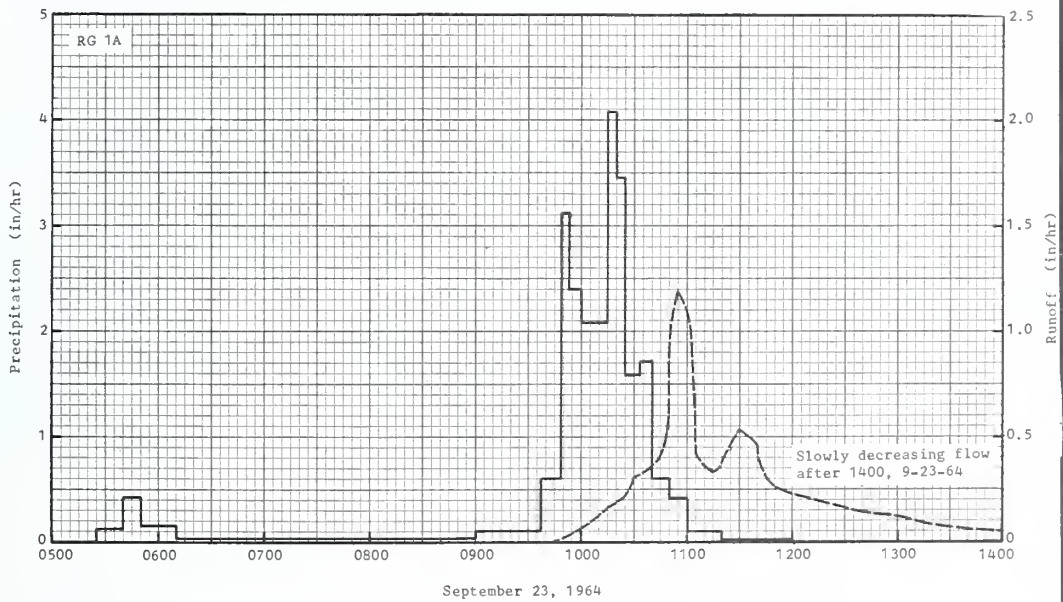
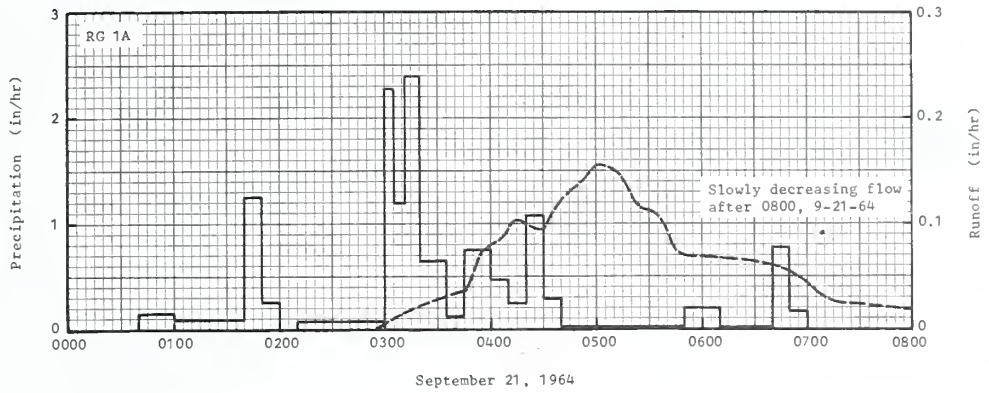
NOTES: Watershed conditions: 0.3 percent caliche roads; 99.7 percent rangeland. Rangeland fair condition to moderately overgrazed during a year depending on climatic conditions and stocking rates. ^{1/} Precipitation data by Thiessen method using rain gages 1 and 1A. ^{2/} Precipitation and runoff records began May 1961; part-year amounts not included in averages. ^{3/} Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ^{4/} From personal observation, no runoff occurred in 1961 prior to establishing the station in May.

1964 SELECTED RUNOFF EVENT			SONORA, TEXAS				WATERSHED S-9				70.02
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 ^{5/} (in/hr)	ACC. (inches)	
	2 RG ^{6/}		Event of September 21, 1964								
8-22	.05	.0000			RG 1A		9-21	0255	.0027	.0000	
8-24	.22	.0000	9-21	0040	.00	.00		0330	.0290	.0163	
9-13	1.05	.0018		0100	.15	.05		0345	.0344	.0239	
9-14	.35	.0016		0140	.09	.08		0355	.0720	.0359	
9-19	4.00	.2737		0150	1.26	.29		0405	.0828	.0491	
9-20	.84	.1679		0200	.24	.33		0415	.1032	.0663	
9-21	.00	^{7/} .0078		0210	.00	.33		0430	.0956	.0902	
				0300	.08	.40		0440	.1206	.1103	
				0305	2.28	.59		0450	.1368	.1331	
				0312	1.20	.73		0500	.1542	.1588	
				0320	2.40	1.05		0510	.1524	.1842	
				0335	.64	1.21		0520	.1284	.2056	
				0345	.12	1.23		0535	.1088	.2328	
				0400	.76	1.42		0545	.0744	.2452	
				0410	.48	1.50		0555	.0696	.2568	

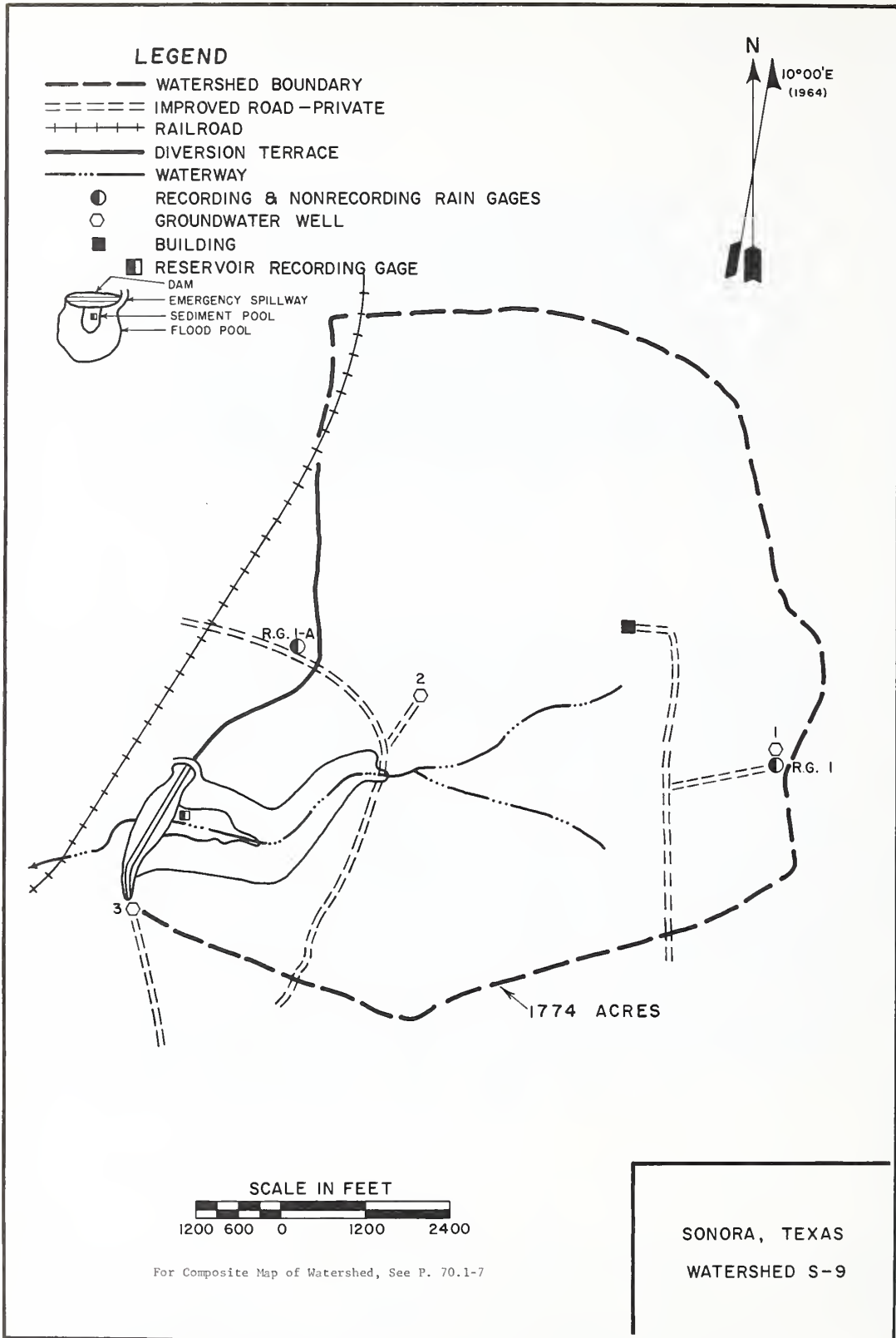
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1788.78. ^{5/} RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ^{6/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1 AND 1A. ^{7/} RUNOFF PRIOR TO EVENT BEGINNING AT 0255.

1964 SELECTED RUNOFF EVENTS			SONORA, TEXAS			WATERSHED S-9			70.02	
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 <u>1/</u> (in/hr)	ACC. (inches)
Event of September 21, 1964 - Continued										
	2 RG <u>2/</u>		9-21	0420	.24	1.54	9-21	0630	.0674	.2961
				0430	1.08	1.72		0700	.0442	.3182
				0440	.30	1.77		0715	.0273	.3250
				0550	.03	1.80		0730	.0244	.3312
				0610	.21	1.87		0800	.0191	.3406
				0640	.02	1.88		0825	.0154	.3522
				0650	.78	2.01		0900	.0060	.3537
				0700	.18	2.04		0930	.0052	.3563
				RG	1	1.16		1000	.0046	.3586
				2 RG	AVG. <u>2/</u>	1.68		1130	.0035	.3638
								1400	.0025	.3702
								1630	.0012	.3731
								1900	.0009	.3754
								2230	<u>3/</u> 0009	.3787
Event of September 23, 1964										
8-24	.22	.0000		RG	1A		9-23	0600	.0023	.0000
9-13	1.05	.0018	9-23	0525	.00	.00		0945	.0018	.0066
9-14	.35	.0016		0540	.12	.03		1000	.0556	.0205
9-19	4.00	.2737		0550	.42	.10		1015	.1630	.0612
9-20	.84	.1679		0610	.15	.15		1025	.2137	.0916
9-21	1.76	.3900		0900	.03	.23		1030	.2965	.1163
9-22	.44	.1140		0937	.10	.29		1045	.4000	.2163
9-23	.00	<u>4/</u> 0137		0948	.60	.40		1050	.6000	.2663
				0953	3.12	.66		1055	1.1880	.3653
				1000	2.40	.94		1100	1.0920	.4563
				1015	2.08	1.46		1105	.4200	.4913
				1020	4.08	1.80		1115	.3264	.5457
				1025	3.46	2.08		1120	.3540	.5752
				1033	1.58	2.29		1125	.4428	.6121
				1040	1.71	2.49		1130	.5304	.6563
				1050	.60	2.59		1140	.4608	.7331
				1100	.42	2.66		1150	.2586	.7762
				1120	.09	2.69		1200	.2286	.8133
				1200	.02	2.70		1215	.1856	.8597
				RG	1	2.11		1230	.1624	.9003
				2 RG	AVG. <u>2/</u>	2.46		1300	.1202	.9604
								1330	.0732	.9970
								1400	.0530	1.0235
								1445	.0296	1.0472
								1515	.0179	1.0577
								1600	.0070	1.0638
								1730	.0025	1.0651
								1830	.0011	1.0663
								2030	.0000	1.0673
<p>Watershed conditions: Caliche roads - 0.3%; range-land - 99.7%. Rangeland in fair condition.</p>										

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 1788.78. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVIOR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1 AND 1A. 3/ BEGINNING OF NEXT EVENT. 4/ RUNOFF PRIOR TO EVENT BEGINNING AT 0600.



SONORA, TEXAS WATERSHED S-9



SONORA, TEXAS WATERSHED S-10

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 6 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 5,392 acres (8.42 sq. miles)

SLOPES:	Slope—Percent	0-3	3-8
	Percent of area	67	33

SOILS: Residual, derived from highly calcareous limestones.

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
Valera clay	48	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Tarrant stony clay	34	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Tobosa clay	18	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow

EROSION:	Erosion class	1	2
	Percent of area	66	34

LAND CAPABILITY:	Class	I	II	III	IV	V	VI
	Percent of area	0	0	48	18	0	34

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 45 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 20 percent of the area where the plateau slopes steepen, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 14 percent of the area, thickness 0 to 20 ft. The lower 20 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 1 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of the drainage well defined; principal drainageway 4 miles long with intersecting drainageway 2 miles long and numerous well defined side drainages.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 8 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche roads - 0.4 percent; rangeland - 99.6 percent. Rangeland moderately to severely over-grazed during a year depending on climatic conditions and stocking rates. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Poor	High Poor	Low Fair	Fair	High Fair
Percent climax vegetation	9-17	18-25	26-34	35-42	43-50
Percent of area, 1963	14.1	--	1.8	48.5	35.6
Percent of area, 1964	--	--	25.6	74.4	--
Percent of area, 1965	--	16.4	0.3	22.1	61.2

GENERALLY REPRESENTS: Upland and low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS						WATERSHED S-10		70.03
AREA — 5,392 ACRES (8.42 SQ. MILES)														
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1961 P ^{2/} Q						7.95 .11E	2.14 .00	1.06 .00	2.48 .00	3.79 .04E	1.20 .00	.32 .00	18.94 .15E	
1962 P ^{2/} Q	.15 .00	.44 .00	.31 .00	3.62 .00	.66 .00	3.21 T	.52 .00	.27 .00	5.01 T	2.13 T	1.10 .00	.28 .00	17.70 T	
1963 P ^{2/} Q	.05 .00	.80 .00	.10 .00	1.08 .00	5.23 T	1.38 .00	1.24 T	2.74 .00	1.40 T	.34 .00	2.37 T	.74 .00	17.47 T	
1964 P ^{2/} Q	2.17 .00	1.50 .00	1.02 T	1.40 .00	2.27 .00	.34 .00	1.43 .00	1.76 .00	11.99 1.93	1.52 .00	.62 .00	.55 .00	26.57 1.93	
1965 P ^{2/} Q	1.52 .00	2.51 .00	.46 .00	1.01 .00	6.10 .19	1.20 .00	1.51 .00	1.48 .00	.85 .00	1.28 .00	.22 .00	1.11 .00	19.25 .19	
1966 P ^{2/} Q	.78 .00	1.35 .00	.79 .00	4.22 T	2.11 T	1.42 .00	.48 .00	1.52 .00	3.03 .00	1.00 .00	.11 .00	.09 .00	16.90 T	
1967 P ^{2/} Q	.03 .00	.35 .00	1.12 .00	1.70 .03	2.34 .00	3.12 .09	1.78 .00	.16 .00	5.35 .00	.90 .00	3.19 .00	1.35 .00	21.39 .12	
STA AVG ^{3/} (62-67) Q	.78 .00	1.16 .00	.63 T	2.17 T	3.12 .03	1.78 .02	1.16 T	1.32 .00	4.60 .32	1.20 T	1.27 T	.69 .00	19.88 .37	
MEAN P ^{4/} 45 YR	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48	

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 ^{5/}	6-18	.06E	6-18	.04E	6-18	.05E	6-18	.06E	6-18	.06E	6-18	.06E	6-16	.11E	6-16	.11E
1962	9-10	T	9-10	T	9-10	T	9-10	T	9-10	T	9-10	T	9-10	T	9-7	T
1963	9-14	.01	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-14	T	9-12	T
1964	9-23	.81	9-23	.72	9-23	.95	9-23	1.11	9-23	1.15	9-23	1.23	9-23	1.52	9-19	1.93
1965	5-18	.11	5-17	.09	5-17	.12	5-17	.18	5-17	.18	5-17	.18	5-17	.18	5-16	.19
1966	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T	4-30	T
1967	6-13	.06	6-13	.04	6-13	.05	6-13	.05	6-13	.05	6-13	.05	6-13	.05	6-13	.05

MAXIMUMS FOR PERIOD OF RECORD																
1961 To	9-23	.81	9-23	.72	9-23	.95	9-23	1.11	9-23	1.15	9-23	1.23	9-23	1.52	9-19	1.93
1967	1964		1964		1964		1964		1964		1964		1964		1964	

NOTES: Watershed conditions: Caliche roads - 0.4 percent; rangeland - 99.6 percent. Range condition poor to fair, with moderate to severe overgrazing during a year depending on climatic conditions and stocking rates. ^{2/} Thiessen weighted rainfall using rain gages 1, 1A, 2, 3, 4, 5, 6, and 7. ^{3/} Thiessen weighted rainfall using rain gages 1, 1A, 2, 4, 5, 6, and 7. ^{4/} Precipitation and runoff records began May 1961; part-year amounts not included in averages. ^{5/} Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ^{6/} From personal observation, no runoff occurred in 1961 prior to date station established.

1964 SELECTED RUNOFF EVENTS				SONORA, TEXAS				WATERSHED S-10				70.03
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 ^{6/} (in/hr)	ACC. (inches)		
	8 RG ^{7/}		Event of September 21, 1964									
8-22	.11	.0000		RG	.4		9-21	0235	.0000	.0000		
8-24	.04	.0000	9-21	0114	.00	.00		0245	.0221	.0037		
9-11	.13	.0000		0138	.18	.07		0255	.0242	.0077		
9-12	.18	.0000		0144	1.60	.23		0305	.0310	.0129		
9-13	.89	.0000		0149	.36	.26		0315	.0287	.0177		
9-14	.23	.0000		0214	.03	.27		0325	.0260	.0220		
9-19	3.60	.1112		0234	.12	.31		0335	.0322	.0274		
9-20	.64	.0114		0254	.00	.31		0345	.0306	.0325		
				0259	.12	.32		0355	.0319	.0378		
				0304	.36	.35		0400	.0333	.0406		
				0310	.50	.40		0410	.0478	.0485		
				0314	1.50	.50		0420	.0463	.0563		
				0324	.66	.61		0430	.0913	.0715		
				0414	.20	.78		0435	.0943	.0793		
				0428	.56	.91		0445	.1238	.0999		

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. ^{6/} RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ^{7/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7.

1964 SELECTED RUNOFF EVENTS			SONORA, TEXAS			WATERSHED S-10			70.03	
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 <u>1</u> / (in/hr)	ACC. (inches)
Event of September 21, 1964 - Continued										
8 RG <u>2</u> /			9-21	0434	.10	.92	9-21	0450	.0778	.1064
				0554	.02	.94		0500	.0584	.1162
				0604	.24	.98		0515	.0548	.1299
				0634	.02	.99		0530	.0600	.1449
				0639	.36	1.02		0545	.0656	.1613
				0644	.60	1.07		0600	.0640	.1773
				0704	.06	1.09		0615	.0572	.1916
				RG	5			0630	.0372	.2009
				0040	.00	.00		0645	.0492	.2132
				0100	.12	.04		0700	.0464	.2248
				0140	.09	.10		0730	.0344	.2420
				0145	.60	.15		0800	.0206	.2523
				0150	.72	.21		0900	.0175	.2698
				0210	.57	.40		1000	.0119	.2817
				0220	.36	.46		1200	.0000	.2877
				0225	.12	.47				
				0230	.72	.53				
				0235	.12	.54				
				0240	.60	.59				
				0300	.09	.62				
				0500	.44	1.50				
				0520	.63	1.71				
				0550	.02	1.72				
				0610	.30	1.82				
				0630	.03	1.83				
				0640	.12	1.85				
				0650	.54	1.94				
				0700	.18	1.97				
				RG	1	1.18				
				RG	1A	2.04				
				RG	2	2.20				
				RG	3	2.17				
				RG	6	1.28				
				RG	7	2.03				
				8 RG	AVG. <u>2</u> /	1.48				
Event of September 23, 1964										
8-24	.04	.0000		RG	4		9-23	0930	.0000	.0000
9-11	.13	.0000		0520	.00	.00		0940	.0015	.0002
9-12	.18	.0000		0600	.12	.08		0950	.0053	.0010
9-13	.89	.0000		0930	.03	.18		1000	.0167	.0030
9-14	.23	.0000		0940	.18	.21		1010	.0256	.0067
9-19	3.60	.1112		0950	1.74	.50		1015	.0680	.0123
9-20	.64	.0114		0955	1.80	.65		1030	.1220	.0428
9-21	1.56	.2877		1000	4.80	1.05		1045	.2381	.1023
9-22	.42	.0000		1010	2.04	1.39		1100	.4298	.2098
				1020	3.36	1.95		1115	.5852	.3561
				1030	2.46	2.36		1130	.8093	.5584
				1035	1.32	2.47		1145	.7464	.7450
				1040	.72	2.53		1200	.6600	.9100
				1100	.30	2.63		1215	.2224	.9656
				1130	.06	2.66		1230	.0907	.9883
				RG	5			1300	.0575	1.0189
				0457	.00	.00		1330	.0521	1.0450
				0517	.06	.03		1400	.0381	1.0660
				0524	.26	.06		1500	.0272	1.0995
				0537	.28	.12		1600	.0258	1.1262
				0547	.06	.13		1700	.0213	1.1492
				0657	.00	.13		1800	T	1.1598
				0707	.24	.17		2000	.0000	1.1598
				0857	.02	.20				
				0907	.06	.21				
Continued on next page										

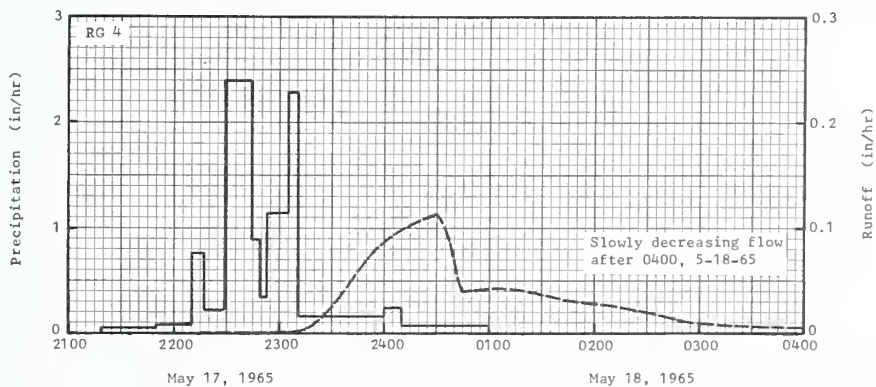
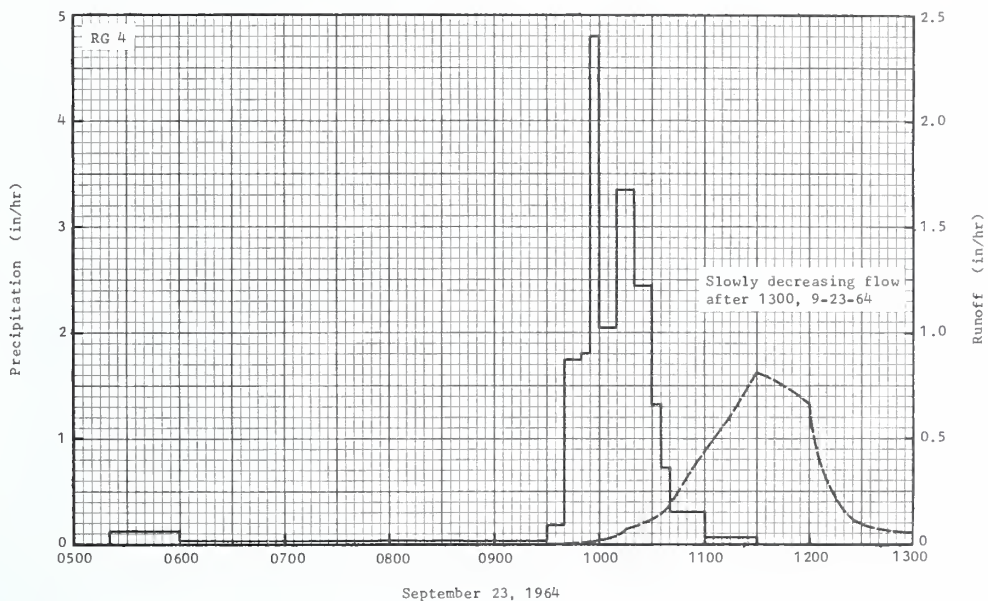
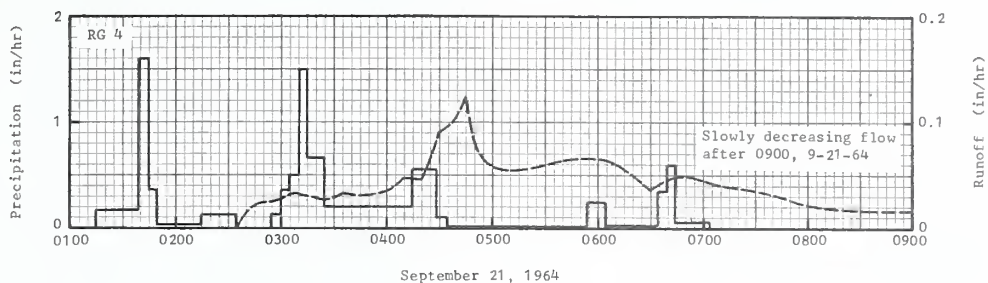
Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Range condition: poor 16%; fair 84%.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7.

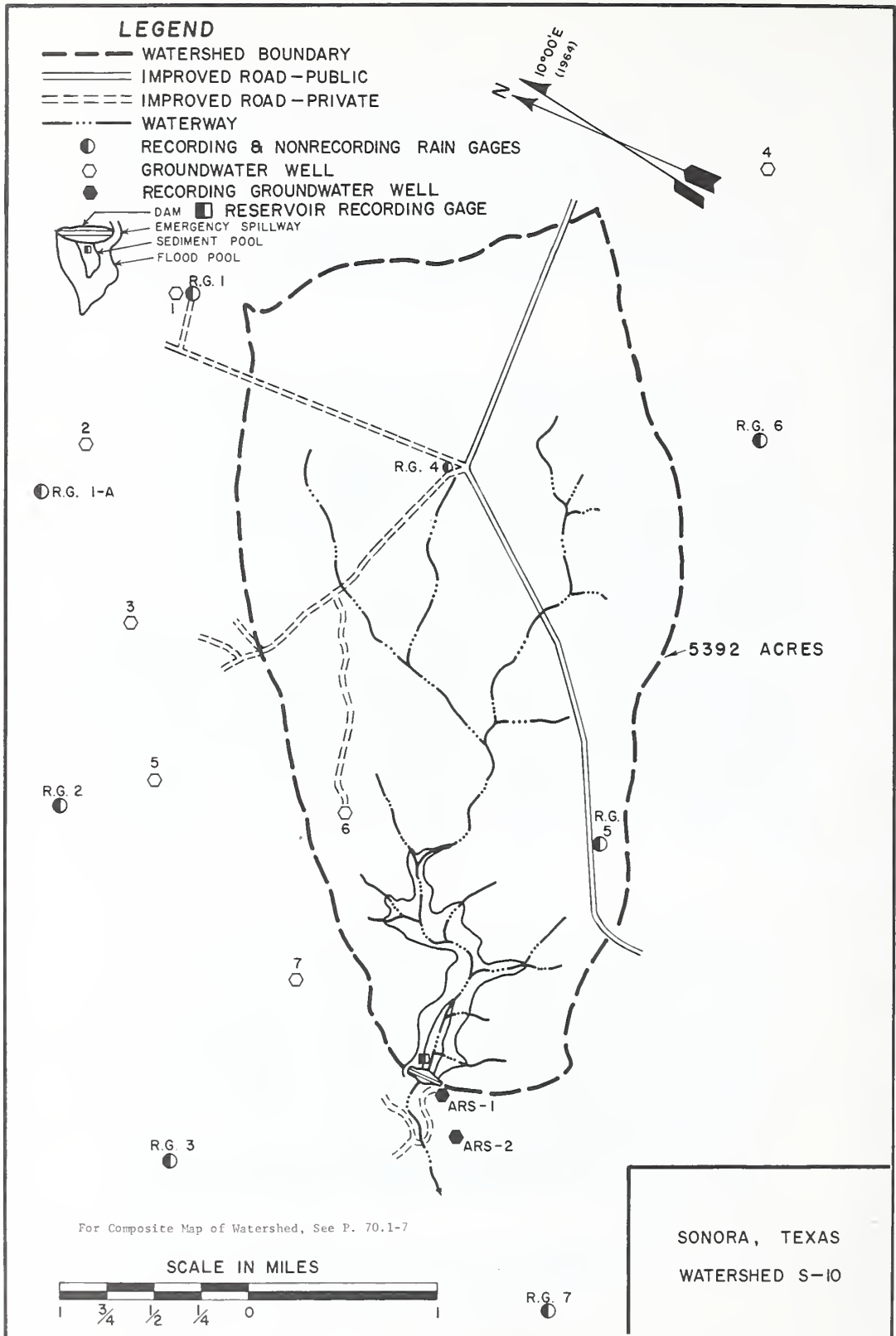
1964-65 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-10			70.03
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE <u>1/</u> (in/hr)	ACC. (inches)
Event of September 23, 1964 - Continued										
			9-23	0917	.42	.28				
				0925	.90	.40				
				0931	.80	.48				
				0937	1.00	.58				
				0941	.75	.63				
				0947	2.20	.85				
				0953	2.30	1.08				
				0957	2.85	1.27				
				1007	3.00	1.77				
				1027	1.74	2.35				
				1039	1.55	2.66				
				1047	.52	2.73				
				1107	.15	2.78				
				RG	1	2.11				
				RG	1A	2.70				
				RG	2	2.51				
				RG	3	1.68				
				RG	6	2.61				
				RG	7	1.65				
				8 RG	AVG. <u>2/</u>	2.66				
Event of May 17-18, 1965										
	7 RG <u>3/</u>			RG	4					
4-25	.02	.0000	5-17	2118	.00	.00	5-17	2215	.0000	.0000
4-26	.99	.0000		2150	.06	.03		2315	.0027	.0009
5-10	.05	.0000		2210	.09	.06		2330	.0255	.0073
5-14	.09	.0000		2217	.77	.15		2345	.0602	.0223
5-15	.02	.0000		2228	.22	.19		2400	.0883	.0444
5-16	2.39	.0155		2244	2.40	.83	5-18	0030	.1119	.0993
				2248	.90	.89		0045	.0402	.1093
				2253	.36	.92		0100	.0431	.1201
				2305	1.15	1.15		0130	.0378	.1391
				2311	2.30	1.38		0215	.0235	.1587
				2400	.17	1.52		0245	.0131	.1656
			5-18	4/0010	.24	1.56		0315	.0094	.1707
				4/0100	.08	1.63		0345	.0072	.1745
				RG	5			0415	.0054	.1772
			5-17	2058	.00	.00		0430	T	.1779
				2218	.09	.03		0500	.0000	.1779
				2228	2.16	.39				
				2232	3.00	.59				
				2238	2.10	.80				
				2246	4.20	1.36				
				2253	2.06	1.60				
				2303	1.14	1.79				
				2313	.54	1.88				
				2318	.24	1.90				
				2400	.14	2.00				
			5-18	4/0008	.23	2.03				
				4/0058	.07	2.10				
				RG	1	1.23				
				RG	1A	1.83				
				RG	2	1.48				
				RG	6	1.97				
				RG	7	1.82				
				7 RG	AVG. <u>3/</u>	1.80				

Watershed conditions: Roads 0.4% of the area; rangeland 99.6%. Poor range conditions 16% of the area; fair condition 84%.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 5436.92. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 3, 4, 5, 6, AND 7. 3/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 1, 1A, 2, 4, 5, 6, AND 7. 4/ RAINFALL BETWEEN 1130 AND 2000 ON 5-18 AMOUNTED TO 0.13 INCH (WEIGHTED) BUT DID NOT CAUSE RUNOFF.



SONORA, TEXAS WATERSHED S-10



SONORA, TEXAS WATERSHED S-11

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 4 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 10,787 acres (16.85 sq. miles)

SLOPES:	Slope—Percent	0-3	3-8	8-20
	Percent of area	62	37	1

SOILS: Residual, derived from highly calcareous limestones.

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	
Tarrant stony clay	39	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Valera clay	36	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium
Tobosa clay	11	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow
Kavett clay	10	9	Moderate very fine subangular blocky	Moderate	Moderate very fine subangular blocky	Moderate	16	Moderate	Slow
Knippa clay	3	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium
Randall clay	1	10	Moderate to strong coarse granular	Slow	Weak medium blocky	Slow	40	Slow	Slow

EROSION:	Erosion class	1	2
	Percent of area	51	49

LAND CAPABILITY:	Class	I	II	III	IV	V	VI
	Percent of area	0	0	39	22	0	39

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 42 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 19 percent of the area where the plateau slopes steeper, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 16 percent of the area, thickness 0 to 20 ft. The lower 21 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 2 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-14, page 70.1-81. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of drainage well defined; principal drainageway 7 miles long with intersecting drainageway 2 miles long and numerous well defined side drainages.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 7 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Caliche and paved roads - 0.4 percent; rangeland - 99.6 percent. Rangeland moderately to severely overgrazed depending on climatic conditions. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Poor	Poor	High Poor	Low Fair	Fair	High Fair
Percent climax vegetation	0-8	9-17	18-25	26-34	35-42	43-50
Percent of area, 1963	--	--	--	18.9	81.1	--
Percent of area, 1964	--	--	--	--	100.0	--
Percent of area, 1965	0.3	--	0.7	15.4	19.7	63.9

GENERALLY REPRESENTS: Upland, low stony hills, and alluvium range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHEO S-11					70.04
						AREA — 10,787 ACRES (16.85 SQ. MILES)							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 P ¹ / _Q						7.23 .38E	2.39 .00	1.36 .00	2.34 .00	3.53 .01E	1.09 .00	.23 .00	18.17 .39E
1962 P ¹ / _Q	.15 .00	.46 .00	.30 .00	3.94 .01	.57 .00	3.16 T	.42 .00	.26 .00	5.00 .01	1.83 T	1.03 .00	.34 .00	17.46 .02
1963 P ¹ / _Q	.07 .00	.80 .00	.14 .00	1.11 .00	5.45 T	1.30 .00	.84 T	2.14 .00	1.31 T	.42 T	2.38 .00	.77 .00	16.73 T
1964 P ¹ / _Q	2.22 T	1.40 T	1.25 .00	1.34 .00	2.14 T	.30 .00	2.07 T	2.11 .00	10.72 1.25	1.57 T	.52 .00	.62 .00	26.26 1.25
1965 P ¹ / _Q	1.50 .00	2.46 .00	.26 .00	1.11 .00	7.03 .68	1.10 .00	2.42 .00	1.15 .00	1.13 .00	1.20 .00	.18 .00	1.12 .00	20.66 .68
1966 P ¹ / _Q	.80 .00	1.44 .00	.77 .00	5.01 .09	1.92 T	1.44 .00	.93 .00	2.19 .00	3.48 .00	1.17 .00	.10 .00	.05 .00	19.30 .09
1967 P ¹ / _Q	.04 .00	.34 .00	.96 .00	1.69 .01	3.40 T	2.88 .06	2.29 T	.28 .00	5.28 .01	1.23 .00	3.18 .00	1.33 .00	22.90 .08
STA AVG ² / _Q (62-67)	.80 T	1.15 T	.61 .00	2.37 .02	3.42 .11	1.70 .01	1.50 T	1.36 .00	4.49 .21	1.24 T	1.23 .00	.70 .00	20.57 .35
MEAN P ² / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48

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 ¹ / _Q	6-18	.11E	6-18	.10E	6-18	.19E	6-18	.25E	6-18	.29E	6-18	.29E	6-16	.38E	6-16	.38E
1962	10-12	.01	9-7	T	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01
1963	7-14	.01	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T
1964	9-23	.39	9-23	.31	9-23	.55	9-23	.77	9-23	.78	9-23	.78	9-23	.91	9-19	1.25
1965	5-17	.27	5-17	.21	5-17	.33	5-17	.50	5-17	.52	5-17	.54	5-16	.67	5-16	.68
1966	4-30	.05	4-30	.04	4-30	.06	4-30	.08	4-30	.09	4-30	.09	4-30	.09	4-30	.09
1967	4-17	.04	6-13	.02	6-13	.03	6-13	.04	6-13	.04	6-13	.04	6-13	.04	6-13	.04

MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	.39	9-23 1964	.31	9-23 1964	.55	9-23 1964	.77	9-23 1964	.78	9-23 1964	.78	9-23 1964	.91	9-19 1964	1.25

NOTES: Watershed conditions: Caliche roads - 0.4 percent; rangeland - 99.6 percent. Range condition poor to fair; moderately to severely overgrazed during a year depending on climatic conditions and stocking rates. ¹/_Q Precipitation data by Thiessen method using rain gages 5, 6, 7, 8, 9, 10, and 11. ²/_Q Precipitation and runoff records began May 1961; part-year amounts not included in averages. ³/_Q Mean P based on 45-yr. (1923-1967) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ⁴/_Q From personal observation, runoff did not occur in 1961 prior to May.

1964 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHEO S-11				70.04
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 ⁵ / _(in/hr)	ACC. (inches)	
7 RG ⁶ / _Q			Event of September 21, 1964								
8-22	.42	.0000		RG	6		9-21	0045	.0000	.0000	
8-24	.03	.0000	9-21	0030	.00	.00		0130	.0005	.0004	
9-11	.16	.0000		0130	.02	.02		0145	.0026	.0010	
9-12	.11	.0000		0145	.48	.14		0200	.0023	.0016	
9-13	.71	.0000		0150	.24	.16		0230	.0012	.0022	
9-14	.13	.0000		0315	.03	.20		0300	.0012	.0028	
9-19	3.26	.0148		0320	3.24	.47		0315	.0027	.0035	
9-20	.67	.0564		0330	.48	.55		0330	.0075	.0053	
				0350	.06	.57		0345	.0131	.0086	
				0414	.30	.69		0355	.0374	.0132	
Watershed conditions: Caliche roads - 0.4%; rangeland - 99.6%. Range in fair condition.				0420	.90	.78		0400	.0260	.0154	
				0427	.60	.85		0405	.0231	.0173	
				0430	.40	.87		0415	.0412	.0230	
				0550	.02	.89		0425	.0355	.0282	
				0605	.56	1.03		0445	.0836	.0486	

Continued on next page

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. ⁵/_Q RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ⁶/_Q THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11.

1964			SONORA, TEXAS				WATERSHED S-11			
SELECTED RUNOFF EVENTS			70.04							
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 <u>1/</u> (in/hr)	ACC. (inches)
Event of September 21, 1964 - Continued										
			9-21	0635	.02	1.04	9-21	0500	.0725	.0650
				0640	1.32	1.15		0515	.0675	.0830
				0647	.86	1.25		0530	.0805	.1017
				0700	.74	1.28		0545	.0712	.1195
				RG	8			0600	.0656	.1359
				0037	.00	.00		0615	.0736	.1543
				0045	.45	.06		0630	.0804	.1754
				0126	.03	.08		0645	.0952	.1992
				0130	1.50	.18		0700	.0856	.2206
				0150	.54	.36		0715	.0796	.2405
				0230	.48	.68		0730	.0776	.2599
				0240	.36	.74		0800	.0150	.2674
				0245	.00	.74		0830	.0030	.2694
				0250	.48	.78		1000	.0014	.2716
				0320	.40	.98		1200	.0000	.2723
				0400	.34	1.21				
				0510	.30	1.56				
				0520	.12	1.58				
				0535	.00	1.58				
				0550	.28	1.65				
				0600	.18	1.68				
				0620	.06	1.70				
				0640	.15	1.75				
				0650	.24	1.79				
				0700	.30	1.84				
				0800	.01	1.85				
				RG	5	2.00				
				RG	7	2.03				
				RG	9	1.51				
				RG	10	1.84				
				RG	11	1.68				
				7 RG	AVG. <u>2/</u>	1.63				
Event of September 23, 1964										
8-24	7 RG <u>2/</u> .03	.0000		RG	6		9-23	0945	.0000	.0000
9-11	.16	.0000	9-23	0518	.00	.00		1000	.0081	.0020
9-12	.11	.0000		0558	.12	.08		1015	.0109	.0047
9-13	.71	.0000		0758	.03	.14		1030	.0138	.0082
9-14	.13	.0000		0908	.00	.14		1045	.0344	.0168
9-19	3.26	.0148		0928	.09	.17		1100	.1182	.0463
9-20	.67	.0000		0933	.36	.20		1120	.1935	.1108
9-21	1.67	.2723		0938	.72	.26		1135	.2402	.1708
9-22	.48	.0000		0948	2.58	.69		1150	.2595	.2357
				0955	4.71	1.24		1205	.2137	.2892
				1002	1.89	1.46		1220	.2470	.3509
				1008	2.40	1.70		1235	.2487	.4131
				1013	1.92	1.86		1250	.3799	.5080
				1020	.86	1.96		1305	.3909	.6058
				1028	2.92	2.35		1320	.2204	.6609
				1048	.69	2.58		1335	.1286	.6930
				1158	.03	2.61		1350	.0662	.7096
				RG	8			1405	.0439	.7205
				0400	.00	.00		1420	.0353	.7294
				0510	.02	.02		1505	.0204	.7501
				0530	.12	.06		1550	.0153	.7616
				0540	.18	.09		1650	.0084	.7724
				0600	.09	.12		1805	.0038	.7780
				0710	.00	.12		1900	.0020	.7807
				0720	.12	.14		2000	T	.7817
				0800	.04	.17		2100	.0000	.7817
				0910	.01	.18				
				0925	.24	.24				
				0930	.60	.29				
				0940	.36	.35				

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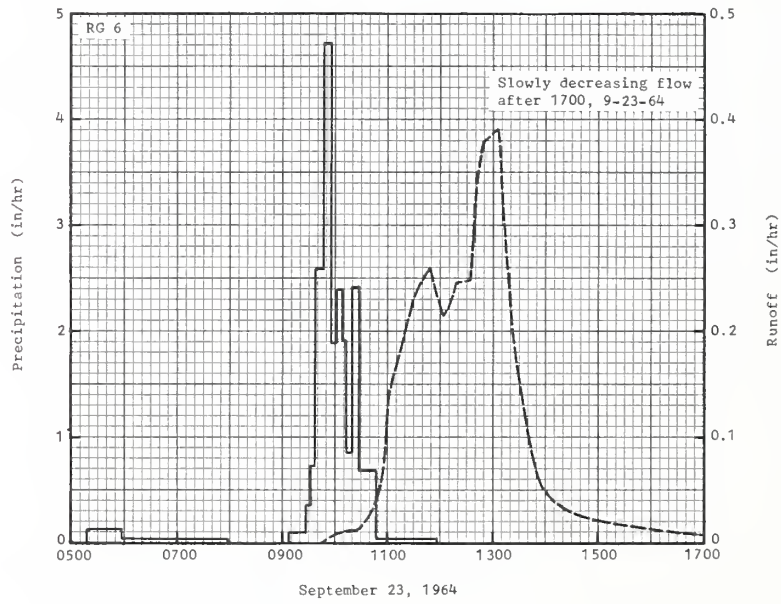
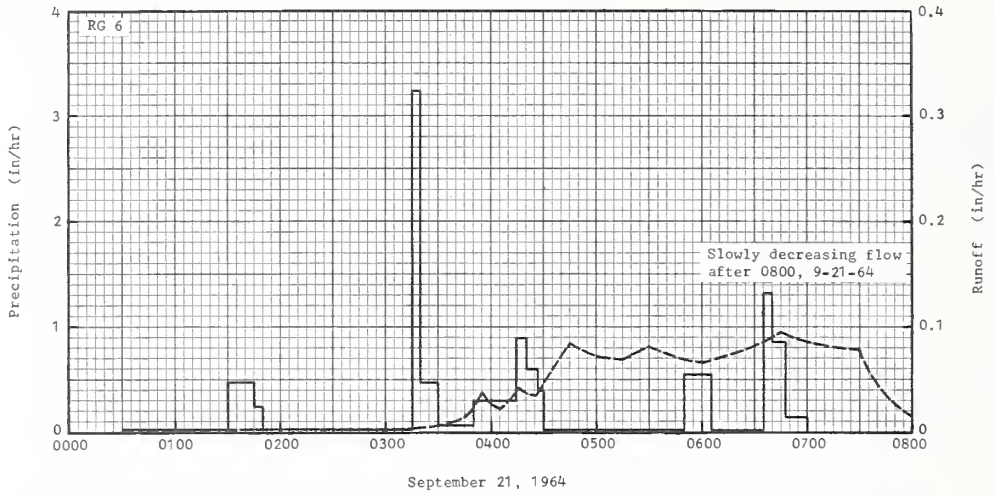
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11.

1964-65 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-11			
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 <u>1/</u> (in/hr)	ACC. (inches)
Event of September 23, 1964 - Continued										
			9-23	0945	1.20	.45				
				0955	.84	.59				
				1000	2.88	.83				
				1005	1.68	.97				
				1010	1.56	1.10				
				1030	1.35	1.55				
				1035	.96	1.63				
				1040	.60	1.68				
				1050	.42	1.75				
				1100	.18	1.78				
				1110	.06	1.79				
				RG	5	2.78				
				RG	7	1.65				
				RG	9	2.15				
				RG	10	1.81				
				RG	11	1.84				
				7 RG	AVG. <u>2/</u>	2.22				
			Event of May 16, 1965							
	7 RG <u>2/</u>			RG	6		5-16	1000	.0000	.0000
4-25	.01	.0000		0026	.00	.00		1015	.0106	.0027
4-26	1.10	.0000	5-16	0036	.12	.02		1030	.1150	.0314
5-10	.26	.0000		0056	.09	.05		1045	.0418	.0418
5-14	.08	.0000		0726	T	.08		1100	.0391	.0516
5-15	.02	.0000		0736	.84	.22		1115	.0402	.0617
Watershed conditions: Caliche										
Roads - 0.4%; rangeland - 99.6%.										
Fair range condition - 83% of the area; poor condition - 17%.										
				0741	3.12	.48		1130	.0348	.0704
				0746	2.28	.67		1145	.0367	.0796
				0751	1.44	.79		1200	.0323	.0876
				0801	.72	.85		1215	.0350	.0964
				0806	2.16	1.03		1230	.0296	.1038
				0816	1.56	1.29		1245	.0226	.1095
				0826	2.16	1.65		1300	.0187	.1141
				0836	2.10	2.00		1330	.0132	.1208
				0846	.84	2.14		1345	.0095	.1231
				0856	.30	2.19		1415	.0065	.1267
				0906	.12	2.21		1445	.0056	.1297
				1026	.06	2.24		1515	.0044	.1320
				1056	.10	2.29		1545	.0035	.1338
				RG	8			1645	.0020	.1362
			5-15	2310	.00	.00		1915	.0009	.1390
				2400	.02	.02		2045	T	.1397
			5-16	0030	.00	.02		2200	.0000	.1397
				0040	.06	.03				
				0725	.00	.03				
				0730	.48	.07				
				0800	2.04	.75				
				0806	4.80	1.23				
				0811	1.44	1.35				
				0820	2.80	1.77				
				0830	1.68	2.05				
				0840	1.20	2.25				
				0850	.96	2.41				
				0910	.93	2.72				
				1020	.05	2.78				
				1040	.18	2.84				
				1150	.03	2.87				
				RG	5	2.29				
				RG	7	2.27				
				RG	9	3.09				
				RG	10	3.57				
				RG	11	3.22				
				7 RG	AVG. <u>2/</u>	2.67				

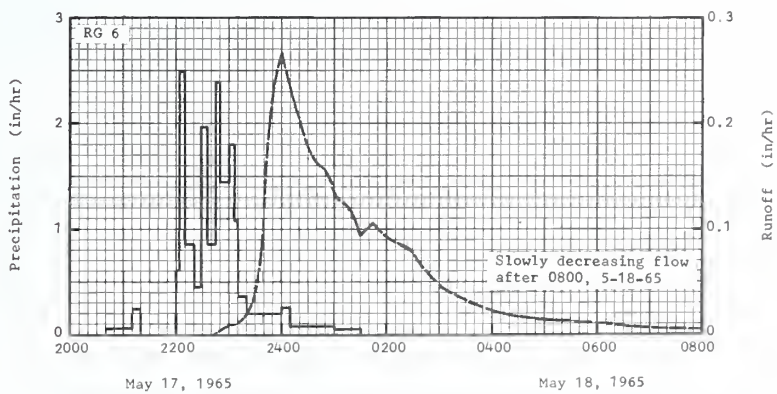
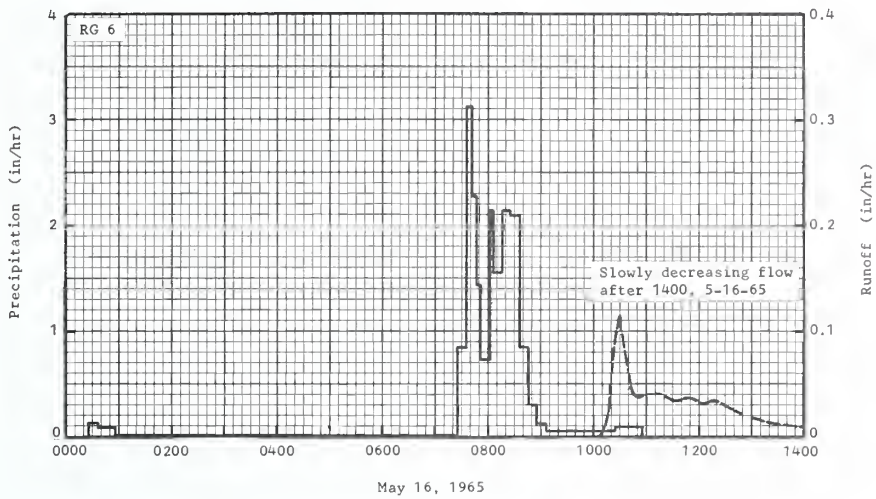
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11.

1965 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-11 70.04			
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 <u>1/</u> (in/hr)	ACC. (inches)
	7 RG <u>2/</u>		Event of May 17-18, 1965							
4-25	.01	.0000		RG	.6		5-17	2245	.0000	.0000
4-26	1.10	.0000	5-17	2040	.00	.00		2300	.0077	.0019
5-10	.26	.0000		2110	.04	.02		2315	.0130	.0052
5-14	.08	.0000		2120	.24	.06		2330	.0407	.0154
5-15	.02	.0000		2200	.00	.06		2345	.1745	.0590
5-16	2.68	.1397		2203	.60	.09		2400	.2667	.1257
				2210	2.49	.38	5-18	0015	.2171	.1800
				2220	.84	.52		0030	.1673	.2218
				2228	.45	.58		0045	.1590	.2615
				2235	1.97	.81		0100	.1312	.2944
				2245	.84	.95		0115	.1213	.3247
				2250	2.40	1.15		0130	.0942	.3482
				2300	1.44	1.39		0145	.1049	.3744
				2305	1.80	1.54		0200	.0906	.3971
				2310	1.08	1.63		0215	.0869	.4188
				2320	.36	1.69		0230	.0775	.4382
				2400	.20	1.82		0300	.0477	.4659
			5-18	0010	.24	1.86		0330	.0319	.4841
				0100	.08	1.93		0400	.0224	.4972
				0130	.06	1.96		0430	.0178	.5060
				<u>3/</u> 0300	.01	1.97		0500	.0140	.5131
				RG	.8			0545	.0101	.5212
			5-17	2055	.00	.00		0645	.0059	.5277
				2215	.06	.02		0745	.0038	.5321
				2220	.48	.06		0915	.0032	.5355
				2227	2.66	.37		1015	.0026	.5368
				2235	1.13	.52		1115	.0024	.5380
				2240	6.24	1.04		1215	.0012	.5398
				2245	5.16	1.47		1330	.0000	.5406
				2250	4.08	1.81				
				2255	1.80	1.96				
				2300	4.32	2.32				
				2305	2.64	2.54				
				2310	.24	2.56				
				2400	.16	2.69				
			5-18	0100	.60	2.75				
				<u>3/</u> 0200	.01	2.76				
				RG	.5	2.10				
				RG	.7	1.82				
				RG	.9	2.14				
				RG	1.0	1.57				
				RG	1.1	2.35				
				7 RG	AVG. <u>2/</u>	2.21				

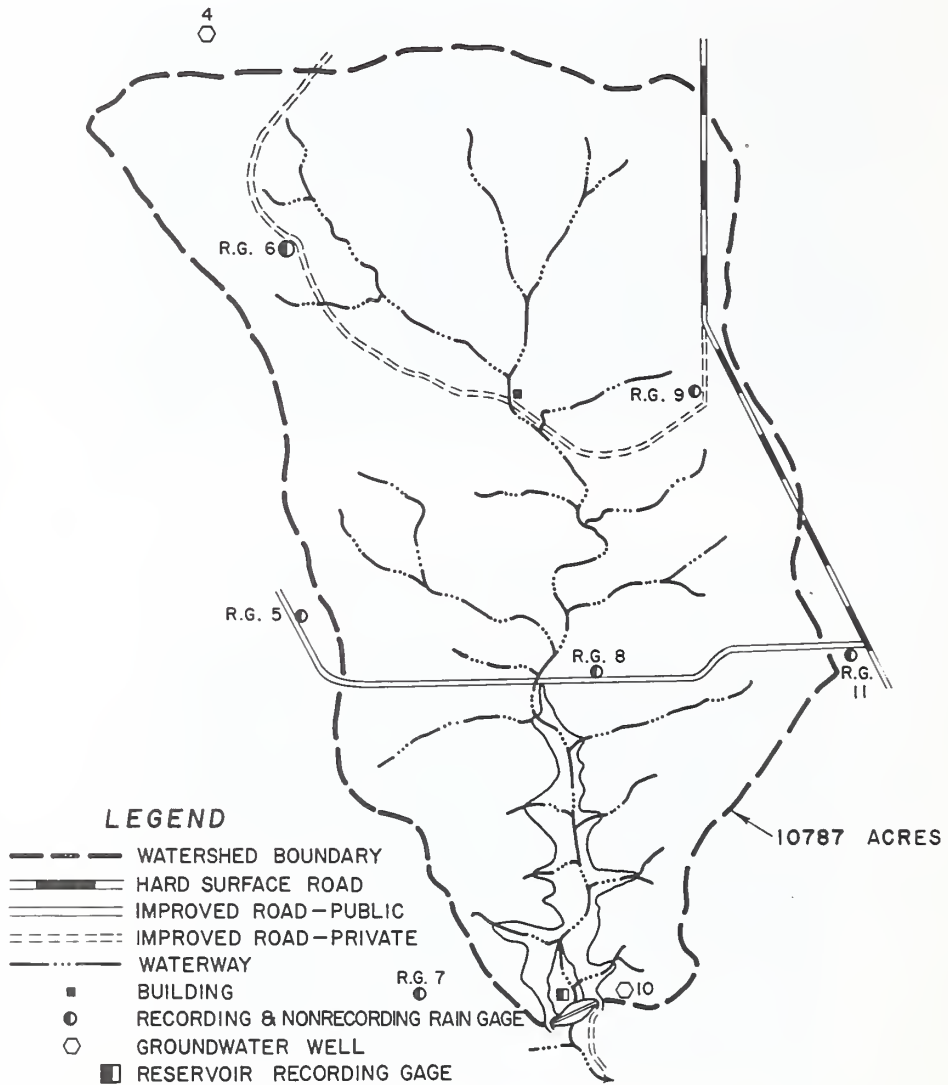
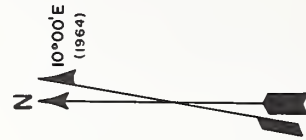
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10,876.86. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 5, 6, 7, 8, 9, 10, AND 11. 3/ RAINFALL BETWEEN 1130 AND 2000 ON 5-18 AMOUNTED TO 0.09 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.



SONORA, TEXAS WATERSHED S-11

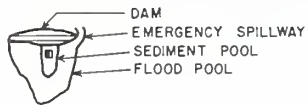


SONORA, TEXAS WATERSHED S-11



LEGEND

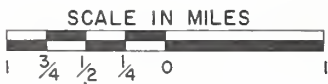
- WATERSHED BOUNDARY
- ==== HARD SURFACE ROAD
- ==== IMPROVED ROAD - PUBLIC
- IMPROVED ROAD - PRIVATE
- WATERWAY
- BUILDING
- RECORDING & NONRECORDING RAIN GAGE
- GROUNDWATER WELL
- RESERVOIR RECORDING GAGE



10787 ACRES

R.G. 10

For Composite Map of Watershed, See P. 70.1-7



SONORA, TEXAS
WATERSHED S-II

SONORA, TEXAS WATERSHED S-12

LOCATION: Sutton County, Tex.: gaging station on flood detention reservoir, 2 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 2,801 acres (4.38 sq. miles)

SLOPES:	Slope—Percent	0-3	3-8
	Percent of area	30	70

SOILS: Residual, derived from highly calcareous limestones.

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	
Tarrant stony clay	79	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Kavett clay	14	9	Moderate to strong very fine subangular blocky	Moderate	Moderate very fine subangular blocky	Moderate	16	Moderate	Slow
Knippa clay	6	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium
Tobosa clay	1	10	Strong coarse granular	Moderately slow	Weak medium blocky	Very slow	30	Very slow	Very slow

EROSION:	Erosion class	1	2
	Percent of area	7	93

LAND CAPABILITY:	Class	I	II	III	IV	V	VI
	Percent of area	0	0	6	15	0	79

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Thin beds of hard limestone with thicker beds of marly limestone occur on the plateau, 10 percent of the area, thickness 0 to 20 ft. Marly limestone outcrops on 13 percent of the area where the plateau slopes steepen, thickness 0 to 25 ft. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 21 percent of the area, thickness 0 to 20 ft. The lower 52 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 ft. Alluvium and colluvium along stream channels occur on 4 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; most of drainage well defined; principal drainageway 3 miles long with intersecting drainageway 1.5 miles long and numerous well defined side drainages.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 5 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Paved roads - 0.2 percent; rangeland - 99.8 percent. Rangeland moderately to severely overgrazed depending on climatic conditions. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Poor	Poor	High Poor	Low Fair	Fair
Percent climax vegetation	0-8	9-17	18-25	26-34	35-42
Percent of area, 1963	9.1	--	--	78.0	12.9
Percent of area, 1964	27.2	--	--	--	72.8
Percent of area, 1965	39.5	--	--	43.8	16.7

GENERALLY REPRESENTS: Upland, low stony hills, and alluvium range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS WATERSHED S-12							70.05
						AREA — 2,801 ACRES (4.38 SQ. MILES)							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 P ^{1/} Q						5.58 .10E	3.82 .09E	.68 .00	2.01 .00	3.28 .02E	1.01 .00	.21 .00	16.59 .21E
1962 P ^{1/} Q	.13 .00	.43 .00	.31 .00	3.99 T	.91 T	3.11 T	.02 .00	.27 .00	5.13 .01	1.56 T	1.01 .00	.30 .00	17.17 .01
1963 P ^{1/} Q	.07 .00	.84 .00	.06 .00	1.27 .00	4.79 T	1.12 .00	.68 .00	.92 .00	1.82 T	.82 T	2.59 T	.66 .00	15.64 T
1964 P ^{1/} Q	2.11 T	1.31 .00	1.37 .00	1.38 .00	2.41 T	.53 .00	3.45 .11	1.99 .00	9.30 1.62	1.57 .00	.39 .00	.68 .00	26.49 1.73
1965 P ^{1/} Q	1.46 .00	2.70 .00	.22 .00	1.12 .00	7.73 1.37	1.10 T	1.58 .00	.92 T	1.13 .00	.97 .00	.21 .00	1.08 .00	20.22 1.37
1966 P ^{1/} Q	.77 .00	1.21 .00	.89 .00	4.98 .21	2.10 .00	.98 .00	1.11 T	3.21 T	3.85 .00	1.31 .00	.12 .00	.07 .00	20.60 .21
1967 P ^{1/} Q	.04 .00	.44 .00	.77 .00	1.70 T	2.88 T	2.10 T	2.68 .00	.57 .00	5.60 .00	1.39 .00	2.85 .00	1.29 .00	22.31 T
STA AVG ^{2/} (62-67) Q	.76 T	1.16 .00	.60 .00	2.41 .04	3.47 .23	1.49 T	1.59 .02	1.31 T	4.47 .27	1.27 T	1.20 T	.68 .00	20.41 .56
MEAN P ^{2/} 45 YR	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48

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 ^{2/}	6-18	.16E	6-18	.09E	6-18	.10E	6-18	.10E	6-18	.10E	6-18	.10E	6-18	.10E	6-18	.10E
1962	9-7	.02	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01	9-7	.01
1963	11-8	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T	9-12	T
1964	9-23	1.20	9-23	.79	9-23	1.00	9-23	1.08	9-23	1.09	9-23	1.09	9-23	1.15	9-19	1.62
1965	5-16	.83	5-16	.58	5-16	.78	5-16	.84	5-16	.84	5-16	.84	5-16	.85	5-16	1.37
1966	4-30	.27	4-30	.12	4-30	.16	4-30	.20	4-30	.21	4-30	.21	4-30	.21	4-24	.21
1967	4-17	.02	4-17	T	4-17	T	4-17	T	4-17	T	4-17	T	4-17	T	4-17	T

MAXIMUMS FOR PERIOD OF RECORD																
1961 To	9-23	1.20	9-23	.79	9-23	1.00	9-23	1.08	9-23	1.09	9-23	1.09	9-23	1.15	9-19	1.62
1967	1964		1964		1964		1964		1964		1964		1964		1964	

NOTES: Watershed conditions: Paved roads - 0.2 percent of the area; rangeland - 99.8 percent. Range conditions poor to fair, with moderate to severe overgrazing during a year depending on climatic conditions and stocking rates.
^{1/} Thiessen weighted rainfall using rain gages 8, 10, 11, 12, and 13. ^{2/} Precipitation and runoff records began May 1961; part-year amounts not included in averages. ^{3/} Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, approximately 18 miles south of Sonora, Tex. ^{4/} From personal observation, no runoff occurred in 1961 prior to June.

1964 SELECTED RUNOFF EVENTS				SONORA, TEXAS WATERSHED S-12				70.05				
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 ^{5/} (in/hr)	ACC. (inches)		
Watershed conditions: Paved roads - 0.2% of the area; rangeland - 99.8%. Range conditions - poor to fair.			Event of September 21, 1964				9-21 0220 .0000 .0000 0235 .0003 .0001 0250 .0020 .0006 0305 .0005 .0007 0320 .0005 .0008 0335 .0762 .0199 0350 .1590 .0596 0405 .0875 .0815 0420 .0767 .1006 0435 .0992 .1255 0450 .1215 .1558 0505 .1724 .1989 0520 .1447 .2351 0535 .1028 .2608 0550 .1029 .2866					
			8-22	5 RG ^{6/}	.0000					RC	.12	
			8-24	.26	.0000	9-21				0030	.00	.00
			9-11	.11	.0000					0040	.24	.04
			9-12	.20	.0000					0050	.12	.06
			9-12	T	.0000					0115	.05	.08
			9-13	.56	.0000							
			9-14	.20	.0000					0120	2.04	.25
			9-19	2.06	.0008					0127	2.31	.52
			9-20	.67	.0002					0140	.28	.58
										0150	.12	.60
										0155	.36	.63
										0200	1.80	.78
										0205	1.32	.89
										0215	1.14	1.08
				0220	.96	1.16						
				0230	.24	1.20						

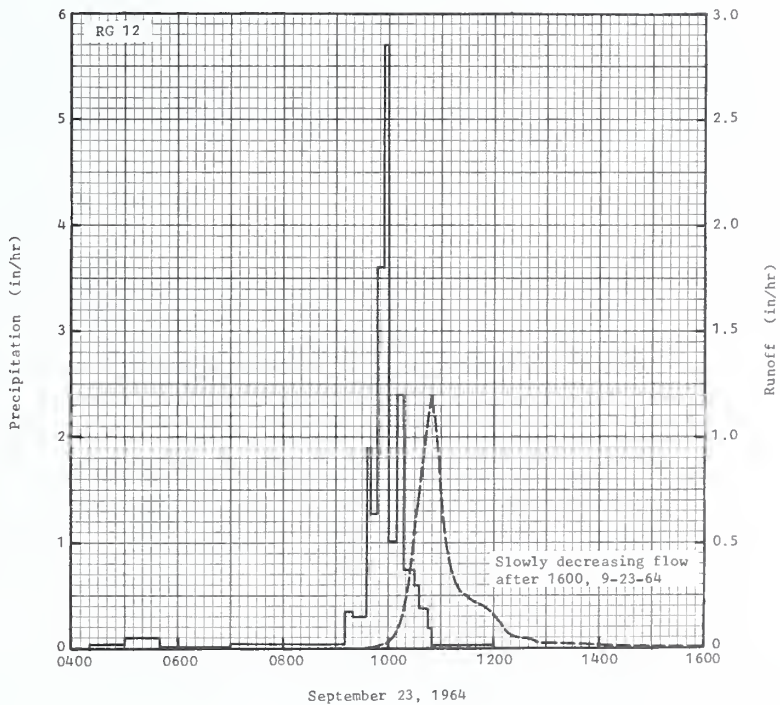
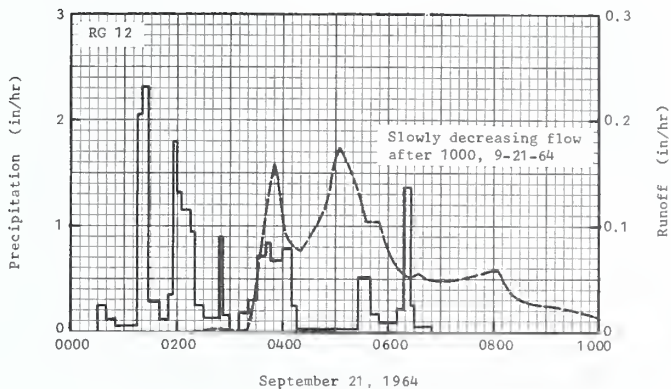
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2824.33. ^{5/} RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ^{6/} THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 8, 10, 11, 12, AND 13.

1964-65 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-12				70.05
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 1/ (in/hr)	ACC. (inches)	
Event of September 21, 1964 - Continued											
			9-21	0248	.13	1.24	9-21	0605	.0691	.3038	
				0252	.90	1.30		0620	.0520	.3168	
				0300	.15	1.32		0635	.0536	.3302	
				0310	.00	1.32		0650	.0492	.3425	
				0320	.18	1.35		0705	.0490	.3548	
				0330	.30	1.40		0735	.0512	.3803	
				0340	.72	1.52		0805	.0565	.4086	
				0345	.84	1.59		0820	.0352	.4174	
				0400	.68	1.76		0850	.0263	.4305	
				0410	.78	1.89		0950	.0172	.4461	
				0415	.24	1.91		1020	.0051	.4487	
				0525	.03	1.94		1120	.0034	.4521	
				0540	.52	2.07		1200	.0017	.4543	
				0550	.18	2.10		1300	.0000	.4543	
				0610	.09	2.13					
				0618	.22	2.16					
				0625	1.37	2.32					
				0630	.24	2.34					
				0650	.06	2.36					
				RG	8	1.85					
				RG	10	1.84					
				RG	11	1.68					
				RG	13	1.96					
				5 RG	AVG. 2/	2.04					
Event of September 23, 1964											
				RG	12		9-23	0920	.0000	.0000	
			9-23	0420	.00	.00		0935	.0012	.0003	
				0500	.03	.02		0950	.0161	.0043	
				0540	.10	.09		1005	.0532	.0176	
				0700	.01	.10		1035	.7358	.3843	
				0910	.03	.17		1050	1.1961	.6833	
				0920	.36	.23		1105	.5049	.8096	
				0934	.30	.30		1120	.2788	.8793	
				0940	1.90	.49		1135	.2254	.9356	
				0948	1.28	.66		1150	.2007	.9858	
				0954	3.60	1.02		1205	.1327	1.0190	
				1000	5.70	1.59		1220	.0644	1.0351	
				1010	1.02	1.76		1235	.0459	1.0466	
				1018	2.40	2.08		1250	.0324	1.0547	
				1030	.75	2.23		1335	.0213	1.0706	
				1036	.60	2.29		1350	.0119	1.0736	
				1044	.38	2.34		1450	.0045	1.0771	
				1050	.20	2.36		1650	.0015	1.0801	
				1200	.03	2.39		1800	.0000	1.0801	
				RG	8	1.79					
				RG	10	1.81					
				RG	11	1.84					
				RG	13	1.67					
				5 RG	AVG. 2/	2.06					
Event of May 15-16, 1965											
				RG	12		5-16	0800	.0000	.0000	
			5-15	2315	.00	.00		0815	.0280	.0070	
				2335	.15	.05		0830	.0516	.0199	
				2400	.00	.05		0845	.1622	.0605	
			5-16	0020	.00	.05		0900	.2704	.1281	
				0025	.36	.08		0915	.3343	.2116	
				0030	1.44	.20		0930	.4510	.3244	
				0200	.00	.20		0945	.5403	.4595	
				0300	.01	.21		1000	.8300	.6670	
				0600	.00	.21		1015	.4958	.7909	
Continued on next page											
<p>Watershed conditions: Paved roads - 0.2% of the area; rangeland - 99.8%. Range conditions - poor to fair.</p> <p>Watershed Conditions: Roads - 0.2% of the area; rangeland - 99.8%. Poor range conditions - 40% of the area, fair conditions - 60%.</p>											
<p>NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2824.33. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 8, 10, 11, 12, AND 13.</p>											

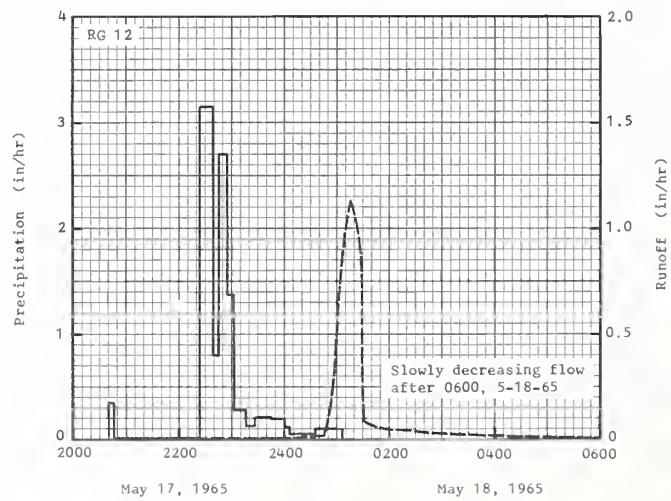
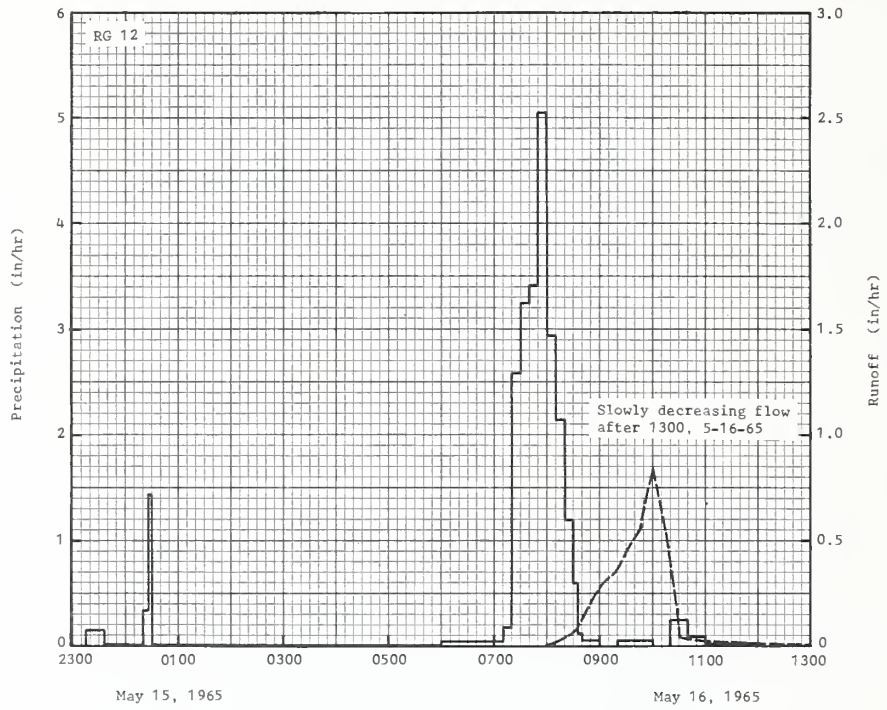
1965 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-12			70.05
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE <u>1</u> / (in/hr)	ACC. (inches)
Event of May 15-16, 1965 - Continued										
			5-16	0710	.03	.24	5-16	1030	.0431	.8017
				0720	.18	.27		1045	.0320	.8097
				0730	2.58	.70		1115	.0228	.8211
				0740	3.24	1.24		1130	.0192	.8259
				0750	3.42	1.81		1145	.0153	.8297
				0800	5.04	2.65		1200	.0147	.8334
				0810	2.94	3.14		1215	.0091	.8357
				0820	2.16	3.50		1230	.0069	.8374
				0830	1.20	3.70		1245	.0035	.8383
				0835	.60	3.75		1300	T	.8383
				0840	.12	3.76		1330	.0000	.8383
				0900	.06	3.78				
				0920	.00	3.78				
				1000	.06	3.82				
				1020	.00	3.82				
				1040	.24	3.90				
				1100	.09	3.93				
				1200	.01	3.94				
				RG	8	2.87				
				RG	10	3.57				
				RG	11	3.22				
				RG	13	2.45				
				5 RG	AVG. <u>2</u> / 3.64					
Event of May 17-18, 1965										
	5 RG <u>2</u> / .03	.0000		RG	12	.00	5-17	2215	.0000	.0000
4-25	1.07	.0000	5-17	2040	.00	.00		2245	.0023	.0012
4-26	.43	.0000		2045	.36	.03		2315	.0041	.0032
5-10	.07	.0000		2223	.01	.04		2330	.0046	.0044
5-14	.05	.0000		2239	3.15	.88		2345	.0064	.0060
5-15	3.60	.8383		2245	.80	.96		2400	.0066	.0076
				2255	2.70	1.41	5-18	0015	.0093	.0099
				2302	1.37	1.57		0030	.0112	.0127
				2315	.28	1.63		0045	.0147	.0164
				2325	.12	1.65		0100	.4577	.1308
				2345	.21	1.72		0115	1.1308	.4135
			5-18	2400	.20	1.77		0130	.0842	.4345
				0005	.12	1.78		0145	.0530	.4478
				0035	.06	1.81		0200	.0436	.4587
				<u>2</u> /0105	.10	1.86		0215	.0378	.4676
				RG	8	2.76		0245	.0219	.4786
				RG	10	1.57		0315	.0196	.4884
				RG	11	2.33		0345	.0162	.4965
				RG	13	1.21		0415	.0051	.4990
				5 RG	AVG. <u>2</u> / 1.84			0445	.0051	.5016
								0515	.0035	.5033
								0545	.0029	.5048
								0615	.0000	.5048

Watershed conditions:
 Roads - 0.2% of the area;
 rangeland - 99.8%. Poor range
 conditions - 40% of the area,
 fair conditions - 60%.

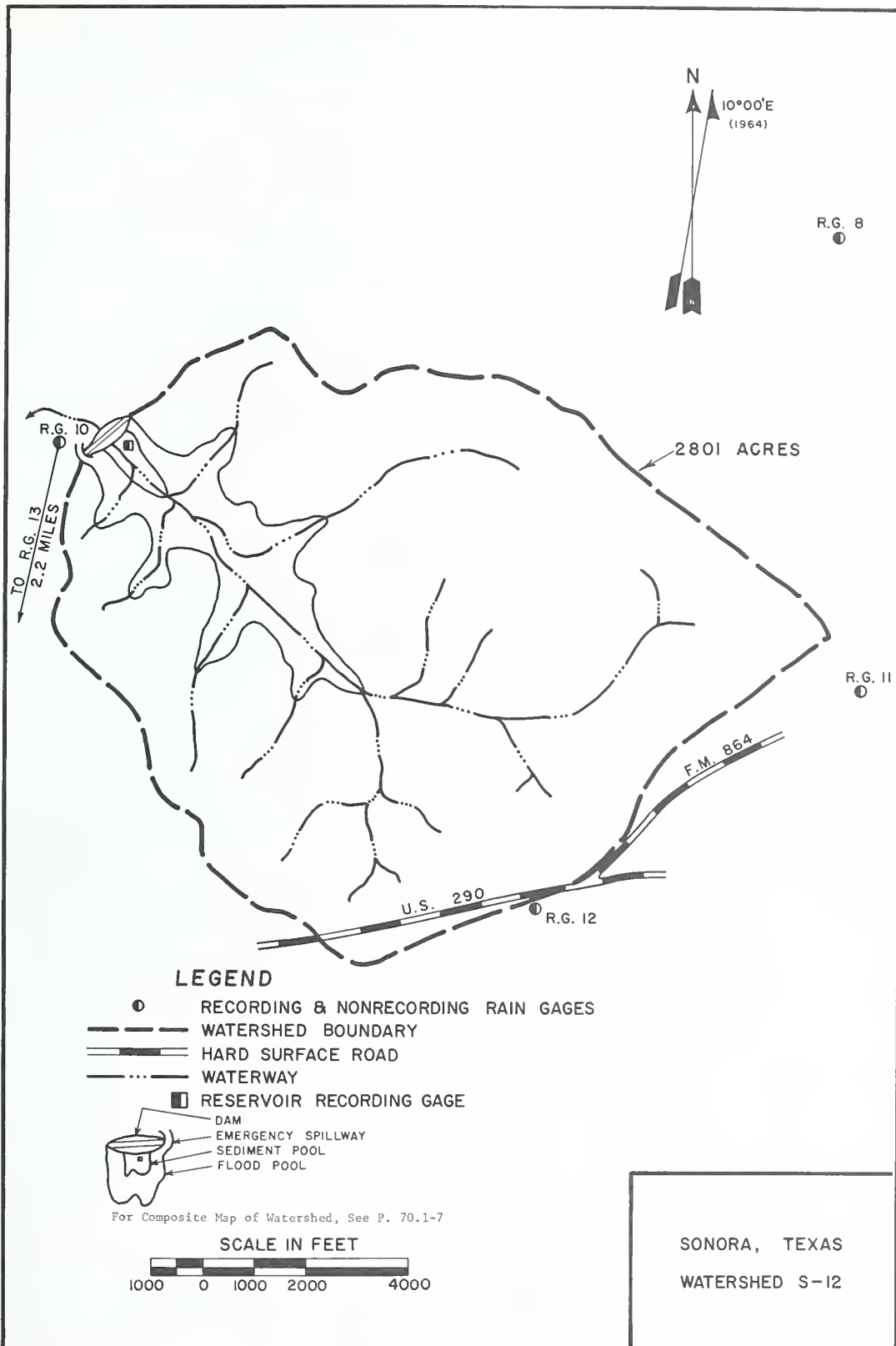
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 2824.33. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 8, 10, 11, 12, AND 13. 3/ RAINFALL BETWEEN 0700 AND 2000 ON 5-18 AMOUNTED TO 0.21 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.



SONORA, TEXAS WATERSHED S-12

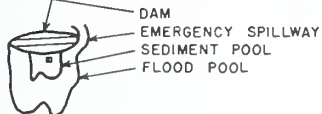


SONORA, TEXAS WATERSHED S-12



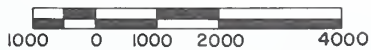
LEGEND

- RECORDING & NONRECORDING RAIN GAGES
- WATERSHED BOUNDARY
- == HARD SURFACE ROAD
- ... WATERWAY
- RESERVOIR RECORDING GAGE



For Composite Map of Watershed, See P. 70.1-7

SCALE IN FEET



SONORA, TEXAS
WATERSHED S-12

SONORA, TEXAS WATERSHED S-13

LOCATION: Sutton County, Tex.; gaging station on flood detention reservoir, 0.5 miles southeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande River Basin.

AREA: 686 acres (1.07 sq. miles)

<u>SLOPES:</u>	Slope—Percent	0-3	3-8	8-20
	Percent of area	10	87	3

SOILS: Residual, derived from highly calcareous limestones.

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
Tarrant stony clay	90	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid
Knippa clay	10	10	Moderate medium granular	Moderate	Weak very fine blocky	Moderate	24	Moderate	Medium

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	10	90

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	10	0	0	90

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone outcrop on the middle slopes, 21 percent of the area, thickness 0 to 20 ft. The lower 77 percent of the watershed, on steeper slopes, hard limestone jointed and cavernous, thickness 20 to 70 feet. Alluvium and colluvium along stream channels occur on 2 percent of the area. All strata, strike N26°W, dip S54°W at 4.5 feet per mile. For distribution of formations, see geology map of watershed W-14, page 70.1-8. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; drainage well defined; principal drainageway 1.5 miles long with an intersecting drainageway 0.5 mile long.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Stripchart waterstage recorder with bubbler gage on flood detention reservoir with detailed topographic map of flood pool, 9.6 inches per day chart speed. Precipitation: 2 weighing-recording rain gages, 12-hr. time scale.

WATERSHED CONDITIONS: Paved roads - 1.5 percent; rangeland - 98.5 percent. Rangeland moderately to severely overgrazed depending on climatic conditions. Reconnaissance type survey made 1963-65 based on percent of climax vegetation present.

Range condition	Low Poor	Poor	High Poor	Low Fair	Fair
Percent climax vegetation	0-8	9-17	18-25	26-34	35-42
Percent of area, 1963	79.8	--	--	--	20.2
Percent of area, 1964	--	36.8	--	--	63.2
Percent of area, 1965	55.8	--	--	--	44.2

GENERALLY REPRESENTS: Low stony hills and alluvium range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED S-13		70.06			
						AREA — 686 ACRES (1.07 SQ. MILES)							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1961 p ¹ / Q						5.28 T	3.74 .00	.46 .00	2.03 .00	3.55 .06	1.18 .00	.12 .00	16.36 .06
1962 p ¹ / Q	.11 .00	.42 .00	.30 .00	4.12 .03	1.06 T	3.98 .02	.28 .00	.55 .00	5.19 .07	1.66 T	1.01 T	.30 .00	18.98 .12
1963 p ¹ / Q	.06 .00	.87 .00	T .00	1.27 .00	4.74 .02	1.06 T	.27 .00	.46 .00	2.55 .02	.57 T	2.53 .03	.68 .00	15.06 .07
1964 p ¹ / Q	2.20 .01	1.32 T	1.12 T	1.18 T	2.88 .02	.33 T	2.96 .01	2.09 T	8.67 .85	1.42 T	.41 .00	.78 .00	25.36 .89
1965 p ¹ / Q	1.80 T	2.84 T	.19 T	.85 T	6.60 .48	1.19 T	.47 .00	1.13 T	.94 .00	1.07 T	.24 .00	1.20 T	18.52 .48
1966 p ¹ / Q	.82 .00	1.54 .00	1.01 .00	5.23 .33	1.69 T	1.03 T	1.16 T	2.69 .01	2.91 .01	1.24 T	.10 .00	.02 .00	19.44 .35
1967 p ¹ / Q	.03 .00	.55 .00	.69 T	1.59 .01	2.69 .01	1.51 T	2.22 T	1.42 T	4.91 .01	1.14 .00	2.87 T	1.36 .00	20.98 .03
STA AVG ² / (62-67) Q	.84 T	1.26 T	.55 T	2.37 .06	3.28 .09	1.52 T	1.23 T	1.39 T	4.20 .16	1.18 T	1.19 T	.72 T	19.73 .31
MEAN p ² / 45 YR	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48

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 ⁴ / 1962	10-10	.05E	10-10	.03E	10-10	.04E	10-10	.05E	10-10	.06E	10-10	.06E	10-10	.06E	10-10	.06E
1962	9-7	.02	9-7	.02	9-7	.02	9-7	.04	9-7	.04	9-7	.06	9-7	.06	9-7	.07
1963	11-8	.05	11-8	.03	11-8	.03	11-8	.03	11-8	.03	11-8	.03	11-8	.03	11-8	.03
1964	9-23	.77	9-23	.46	9-23	.60	9-23	.68	9-23	.68	9-23	.68	9-23	.68	9-19	.85
1965	5-16	.27	5-16	.14	5-16	.22	5-16	.25	5-16	.25	5-16	.25	5-16	.46	5-10	.46
1966	4-30	.34	4-30	.18	4-30	.24	4-30	.32	4-30	.32	4-30	.32	4-29	.33	4-23	.33
1967	5-20	.02	4-17	.01	4-17	.01	4-17	.01	4-17	.01	4-17	.01	4-17	.01	4-17	.01
MAXIMUMS FOR PERIOD OF RECORD																
1961 To 1967	9-23 1964	.77	9-23 1964	.46	9-23 1964	.60	9-23 1964	.68	9-23 1964	.68	9-23 1964	.68	9-23 1964	.68	9-19 1964	.85

NOTES: Watershed conditions: Paved roads - 1.5 percent of the area, rangeland - 98.5 percent. Range in poor to fair condition, severely overgrazed during a year depending on climatic conditions and stocking rates. ¹/ Precipitation data by Thiessen method using rain gages 12 and 13. ²/ Precipitation and runoff records began May 1961; part-year amounts not included in averages. ³/ Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex. ⁴/ From personal observation, no runoff occurred in 1961 prior to May.

1964 SELECTED RUNOFF EVENTS			SONORA, TEXAS		WATERSHED S-13		70.06			
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF OAY	RATE ⁵ / (in/hr)	ACC. (inches)
	2 RG ⁶ / 6/		Event of September 21, 1964							
8-22	.21	.0000		RG	1.3		9-21	0035	.0000	.0000
8-24	.07	.0000		0015	.00	.00		0050	.0001	.0001
9-11	.07	.0000	9-21	0030	.04	.01		0105	.0012	.0004
9-13	.70	.0000		0050	.12	.05		0120	.0002	.0004
9-14	.23	.0000		0116	.02	.06		0135	.0004	.0005
9-19	1.47	.0027		0120	1.80	.18		0150	.0053	.0019
9-20	.61	.0007		0123	3.20	.34		0205	.0071	.0036
				0130	1.03	.46		0220	.0104	.0062
				0150	.09	.49		0235	.0097	.0087
				0157	.34	.53		0250	.0118	.0116
				0202	1.80	.68		0305	.0081	.0136
				0212	.70	.75		0320	.0042	.0147
				0220	1.58	.96		0335	.0020	.0152
				0249	.12	1.02		0350	.0019	.0157
				0310	.24	1.10		0405	.0083	.0177

Watershed conditions: Paved roads - 1.5% of the area; rangeland - 98.5%. Range condition poor to fair.

Continued on next page

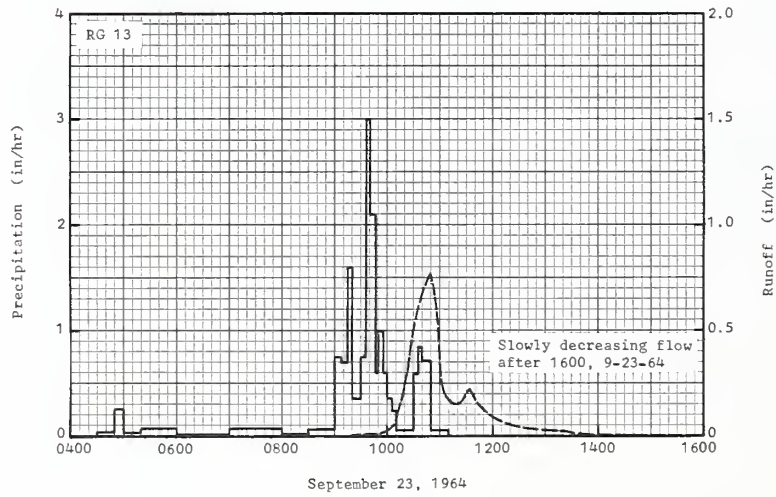
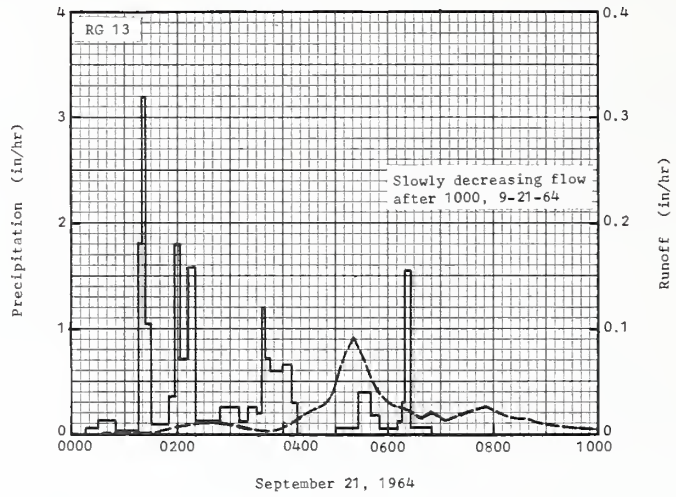
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 691.71. ⁵/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. ⁶/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 12 AND 13.

1964 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED S-13			70.06
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 <u>1</u> / (in/hr)	ACC. (inches)
Event of September 21, 1964 - Continued										
			9-21	0320	.12	1.12	9-21	0420	.0170	.0220
				0330	.24	1.16		0435	.0229	.0277
				0336	.20	1.18		0450	.0294	.0351
				0340	1.20	1.26		0505	.0656	.0515
				0345	.72	1.32		0520	.0912	.0743
				0400	.60	1.47		0535	.0628	.0900
				0410	.66	1.58		0550	.0396	.0999
				0414	.30	1.60		0605	.0288	.1071
				0500	.00	1.60		0620	.0227	.1128
				0525	.05	1.62		0635	.0154	.1166
				0540	.40	1.72		0650	.0207	.1218
				0550	.18	1.75		0705	.0123	.1249
				0610	.06	1.77		0720	.0186	.1295
				0615	.12	1.78		0735	.0213	.1348
				0619	.30	1.80		0750	.0273	.1417
				0624	1.56	1.93		0805	.0220	.1472
				0650	.07	1.96		0820	.0174	.1515
				RG	.12	2.36		0835	.0149	.1552
				2 RG	AVG. <u>2</u> / 1.96			0850	.0108	.1580
								0905	.0077	.1599
								0935	.0054	.1626
								1005	.0038	.1645
								1135	.0016	.1668
								1235	.0000	.1668
			Event of September 23, 1964							
	2 RG <u>2</u> / .07	.0000		RG	.13		9-23	0920	.0000	.0000
8-24	.07	.0000		0430	.00	.00		0935	.0101	.0025
9-11	.07	.0000		0450	.03	.01		0950	.0153	.0064
9-13	.70	.0000		0500	.24	.05		1005	.0383	.0159
9-14	.23	.0000		0520	.03	.06		1020	.2329	.0742
9-19	1.47	.0027		0600	.06	.10		1035	.6015	.2245
9-20	<u>3</u> / 2.02	.0007		0700	.01	.11		1050	.7717	.4175
9-21	.51	.0000		0800	.06	.17		1105	.2156	.4713
9-22				0830	.02	.18		1120	.1560	.5104
				0900	.06	.21		1135	.2197	.5653
				0908	.75	.31		1150	.1250	.5965
				0914	.70	.38		1205	.0822	.6171
				0920	1.60	.54		1220	.0586	.6317
				0930	.36	.60		1235	.0431	.6425
				0934	.75	.65		1250	.0304	.6501
				0940	3.00	.95		1320	.0298	.6650
				0946	2.10	1.16		1335	.0136	.6684
				0950	.60	1.20		1405	.0080	.6724
				0956	1.00	1.30		1505	.0058	.6781
				1000	.60	1.34		1635	.0024	.6816
				1005	.36	1.37		1805	.0000	.6816
				1010	.24	1.39				
				1030	.06	1.41				
				1035	.60	1.46				
				1040	.84	1.53				
				1050	.72	1.65				
				1110	.06	1.67				
				RG	.12	2.39				
				2 RG	AVG. <u>2</u> / 1.67					
<p>Watershed conditions: Paved roads - 1.5% of the area; range land - 98.5%. Range condition poor to fair.</p>										

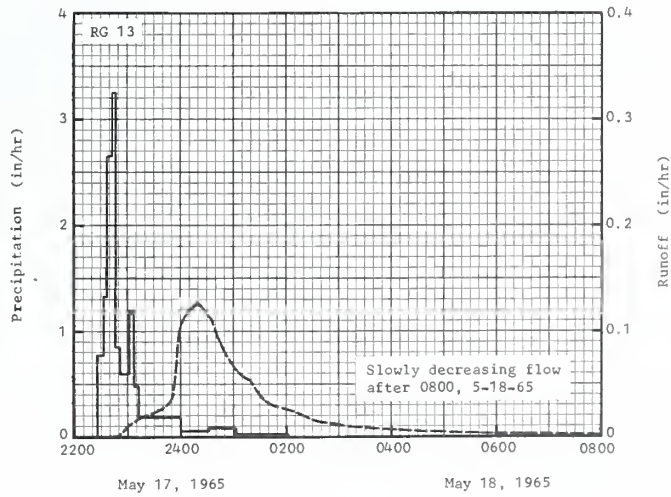
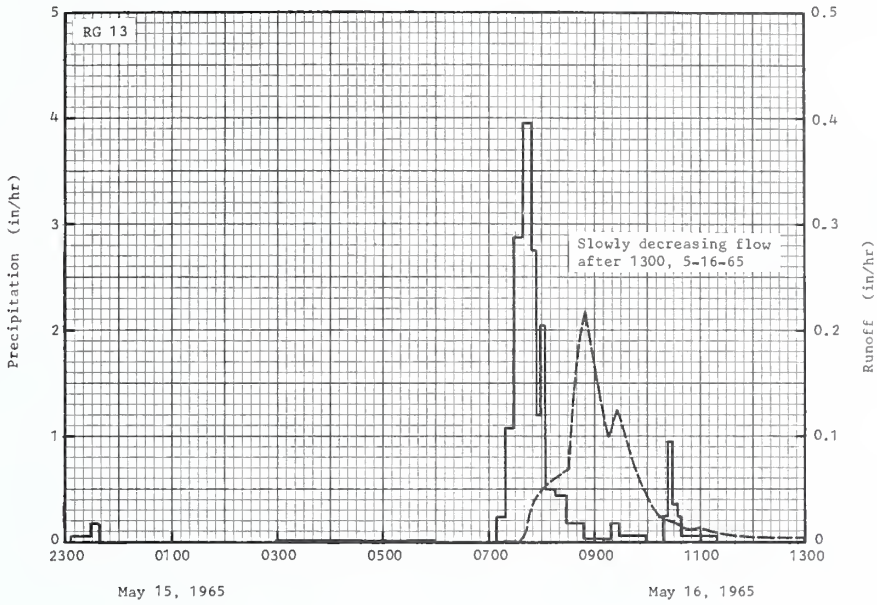
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 691.71. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES I2 AND I3. 3/ ON 9-21-64, 0.06 INCH OCCURRED BETWEEN 2310 AND 2400 AND WAS NOT SHOWN ON THE EVENT OF 9-21.

1965 SELECTED RUNOFF EVENTS			SONORA, TEXAS			WATERSHED S-13			70.06	
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 <u>1/</u> (in/hr)	ACC. (inches)
			Event of May 15-16, 1965							
4-25	2 RC <u>2/</u> .04	.0000		RC	13		5-16	0715	.0000	.0000
4-26	.81	.0016	5-15	2305	.00	.00		0735	.0012	.0004
5-10	.74	.0041		2328	.05	.02		0745	.0228	.0042
5-14	.10	.0000		2338	.18	.05		0800	.0492	.0165
				2400	.00	.05		0815	.0600	.0315
			5-16	0258	.00	.05		0830	.0684	.0486
Watershed conditions: Paved roads - 1.5% of the area; rangeland - 98.5%. Poor range condition - 56% of the area; fair condition - 44%.				0558	T	.06		0850	.2187	.1215
				0708	.01	.07		0915	.1003	.1633
				0718	.24	.11		0925	.1248	.1841
				0728	1.08	.29		0935	.1003	.2008
				0738	2.88	.77		0945	.0747	.2133
				0748	3.96	1.43		1000	.0420	.2238
				0753	2.76	1.66		1015	.0216	.2292
				0758	1.20	1.76		1030	.0194	.2340
				0803	2.04	1.93		1045	.0112	.2368
				0815	.50	2.03		1100	.0119	.2398
				0828	.46	2.13		1115	.0088	.2420
				0848	.18	2.19		1145	.0036	.2438
				0918	.02	2.20		1345	.0016	.2470
				0928	.18	2.23		1445	T	.2470
				0958	.06	2.26		1545	.0000	.2470
	1018	.00	2.26							
	1023	.24	2.28							
	1028	.96	2.36							
	1033	.36	2.39							
	1038	.24	2.41							
	1118	.06	2.45							
	RC	12	3.94							
	2 RC	AVG. <u>2/</u>	2.46							
			Event of May 17-18, 1965							
4-25	.04	.0000		RC	13		5-17	2235	.0000	.0000
4-26	.81	.0016	5-17	2225	.00	.00		2250	.0030	.0008
5-10	.74	.0041		2232	.77	.09		2305	.0133	.0041
5-14	.10	.0000		2237	1.32	.20		2320	.0197	.0090
5-15	.05	.0000		2242	2.64	.42		2335	.0244	.0151
5-16	2.40	.2470		2247	3.24	.69		2350	.0326	.0233
				2252	.84	.76		2400	.1057	.0409
Watershed conditions: Paved roads - 1.5% of the area; rangeland - 98.5%. Poor range condition - 56% of the area; fair condition - 44%.				2302	.60	.86	5-18	0020	.1260	.0829
				2307	1.20	.96		0035	.1115	.0689
				2312	.48	1.00		0050	.0829	.0906
				2400	.19	1.15		0105	.0614	.1059
				0032	.04	1.17		0120	.0523	.1190
				0102	.08	1.21		0135	.0355	.1279
				<u>3/</u> 0202	.02	1.23		0150	.0290	.1351
				RC	12	1.86		0205	.0256	.1415
								0220	.0198	.1465
								0235	.0136	.1499
								0250	.0129	.1531
								0305	.0103	.1556
								0335	.0082	.1597
								0405	.0061	.1628
								0435	.0040	.1648
					0735	.0018	.1703			
					0805	T	.1703			
					0905	.0000	.1703			

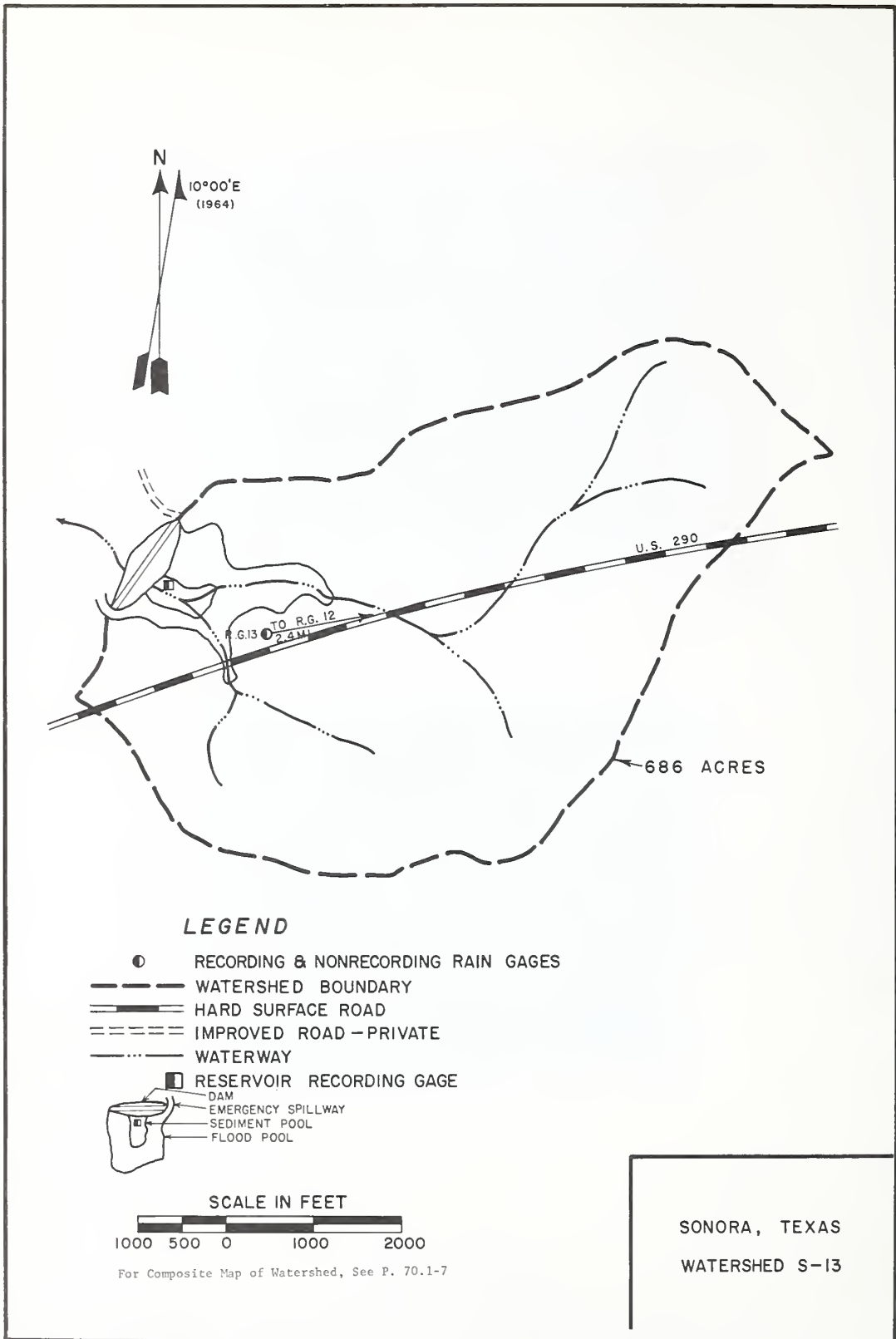
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 691.71. 1/ RUNOFF RATE SHOWN IS THE AVERAGE RATE IN IN/HR FOR THE PRECEDING TIME INTERVAL DETERMINED FROM THE ACCUMULATION DATA AS COMPUTED FROM THE RESERVOIR STAGE-VOLUME CURVE AND SPILLWAY FLOW RATING. 2/ THIESSEN WEIGHTED RAINFALL USING RAIN GAGES 12 AND 13. 3/ RAINFALL BETWEEN 1700 AND 2000 ON 5-18 AMOUNTED TO 0.04 INCH (THIESSEN WEIGHTED) BUT DID NOT CAUSE RUNOFF.



SONORA, TEXAS WATERSHED S-13



SONORA, TEXAS WATERSHED S-13



LEGEND

- RECORDING & NONRECORDING RAIN GAGES
- WATERSHED BOUNDARY
- == HARD SURFACE ROAD
- == IMPROVED ROAD - PRIVATE
- WATERWAY
- RESERVOIR RECORDING GAGE
- DAM
- EMERGENCY SPILLWAY
- SEDIMENT POOL
- FLOOD POOL



For Composite Map of Watershed, See P. 70.1-7

SONORA, TEXAS
WATERSHED S-13

SONORA, TEXAS WATERSHED W-1

LOCATION: Edwards County, Tex.: 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 10.2 acres

<u>SLOPES</u> :	Slope—Percent	0-3	3-8
	Percent of area	0	100

SOILS: Residual, derived from highly calcareous limestones.

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	
Tarrant stony clay	100	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid

<u>EROSION</u> :	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY</u> :	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone overlying hard limestone, jointed and cavernous, thickness 30 to 60 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 750 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. Fair level of management; stocking rate 30-35 animal units per section.

GENERALLY REPRESENTS: Low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-1		70.07						
						AREA — 10.2 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1963	P ^{1/} Q										.71 .00	2.13 .00	.57 .00	3.41 .00		
1964	P ^{1/} Q	3.49 .68	1.51 .00	.72 .00	1.97 .00	1.64 .00	.77 .00	3.29 .06	2.52 .03	7.95 1.57E	1.53 .00	.55 .00	.74 .00	26.68 2.34E		
1965	P ^{1/} Q	.66 .00	2.56 .00	T .00	.45 .00	7.47 .97	2.02 .00	1.57 .00	.63 .00	1.38 .00	1.38 .00	.23 .00	1.00 .00	19.35 .97		
1966	P ^{1/} Q	1.18 .00	1.42 .00	1.20 .00	6.78 1.56	1.66 .01	2.96 .01	2.08 .00	6.01 .23	4.16 .00	1.65 .00	.12 .00	.00 .00	29.22 1.81		
1967	P ^{1/} Q	.08 .00	.64 .00	.05 .00	1.39 .00	1.84 .00	.28 .00	2.97 .01	1.29 .00	3.91 .00	1.24 .00	2.75 .00	1.05 .00	17.49 .01		
STA AVG ^{2/} (64-67) Q		1.35 .17	1.53 .00	.49 .00	2.65 .39	3.15 .24	1.51 T	2.48 .02	2.61 .06	4.35 .39	1.45 .00	.91 .00	.70 .00	23.18 1.27		
MEAN P ^{2/} 45 YR		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48		
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
1964	9-24	.68	9-24	.45E	9-24	.60E	9-24	.76E	9-24	.82E	9-24	1.02E	9-23	1.03E	9-21	1.57E
1965	5-31	.40	5-31	.30	5-31	.41	5-31	.78	5-31	.81	5-31	.81	5-31	.81	5-28	.94
1966	4-30	1.68	4-30	.99	4-30	1.18	4-30	1.28	4-30	1.30	4-30	1.30	4-29	1.49	4-24	1.52
1967	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01	7-20	.01
MAXIMUMS FOR PERIOD OF RECORD																
1964 To 1967	4-30 1966	1.68	4-30 1966	.99	4-30 1966	1.18	4-30 1966	1.28	4-30 1966	1.30	4-30 1966	1.30	4-29 1966	1.49	9-21 1964	1.57E
NOTES: Watershed conditions: 100 percent rangeland; fair level of management; stocking rate, 30-35 animal units per section. 1/ Precipitation data from rain gage 15. 2/ Precipitation and runoff records began October 1963; part-year amounts not included in station averages. 3/ Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14. Watershed is on substation property.																
1965 SELECTED RUNOFF EVENTS						SONORA, TEXAS		WATERSHED W-1		70.07						
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 28, 1965																
	RG 15			RG	15		5-28	1152	.0000	.0000						
5-10	.46	.0000	5-28	1117	.00	.00		1156	.0004	T						
5-12	.20	.0000		1120	8.40	.42		1200	.0017	.0001						
5-13	.06	.0000		1128	3.22	.85		1204	.0036	.0003						
5-14	.05	.0000		1132	.45	.88		1208	.0072	.0006						
5-16	2.34	.0248		1140	.08	.89		1211	.0143	.0011						
5-17	.33	.0000		1155	.16	.93		1213	.0540	.0022						
5-18	.15	.0000		1200	2.40	1.13		1215	.0921	.0047						
				1210	2.34	1.52		1218	.1556	.0110						
				1220	1.50	1.77		1220	.1969	.0169						
				1230	.30	1.82		1222	.2455	.0243						
				1304	.11	1.88		1224	.2790	.0330						
Watershed conditions: Rangeland - 100%. Range condition, fair.																
								1226	.2876	.0425						
								1228	.2821	.0520						
								1232	.2390	.0693						
								1236	.1956	.0838						
								1240	.1482	.0952						
								1244	.1122	.1037						
								1248	.0843	.1102						
								1252	.0614	.1149						
								1304	.0243	.1235						
								1312	.0150	.1261						
								1320	.0090	.1277						
								1334	.0050	.1292						
								1354	.0018	.1304						
								1404	.0008	.1306						
								1414	.0004	.1307						
								1434	.0003	.1308						
								1504	.0001	.1309						
								1540	.0000	.1310						
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10.285.																

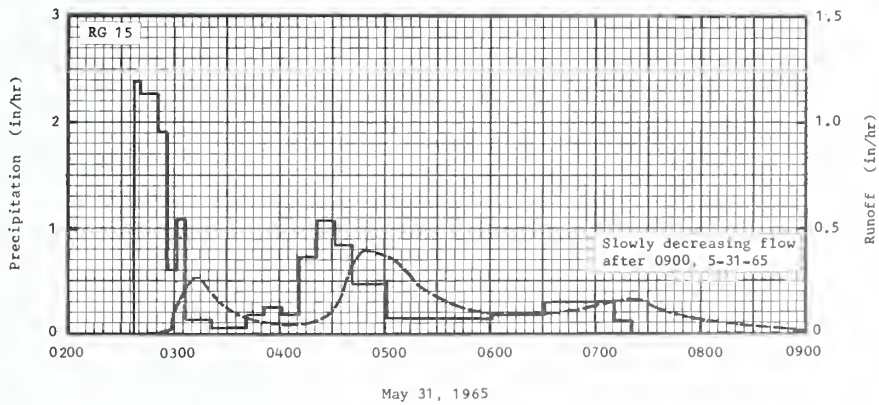
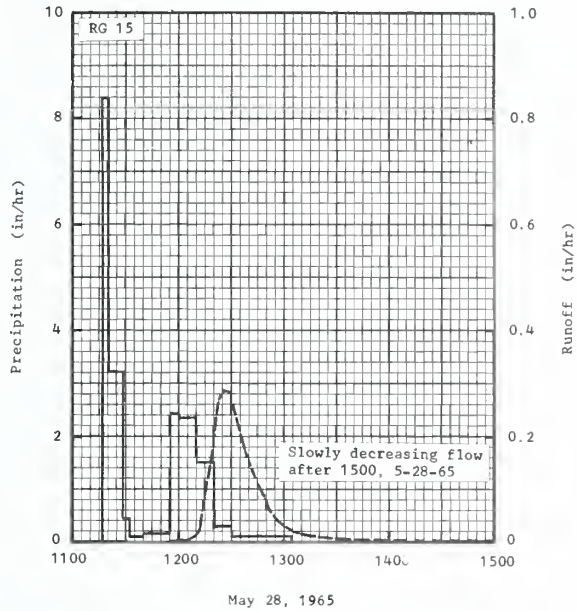
1965-66 SELECTED RUNOFF EVENTS			SONORA, TEXAS			WATERSHED W-1			70.07	
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-OAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-OAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-OAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of May 31, 1965										
	RG 15			RG	15		5-31	0242	.0000	.0000
5-10	.46	.0000	5-31	0237	.00	.00		0246	.0006	.0000 T
5-12	.20	.0000		0241	2.40	.16		0249	.0047	.0002
5-13	.06	.0000		0251	2.28	.54		0251	.0058	.0003
5-14	.05	.0000		0256	1.92	.70		0253	.0058	.0005
5-16	2.34	.0248		0301	.60	.75		0255	.0090	.0008
5-17	.33	.0000		0306	1.08	.84		0258	.0207	.0014
5-18	.15	.0000		0321	.12	.87		0300	.0863	.0032
5-28	1.88	.1310		0341	.06	.89		0303	.1361	.0091
				0351	.18	.92		0307	.2114	.0212
				0401	.24	.96		0311	.2550	.0368
				0411	.18	.99		0313	.2646	.0454
				0421	.72	1.11		0315	.2572	.0541
				0431	1.08	1.29		0319	.2188	.0701
				0441	.84	1.43		0323	.1786	.0834
				0501	.48	1.59		0327	.1406	.0940
				0601	.15	1.74		0333	.1063	.1064
				0631	.18	1.83		0339	.0800	.1156
				0711	.30	2.03		0347	.0594	.1247
				0721	.12	2.05		0403	.0445	.1382
								0411	.0445	.1441
								0415	.0464	.1471
								0421	.0573	.1523
								0427	.0851	.1594
								0431	.1253	.1662
								0437	.2292	.1833
								0441	.3164	.2021
								0445	.3674	.2250
								0449	.4007	.2509
								0453	.3861	.2772
								0507	.3431	.3621
								0513	.2931	.3938
								0519	.2369	.4204
								0525	.2034	.4425
								0535	.1550	.4721
								0551	.1145	.5074
								0603	.0976	.5286
								0607	.0976	.5351
								0627	.1019	.5684
								0639	.1019	.5888
								0651	.1182	.6104
								0705	.1361	.6405
								0715	.1617	.6656
								0719	.1670	.6765
								0723	.1635	.6875
								0731	.1351	.7073
								0739	.1086	.7235
								0747	.0867	.7365
								0755	.0690	.7469
								0817	.0406	.7663
								0857	.0207	.7858
								0947	.0101	.7979
								1037	.0057	.8042
								1137	.0027	.8084
								1237	.0008	.8100
								1307	.0003	.8107
								1507	.0000	.8109
Event of April 30, 1966										
	RG 15			RG	15		4-30	1154	.0000	.0000
4-13	1.23	.0441	4-30	1110	.00	.00		1156	.0022	.0000 T
4-17	.40	.0000		1120	.18	.03		1200	.0033	.0002
4-22	.06	.0000		1126	.20	.05		1214	.0033	.0010
4-23	.58	.0000		1130	.60	.09		1224	.0041	.0016
Watershed conditions: Rangeland - 100%. Range condition, fair.										
Continued on next page										

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10.285.

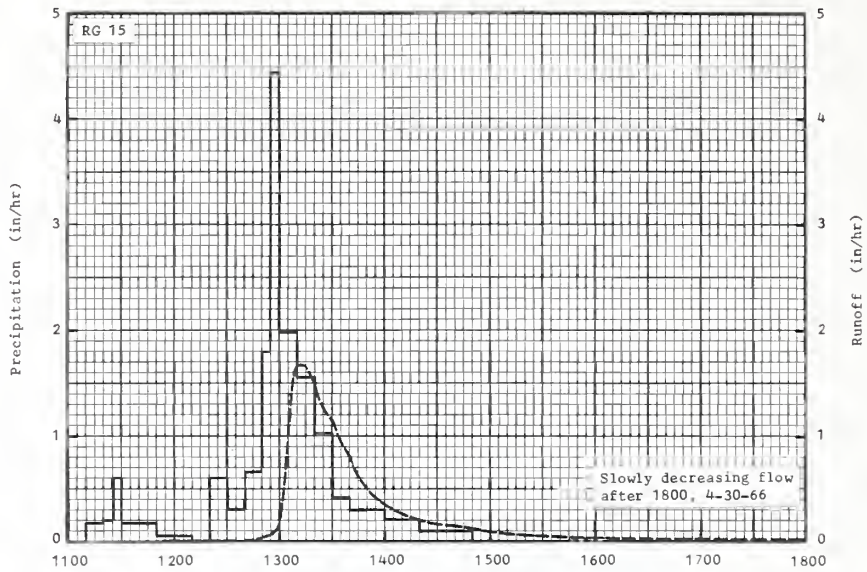
1966			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-1			70.07
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of April 30, 1966 - Continued												
4-24	1.07	.0099	4-30	1150	.18	.15	4-30	1238	.0082	.0029		
4-25	.09	.0183		1210	.04	.17		1242	.0152	.0037		
4-28	.40	.0000		1220	.00	.17		1248	.0252	.0057		
4-29	.95	.1849		1230	.60	.27		1254	.0485	.0092		
				1240	.30	.32		1258	.0876	.0136		
				1250	.66	.43		1300	.1488	.0174		
				1255	1.80	.58		1303	.5010	.0317		
				1300	4.44	.95		1306	1.2820	.0792		
				1310	1.98	1.28		1308	1.5581	.1277		
				1320	1.56	1.54		1310	1.6674	.1815		
				1330	1.02	1.71		1312	1.6778	.2372		
				1340	.42	1.78		1314	1.6571	.2928		
				1400	.30	1.88		1318	1.5541	.3999		
				1420	.21	1.95		1322	1.3902	.4980		
				1450	.10	2.00		1326	1.2499	.5861		
								1330	1.1360	.6656		
								1334	.9695	.7362		
								1340	.8099	.8256		
								1346	.6057	.8961		
								1352	.4767	.9506		
								1400	.3474	1.0051		
								1408	.2868	1.0471		
								1420	.2243	1.0986		
								1432	.1641	1.1371		
								1444	.1381	1.1671		
								1459	.1006	1.1966		
								1514	.0671	1.2171		
								1534	.0448	1.2353		
								1604	.0282	1.2535		
								1704	.0132	1.2729		
								1804	.0072	1.2827		
								2000	.0035	1.2920		
								2400	1.0006	1.2987		
Event of August 11, 1966												
	RG 15			RG	15		8-11	0629	.0000	.0000		
7-23	.10	.0000	8-11	0614	.00	.00		0631	.0007	.0004		
7-25	.07	.0000		0620	.80	.08		0637	.0058	.0006		
7-31	.29	.0000		0625	.48	.12		0639	.0058	.0010		
8-02	.07	.0000		0630	5.64	.59		0642	.0139	.0020		
8-03	1.20	.0000		0640	4.14	1.28		0645	.0323	.0055		
8-06	.32	.0000		0645	4.44	1.65		0648	.1292	.0113		
				0650	3.36	1.93		0650	.2067	.0233		
				0700	1.86	2.24		0653	.2557	.0319		
				0705	1.32	2.35		0655	.2609	.0585		
				0710	.72	2.41		0701	.2722	.0766		
				0750	.26	2.58		0705	.2684	.0938		
				0810	.00	2.58		0709	.2462	.1087		
				0840	.12	2.64		0713	.1975	.1255		
				0900	.42	2.78		0719	.1366	.1367		
				0930	.22	2.89		0725	.0921	.1464		
				1030	.10	2.99		0733	.0587	.1558		
				1050	.06	3.01		0745	.0374	.1604		
				1103	.23	3.06		0754	.0250	.1648		
								0809	.0124	.1679		
								0829	.0069	.1690		
								0839	.0063	.1701		
								0849	.0063	.1713		
								0859	.0099	.1738		
								0909	.0197	.1781		
								0919	.0294	.1833		
								0929	.0333	.1890		
								0939	.0351	.1919		
								0944	.0351	.1948		
								0949	.0333	.2075		
								1019	.0213	.2188		
								1059	.0120	.2221		
								1119	.0079	.2242		
								1139	.0046	.2265		
								1219	.0020	.2269		
								1239	.0006	.2273		
								1359	.0001	.2273		
								1450	.0000	.2273		

Watershed conditions:
Rangeland - 100%. Range
condition, fair.

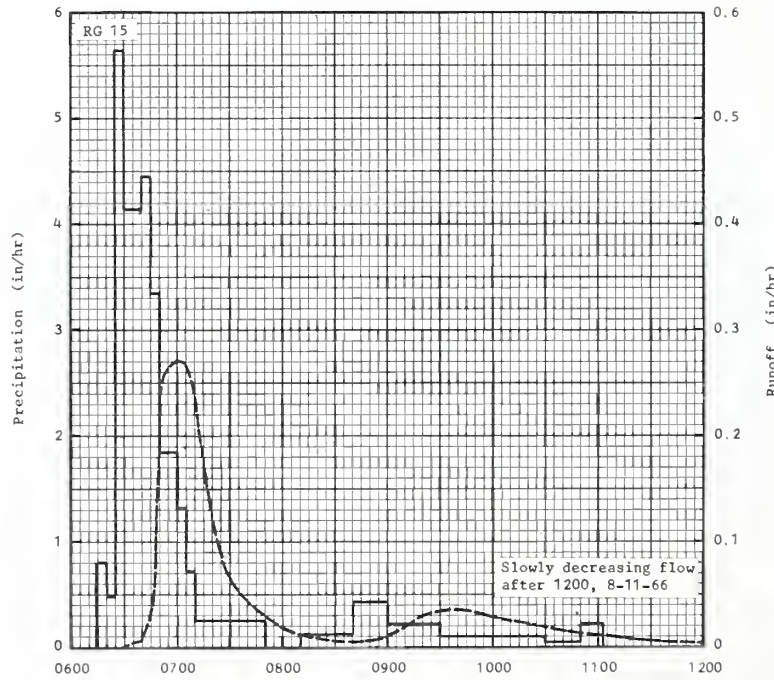
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 10.285.
1/ BEGINNING OF NEXT EVENT.



SONORA, TEXAS WATERSHED W-1

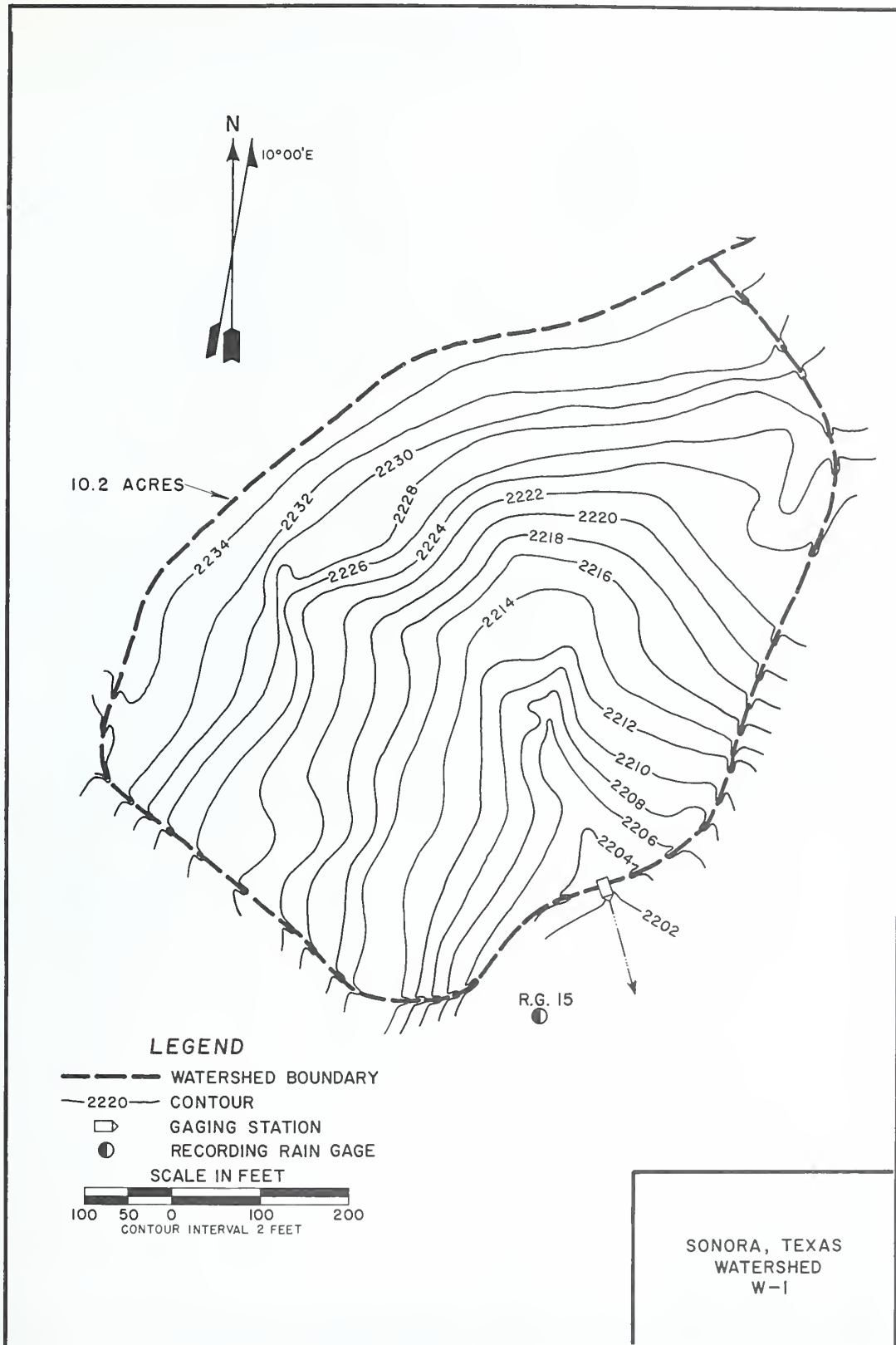


April 30, 1966



August 11, 1966

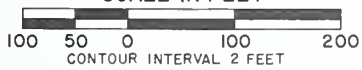
SONORA, TEXAS WATERSHED W-1



LEGEND

- WATERSHED BOUNDARY
- 2220 — CONTOUR
- ▭ GAGING STATION
- RECORDING RAIN GAGE

SCALE IN FEET



SONORA, TEXAS
WATERSHED
W-1

SONORA, TEXAS WATERSHED W-2

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 8.6 acres

<u>SLOPES:</u>	Slope—Percent	0-3	3-8
	Percent of area	0	100

SOILS: Residual, derived from highly calcareous limestones.

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	
Tarrant stony clay	100	5	Strong medium to fine granular	Moderate	-----	-----	5'	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone overlying hard limestone, jointed and cavernous, thickness 50 to 80 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 550 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume; 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. Low good level of management; stocking rate, 32 animal units per section.

GENERALLY REPRESENTS: Low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS							WATERSHED W-2		70.08
						AREA — 8.6 ACRES									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
YEAR															
1965 P ¹ / _Q	.57 .00	2.20 .00	T .00	.39 .00	6.48 1.00	1.80 T	1.90 .00	.58 .00	1.35 .00	1.18 .00	.28 .00	.90 .00	17.63 1.00		
1966 P ¹ / _Q	1.14 .00	1.25 .00	1.00 .00	6.41 2.15	1.49 .02	2.74 T	1.85 .00	5.74 .22	4.02 .00	1.47 .00	.12 .00	.00 .00	27.23 2.39		
1967 P ¹ / _Q	.08 .00	.60 .00	.06 .00	1.25 .00	1.60 .00	.25 .00	3.03 .00	1.17 .00	3.93 .00	1.23 .00	2.79 .00	1.03 .00	17.02 .00		
STA AVG ² / _P	.60	1.35	.35	2.68	3.19	1.60	2.26	2.50	3.10	1.29	1.06	.64	20.62		
(65-67) Q	.00	.00	.00	.72	.34	T	.00	.07	.00	.00	.00	.00	1.13		
MEAN P ² / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48		

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
1965	5-31	.36	5-31	.27	5-31	.44	5-31	.90	5-31	.97	5-31	.97	5-31	.97	5-28	.99
1966	4-30	1.55	4-30	1.25	4-30	1.71	4-30	1.96	4-30	2.00	4-30	2.00	4-29	2.14	4-24	2.16
1967		.00		.00		.00		.00		.00		.00		.00		.00

MAXIMUMS FOR PERIOD OF RECORD

1965 To 1967	4-30 1966	1.55	4-30 1966	1.25	4-30 1966	1.71	4-30 1966	1.96	4-30 1966	2.00	4-30 1966	2.00	4-29 1966	2.14	4-24 1966	2.16
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NOTES: Watershed conditions: 100 percent rangeland; low good level of management; stocking rate, 32 animal units per section. ¹/ Precipitation data from rain gage 16. ²/ Precipitation and runoff records began January 1965. ³/ Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14. Watershed is on substation property.

1965 SELECTED RUNOFF EVENTS

SONORA, TEXAS

WATERSHED W-2

70.08

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 May 31 - June 1, 1965							
	RG 16			RG	.16		5-31	0242	.0000	.0000
5-10	.34	.0000	5-31	0233	.00	.00		0249	.0050	.0001
5-12	.22	.0000		0238	2.28	.19		0252	.0195	.0007
5-13	.03	.0000		0248	1.98	.52		0300	.0902	.0078
5-14	.05	.0000		0253	2.52	.73		0306	.0172	.0475
5-16	1.97	.0152		0258	.60	.78		0312	.0265	.0568
5-17	.33	.0000		0305	.69	.86		0318	.0848	.0355
5-18	.11	.0000		0328	.05	.88		0324	.0668	.0430
5-28	1.46	.0151		0338	.24	.92		0330	.0517	.0490
				0358	.15	.97		0336	.0366	.0533
				0408	.18	1.00		0346	.0299	.0588
				0423	.52	1.13		0400	.0275	.0655
				0428	1.92	1.29		0412	.0302	.0712
				0438	.78	1.42		0416	.0360	.0734
				0448	.30	1.47		0420	.0521	.0763
				0458	.48	1.55		0424	.0745	.0805
				0558	.12	1.67		0428	.1058	.0864
				0628	.20	1.77		0432	.1715	.0955
				0658	.24	1.89		0436	.2088	.1083
				0708	.36	1.95		0438	.2213	.1155
				0718	.12	1.97		0440	.3400	.1248
								0442	.3607	.1365
								0445	.3645	.1546
								0450	.3345	.1837
								0500	.3191	.2373
								0512	.2506	.2941
								0520	.2198	.3255
								0540	.1727	.3905
								0545	.1625	.4045
								0610	.1721	.4733
								0640	.1788	.5616
								0700	.2251	.6314
								0710	.2684	.6728
								0720	.2490	.7164
								0730	.2052	.7544

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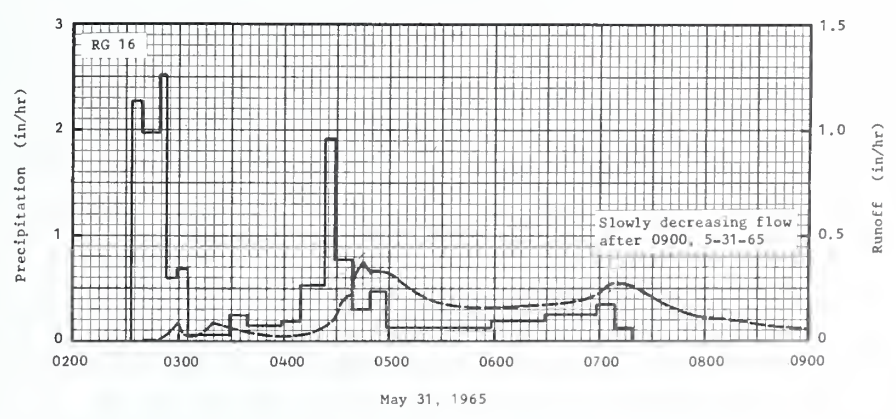
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.672.

1965-66			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-2		70.08	
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 May 31 - June 1, 1965 - Continued												
							5-31	0742	.1555	.7903		
								0800	.1162	.8314		
								0830	.0753	.8782		
								0900	.0521	.9095		
								0930	.0337	.9308		
								1000	.0231	.9447		
								1130	.0051	.9629		
								1300	.0006	.9665		
								2400	.0002	.9706		
							6-01	0930	.0000	.9714		
Event of April 30 - May 2, 1966												
	RG 16			RG	16		4-30	1137	.0000	.0000		
4-13	1.01	.0051	4-30	1110	.00	.00		1143	.0037	.0002		
4-17	.40	.0000		1126	.19	.05		1151	.0107	.0013		
4-22	.05	.0000		1130	.75	.10		1157	.0111	.0024		
4-23	.49	.0000		1150	.18	.16		1207	.0104	.0042		
4-24	.94	.0045		1210	.09	.19		1223	.0077	.0066		
4-25	.07	.0046		1220	.00	.19		1227	.0077	.0071		
4-28	.41	.0000		1230	.54	.28		1233	.0128	.0081		
4-29	.99	.1297		1240	.36	.34		1241	.0260	.0106		
				1250	.60	.44		1251	.0539	.0170		
				1255	1.44	.58		1257	.1019	.0241		
				1300	5.04	1.00		1300	.2059	.0317		
				1310	2.10	1.35		1303	.6038	.0496		
				1320	1.44	1.59		1305	1.1095	.0787		
				1330	.96	1.75		1307	1.3171	.1191		
				1340	.48	1.83		1309	1.4280	.1648		
				1400	.24	1.92		1311	1.5307	.2141		
				1420	.21	1.99		1313	1.5543	.2655		
				1450	.12	2.05		1315	1.5264	.3169		
								1317	1.4778	.3670		
								1319	1.4403	.4156		
								1321	1.4799	.4643		
								1325	1.4799	.5629		
								1329	1.3851	.6584		
								1333	1.3669	.7502		
								1337	1.3790	.8417		
								1339	1.3429	.8871		
								1341	1.2663	.9305		
								1345	1.1680	1.0113		
								1351	1.0127	1.1208		
								1357	.8612	1.2156		
								1409	.6941	1.3710		
								1422	.5545	1.5076		
								1437	.3888	1.6237		
								1502	.2251	1.7493		
								1522	.1491	1.8105		
								1542	.1038	1.8524		
								1607	.0656	1.8871		
								1757	.0197	1.9577		
								2400	.0041	2.0009		
							5-01	0600	.0005	2.0133		
								2400	.0001	2.0166		
							5-02	1600	.0000	2.0172		
Event of August 11, 1966												
	RG 16			RG	16		8-11	0637	.0000	.0000		
7-23	.15	.0000	8-11	0616	.00	.00		0641	.0215	.0006		
7-25	.10	.0000		0620	.90	.06		0645	.0800	.0037		
7-31	.19	.0000		0625	.24	.08		0647	.1014	.0067		
8-02	.11	.0000		0630	4.44	.45		0649	.1188	.0104		
8-03	1.09	.0000		0640	3.96	1.11		0651	.1107	.0142		
8-06	.50	.0000		0645	3.60	1.41		0653	1.009	.0177		
				0650	2.64	1.63		0655	.0962	.0210		
				0655	1.56	1.76		0657	.0990	.0243		
				0700	1.92	1.92		0659	.1072	.0277		
<p>Watershed conditions: Rangeland - 100%. Range condition, low good.</p>												
Continued on next page												

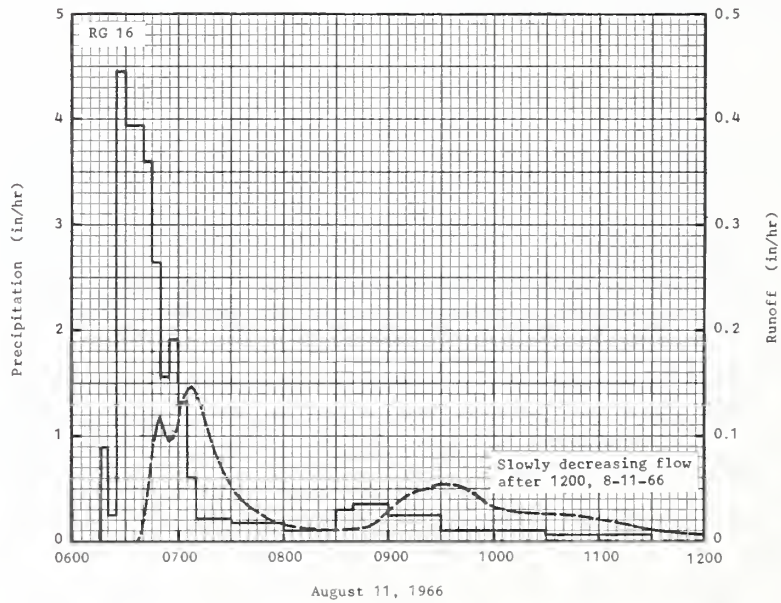
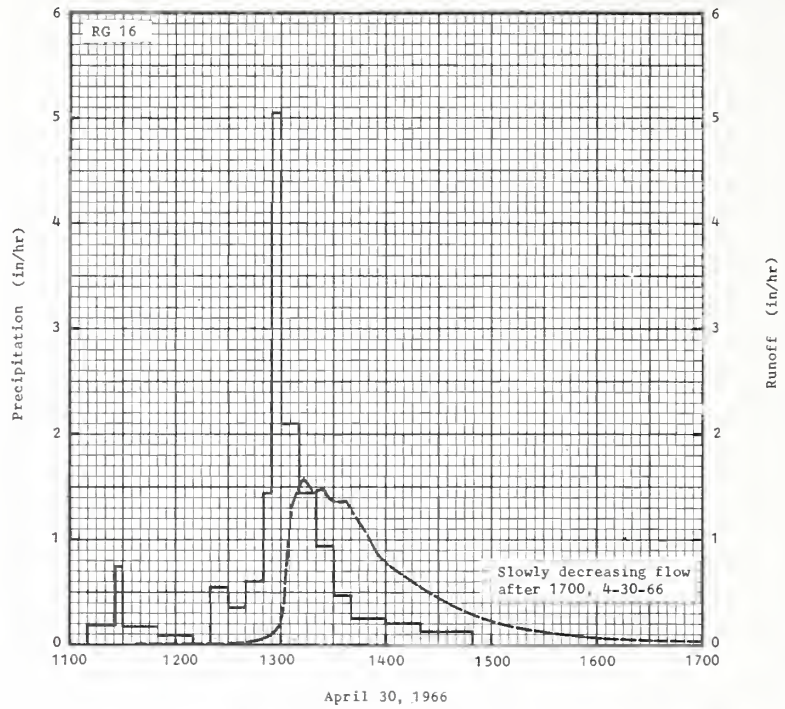
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.672.

1966 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED W-2 70.08			
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)
Event of August 11, 1966 - Continued										
			8-11	0705	1.32	2.03	8-11	0701	.1219	.0315
				0710	.60	2.08		0703	.1358	.0358
				0730	.21	2.15		0707	.1452	.0452
				0800	.18	2.24		0711	.1379	.0546
				0830	.10	2.29		0713	.1250	.0590
				0840	.30	2.34		0717	.1014	.0665
				0900	.36	2.46		0721	.0822	.0726
				0930	.24	2.58		0725	.0696	.0777
				1030	.10	2.68		0729	.0542	.0818
				1130	.06	2.74		0737	.0374	.0879
								0745	.0291	.0924
								0753	.0217	.0958
								0809	.0132	.1002
								0819	.0106	.1022
								0829	.0099	.1039
								0839	.0106	.1056
								0853	.0182	.1089
								0857	.0238	.1102
								0903	.0334	.1131
								0907	.0395	.1155
								0911	.0437	.1183
								0919	.0494	.1245
								0929	.0527	.1330
								0939	.0517	.1417
								0944	.0501	.1460
								0949	.0440	.1499
								0959	.0334	.1562
								1019	.0283	.1663
								1049	.0217	.1790
								1119	.0147	.1880
								1149	.0088	.1937
								1259	.0031	.2003
								1409	.0007	.2027
								1900	.0000	.2043

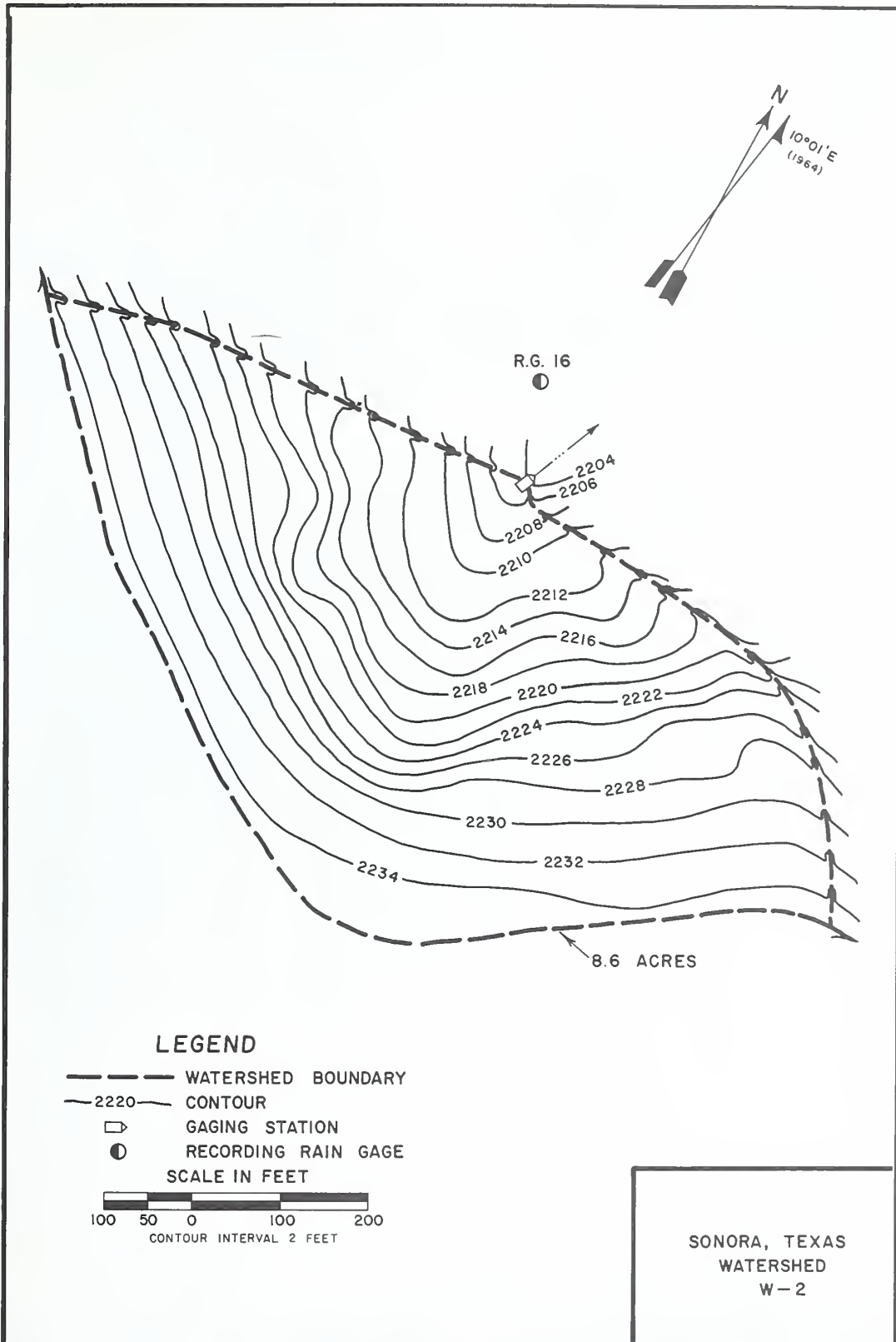
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 8.672.



SONORA, TEXAS WATERSHED W-2



SONORA, TEXAS WATERSHED W-2



SONORA, TEXAS WATERSHED W-3

LOCATION: Edwards County, Tex.: 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 6.7 acres

<u>SLOPES:</u>	Slope—Percent	0-3
	Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

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	
Tarrant stony clay	100	8	Strong medium to fine granular	Moderate	Strong fine granular	Moderately slow	18	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 10 to 25 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 200 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type H-4.5 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. High fair level of management; stocking rate, 32 animal units per section.

GENERALLY REPRESENTS: Shallow upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-3		70.09				
						AREA — 6.7 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965	P ¹ / _Q	.54	2.55	T	.28	7.32	2.35	.65	.29	1.29	1.83	.36	1.08	18.54
	Q	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	T	.05
1966	P ¹ / _Q	1.13	1.12	1.28	6.70	1.72	2.54	1.30	6.27	2.86	1.55	T	.00	26.47
	Q	.00	.00	.00	1.26	.00	.00	.00	.00	.00	.00	.00	.00	1.26
1967	P ¹ / _Q	.08	.62	.07	1.66	2.02	.14	3.25	2.21	5.01	1.34	2.58	.98	19.96
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
STA AVG ² / _P		.58	1.43	.45	2.88	3.69	1.68	1.73	2.92	3.05	1.57	.98	.69	21.65
(65-67) Q		.00	.00	.00	.42	.02	.00	.00	.00	.00	.00	.00	T	.44
MEAN P ³ / _{45 YR}		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48

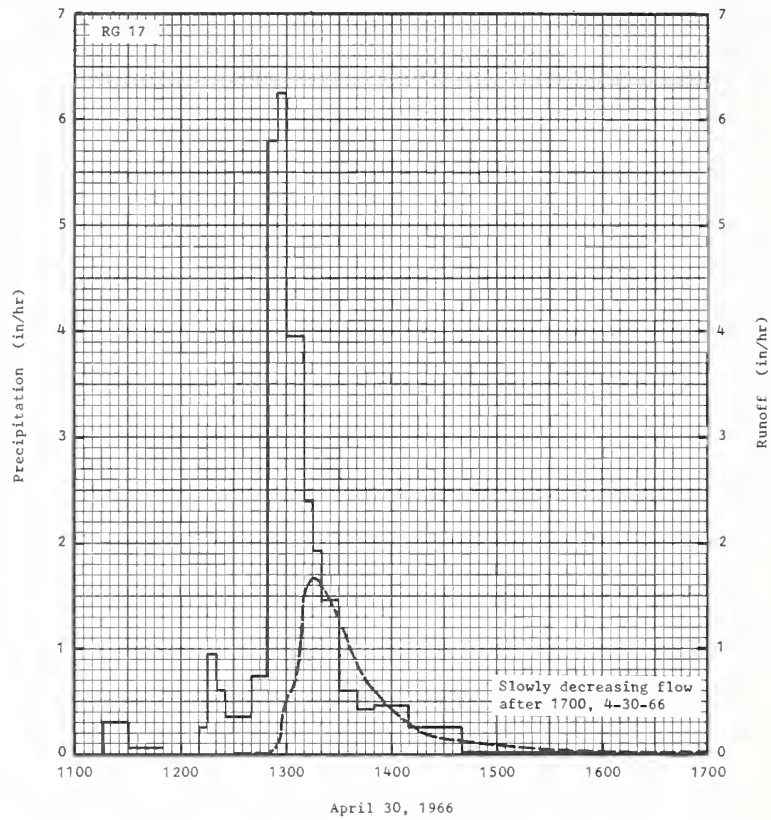
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1965	5-31	.02	5-31	.02	5-31	.02	5-31	.04	5-31	.04	5-31	.04	5-31	.04	5-28	.04
1966	4-30	1.67	4-30	1.02	4-30	1.22	4-30	1.26	4-30	1.26	4-30	1.26	4-30	1.26	4-30	1.26
1967		.00		.00		.00		.00		.00		.00		.00		.00

MAXIMUMS FOR PERIOD OF RECORD																
1965 To	4-30	1.67	4-30	1.02	4-30	1.22	4-30	1.26	4-30	1.26	4-30	1.26	4-30	1.26	4-30	1.26
1967	1966		1966		1966		1966		1966		1966		1966		1966	

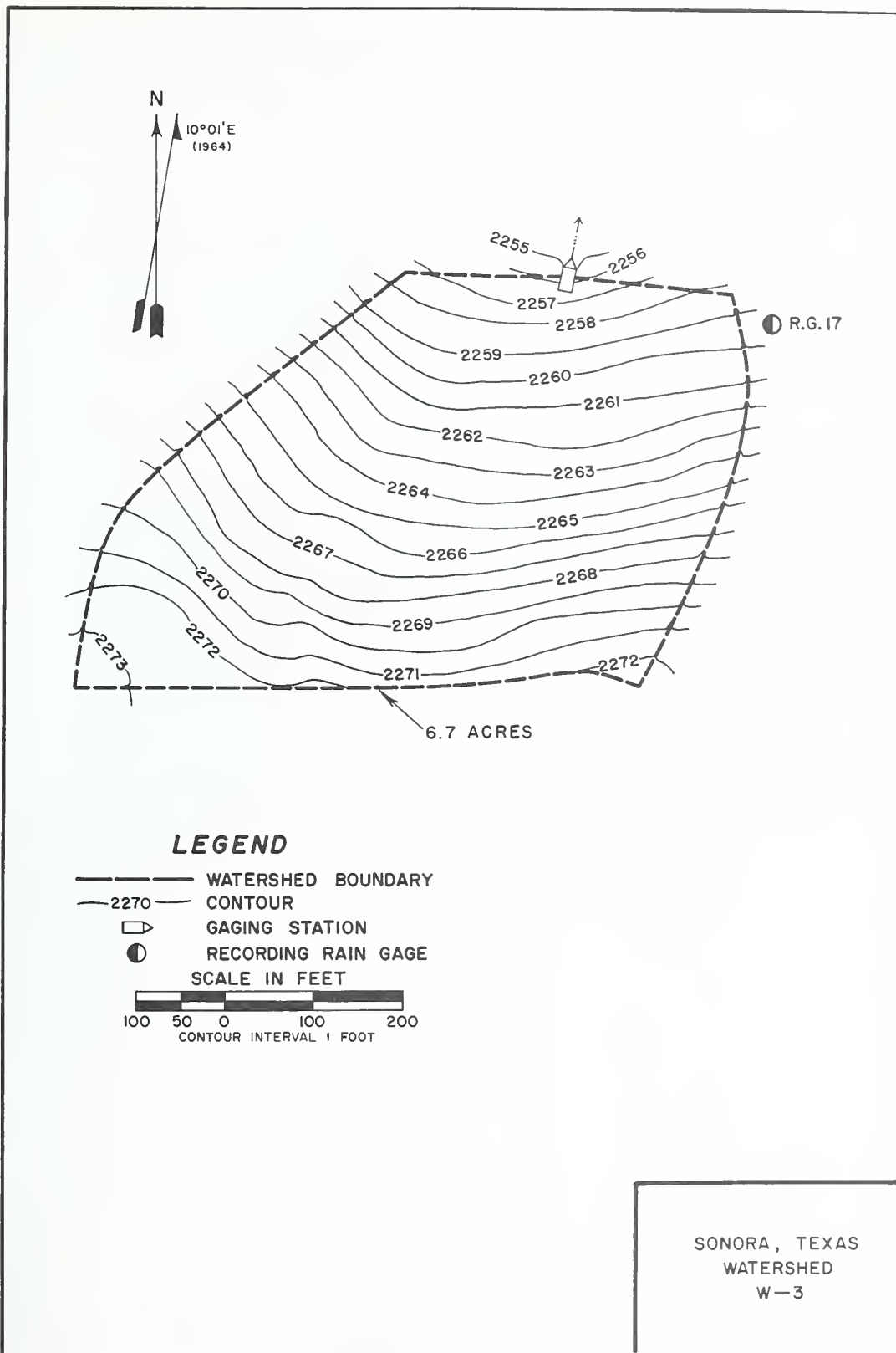
NOTES: Watershed conditions: 100 percent rangeland; range in fair condition. ¹/_Q Precipitation data from rain gage 17. ²/_P Precipitation and runoff records began January 1965. ³/_P Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.

1966 SELECTED RUNOFF EVENT			SONORA, TEXAS				WATERSHED W-3		70.09		
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 (in/hr)	ACC. (inches)	
Event of April 30, 1966											
	RG 17			RG	17		4-30	1230	.0000	.0000	
4-13	.24	.0000	4-30	1116	.00	.00		1244	.0007	T	
4-17	.24	.0000		1130	.30	.07		1248	.0053	.0002	
4-23	.32	.0000		1150	.06	.09		1251	.0154	.0007	
4-24	1.15	.0000		1210	.00	.09		1254	.0506	.0020	
				1215	.24	.11		1257	.2258	.0105	
4-25	.02	.0000		1220	.96	.19		1300	.4964	.0287	
4-28	.35	.0000		1225	.60	.24		1304	.6595	.0664	
4-29	.99	.0000		1240	.36	.33		1307	.9245	.1063	
				1249	.73	.44		1310	1.5027	.1644	
				1255	5.80	1.02		1312	1.5656	.2155	
				1300	6.24	1.54		1314	1.6395	.2689	
				1310	3.96	2.20		1316	1.6662	.3240	
				1315	2.40	2.40		1318	1.6492	.3793	
				1320	1.92	2.56		1320	1.5940	.4333	
				1330	1.44	2.80		1324	1.4775	.5357	
				1340	.60	2.90		1328	1.3157	.6288	
				1350	.42	2.97		1332	1.1739	.7118	
				1410	.45	3.12		1336	1.0141	.7847	
				1440	.26	3.25		1340	.8529	.8470	
				1600	.01	3.26		1348	.6261	.9449	
								1356	.4487	1.0152	
								1404	.3668	1.0696	
								1410	.2736	1.1012	
								1416	.2079	1.1252	
								1425	.1748	1.1542	
								1435	.1443	1.1809	
								1445	.1126	1.2025	
								1455	.0777	1.2184	
								1510	.0502	1.2343	
								1525	.0289	1.2438	
								1540	.0162	1.2494	
								1600	.0098	1.2537	
								1630	.0042	1.2569	
								1700	.0022	1.2585	
								1730	.0005	1.2592	
								1800	.0001	1.2593	
								1830	.0000	1.2594	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.756.



SONORA, TEXAS WATERSHED W-3



LEGEND

- WATERSHED BOUNDARY
- 2270— CONTOUR
- ▭▷ GAGING STATION
- RECORDING RAIN GAGE



SONORA, TEXAS
WATERSHED
W-3

SONORA, TEXAS WATERSHED W-4

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 4.5 acres

<u>SLOPES</u> :	Slope—Percent	0-3
	Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

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	
Valera clay	100	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium

<u>EROSION</u> :	Erosion class	1
	Percent of area	100

<u>LAND CAPABILITY</u> :	Class	I	II	III	IV	V	VI
	Percent of area	0	0	100	0	0	0

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 4 to 16 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 150 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. Low good level of management; stocking rate, 16 animal units per section.

GENERALLY REPRESENTS: Deep upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-4					70.10	
						AREA -- 4.5 ACRES								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1966	P ^{1/}	1.13	1.74	1.12	7.38	2.00	3.02	1.70	5.94	3.39	1.78	T	.00	28.60
	Q	.00	.00	.00	.25	.00	.00	.00	.00	.00	.00	.00	.00	.25
1967	P ^{1/}	.08	.65	.09	1.59	2.27	.24	3.60	2.07	5.33	1.49	2.45	1.07	20.93
	Q	.00	.00	.00	.00	.00	.00	.00	.01	.00	.00	.00	.00	.01
	STA AVG ^{2/} P	.60	.90	.60	4.48	2.14	1.63	2.65	4.00	4.36	1.64	1.22	.54	24.76
	(66-67) Q	.00	.00	.00	.12	.00	.00	.00	T	.00	.00	.00	.00	.12
	MEAN P ^{3/}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48
	45 YR													

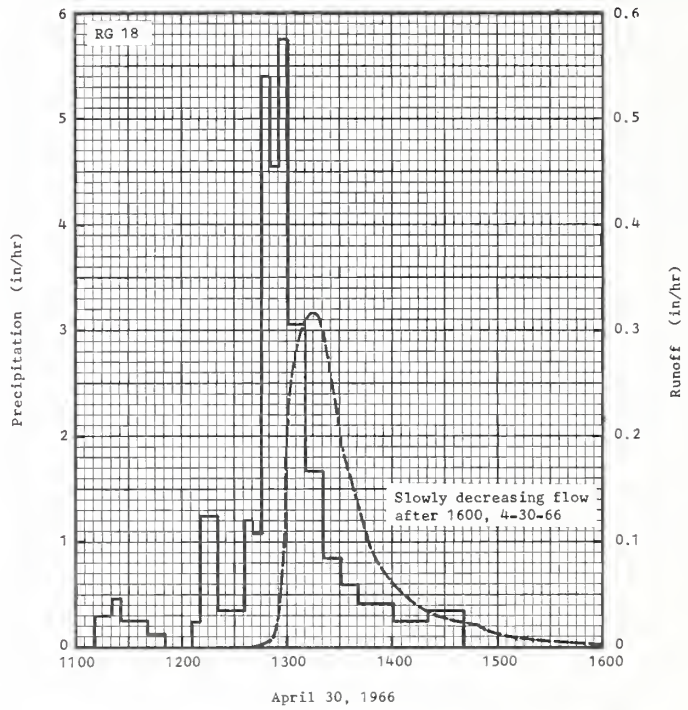
ANNUAL MAXIMUM DISCHARGES (inches per hour) AND ANNUAL MAXIMUM VOLUMES OF RUNOFF (inches) FOR SELECTED TIME INTERVALS																
YEAR	MAXIMUM DISCHARGE		MAXIMUM VOLUME FOR SELECTED TIME INTERVAL													
			1 HOUR		2 HOURS		6 HOURS		12 HOURS		1 DAY		2 DAYS		8 DAYS	
	DATE	RATE	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME	DATE	VOLUME
1966	4-30	.32	4-30	.20	4-30	.24	4-30	.25	4-30	.25	4-30	.25	4-30	.25	4-30	.25
1967	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01	8-17	.01
MAXIMUMS FOR PERIOD OF RECORD																
1966 To	4-30	.32	4-30	.20	4-30	.24	4-30	.25	4-30	.25	4-30	.25	4-30	.25	4-30	.25
1967	1966		1966		1966		1966		1966		1966		1966		1966	

NOTES: Watershed conditions: Rangeland - 100 percent; range in low good condition. ^{1/} Precipitation data from rain gage 18. ^{2/} Precipitation and runoff records began January 1966. ^{3/} Mean P based on 45-yr. (1923-67) record period at Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.

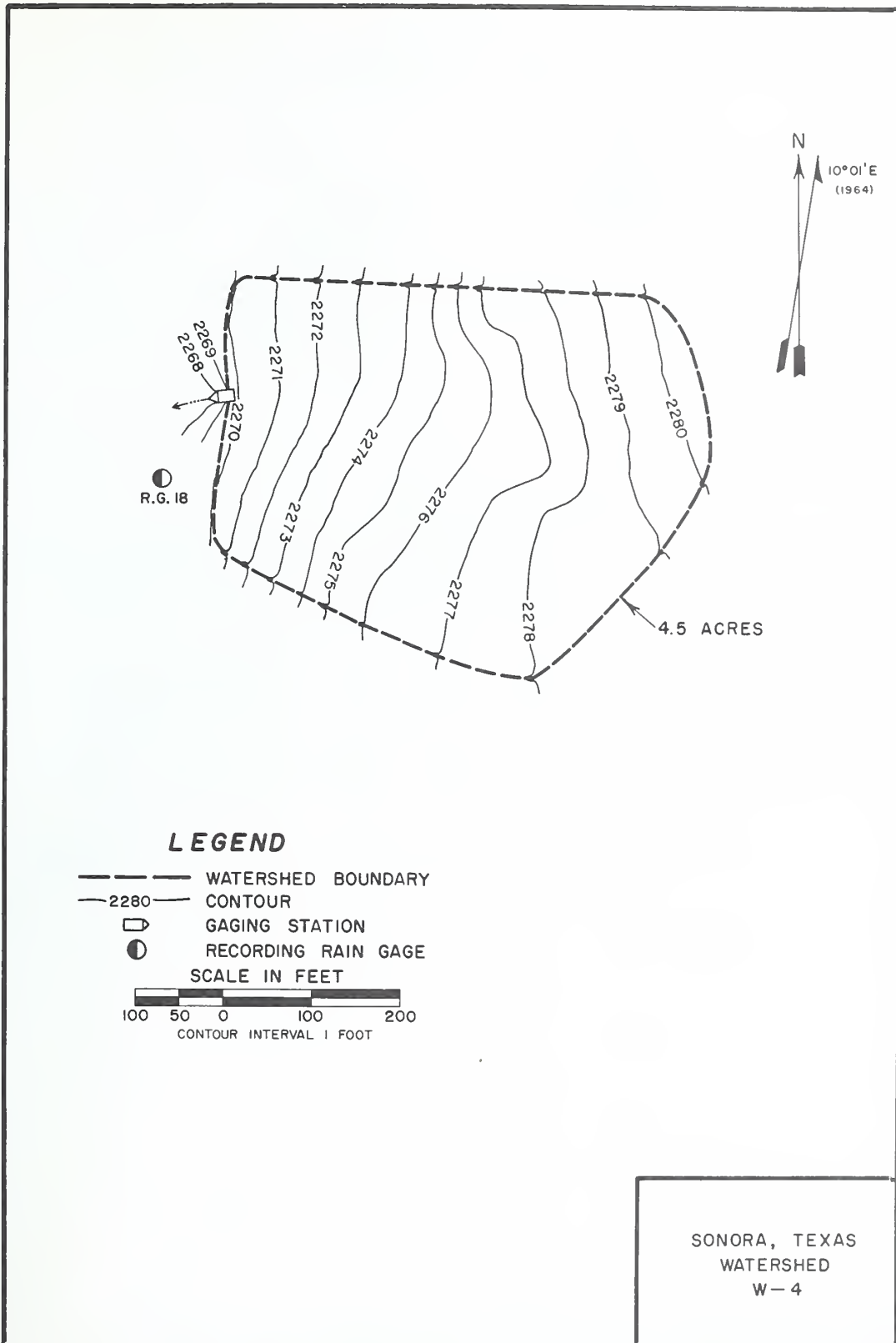
1966			SELECTED RUNOFF EVENT				SONORA, TEXAS		WATERSHED W-4				70.10
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)			
Event of April 30, 1966													
	RG 18			RG	18		4-30	1230	.0000	.0000			
4-13	.56	.0000	4-30	1111	.00	.00		1240	.0003	T			
4-17	.34	.0000		1121	.30	.05		1246	.0020	.0001			
4-22	.06	.0000		1126	.48	.09		1250	.0058	.0004			
4-23	.39	.0000		1141	.24	.15		1254	.0173	.0011			
4-24	1.19	.0000		1151	.12	.17		1257	.0642	.0027			
4-25	.02	.0000		1206	.00	.17		1300	.2107	.0096			
4-28	.39	.0000		1211	.24	.19		1304	.2774	.0260			
4-29	1.05	.0000		1221	1.26	.40		1308	.3007	.0453			
				1236	.36	.49		1312	.3131	.0657			
				1241	1.20	.59		1314	.3168	.0762			
				1246	1.08	.68		1318	.3114	.0971			
				1251	5.40	1.13		1322	.2876	.1171			
				1256	4.56	1.51		1326	.2525	.1351			
				1301	5.76	1.99		1330	.2011	.1502			
				1311	3.06	2.50		1334	.1694	.1626			
				1321	1.68	2.78		1338	.1479	.1732			
				1331	.84	2.92		1346	.1059	.1901			
				1341	.60	3.02		1354	.0728	.2019			
				1401	.42	3.16		1402	.0586	.2106			
				1421	.24	3.24		1410	.0460	.2175			
				1441	.36	3.36		1420	.0335	.2240			
								1430	.0277	.2290			
								1448	.0212	.2364			
								1500	.0126	.2396			
								1520	.0062	.2428			
								1550	.0030	.2453			
								1600	.0018	.2457			
								1610	.0008	.2459			
								1640	.0003	.2461			
								1800	.0002	.2464			
								2000	.0000	.2466			

Watershed conditions:
Rangeland - 100%. Range condition - low good.

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 4.537.



SONORA, TEXAS WATERSHED W-4



LEGEND

- WATERSHED BOUNDARY
 - 2280 CONTOUR
 - ▭ GAGING STATION
 - RECORDING RAIN GAGE
- SCALE IN FEET



SONORA, TEXAS
WATERSHED
W-4

SONORA, TEXAS WATERSHED W-5

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 7.2 acres

<u>SLOPES:</u>	Slope—Percent	0-3	3-8
	Percent of area	0	100

SOILS: Residual, derived from highly calcareous limestones.

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	
Tarrant stony clay	100	5	Strong medium to fine granular	Moderate	-----	-----	5	Moderately slow	Rapid

<u>EROSION:</u>	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Alternating beds of hard limestone and marly limestone overlying hard limestone, jointed and cavernous, thickness 20 to 65 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 400 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type H-4.5 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. Low poor level of management; stocking rate, 48 animal units per section.

GENERALLY REPRESENTS: Low stony hills range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS						WATERSHED W-5		70.11
						AREA — 7.2 ACRES								
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL	
1966 P ¹ / _Q	1.02	1.09	1.28	6.67	1.86	2.72	1.38	5.84	2.60	1.54	T	.00	26.00	
	.00	.00	.00	1.15	.04	.01	.00	.13	.00	.00	.00	.00	1.33	
1967 P ¹ / _Q	.08	.55	.08	1.48	2.34	.29	3.28	2.16	4.65	1.50	2.09	1.05	19.55	
	.00	.00	.00	.00	.02	.00	.01	T	.00	.00	.00	.00	.03	
STA AVG ² / _P (66-67) Q	.55	.82	.68	4.08	2.10	1.50	2.33	4.00	3.62	1.52	1.04	.52	22.76	
	.00	.00	.00	.58	.03	T	T	.06	.00	.00	.00	.00	.67	
MEAN P ³ / _{45 YR}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48	

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
1966	4-30	1.38	4-30	.79	4-30	1.01	4-30	1.08	4-30	1.08	4-30	1.08	4-29	1.13	4-24	1.15
1967	5-31	.05	5-31	.01	5-31	.01	5-31	.01	5-30	.02	5-30	.02	5-30	.02	5-30	.02
MAXIMUMS FOR PERIOD OF RECORD																
1966 To 1967	4-30 1966	1.38	4-30 1966	.79	4-30 1966	1.01	4-30 1966	1.08	4-30 1966	1.08	4-30 1966	1.08	4-29 1966	1.13	4-24 1966	1.15

NOTES: Watershed conditions: Rangeland - 100 percent; range overgrazed, low poor condition. ¹/_Q Precipitation data from rain gage 19. ²/_P Precipitation and runoff records began January 1966. ³/_P Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.

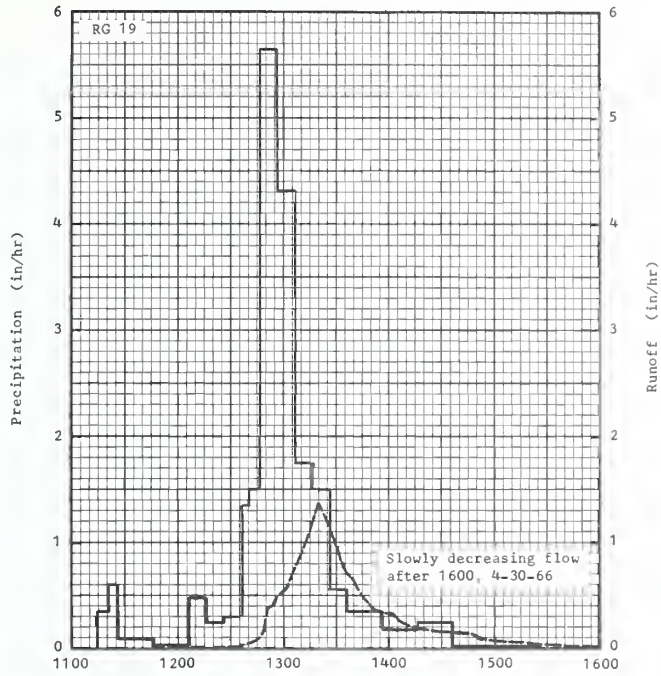
1966 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED W-5			70.11
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of April 30, 1966										
	RG 19			RG	19		4-30	1210	.0000	.0000
4-13	.37	.0000	4-30	1114	.00	.00		1218	.0009	T
4-17	.27	.0000		1121	.34	.04		1222	.0046	.0002
4-22	.05	.0000		1126	.60	.09		1228	.0112	.0011
4-23	.32	.0000		1146	.09	.12		1234	.0165	.0024
4-24	1.28	.0163		1206	.03	.13		1238	.0285	.0039
4-25	.00	T		1216	.48	.21		1242	.0471	.0064
4-28	.37	.0000		1226	.24	.25		1245	.0634	.0091
4-29	.88	.0551		1236	.30	.30		1248	.1691	.0145
				1240	1.35	.39		1250	.3744	.0256
				1246	1.50	.54		1254	.4300	.0524
				1256	5.64	1.48		1258	.5295	.0843
				1306	4.32	2.20		1302	.5681	.1209
				1316	1.74	2.49		1306	.7422	.1650
				1326	1.50	2.74		1310	.8824	.2190
				1336	.54	2.83		1314	1.0903	.2840
				1356	.36	2.95		1318	1.2829	.3640
				1416	.18	3.01		1320	1.3789	.4083
				1436	.24	3.09		1322	1.2990	.4530
				1526	.02	3.11		1326	1.1587	.5350
								1330	.9532	.6053
								1334	.7639	.6625
								1338	.6588	.7095
								1342	.5496	.7500
								1346	.4760	.7842
								1352	.3806	.8272
								1402	.3103	.8850
								1410	.2248	.9208
								1420	.1874	.9546
								1432	.1533	.9888
								1440	.1430	1.0087
								1452	.1009	1.0328
								1500	.0729	1.0443
								1515	.0431	1.0585
								1530	.0260	1.0672

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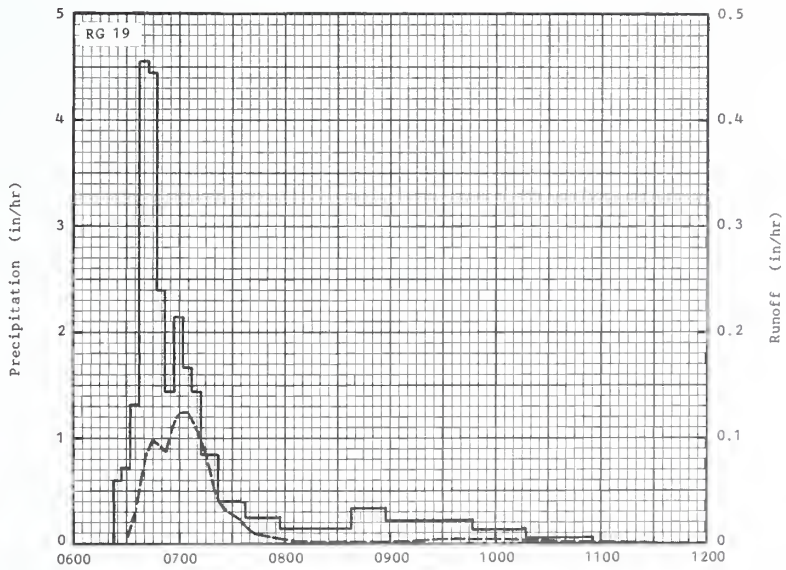
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.260.

1966			SONORA, TEXAS			WATERSHED W-5			70.11	
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	ACC. (inches)	
Event of April 30, 1966 - Continued										
							4-30	1550	.0119	1.0729
								1610	.0068	1.0760
								1630	.0035	1.0777
								1700	.0014	1.0789
								1720	.0005	1.0792
								1740	T	1.0792
								1748	.0000	1.0792
Event of August 11, 1966										
	RG 19		8-11	RG	19		8-11	0629	.0000	.0000
7-23	.16	.0000		0623	.00	.00		0633	.0149	.0003
7-25	.06	.0000		0627	.60	.04		0637	.0515	.0027
7-31	.25	.0000		0632	.72	.10		0641	.0857	.0074
8-02	.14	.0000		0637	1.32	.21		0643	.0943	.0104
8-03	.70	.0000		0642	4.56	.59		0645	.0987	.0136
8-06	.39	.0000		0647	4.44	.96		0647	.0943	.0168
				0652	2.40	1.16		0653	.0882	.0257
				0657	1.44	1.28		0657	.1117	.0323
				0702	2.16	1.46		0701	.1235	.0401
				0707	1.68	1.60		0703	.1244	.0442
				0712	1.44	1.72		0705	.1217	.0483
				0722	.84	1.86		0709	.1093	.0561
				0737	.40	1.96		0715	.0836	.0657
				0757	.24	2.04		0719	.0537	.0704
				0837	.14	2.13		0725	.0360	.0748
				0857	.33	2.24		0735	.0208	.0797
				0947	.22	2.42		0743	.0098	.0816
				1017	.14	2.49		0758	.0044	.0834
				1055	.06	2.53		0813	.0024	.0842
								0833	.0005	.0847
								0848	.0012	.0849
								0913	.0022	.0857
								0923	.0034	.0862
								0933	.0038	.0868
								0943	.0031	.0873
								1013	.0031	.0889
								1033	.0024	.0898
								1053	.0009	.0903
								1113	.0002	.0905
								1130	.0000	.0905
Watershed conditions: Rangeland - 100%. Range condition - low poor.										

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 7.260

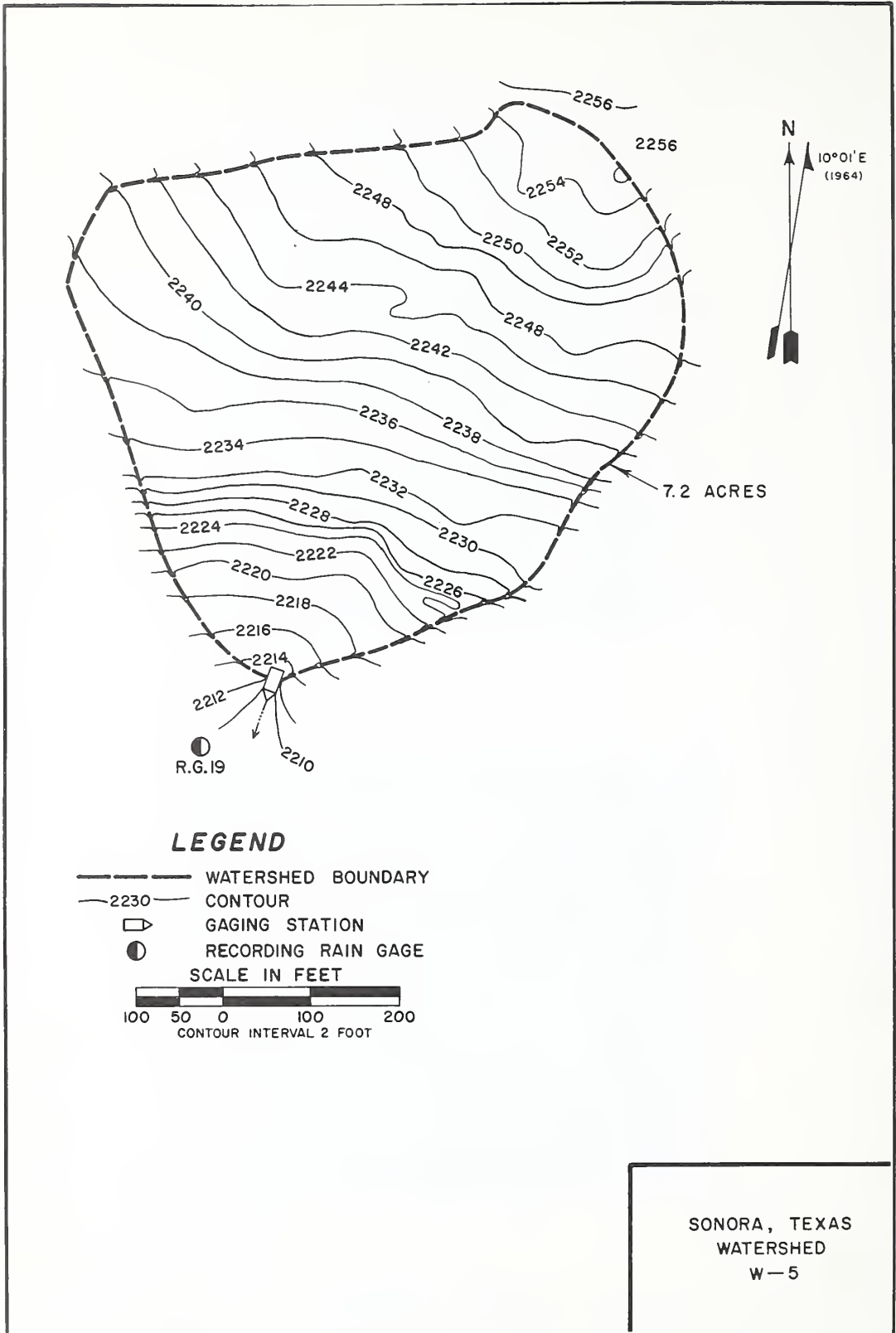


April 30, 1966



August 11, 1966

SONORA, TEXAS WATERSHED W-5



SONORA, TEXAS WATERSHED W-6

LOCATION: Edwards County, Tex.; 28 miles (highway) south of Sonora; East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 6.9 acres

<u>SLOPES</u> :	Slope—Percent	0-3
	Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

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	
Tarrant stony clay	100	8	Strong medium to fine granular	Moderate	Strong fine granular	Moderately slow	18	Moderately slow	Rapid

<u>EROSION</u> :	Erosion class	1	2
	Percent of area	0	100

<u>LAND CAPABILITY</u> :	Class	I	II	III	IV	V	VI
	Percent of area	0	0	0	0	0	100

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 5 to 20 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 350 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type H-4.5 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. Poor level of management; stocking rate, 48 animal units per section.

GENERALLY REPRESENTS: Shallow upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS WATERSHED W-6								
						AREA — 6.9 ACRES								
YEAR	MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1966	P ¹ / _Q	1.26	1.10	1.43	7.37	1.91	2.63	1.27	6.65	2.76	1.68	.10	.00	28.16
	Q	.00	.00	.00	.92	.04	.00	.00	.04	.00	.00	.00	.00	1.00
1967	P ¹ / _Q	.08	.62	.08	1.54	2.06	.13	3.22	1.82	5.04	1.49	2.60	.98	19.66
	Q	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
STA AVG ² / _P (66-67) Q		.67	.86	.76	4.46	1.98	1.38	2.24	4.24	3.90	1.58	1.35	.49	23.91
		.00	.00	.00	.46	.02	.00	.00	.02	.00	.00	.00	.00	.50
MEAN P ² / _{45 YR}		1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48

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
1966	4-30	1.90	4-30	.84	4-30	.91	4-30	.91	4-30	.91	4-30	.91	4-29	.91	4-24	.92
1967		.00		.00		.00		.00		.00		.00		.00		.00

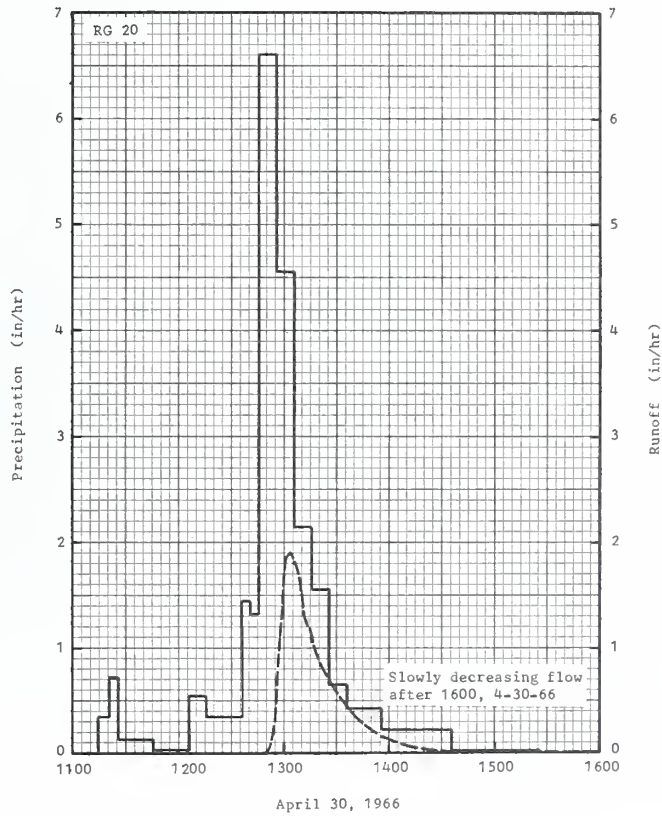
MAXIMUMS FOR PERIOD OF RECORD																
1966 To	4-30	1.90	4-30	.84	4-30	.91	4-30	.91	4-30	.91	4-30	.91	4-29	.91	4-24	.92
1967	1966		1966		1966		1966		1966		1966		1966		1966	

NOTES: Watershed conditions: Rangeland - 100 percent; range condition - poor. ¹/_Q Precipitation data from rain gage 20. ²/_P Precipitation and runoff records began January 1966. ³/_P Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.

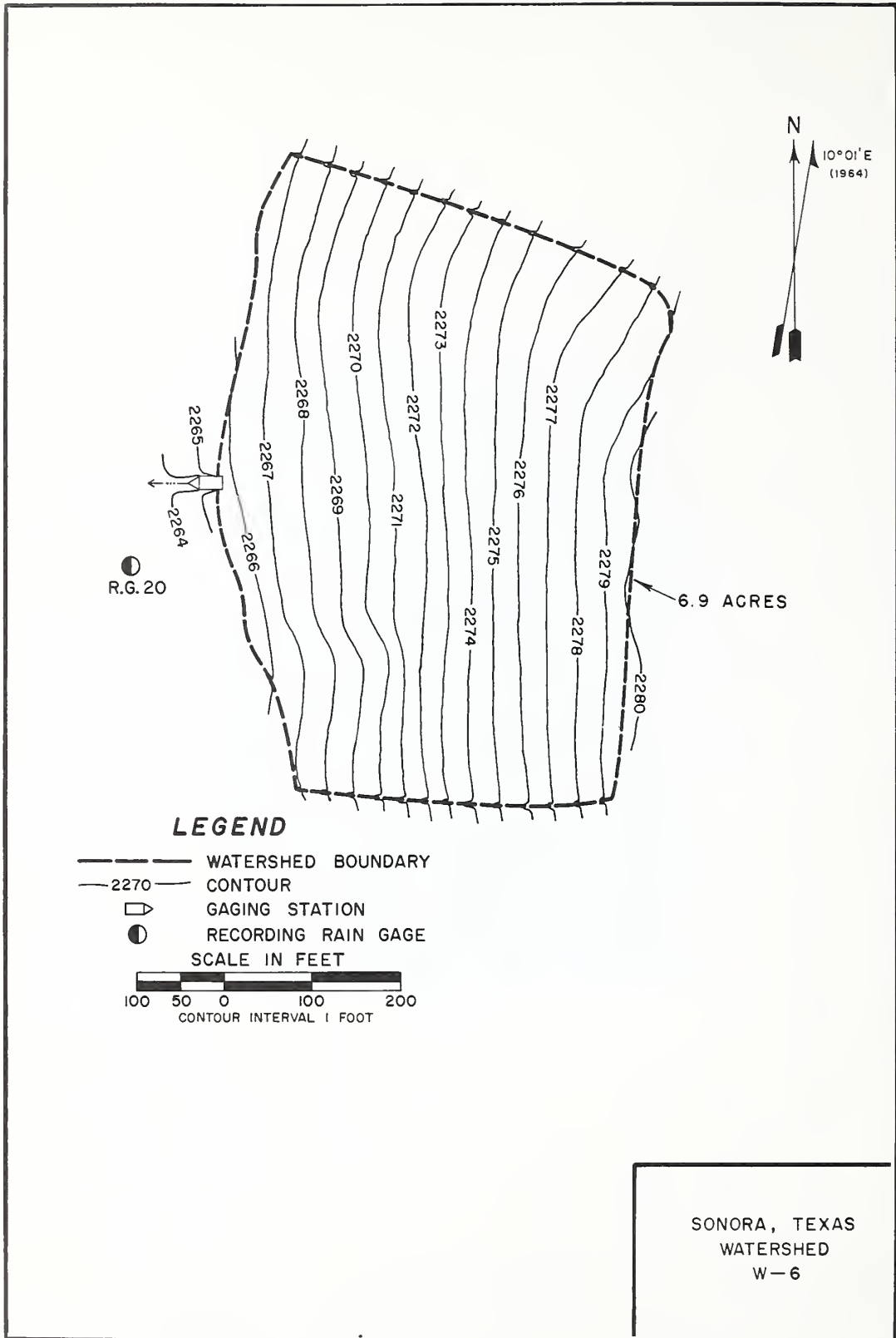
1966 SELECTED RUNOFF EVENT						SONORA, TEXAS WATERSHED W-6							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF						
DATE MD-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MD-DAY	TIME DF DAY	RATE (in/hr)	ACC. (inches)			
Event of April 30, 1966													
	RG 20			RG	20		4-30	1246	.0000	.0000			
4-13	.40	.0000	4-30	1114	.00	.00		1250	.0008	T			
4-17	.26	.0000		1121	.34	.04		1252	.0394	.0004			
4-22	.06	.0000		1126	.72	.10		1254	.2616	.0054			
4-23	.43	.0000		1146	.12	.14		1256	.5369	.0184			
4-24	1.35	.0018		1206	.03	.15		1258	1.2345	.0479			
4-25	.02	T		1216	.54	.24		1300	1.6320	.0957			
4-28	.36	.0000		1236	.33	.35		1302	1.8656	.1547			
4-29	.98	.0062		1241	1.44	.47		1304	1.9038	.2176			
				1246	1.32	.58		1306	1.8106	.2795			
				1256	6.60	1.68		1308	1.6561	.3373			
				1306	4.56	2.44		1310	1.5177	.3901			
				1316	2.16	2.80		1312	1.3221	.4375			
				1326	1.56	3.06		1314	1.2059	.4796			
				1336	.66	3.17		1316	1.0745	.5176			
				1356	.42	3.31		1318	.9861	.5520			
				1436	.22	3.46		1322	.8303	.6121			
				1526	.02	3.48		1326	.7123	.6636			
								1330	.5939	.7077			
								1334	.4898	.7439			
								1338	.4045	.7737			
								1342	.3252	.7978			
								1348	.2396	.8253			
								1354	.1825	.8462			
								1400	.1336	.8617			
								1408	.0924	.8766			
								1420	.0543	.8907			
								1432	.0330	.8992			
								1440	.0245	.9030			
								1450	.0144	.9062			
								1500	.0091	.9081			
								1520	.0029	.9100			
								1530	.0012	.9103			
								1540	.0007	.9105			
								1600	.0004	.9107			
								1630	.0002	.9108			
								1710	.0000	.9109			

Watershed conditions:
Rangeland - 100%. Range
condition - poor.

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 6.957.



SONORA, TEXAS WATERSHED W-6



SONORA, TEXAS WATERSHED W-7

LOCATION: Sutton County, Tex.; 10 miles northeast of Sonora; Lowrey Draw, East Fork Devils River, Devils River, Rio Grande Basin.

AREA: 12.2 acres

<u>SLOPES:</u>	Slope—Percent	0-3
	Percent of area	100

SOILS: Residual, derived from highly calcareous limestones.

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	
Valera clay	100	12	Strong medium to fine granular	Moderate	Strong medium granular	Moderate	26	Moderately slow	Medium

<u>EROSION:</u>	Erosion class	1
	Percent of area	100

<u>LAND CAPABILITY:</u>	Class	I	II	III	IV	V	VI
	Percent of area	0	0	100	0	0	0

GEOLOGY: Edwards and associated limestones of Lower Cretaceous age. Marly limestone, thickness 10 to 20 ft. Strike N26°W, dip S54°W at 4.5 feet per mile. Source of data: Geology and Groundwater Studies in Part of the Edwards Plateau of Texas, Including Sutton and Adjacent Counties, U. S. Dept. Agr., ARS 41-103, April 1966.

SURFACE DRAINAGE: Good; no well-defined drainageways; terraces collect runoff at lower side of watershed; terraces 350 feet long each side of runoff measuring flume.

CHARACTER OF FLOW: Ephemeral, continuous.

INSTRUMENTATION: Runoff: Type HL-4 flume, 12-hr. chart. Precipitation: One weighing-recording rain gage, 12-hr. chart.

WATERSHED CONDITIONS: Rangeland, 100 percent. High fair level of management; variable stocking rate.

GENERALLY REPRESENTS: Deep upland range sites of the Edwards Plateau land resource area (I-81) in southwest Texas.

MONTHLY PRECIPITATION AND RUNOFF (inches)						SONORA, TEXAS		WATERSHED W-7		70.13			
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1965 P ^{1/}	1.39	2.39	.27	1.09	4.62	1.12	.66	.86	.78	1.45	.25	1.07	15.95
Q	.00	.00	.00	.00	.14	.00	.00	.00	.00	.00	.00	.00	.14
1966 P ^{1/}	.71	1.14	.72	3.33	3.05	1.92	.24	1.00	2.63	.78	.08	.03	15.63
Q	.00	.00	.00	.03	.19	.03	.00	.00	T	.00	.00	.00	.25
1967 P ^{1/}	.02	.31	.89	1.24	2.99	2.89	2.17	.19	5.74	.78	2.84	1.37	21.43
Q	.00	.00	.00	.13	.26	.73	.01	.00	.07	.00	.00	.00	1.20
STA AVG ^{2/}	.71	1.28	.63	1.89	3.55	1.98	1.02	.68	3.05	1.00	1.06	.82	17.67
(65-67) Q	.00	.00	.00	.05	.20	.25	T	.00	.02	.00	.00	.00	.52
MEAN P ^{2/}	1.01	1.02	.96	1.69	2.88	2.74	2.08	1.75	3.08	2.17	.89	1.21	21.48
45 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
1965	5-17	.09	5-17	.06	5-17	.07	5-17	.07	5-17	.07	5-17	.07	5-16	.14	5-16	.14
1966	5-29	.11	5-28	.08	5-28	.11	5-28	.13	5-28	.13	5-28	.13	5-27	.14	5-26	.19
1967	6-2	.91	6-2	.57	6-2	.66	6-2	.66	6-2	.66	6-2	.73	6-2	.73	6-2	.73

MAXIMUMS FOR PERIOD OF RECORD																
1965 To	6-2	.91	6-2	.57	6-2	.66	6-2	.66	6-2	.66	6-2	.73	6-2	.73	6-2	.73
1967	1967		1967		1967		1967		1967		1967		1967		1967	

NOTES: Watershed conditions: Rangeland - 100 percent; range condition - high fair. ^{1/} Precipitation data from rain gage 1. ^{2/} Precipitation and runoff records began January 1965. ^{3/} Mean P based on 45-yr. (1923-67) record period at the Texas Agricultural Experiment Station, Substation No. 14, 18 miles south of Sonora, Tex.

1966 SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-7		70.13		
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 May 28-29, 1966										
	RG 1			RG	1		5-28	2047	.0000	.0000
4-29	.27	.0000	5-28	2045	.00	.00		2051	.0022	.0001
4-30	.71	.0091		2049	.75	.05		2101	.0065	.0006
5-01	.10	.0000		2055	2.50	.31		2109	.0127	.0019
5-23	.03	.0000		2059	.75	.36		2113	.0152	.0028
5-26	1.16	.0477		2104	.48	.40		2117	.0172	.0039
5-27	.44	.0082		2109	.72	.46		2131	.0177	.0080
				2119	.18	.49		2135	.0168	.0091
				2259	.00	.49		2143	.0118	.0110
				2304	1.08	.58		2156	.0069	.0130
				2314	.06	.59		2211	.0027	.0142
				2321	.77	.68		2231	.0013	.0148
				2325	2.25	.83		2257	.0002	.0150
				2329	.60	.87		2301	.0005	.0151
				2334	.24	.89		2303	.0010	.0151
				2339	.60	.94		2307	.0003	.0151
				2345	1.50	1.09		2315	.0003	.0152
				2354	.53	1.17		2317	.0009	.0152
				2400	.10	1.18		2319	.0009	.0152
			5-29	0009	.26	1.22		2321	.0025	.0153
				0059	.06	1.27		2325	.0073	.0156
								2329	.0104	.0162
								2333	.0152	.0170
								2339	.0286	.0192
								2343	.0429	.0215
								2347	.0750	.0253
								2351	.0942	.0310
								2355	.1071	.0377
								2400	.1095	.0468
							5-29	0006	.1111	.0578
								0011	.1091	.0670
								0021	.0957	.0841
								0031	.0739	.0981
								0041	.0553	.1091
								0051	.0395	.1169

Continued on next page

NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 12.302.

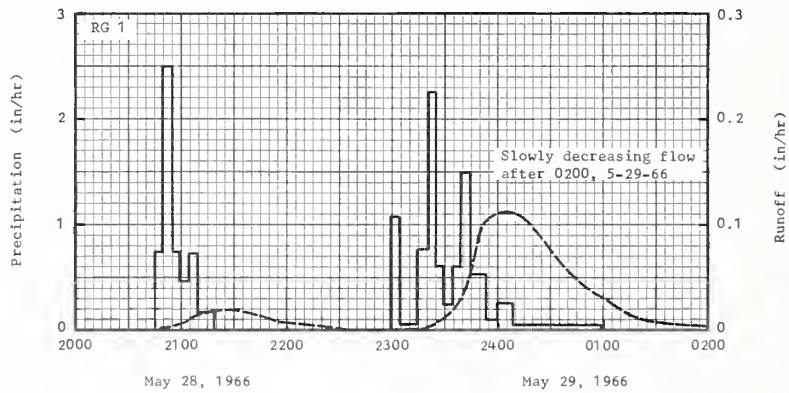
1966-67			SELECTED RUNOFF EVENTS				SONORA, TEXAS		WATERSHED W-7		70.13	
ANTECEGENT CONOITIONS			RAINFALL				RUNOFF					
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)		
Event of May 28-29, 1966 - Continued												
							5-29	0101	.0308	.1226		
								0116	.0154	.1282		
								0131	.0080	.1310		
								0151	.0031	.1328		
								0221	.0010	.1336		
								0241	.0002	.1338		
								0301	.0000	.1338		
Event of May 29, 1967												
	RG 1			RG	1		5-29	0627	.0000	.0000		
5-01	T	.0000	5-29	0500	.00	.00		0630	.0017	.0000 T		
5-14	.06	.0000		0530	.02	.01		0633	.0215	.0005		
5-19	.71	.0096		0540	.18	.04		0635	.0415	.0016		
5-20	.32	.0014		0545	.48	.08		0638	.0889	.0046		
Watershed conditions: Rangeland - 100%. Range condition - high fair.												
				0610	.17	.15		0640	.1336	.0084		
				0615	.48	.19		0642	.1993	.0140		
				0620	1.32	.30		0644	.2410	.0214		
				0625	.48	.34		0646	.2489	.0295		
				0630	.96	.42		0651	.2489	.0503		
				0633	1.00	.47		0655	.2410	.0666		
				0640	3.86	.92		0659	.2083	.0816		
				0645	.84	.99		0701	.1906	.0883		
				0650	.36	1.02		0705	.1548	.0995		
				0700	.12	1.04		0709	.1303	.1090		
				0730	.00	1.04		0713	.1063	.1169		
				0750	.66	1.26		0717	.0823	.1232		
				0800	.96	1.42		0721	.0653	.1281		
				0805	1.20	1.52		0725	.0495	.1319		
				0810	.24	1.54		0735	.0301	.1382		
				0820	.36	1.60		0743	.0222	.1416		
				0900	.02	1.61		0747	.0222	.1431		
								0751	.0276	.1447		
								0757	.0339	.1478		
								0803	.0640	.1525		
								0809	.0908	.1604		
								0813	.1067	.1670		
								0815	.1067	.1706		
								0817	.1132	.1742		
								0819	.1212	.1781		
								0821	.1165	.1821		
								0831	.1003	.2007		
								0835	.0856	.2069		
								0843	.0712	.2174		
								0851	.0506	.2254		
								0859	.0359	.2312		
								0907	.0272	.2354		
								0919	.0130	.2394		
								0931	.0074	.2414		
								0949	.0037	.2431		
								1006	.0017	.2438		
								1016	.0006	.2440		
								1026	.0002	.2441		
								1030	.0000	.2441		
Event of June 2, 1967												
	RG 1			RG	1		6-02	0240	.0000	.0000		
5-14	.06	.0000	6-02	0225	.00	.00		0246	.0013	.0001		
5-19	.71	.0096		0230	.12	.01		0250	.0049	.0003		
5-20	.32	.0014		0240	1.98	.34		0254	.0091	.0007		
5-29	1.61	.2441		0250	1.68	.62		0258	.0337	.0022		
5-31	.29	.0000		0310	1.92	1.26		0302	.0896	.0061		
Watershed conditions: Rangeland - 100%. Range condition - high fair.												
				0330	.60	1.46		0305	.1911	.0129		
				0350	.30	1.56		0309	.3779	.0320		
				0400	.24	1.60		0312	.5494	.0548		
				0430	.08	1.64		0316	.8349	.1012		

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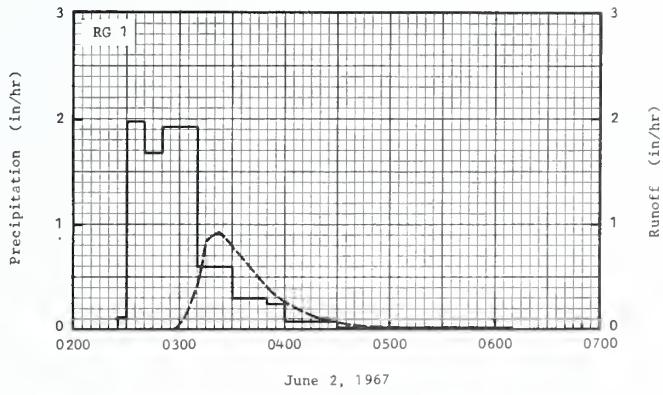
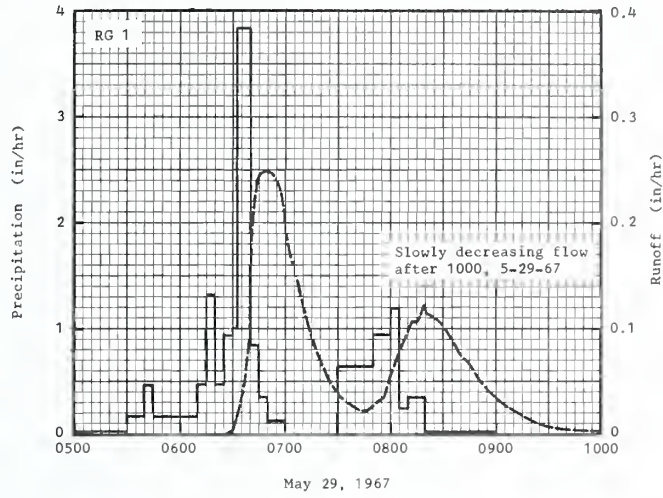
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 12.302.

1967 SELECTED RUNOFF EVENTS			SONORA, TEXAS				WATERSHED W-7 70.13			
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 2, 1967 - Continued										
			6-02	0610	.02	1.68	6-02	0320	.9031	.1596
								0322	.9126	.1899
								0324	.8963	.2200
								0328	.8349	.2780
								0332	.7645	.3316
								0338	.6505	.4024
								0344	.5092	.4602
								0350	.4018	.5065
								0356	.2958	.5411
								0404	.2326	.5764
								0412	.1622	.6029
								0420	.1107	.6210
								0428	.0750	.6333
								0436	.0470	.6414
								0444	.0341	.6467
								0452	.0226	.6506
								0504	.0108	.6537
								0516	.0056	.6554
								0536	.0026	.6567
								0546	.0013	.6570
								0556	.0009	.6572
								0606	.0003	.6573
								0616	.0001	.6573
								0626	.0000	.6573

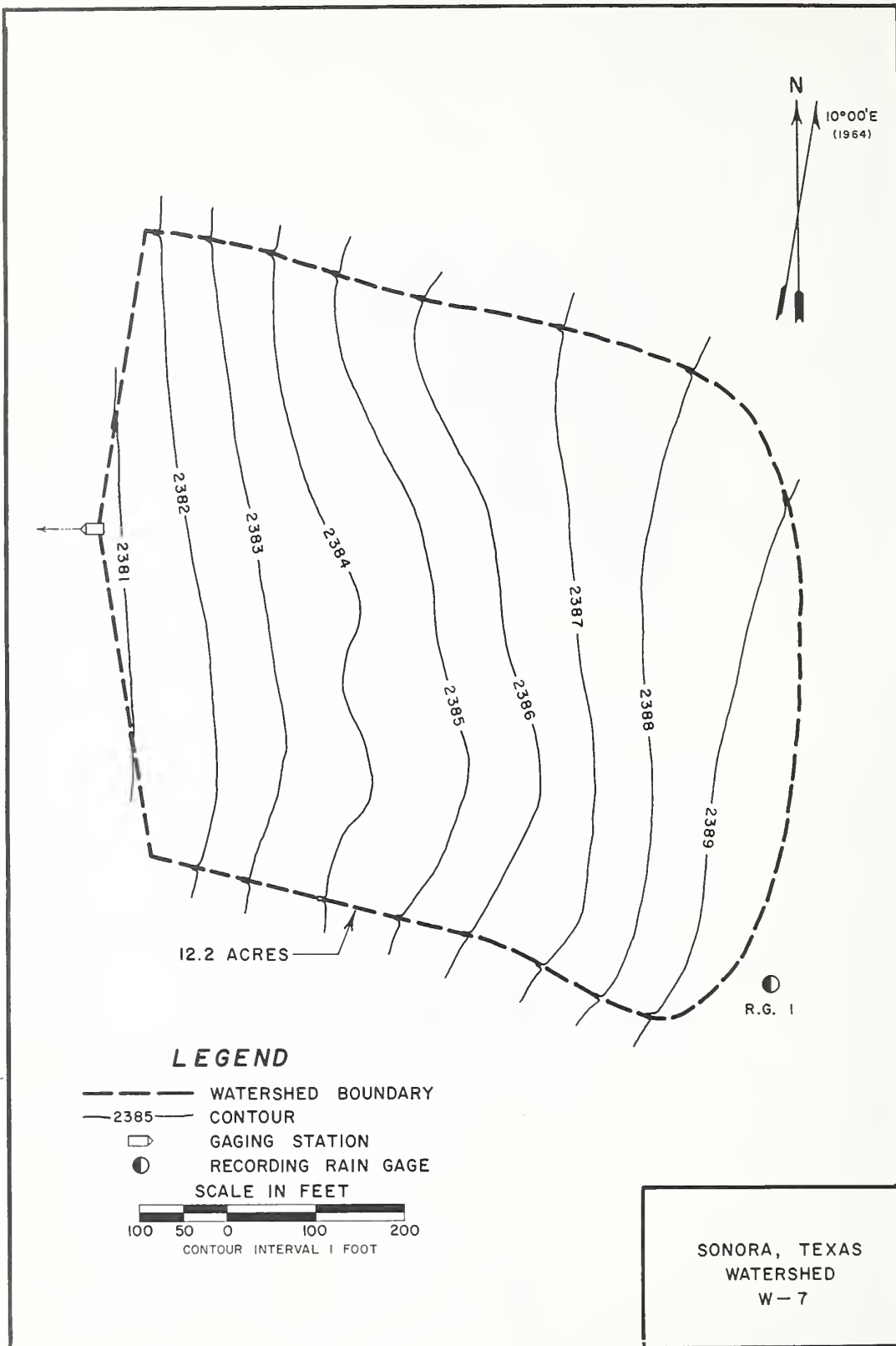
NOTE: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 12.302.



SONORA, TEXAS WATERSHED W-7



SONORA, TEXAS WATERSHED W-7



LEGEND

- WATERSHED BOUNDARY
- 2385- CONTOUR
- ▭ GAGING STATION
- RECORDING RAIN GAGE



SONORA, TEXAS
WATERSHED
W-7

MONTHLY PRECIPITATION AND RUNOFF (inches)													TREYNOR, IOWA				WATERSHED 1			
													AREA—74.5 ACRES							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL							
1967 P ₁	.69	.10	1.14	2.59	3.78	18.79	2.10	2.65	3.48	2.39	.09	.45	38.25							
Q	.17	.26	.16	.17	.18	11.66	.27	.20	.22	.20	.20	.16	13.85							
STA AV 2/P (64-67) Q	.62	.60	1.23	2.94	4.43	9.88	3.42	3.66	5.61	1.11	.73	.66	34.89							
MEAN P ₃ /97 YR	.25	.55	.72	.41	.82	4.20	.44	.40	.91	.26	.24	.23	9.43							
	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37							
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				
1967	6-20	5.84	6-20	3.15	6-20	4.16	6-20	4.22	6-20	4.23	6-20	4.25	6-20	4.26	6-4	5.98				
MAXIMUMS FOR PERIOD OF RECORD																				
1964 TO 1967	6-20	5.84	6-20	3.15	6-20	4.16	6-20	4.22	6-20	4.23	6-20	4.25	6-20	4.26	6-4	5.98				
	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967	1967				
NOTES: Watershed conditions: 95% contoured corn; 5% gullies and grassed waterways. 1/ Precipitation from gage 117 before Apr. 4 and after Nov. 1; Thiessen average of gages 116, 117, and 118 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Feb. 10, 1964. Jan. 1 - Feb. 10, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.																				
1967 SELECTED RUNOFF EVENTS													TREYNOR, IOWA WATERSHED 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)										
<u>Event of June 14, 1967</u>																				
	3 RG 4/				RC 117		6-14	0519	.0009	.000										
5-15	.00	.0053	6-14	0510	.00	.00	0521	.0010	.000	.000										
5-16	.00	.0039		0513	.80	.04	0523	.0012	.000	.000										
5-17	.00	.0041		0518	.24	.06	0526	.0022	.000	.000										
5-18	.00	.0037		0521	2.00	.16	0529	.0045	.000	.000										
5-19	.00	.0037		0524	2.40	.28	0530	.0062	.000	.000										
5-20	.00	.0041		0526	3.00	.38	0531	.0180	.001	.001										
5-21	.00	.0041		0528	6.60	.60	0533	.776	.012	.012										
5-22	.00	.0041		0531	1.20	.66	0534	1.10	.028	.028										
5-23	.00	.0041		0541	.18	.69	0535	1.36	.049	.049										
5-24	.00	.0037		0552	.16	.72	0536	2.58	.081	.081										
5-25	.00	.0034		0621	.06	.75	0537	2.84	.126	.126										
5-26	.00	.0030		0651	.04	.77	0538	3.13	.177	.177										
5-27	.02	.0040					0539	2.80	.226	.226										
5-28	.52	.0072					0540	2.23	.268	.268										
5-29	.24	.0054		RC	116	.75	0542	1.44	.328	.328										
5-30	1.62	.0142		RC	118	.78	0543	1.14	.349	.349										
5-31	.88	.0120					0546	.682	.395	.395										
6-1	.06	.0088		3 RG	AVG 4/	.77	0550	.295	.425	.425										
6-2	.00	.0065					0559	.0962	.452	.452										
6-3	.00	.0056					0612	.0507	.468	.468										
6-4	1.30	.1943					0625	.0368	.477	.477										
6-5	2.46	1.6156					0634	.0220	.482	.482										
6-6	.00	.0096					0643	.0088	.484	.484										
6-7	2.25	1.6909					0700	.0045	.486	.486										
6-8	.00	.0149					0709	5/ .0041	.486	.486										
6-9	2.54	1.8484																		
6-10	.16	.0216																		
6-11	.96	.5408																		
6-12	.03	.0483																		
6-13	.00	.0176																		
6-14	6/ .05	7/.0042																		
Watershed conditions: 95% - Contoured corn, 6-8 in. tall, approx. 8% canopy, rotary hoed 10 days prior to event; 5% - gullies and grassed waterways, grass 12-18 in. tall.																				
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 75.121. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, P. 71.1-5. 4/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ BEGINNING OF NEXT EVENT. 6/ RAINFALL FROM 0320 TO 0510. 7/ RUNOFF PRIOR TO 0519.																				

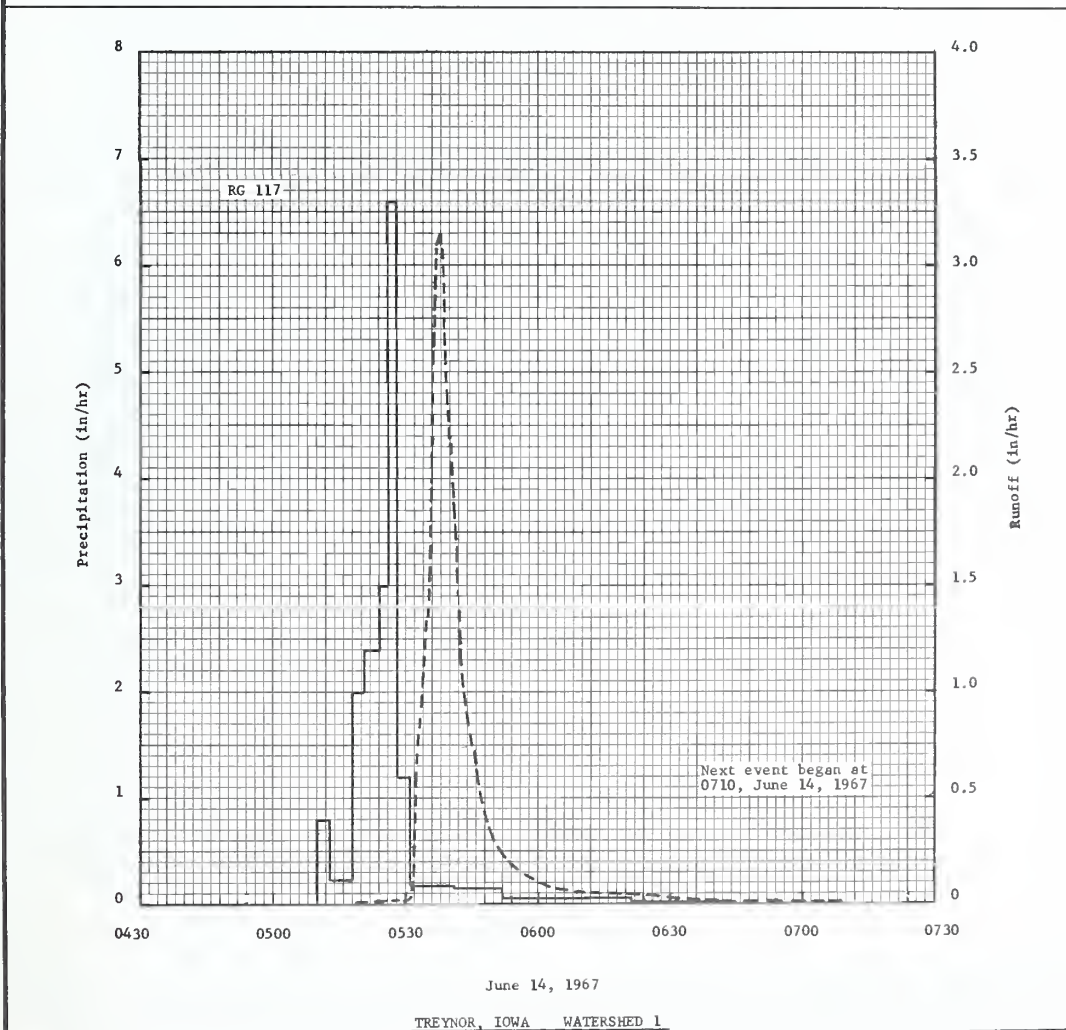
1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA			WATERSHED 1				
ANTECEDENT CONDITIONS			RAINFALL			RUNOFF				
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
<u>Event of June 20 and 21, 1967</u>										
	3 RG <u>1/</u>			RG	117		6-20	2057	.0007	.000
5-21	.00	.0041	6-20	2056	.00	.00		2101	.0010	.000
5-22	.00	.0041		2104	.22	.03		2104	.0028	.000
5-23	.00	.0041		2107	3.00	.18		2109	.0057	.000
5-24	.00	.0037		2113	1.50	.33		2111	.0077	.001
5-25	.00	.0034		2117	2.55	.50		2115	.0129	.001
5-26	.00	.0030		2124	3.34	.89		2119	.0627	.003
5-27	.02	.0040		2133	6.53	1.87		2122	.173	.009
5-28	.52	.0072		2144	4.20	2.64		2125	.647	.029
5-29	.24	.0054		2148	3.90	2.90		2127	1.50	.068
5-30	1.62	.0142		2152	1.20	2.98		2129	3.55	.148
5-31	.88	.0120		2159	4.11	3.46		2131	4.95	.299
6 -1	.06	.0088		2204	3.72	3.77		2132	5.52	.381
6 -2	.00	.0065		2210	2.90	4.06		2133	5.84	.469
6 -3	.00	.0056		2216	5.50	4.61		2134	5.17	.577
6 -4	1.30	.1943		2220	1.05	4.68		2135	4.64	.654
6 -5	2.46	1.6156		2222	1.20	4.72		2136	4.00	.721
6 -6	.00	.0096		2227	1.56	4.85		2138	3.49	.853
6 -7	2.25	1.6909		2231	3.00	5.05		2140	3.33	.959
6 -8	.00	.0149		2239	2.33	5.36		2141	3.28	1.011
6 -9	2.54	1.8484		2247	1.57	5.57		2142	3.55	1.078
6-10	.16	.0216		2250	4.00	5.77		2144	4.03	1.197
6-11	.96	.5408		2258	1.13	5.92		2145	4.38	1.279
6-12	.03	.0483		2308	.36	5.98		2146	4.07	1.345
6-13	.00	.0176		2314	1.00	6.08		2147	3.89	1.407
6-14	.85	.5213		2350	.10	6.14		2150	2.73	1.572
6-15	.60	.2312						2151	2.23	1.611
6-16	.20	.1266		RG	116	5.78		2153	2.02	1.685
6-17	.00	.0149		RG	118	6.20		2154	2.11	1.718
6-18	.00	.0135						2156	2.58	1.791
6-19	.00	.0118	3 RG	AVG <u>1/</u>	6.09			2157	2.89	1.844
6-20	.00	<u>2/</u> .0121						2159	3.18	1.939
								2201	3.36	2.054
								2202	3.08	2.104
								2209	2.60	2.437
								2211	2.66	2.519
								2213	3.03	2.619
								2214	3.38	2.669
								2215	3.68	2.738
								2216	3.83	2.796
								2217	3.68	2.855
								2218	3.47	2.911
								2219	3.13	2.976
								2221	2.25	3.060
								2223	1.56	3.127
								2225	1.30	3.171
								2226	1.36	3.192
								2227	1.24	3.218
								2129	1.32	3.257
								2230	1.43	3.284
								2231	1.85	3.309
								2232	1.90	3.339
								2233	2.13	3.370
								2234	1.91	3.410
								2236	1.60	3.465
								2237	1.51	3.489
								2238	1.54	3.519
								2240	1.71	3.570
								2241	1.71	3.597
								2243	1.41	3.652
								2247	1.16	3.738
								2248	1.13	3.756
								2249	1.16	3.778
								2252	1.53	3.840
								2253	1.41	3.869

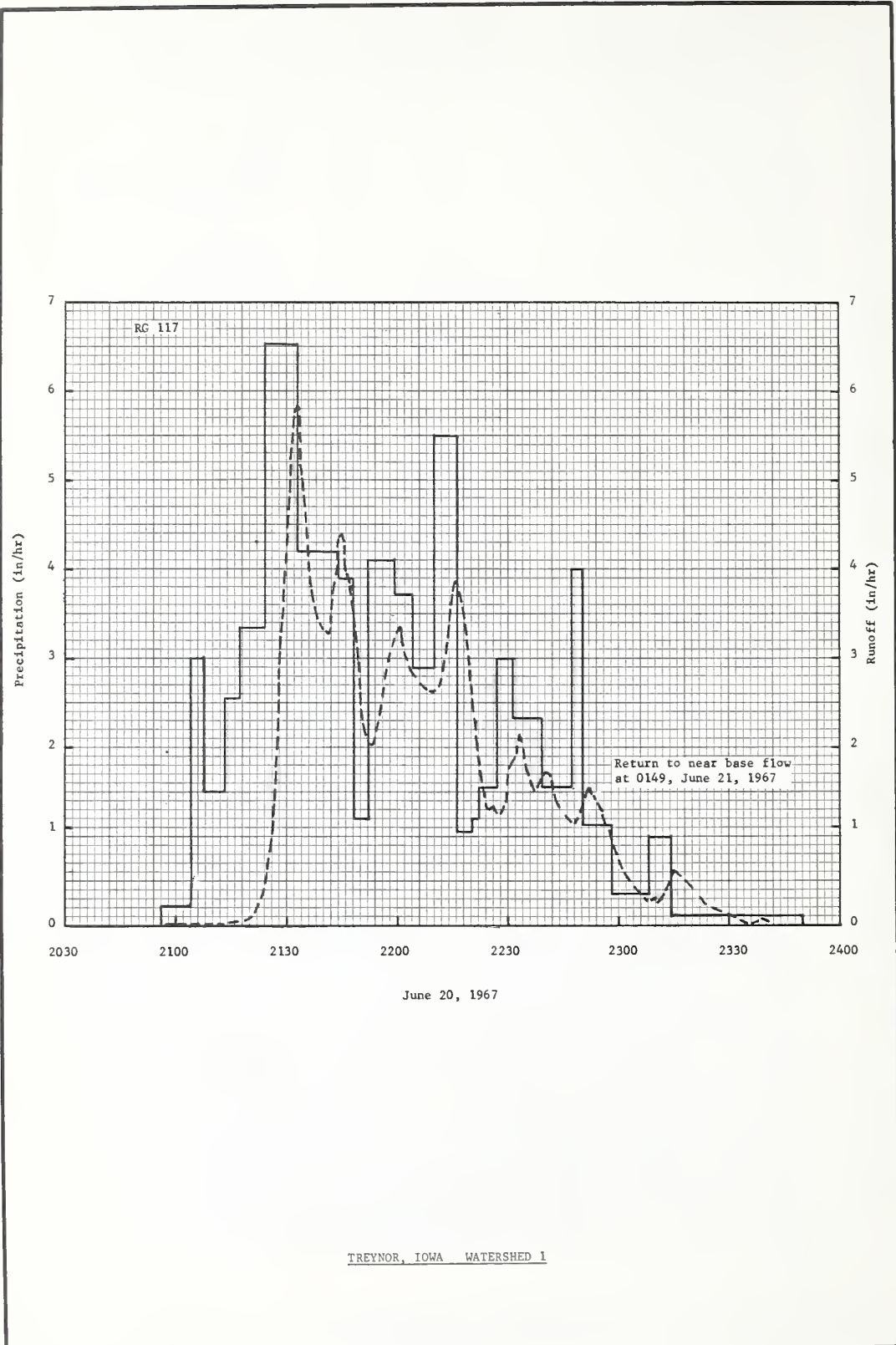
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 75.121. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES.
2/ RUNOFF PRIOR TO 2057.

1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA				WATERSHED 1			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MD-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)
Event of June 20, 21-Continued										
								2254	1.46	3.892
								2257	1.14	3.956
								2259	.877	3.988
								2306	.371	4.059
								2308	.289	4.070
								2309	.300	4.075
								2311	.279	4.084
								2314	.494	4.102
								2315	.613	4.113
								2317	.572	4.131
								2319	.486	4.150
								2323	.279	4.175
								2326	.189	4.186
								2331	.0962	4.197
								2338	.0427	4.205
								2339	.0382	4.206
								2341	.0326	4.207
								2400	.0088	4.214
							6-21	0149	1/ .0010	4.223

Watershed conditions:
 95% - Contoured corn,
 7-10 in. tall, 15%
 canopy, 50% cultivated
 first time prior to
 event;
 5% - gullies and grassed
 waterways, grass 18-24 in.
 tall.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 75.121. 1/ RETURN TO NEAR BASE FLOW.





MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA								WATERSHED 2	
						AREA—82.8 ACRES									
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	.69	.10	1.14	2.67	3.49	18.50	2.00	2.59	3.47	2.42	.09	.45	37.61		
P ₁	.25	.32	.23	.17	.15	10.47	.28	.25	.22	.22	.22	.17	12.95		
O	.62	.60	1.22	2.93	4.31	9.83	3.34	3.48	5.59	1.09	.74	.66	34.41		
STA AV 2/P	.25	.66	.75	.39	.82	3.91	.36	.37	.81	.25	.23	.22	9.02		
(64-67)															
MEAN P ₃															
97 YR	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37		

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
1967	6-20	4.87	6-20	2.70	6-20	3.69	6-20	3.78	6-20	3.79	6-20	3.79	6-20	3.81	6-4	5.53

MAXIMUMS FOR PERIOD OF RECORD																
1964 TO 1967	6-20	4.87	6-20	2.70	6-20	3.69	6-20	3.78	6-20	3.79	6-20	3.79	6-20	3.81	6-4	5.53

NOTES: Watershed conditions: 95% contoured corn; 5% gullies and grassed waterways. 1/ Precipitation from gage 117 before Apr. 4 and after Nov. 1; Thiessen average of gages 115, 116, and 118 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Feb. 3, 1964. Jan. 1 - Feb. 3, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.

1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 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 14, 1967											
	3 RG 4/			RG	115		6-14	0518	.0005	.000	
5-15	.00	.0040	6-14	0513	.00	.00		0522	.0010	.000	
5-16	.00	.0043		0519	.90	.09		0524	.0020	.000	
5-17	.00	.0038		0522	2.00	.19		0526	.0038	.000	
5-18	.00	.0035		0528	2.20	.41		0527	.0044	.000	
5-19	.00	.0034		0531	4.00	.61		0530	.0694	.002	
5-20	.00	.0035		0546	.24	.67		0531	.137	.004	
5-21	.00	.0035		0553	.09	.68		0533	.817	.017	
5-22	.00	.0034		0556	.60	.71		0535	1.51	.056	
5-23	.00	.0035		0647	.04	.74		0537	2.03	.115	
5-24	.00	.0032		0656	.27	.78		0538	2.18	.150	
5-25	.00	.0024						0539	2.12	.186	
5-26	.00	.0027		RG	116	.75		0540	1.97	.220	
5-27	.00	.0029		RG	118	.78		0541	1.68	.250	
5-28	.53	.0059						0543	1.13	.297	
5-29	.24	.0057		3 RG	AVG 4/	.77		0545	.723	.328	
5-30	1.44	.0167						0547	.470	.347	
5-31	.82	.0119						0550	.316	.367	
6-1	.08	.0068						0553	.198	.380	
6-2	.00	.0040						0554	.154	.383	
6-3	.00	.0038						0557	.122	.390	
6-4	1.28	.1862						0604	.0750	.401	
6-5	2.43	1.4917						0612	.102	.413	
6-6	.00	.0064						0614	.0788	.416	
6-7	2.30	1.3569						0620	.0528	.423	
6-8	.01	.0117						0626	.0259	.426	
6-9	2.44	1.8313						0632	.0144	.428	
6-10	.18	.0222						0638	.0098	.430	
6-11	.98	.5915						0643	.0070	.430	
6-12	.03	.0374						0651	.0051	.431	
6-13	.00	.0147						0700	.0038	.432	
6-14	5/ .04	5/ .0032						0705	7/ .0035	.432	

Watershed conditions:
 95% - Contoured corn,
 6-8 in. tall, approx.
 8% canopy, rotary hoed
 10 days prior to event;
 5% - gullies and grassed
 waterways, grass approx.
 12-18 in. tall.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 83.490. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, P. 71.2-5. 4/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ RAINFALL FROM 0320 TO 0513. 6/ RUNOFF PRIOR TO 0518. 7/ BEGINNING OF NEXT EVENT.

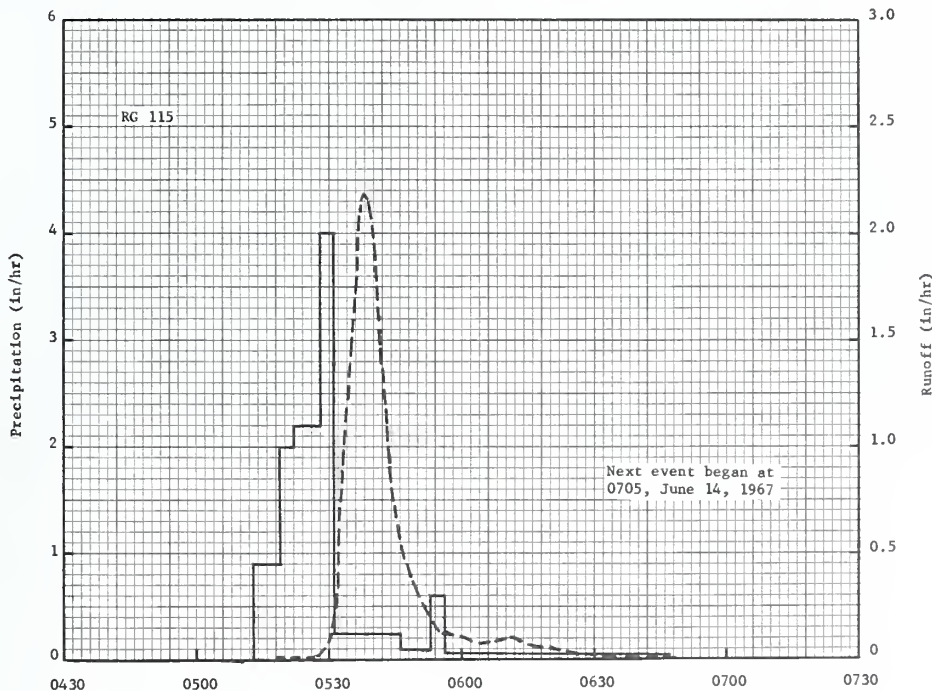
1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA				WATERSHED 2			
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Event of June 20 and 21, 1967										
	3 RG <u>1/</u>			RG	115		6-20	2102	.0007	.000
5-21	.00	.0035	6-20	2056	.00	.00	2106	.0021	.000	.000
5-22	.00	.0034		2101	.24	.02	2109	.0054	.000	.000
5-23	.00	.0035		2110	2.40	.38	2114	.0187	.001	.001
5-24	.00	.0032		2120	3.18	.91	2116	.117	.003	.003
5-25	.00	.0024		2124	3.30	1.13	2119	.581	.021	.021
5-26	.00	.0027		2132	6.45	1.99	2121	.989	.045	.045
5-27	.00	.0029		2138	4.10	2.40	2123	1.42	.088	.088
5-28	.53	.0059		2143	5.04	2.82	2124	1.51	.110	.110
5-29	.24	.0057		2147	2.85	3.01	2125	1.46	.134	.134
5-30	1.44	.0167		2151	2.40	3.17	2128	1.35	.204	.204
5-31	.82	.0119		2200	2.73	3.58	2130	1.73	.257	.257
6 -1	.08	.0068		2205	2.28	3.77	2131	2.30	.289	.289
6 -2	.00	.0040		2209	2.70	3.95	2132	3.40	.333	.333
6 -3	.00	.0038		2213	3.30	4.17	2133	4.36	.394	.394
6 -4	1.28	.1862		2217	3.45	4.40	2134	4.87	.484	.484
6 -5	2.43	1.4917		2222	.84	4.47	2135	4.69	.559	.559
6 -6	.00	.0064		2238	1.99	5.00	2137	4.50	.702	.702
6 -7	2.30	1.3569		2246	1.50	5.20	2138	4.31	.788	.788
6 -8	.01	.0117		2251	2.64	5.42	2140	3.78	.914	.914
6 -9	2.44	1.8313		2259	.45	5.48	2142	3.63	1.044	1.044
6-10	.18	.0222		2309	.54	5.57	2145	3.99	1.236	1.236
6-11	.98	.5915		2320	.16	5.60	2146	4.15	1.299	1.299
6-12	.03	.0374		2342	.08	5.63	2148	3.97	1.427	1.427
6-13	.00	.0147					2149	3.61	1.501	1.501
6-14	.87	.4999		RG	116	5.78	2150	3.09	1.553	1.553
6-15	.62	.2410		RG	118	6.20	2151	2.80	1.599	1.599
6-16	.20	.1233					2152	2.24	1.638	1.638
6-17	.00	.0129		3 RG	AVG <u>1/</u>	5.82	2155	1.74	1.738	1.738
6-18	.00	.0108					2157	1.84	1.800	1.800
6-19	.00	.0093					2159	2.36	1.866	1.866
6-20	.00	^{2/} .0086					2201	2.49	1.952	1.952
							2202	2.66	1.992	1.992
							2203	2.33	2.031	2.031
							2205	2.09	2.108	2.108
							2206	1.85	2.139	2.139
							2210	1.95	2.265	2.265
							2213	2.24	2.370	2.370
							2215	2.70	2.457	2.457
							2216	2.94	2.501	2.501
							2218	2.87	2.592	2.592
							2224	1.33	2.809	2.809
							2226	1.08	2.846	2.846
							2229	1.16	2.903	2.903
							2231	1.35	2.947	2.947
							2233	1.53	2.993	2.993
							2235	1.46	3.046	3.046
							2237	1.37	3.090	3.090
							2242	1.40	3.208	3.208
							2243	1.36	3.230	3.230
							2245	1.39	3.278	3.278
							2246	1.30	3.299	3.299
							2249	1.16	3.361	3.361
							2251	1.37	3.401	3.401
							2252	1.30	3.422	3.422
							2253	1.42	3.448	3.448
							2254	1.26	3.469	3.469
							2255	1.33	3.489	3.489
							2256	1.48	3.511	3.511
							2258	1.01	3.556	3.556
							2300	.801	3.587	3.587
							2302	.622	3.609	3.609
							2305	.482	3.636	3.636
							2306	.394	3.643	3.643
							2308	.363	3.656	3.656

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 83,490. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES.
2/ RUNOFF PRIOR TO 2102.

1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA				WATERSHED 2			
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 June 20, 21-Continued							
								2310	.218	3.666
								2313	.233	2.677
								2315	.326	3.686
								2317	.368	3.697
								2319	.307	3.709
								2323	.191	3.726
								2330	.107	3.743
								2338	.0594	3.753
								2342	.0484	3.757
								2343	.0442	3.757
								2344	.0204	3.758
								2345	.0151	3.758
								2348	.0098	3.759
								2400	.0088	3.761
							6-21	0006	.0120	3.770
								0008	.0240	3.771
								0015	.0282	3.775
								0028	.0132	3.779
								0048	.0044	3.782
								0200	<u>1/</u> .0033	3.786

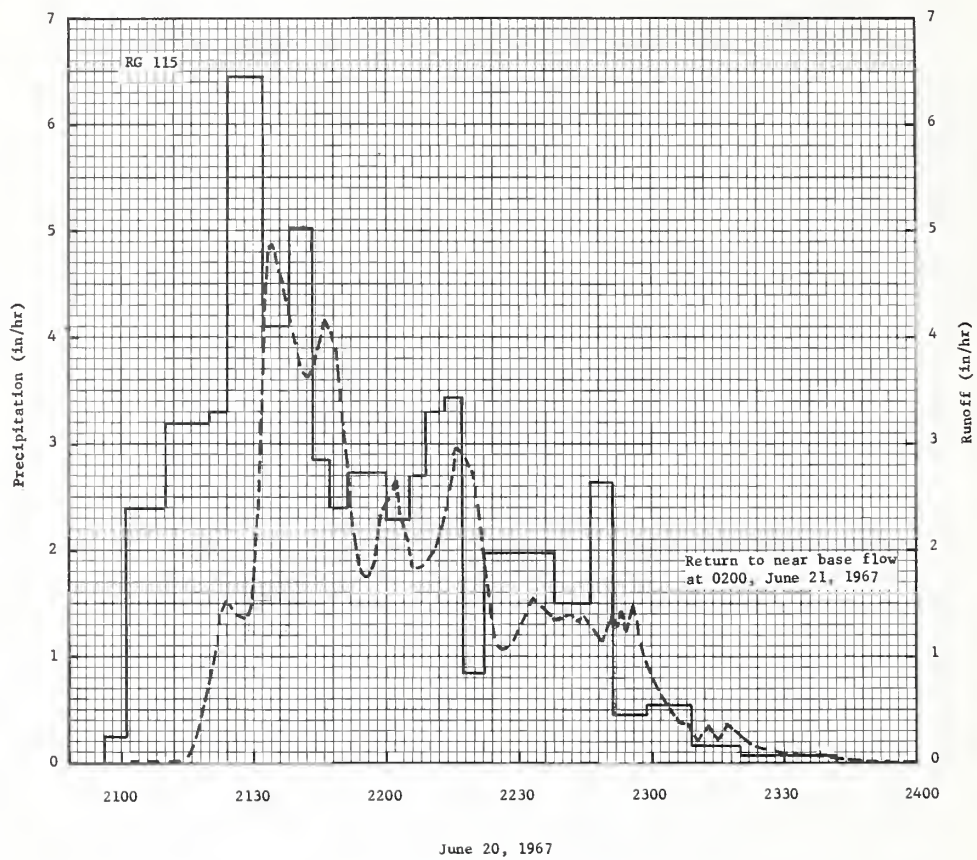
Watershed conditions:
 95% - Contoured corn,
 7-10 in. tall, approx.
 15% canopy; 50%
 cultivated first time
 prior to event;
 5% - gullies and grassed
 waterways, grass approx.
 18-24 in. tall.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 83.490. 1/ RETURN TO NEAR BASE FLOW.



June 14, 1967

TREYNOR, IOWA WATERSHED 2



TREYNOR, IOWA WATERSHED 2

MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA AREA—107 ACRES WATERSHED 3							
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P 1/	.64	.09	1.12	2.64	3.26	15.61	2.08	1.88	3.72	2.55	.10	.54	34.23
Q	.16	.24	.18	.14	.11	3.05	.71	.50	.26	.23	.18	.19	5.95
STA AV 2/P	.58	.61	1.18	3.15	4.34	9.80	3.12	2.85	5.36	1.18	.71	.64	33.52
(64-67) Q	.20	.54	.64	.36	.32	1.23	.46	.28	.41	.31	.26	.21	5.22
MEAN P 3/	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37
97 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
1967	6-20	2.01	6-20	1.01	6-20	1.29	6-20	1.34	6-20	1.35	6-20	1.37	6-20	1.41	6-14	1.74

MAXIMUMS FOR PERIOD OF RECORD																
1964 TO 1967	6-20 1967	2.01	6-20 1967	1.01	6-20 1967	1.29	6-20 1967	1.34	6-20 1967	1.35	6-20 1967	1.37	2-27 1965	1.54	6-14 1967	1.74

Notes: Watershed conditions: 96% permanent pasture with controlled grazing; 4% gravel roads and farmstead. 1/ Precipitation: Arithmetic average of gages 113 and 114 before Apr. 4 and after Nov. 1; Thiessen average of gages 112, 113, and 114 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Jan. 2, 1964. Jan. 1, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.

1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 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 14, 1967											
	3 RG 1/2		6-14	RG	113		6-14	0513	.0008	.0000	
5-15	.00	.0035		0510	.00	.00		0519	.0009	.0001	
5-16	.00	.0035		0517	1.37	.16		0523	.0012	.0002	
5-17	.00	.0035		0529	2.25	.61		0525	.0012	.0002	
5-18	.00	.0033		0533	1.05	.68		0527	.0015	.0002	
5-19	.00	.0030		0612	.11	.75		0528	.0017	.0003	
5-20	.00	.0031		0658	.10	.83		0530	.0045	.0004	
5-21	.00	.0029						0534	.0158	.0010	
5-22	.00	.0026		RG	112	.80		0539	.0269	.0028	
5-23	.00	.0026		RG	114	.85		0544	.0457	.0058	
5-24	.00	.0024		3 RG	AVG 4/	.83		0546	.0676	.0077	
5-25	.00	.0020						0550	.141	.0147	
5-26	.00	.0020						0553	.197	.0232	
5-27	.00	.0022						0555	.232	.0303	
5-28	.38	.0034						0558	.246	.0423	
5-29	.33	.0030						0600	.236	.0503	
5-30	1.42	.0070						0602	.203	.0576	
5-31	.74	.0054						0608	.139	.0747	
6-1	.16	.0048						0612	.110	.0830	
6-2	.00	.0032						0625	.0503	.1003	
6-3	.00	.0027						0640	.0217	.1093	
6-4	1.29	.0038						0708	.0064	.1158	
6-5	1.95	.2461						0725	.0045	.1174	
6-6	.00	.0070						0732	5/ .0042	.1179	
6-7	1.78	.2292									
6-8	.01	.0121									
6-9	2.40	.2973									
6-10	.07	.0245									
6-11	.99	.0534									
6-12	.04	.0230									
6-13	.00	.0186									
6-14	6/ .02	7/ .0040									

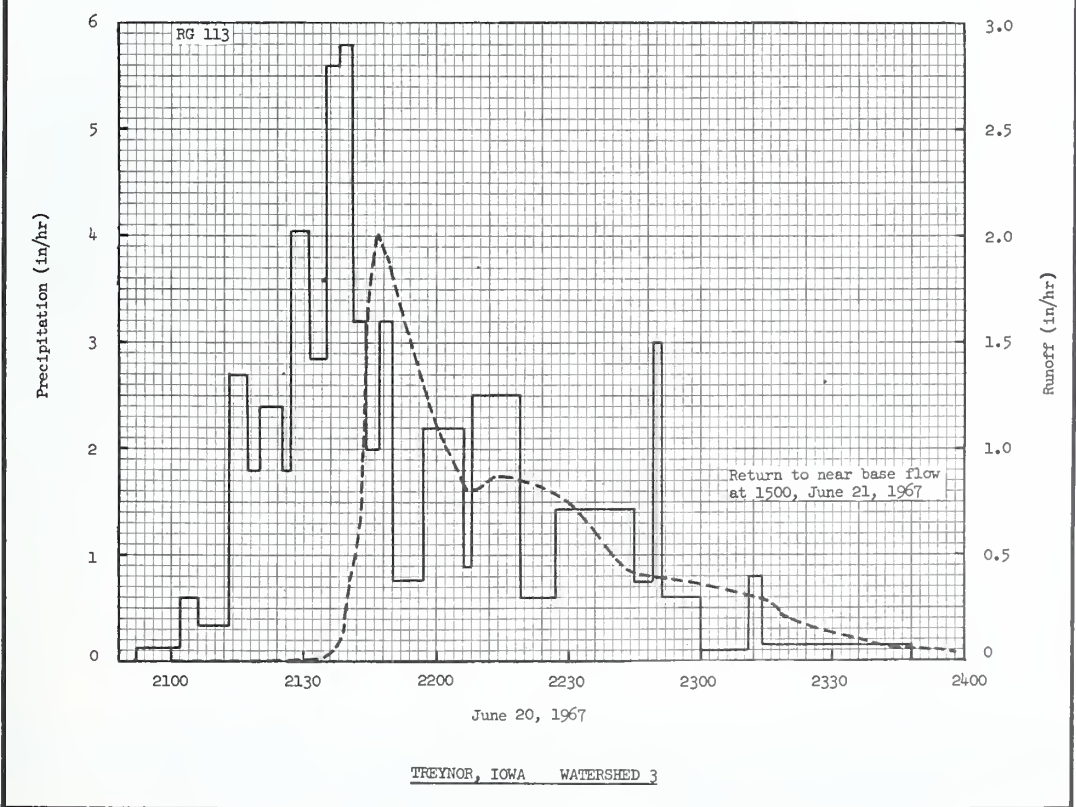
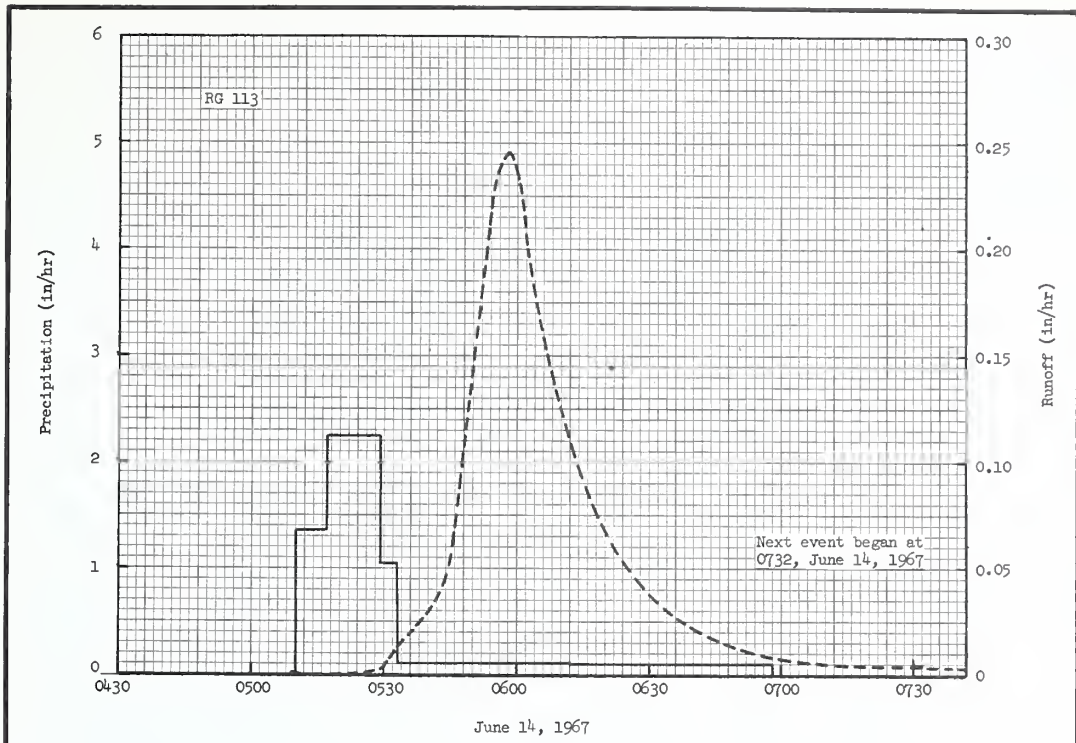
Watershed conditions:
 96% - Pasture, good stand, moderately grazed, 60% 12-14 in. tall, 40% 4-6 in. tall;
 4% - gravel roads and farmstead.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 107.89. FOR TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1964, P. 71.3-4. 4/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ BEGINNING OF NEXT EVENT. 6/ RAINFALL FROM 0320 TO 0510. 7/ RUNOFF PRIOR TO 0513.

1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA WATERSHED 3							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MD-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
<u>Event of June 20 and 21, 1967</u>										
	3 RG 1/		6-20	RG	113		6-20	2113	.0010	.0000
5-21	.00	.0029	2052		.00	.00	2116	.0015	.0000	
5-22	.00	.0026	2102		.12	.02	2122	.0017	.0002	
5-23	.00	.0026	2106		.60	.06	2126	.0020	.0003	
5-24	.00	.0024	2113		.34	.10	2129	.0042	.0005	
5-25	.00	.0020	2117		2.70	.28	2131	.0107	.0007	
5-26	.00	.0020	2120		1.80	.37	2137	.0616	.0043	
5-27	.00	.0022	2125		2.40	.57	2139	.170	.0082	
5-28	.38	.0034	2127		1.80	.63	2140	.343	.0125	
5-29	.33	.0030	2131		4.05	.90	2142	.546	.0273	
5-30	1.42	.0070	2135		2.85	1.09	2143	.807	.0385	
5-31	.74	.0094	2138		5.60	1.37	2144	1.33	.0564	
6-1	.16	.0048	2141		5.80	1.66	2145	1.78	.0824	
6-2	.00	.0032	2144		3.20	1.82	2146	1.96	.1135	
6-3	.00	.0027	2147		2.00	1.92	2147	2.01	.1466	
6-4	1.29	.0038	2150		3.20	2.08	2148	1.92	.1793	
6-5	1.95	.2461	2157		.77	2.17	2149	1.88	.2110	
6-6	.00	.0070	2206		2.20	2.50	2152	1.66	.2995	
6-7	1.78	.2292	2208		.90	2.53	2155	1.44	.3769	
6-8	.01	.0121	2219		2.51	2.99	2158	1.23	.4436	
6-9	2.40	.2973	2227		.60	3.07	2201	1.06	.5010	
6-10	.07	.0245	2245		1.43	3.50	2205	.899	.5662	
6-11	.99	.0534	2249		.75	3.55	2207	.807	.5946	
6-12	.04	.0230	2251		3.00	3.65	2210	.822	.6353	
6-13	.00	.0186	2300		.60	3.74	2213	.868	.6776	
6-14	.89	.1426	2311		.11	3.76	2216	.868	.7210	
6-15	.77	.0818	2314		.80	3.80	2222	.830	.8058	
6-16	.19	.0386	2348		.14	3.88	2227	.793	.8734	
6-17	.00	.0284					2230	.751	.9121	
6-18	.00	.0251					2235	.630	.9696	
6-19	.00	.0246		RG	112	3.78	2240	.490	1.0163	
6-20	.00	2/.0199		RG	114	4.15	2243	.434	1.0394	
				3 RG	AVG 1/	3.94	2250	.388	1.0873	
							2258	.374	1.1381	
							2315	.283	1.2311	
							2318	.222	1.2437	
							2330	.127	1.2787	
							2336	.0990	1.2900	
							2341	.0692	1.2970	
							2344	.0587	1.3002	
							2354	.0468	1.3090	
							2358	.0348	1.3117	
							2400	.0316	1.3128	
							6-21 0015	.0200	1.3193	
							0029	.0117	1.3230	
							0035	.0102	1.3240	
							0055	.0061	1.3268	
							0110	.0048	1.3281	
							0117	.0048	1.3287	
							0230	.0032	1.3335	
							0600	.0023	1.3431	
							1000	.0020	1.3518	
							1500	3/.0017	1.3609	

Watershed conditions:
 96% - Pasture, good stand,
 moderately grazed, 6-18 in.
 tall;
 4% - gravel roads and farmstead.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 107.89. 1/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES.
 2/ RUNOFF PRIOR TO 2113. 3/ RETURN TO NEAR BASE FLOW.



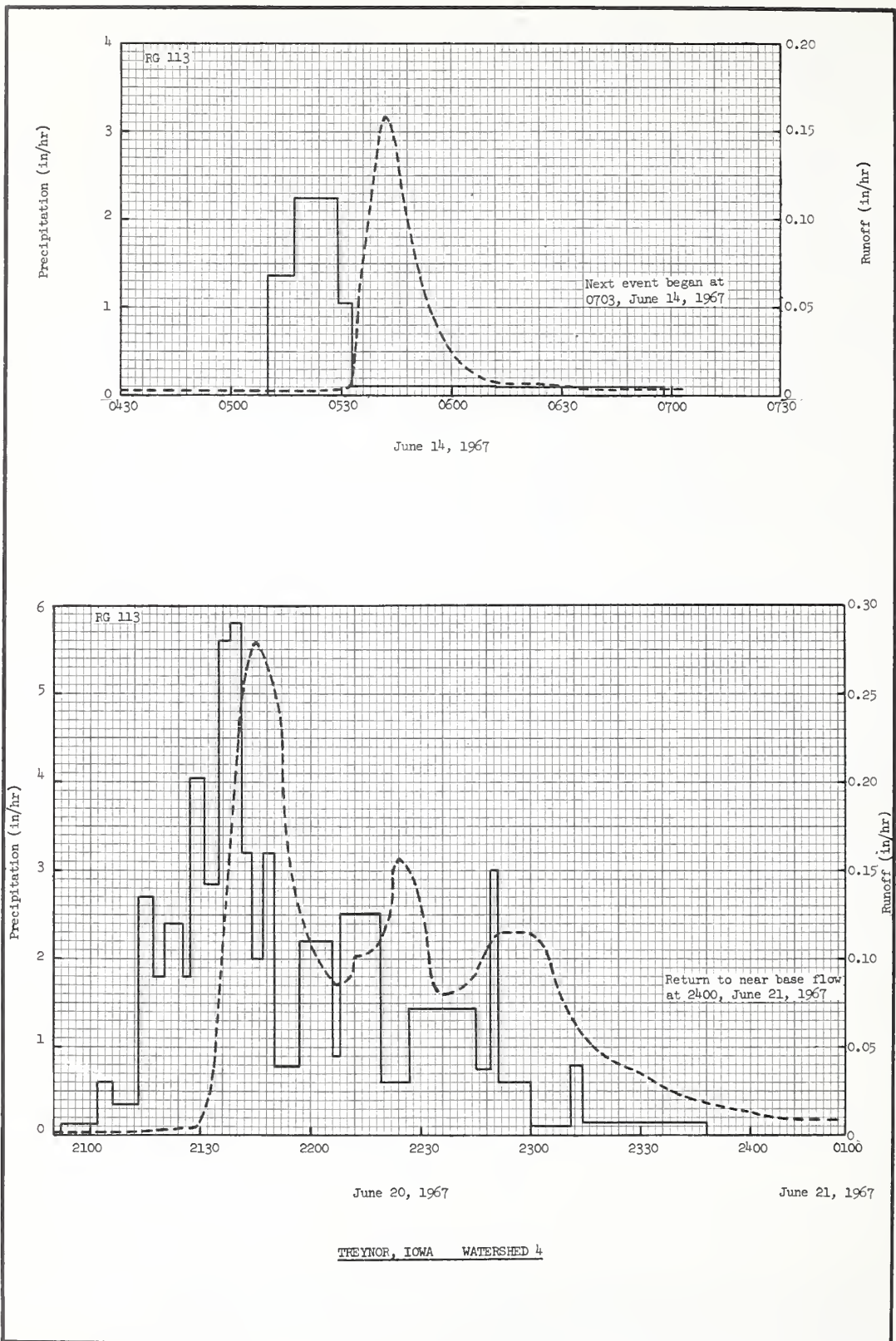
MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA							WATERSHED 4			
						AREA—150 ACRES										
MDNTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
YEAR																
1967 P 1/	.70	.08	1.04	2.59	3.24	15.70	2.13	1.93	3.88	2.61	.10	.55	34.55			
Q	.29	.28	.27	.28	.26	2.61	1.34	.71	.55	.52	.47	.43	8.01			
STA AV 2/F	.58	.61	1.16	3.12	4.28	9.89	3.16	2.78	5.91	1.21	.71	.62	34.03			
(64-67) Q	.41	.44	.75	.48	.55	1.47	1.13	.67	.76	.70	.56	.48	8.40			
MEAN P 3/																
97 YR	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37			
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
1967	6-20	.28	6-20	.15	6-20	.23	6-20	.26	6-20	.29	6-20	.36	6-20	.48	6-20	1.07
MAXIMUMS FOR PERIOD OF RECORD																
1964 1967	6-25 1966	.30	6-22 1964	.17	6-20 1967	.23	2-28 1965	.35	2-28 1965	.50	2-28 1965	.65	2-28 1965	.76	6-20 1967	1.07
Notes: Watershed conditions: 82% contour corn above level terraces which have a capacity of 2 in. of runoff; 7% contour corn below the bottom terraces; 10% grassed terrace back-slopes; 1% gully. 1/ Precipitation from gage 113 before Apr. 4 and after Nov. 1; Thiessen average of gages 111, 112, and 113 for remainder of year. 2/ Precipitation records began Jan. 1, 1964. Runoff records began Feb. 27, 1964. Jan. 1-Feb. 27, 1964 runoff estimated and included in average. 3/ Mean P based on 97-yr. (1871-1967) U.S. Weather Bureau record period at Omaha, Nebr.																
1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA WATERSHED 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 14, 1967																
	3 RG 4/			RG	113		6-14	0511	.0026	.0000						
5-15	.00	.0079	6-14	0510	.00	.00	0521	.0028	.0005							
5-16	.00	.0034		0517	1.37	.16	0532	.0054	.0012							
5-17	.00	.0083		0529	2.25	.61	0533	.0095	.0013							
5-18	.00	.0076		0533	1.05	.68	0535	.0579	.0025							
5-19	.00	.0070		0612	.11	.75	0540	.140	.0107							
5-20	.00	.0081		0658	.10	.83	0542	.159	.0157							
5-21	.00	.0081					0545	.140	.0232							
5-22	.00	.0073		RG	111	.81	0546	.125	.0254							
5-23	.00	.0069		RG	112	.80	0554	.0489	.0370							
5-24	.00	.0069		3 RG	AVG 4/	.81	0600	.0235	.0407							
5-25	.00	.0070					0604	.0155	.0420							
5-26	.00	.0070					0606	.0132	.0424							
5-27	.00	.0075					0608	.0103	.0428							
5-28	.40	.0090					0621	.0066	.0447							
5-29	.29	.0088					0632	.0043	.0457							
5-30	1.45	.0124					0635	.0036	.0459							
5-31	.73	.0112					0645	.0034	.0464							
6-1	.17	.0105					0658	.0036	.0472							
6-2	.00	.0094					0703	5/ .0034	.0475							
6-3	.00	.0087														
6-4	1.28	.0105														
6-5	1.96	.1250														
6-6	.00	.0141														
6-7	1.89	.1054														
6-8	.01	.0261														
6-9	2.49	.1495														
6-10	.06	.0671														
6-11	1.02	.0990														
6-12	.05	.0799														
6-13	.00	.0767														
6-14	6/ .02	7/.0145														
Watershed conditions:																
82% - Contour corn above level terraces;																
7% - contour corn below terraces, all corn 6-8 in. tall, approx. 8% canopy;																
10% - grassed terrace backslopes, grass 14-20 in. tall, terraces wet prior to event;																
1% - gully.																
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 151.25. FOR REVISED TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 71.4-3. 4/ THIESSEN AVERAGE OF THREE RECORDING RAIN GAGES. 5/ BEGINNING OF NEXT EVENT. 6/ RAINFALL FROM 0320 TO 0510. 7/ RUNOFF PRIOR TO 0511.																

Cooperative Research Project of USDA and Iowa Agriculture and Home Economics Experiment Station

1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA WATERSHED 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 20 and 21, 1967										
5-21	3 RG 1/	.0081	6-20	RG	113		6-20	2101	.0024	.0000
5-22	.00	.0073		2052	.00	.00		2116	.0030	.0007
5-23	.00	.0069		2102	.12	.02		2129	.0054	.0016
5-24	.00	.0069		2106	.60	.06		2133	.0280	.0027
				2113	.34	.10		2135	.0790	.0045
5-25	.00	.0070		2117	2.70	.28		2137	.140	.0082
5-26	.00	.0070		2120	1.80	.37		2140	.217	.0171
5-27	.00	.0075		2125	2.40	.57		2143	.266	.0292
5-28	.40	.0090		2127	1.80	.63		2145	.279	.0383
5-29	.29	.0088		2131	4.05	.90		2148	.266	.0519
5-30	1.45	.0124		2135	2.85	1.09		2152	.222	.0681
5-31	.73	.0112		2138	5.60	1.37		2201	.104	.0926
6-1	.17	.0105		2141	5.80	1.66		2207	.0854	.1021
6-2	.00	.0094		2144	3.20	1.82		2211	.0887	.1079
6-3	.00	.0087		2147	2.00	1.92		2212	.102	.1095
6-4	1.28	.0105		2150	3.20	2.08		2217	.104	.1181
6-5	1.96	.1250		2157	.77	2.17		2220	.116	.1236
6-6	.00	.0141		2206	2.20	2.50		2222	.145	.1279
6-7	1.89	.1054		2208	.90	2.53		2224	.157	.1330
6-8	.01	.0261		2219	2.51	2.99		2228	.145	.1430
6-9	2.49	.1495	2227	.60	3.07	2233	.0870	.1527		
6-10	.06	.0671	2245	1.43	3.50	2235	.0806	.1555		
6-11	1.02	.0990	2249	.75	3.55	2241	.0838	.1637		
6-12	.05	.0799	2251	3.00	3.65	2245	.0921	.1696		
6-13	.00	.0767	2300	.60	3.74	2249	.110	.1763		
6-14	.94	.1238	2311	.11	3.76	2251	.114	.1800		
6-15	.79	.1026	2314	.80	3.80	2255	.116	.1876		
6-16	.22	.0869	2348	.14	3.88	2259	.116	.1953		
6-17	.00	.0817				2304	.104	.2045		
6-18	.00	.0754				2308	.0806	.2107		
6-19	.00	.0684	RG	111	3.54	2312	.0632	.2154		
6-20	.00	2/ .0550	RG	112	3.78	2319	.0466	.2218		
			3 RG	AVG 1/	3.71	2328	.0370	.2281		
						2335	.0280	.2319		
						2400	.0132	.2405		
						6-21	0008	.0095	.2420	
							0019	.0076	.2436	
							0041	.0060	.2461	
							2400	3/ .0051	.3753	

Watershed conditions:
 02% - Contour corn above level terraces;
 7% - contour corn below terraces corn 6-10 in. tall, approx.
 10% canopy, 10% cultivated prior to event;
 10% - grassed terrace backslopes, grass 18-24 in. tall, some terraces ponded prior to event;
 1% - gully.

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 151.25. 1/ THESSSEN AVERAGE OF THREE RECORDING RAIN GAGES.
 2/ RUNOFF PRIOR TO 2101. 3/ RETURN TO NEAR BASE FLOW.



TREYNOR, IOWA WATERSHED 4

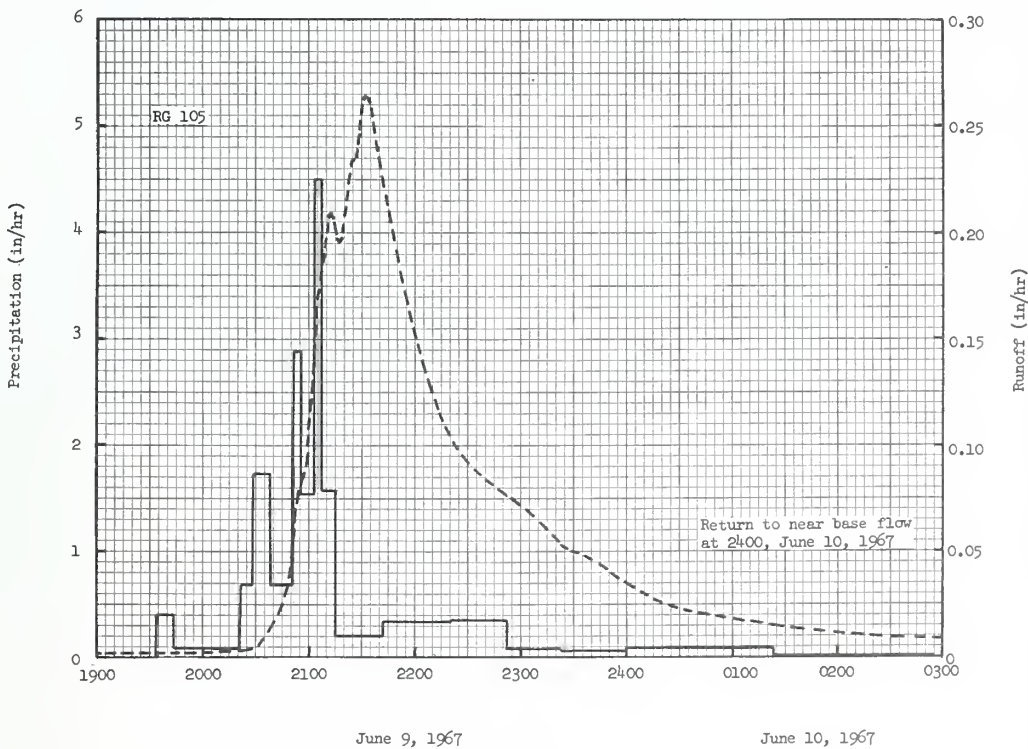
MONTHLY PRECIPITATION AND RUNOFF (inches)						TREYNOR, IOWA						WATERSHED 5				
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967 P 1/	.68	.16	1.18	2.60	2.69	17.25	2.29	1.86	2.85	2.06	.10	.62	34.34			
Q	.10	.17	.13	.13	.11	4.59	1.26	.65	.42	.32	.25	.22	0.35			
STA AV 2/P	.54	.59	1.51	3.04	3.45	8.20	3.21	3.74	5.14	1.01	1.00	.78	32.21			
(63-67) Q	.24	.38	.72	.35	.33	1.53	.64	.39	.61	.36	.33	.30	6.18			
MEAN P 3/	.73	.91	1.41	2.60	3.72	4.69	3.72	3.43	3.12	2.01	1.17	.86	28.37			
97 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
1967	6-20	1.30	6-20	.93	6-20	1.32	6-20	1.59	6-20	1.63	6-20	1.69	6-20	1.80	6-20	2.52
MAXIMUMS FOR PERIOD OF RECORD																
1967 TO 1967	6-20	1.30	6-20	.93	6-20	1.32	6-20	1.59	6-20	1.63	6-20	1.69	6-20	1.80	6-20	2.52
1967																
NOTES: Watershed conditions: Percent crop distribution of area above or below level terraces, respectively is; corn, 32 and 3; beans, 25 and 6; small grain, 3 and 0; hay and clover, 19 and 1; pasture, 3 and 4, and roads and farmsteads, 3 and 1. 1/ Precipitation: Before Apr. 4 and after Nov. 1, arithmetic average of gages 101 and 108; Thiessen average of seven recording gages for remainder of year. 2/ Precipitation and runoff records began Feb. 6, 1963. Jan. 1-Feb. 6, 1963 precipitation and runoff estimated and included in average. 3/ Mean P based on 97-yr (1871-1967) U. S. Weather Bureau record period at Omaha, Nebr.																
1967 SELECTED RUNOFF EVENTS						TREYNOR, IOWA						WATERSHED 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 June 9 and 10, 1967																
5-10	7 RG 4/	.0032	6-9	RG	105	.00	6-9	1935	.0019	.0000						
5-11	.00	.0031		1934	.00	.00		1957	.0022	.0008						
5-12	.00	.0032		1943	.40	.06		2026	.0031	.0021						
5-13	.00	.0031		2022	.08	.11		2032	.0060	.0025						
				2029	.69	.19		2039	.0155	.0038						
5-14	.02	.0031		2038	1.73	.45		2048	.0343	.0075						
5-15	.00	.0032		2051	.69	.60		2051	.0558	.0098						
5-16	.05	.0032		2056	2.88	.84		2055	.0795	.0143						
5-17	.00	.0029		2103	1.54	1.02		2059	.0923	.0200						
5-18	.00	.0027		2107	4.50	1.32		2101	.119	.0235						
5-19	.00	.0023		2115	1.57	1.53		2105	.170	.0332						
5-20	.00	.0023		2142	.20	1.62		2108	.190	.0422						
5-21	.00	.0023		2221	.34	1.84		2112	.209	.0555						
5-22	.00	.0026		2252	.35	2.02		2114	.201	.0623						
5-23	.00	.0024		2323	.08	2.06		2117	.196	.0722						
5-24	.00	.0018		2400	.06	2.10		2121	.212	.0858						
5-25	.00	.0015	6-10	0033	.09	2.15		2123	.229	.0932						
5-26	.00	.0015		0124	.09	2.23		2125	.235	.1009						
5-27	.03	.0015		0204	.01	2.24		2127	.235	.1088						
5-28	.08	.0022		0254	.01	2.25		2130	.257	.1211						
5-29	.36	.0034		RG	101	2.33		2132	.264	.1297						
5-30	.97	.0127		RG	102	2.29		2134	.260	.1385						
5-31	.68	.0116		RG	103	2.16		2136	.251	.1470						
6-1	.03	.0046		RG	104	2.15		2145	.209	.1815						
6-2	.00	.0030		RG	106	2.13		2150	.187	.1980						
6-3	.00	.0025		RG	107	2.15		2157	.160	.2183						
6-4	.44	.0028						2212	.119	.2532						
6-5	2.87	.1746		7 RG	AVG 4/	2.19		2223	.101	.2734						
6-6	.00	.0150						2226	.0956	.2783						
6-7	2.17	.1687						2248	.0780	.3101						
6-8	.00	.0399						2321	.0558	.3469						
6-9	5/ .96	5/ .1124						2324	.0523	.3496						
								2334	.0489	.3580						
								2400	.0335	.3759						
								0020	.0259	.3858						
								0057	.0177	.3993						
								0222	.0104	.4192						
								0223	.0100	.4194						
								0251	.0084	.4236						
								0426	.0055	.4347						
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 392.24. FOR REVISED TOPOGRAPHIC MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1966, P. 71.5-3. 4/ THIESSEN AVERAGE OF SEVEN RECORDING RAIN GAGES. 5/ RAINFALL FROM 0123 TO 0700. 6/ RUNOFF PRIOR TO 1935.																

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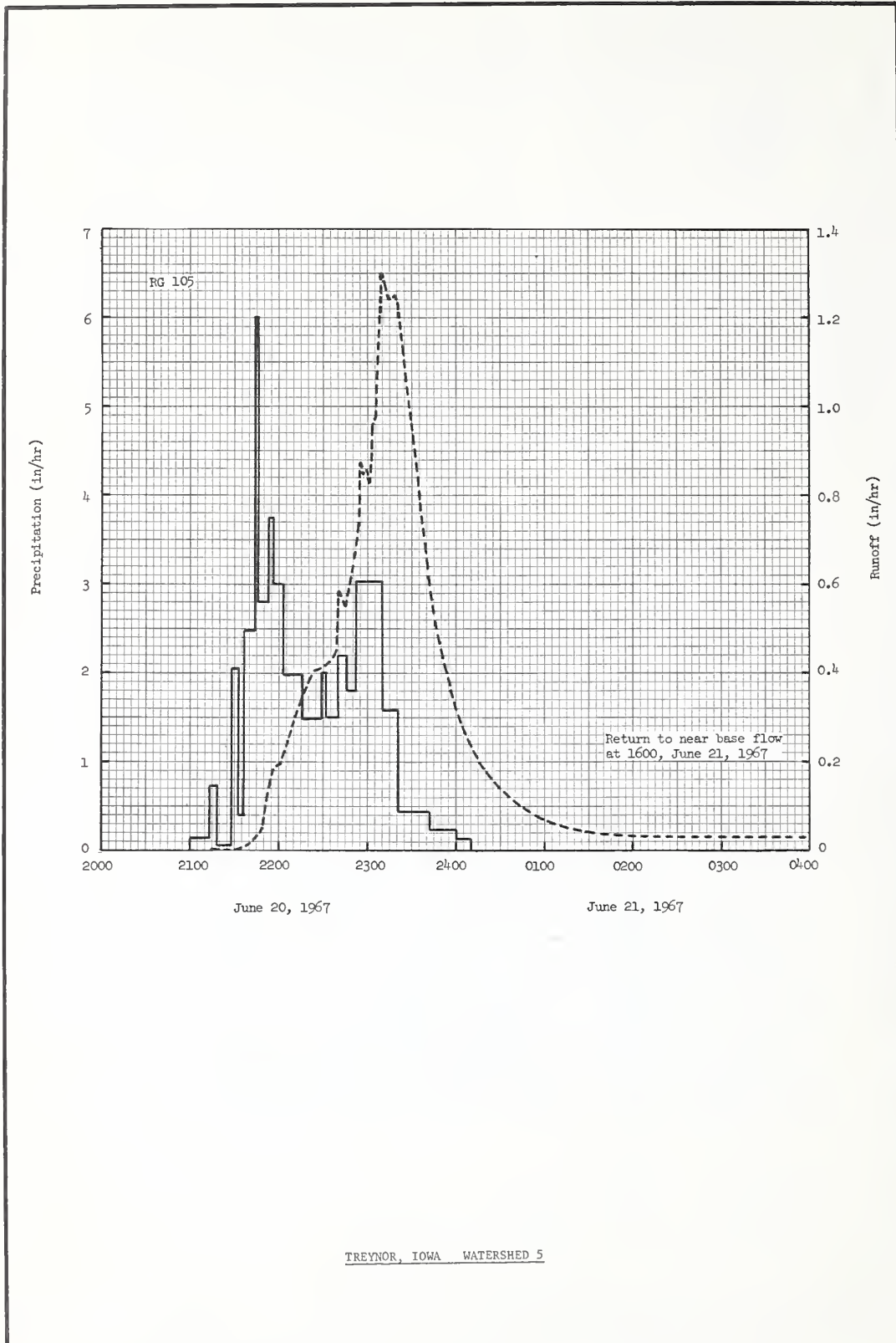
1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA WATERSHED 5							
ANTECEDENT CONDITIONS			RAINFALL				RUNOFF			
DATE MO-DAY	RAINFALL (inches)	RUNOFF (inches)	DATE MO-DAY	TIME OF DAY	INTENSITY (in/hr)	ACC. (inches)	DATE MO-DAY	TIME OF DAY	RATE (in/hr)	ACC. (inches)
Watershed conditions:			Event of June 9 and 10, 1967-Continued							
Percent of watershed in:								0553	.0045	.4419
Above terraces							0734	.0037	.4488	
Below terraces							1054	.0033	.4606	
Corn	32	3					1436	.0031	.4726	
Beans	25	6					1836	.0031	.4851	
Small grain	3	-								
Alfalfa and clover	19	1					2400	<u>1/</u> .0029	.5015	
Pasture	3	4								
Roads and farmsteads	3	1								
Totals	85	15								
Crop heights: Corn, 6 in.; beans, 3 in., small grain 12-18 in.; alfalfa and clover variable; and, pasture, 3-12 in.; some terraces overtopped during previous events and ponding prior to this event.										
			Event of June 20 and 21, 1967							
	7 RG <u>2/</u>			RG	105		6-20	2103	.0021	.0000
5-21	.00	.0023	6-20	2100	.00	.00	2110	.0024	.0003	
5-22	.00	.0026		2113	.14	.03	2118	.0024	.0006	
5-23	.00	.0024		2118	.72	.09	2124	.0026	.0008	
5-24	.00	.0018		2128	.06	.10	2129	.0031	.0011	
5-25	.00	.0015		2133	2.04	.27	2139	.0132	.0024	
5-26	.00	.0015		2136	.40	.29	2145	.0343	.0048	
5-27	.03	.0015		2144	2.48	.62	2149	.0535	.0077	
5-28	.08	.0022		2147	6.00	.92	2152	.116	.0119	
5-29	.36	.0034		2153	2.80	1.20	2157	.187	.0246	
5-30	.97	.0127		2157	3.75	1.45	2202	.198	.0406	
5-31	.68	.0116		2203	3.00	1.75	2213	.315	.0877	
6 -1	.03	.0046		2216	1.98	2.18	2223	.405	.1477	
6 -2	.00	.0030		2229	1.48	2.50	2226	.409	.1680	
6 -3	.00	.0025		2232	2.00	2.60	2238	.453	.2543	
6 -4	.44	.0028		2240	1.50	2.80	2241	.586	.2803	
6 -5	2.87	.1746		2246	2.20	3.02	2245	.550	.3181	
6 -6	.00	.0150		2252	1.80	3.20	2247	.586	.3371	
6 -7	2.17	.1687		2310	3.03	4.11	2253	.717	.4022	
6 -8	.00	.0399		2321	1.58	4.40	2255	.874	.4287	
6 -9	3.08	.4877		2342	.43	4.55	2257	.846	.4574	
6-10	.14	.1251		2400	.23	4.62	2259	.853	.4857	
6-11	1.35	.1949	6-21	0010	.12	4.64	2301	.826	.5138	
6-12	.12	.1246					2303	.960	.5435	
6-13	.00	.0728					2305	.975	.5758	
6-14	.58	.1214		RG	101	4.77	2309	1.24	.6496	
6-15	.42	.0762		RG	102	4.75	2310	1.30	.6708	
6-16	.21	.0846		RG	103	4.86	2312	1.27	.7137	
6-17	.00	.0617		RG	104	4.14	2314	1.24	.7555	
6-18	.00	.0575		RG	106	4.69	2319	1.25	.8594	
6-19	.00	.0517		RG	107	4.15	2321	1.22	.9005	
6-20	.00	<u>3/</u> .0423					2329	.975	1.0465	
				7 RG	AVG <u>2/</u>	4.54	2335	.787	1.1346	
							2345	.534	1.2447	
							2353	.414	1.3079	
							2400	.322	1.3508	
							0003	.290	1.3661	
							0017	.193	1.4225	
							0033	.132	1.4657	
							0048	.0906	1.4935	
Continued on next page										
NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 392.24. <u>1/</u> RETURN TO NEAR BASE FLOW. <u>2/</u> THIENSEN AVERAGE OF SEVEN RECORDING RAIN GAGES. <u>3/</u> RUNOFF PRIOR TO 2103.										

1967 SELECTED RUNOFF EVENTS			TREYNOR, IOWA WATERSHED 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)	
Watershed conditions:			Event of June 20-21, 1967-Continued								
Percent of watershed in:											
	Above terraces	Below terraces									
Corn	32	3						0123	.0454	1.5332	
Beans	25	6						0153	.0326	1.5527	
Small grain	3	-						0213	.0318	1.5634	
Alfalfa and clover	19	1						0227	.0259	1.5701	
Pasture	3	4						0249	.0183	1.5783	
Roads and farmsteads	3	1						0321	.0149	1.5871	
Totals	85	15						0331	.0132	1.5894	
Crop heights: Corn, 6-10 in.; beans, 3-6 in.; small grain 16-24 in.; alfalfa and clover variable, and pasture, 6-18 in. Some terrace overtopping during previous events and ponding prior to this event.								0500	.0088	1.6058	
								0643	.0066	1.6190	
								0753	.0063	1.6265	
								0959	.0060	1.6395	
								1259	.0055	1.6567	
								1600	.0047	1.6721	

NOTES: TO CONVERT RUNOFF IN IN/HR TO CFS, MULTIPLY BY 392.24. 1/ RETURN TO NEAR BASE FLOW.



TREYNOR, IOWA WATERSHED 5



MONTHLY PRECIPITATION AND RUNOFF (inches)						COTTONWOOD, SOUTH DAKOTA WATERSHED H-2								72.01		
						AREA—2.13 ACRES										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	<u>1</u> / Q	.32 .55	.34 .00	.47 .00	3.62 .00	2.15 .03	6.35 1.45	.25 .00	.65 .00	1.65 .00	.28 .00	.17 .00	.51 .00	16.76 2.03		
	STA AVG (63-67) <u>2</u> / O	.26 .11	.19 .00	.77 .14	2.06 .01	3.10 .27	3.91 .48	1.12 .02	1.24 .02	1.41 .02	.46 .00	.18 .00	.39 .00	15.09 1.07		
	MEAN P <u>3</u> / 58 YR	.43	.38	.75	1.76	2.79	3.00	1.82	1.56	1.13	.89	.40	.35	15.26		
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
1967	6-15	.36	6-15	.22	6-15	.29	6-15	.74	6-15	1.12	6-15	1.13	6-15	1.13	6-11	1.37
MAXIMUMS FOR PERIOD OF RECORD																
19 63 TO	5-30	3.58	5-30	.61	5-30	.63	5-30	1.13	5-30	1.13	5-30	1.13	5-30	1.13	6-11	1.37
19 67	1963		1963		1963		1963		1963		1963		1963		1967	
NOTES: Watershed conditions: 100% heavily grazed rangeland. Vegetative cover in late July was 439.8 lb./acre (oven-dry weight.) <u>1</u> / Arithmetic mean of rain gages RH-1, RH-2, RH-3 and RH-4. <u>2</u> / Precipitation and runoff records began Jan. 1963. <u>3</u> / Mean P based on 58-yr. (1910-1967) U. S. Weather Bureau record period at Cottonwood, S. D.																
NO SUITABLE SELECTED RUNOFF TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, USDA MISC. PUB. 1216, P. 72.1-5.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COTTONWOOD, SOUTH DAKOTA WATERSHED L-2							72.02			
						AREA—2.38 ACRES										
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P ^{1/} Q	.28 .00	.30 .00	.38 .01	3.43 .00	2.20 .00	6.05 .64	.26 .00	.76 .00	1.59 .00	.32 .00	.17 .00	.51 .00	16.25 0.65		
STA AVG (63-67)	P ^{2/} Q	.25 .00	.20 .00	.72 .34	2.02 .00	3.09 .05	3.95 .39	1.05 .00	1.24 .00	1.44 .00	.45 .00	.17 .00	.31 .00	14.89 0.78		
58 YR MEAN P ^{3/}		.43	.38	.75	1.76	2.79	3.00	1.82	1.56	1.13	.89	.40	.35	15.26		
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
1967	6-15	.22	6-15	.15	6-15	.19	6-15	.49	6-15	.64	6-15	.64	6-15	.64	6-15	.64
MAXIMUMS FOR PERIOD OF RECORD																
1963 TO 1967	6-15 1963	.54	6-15 1963	.38	6-15 1963	.54	6-15 1963	1.07	6-15 1963	1.16	6-15 1963	1.24	6-15 1963	1.24	3-8 1966	1.54
NOTES: Watershed conditions: 100% lightly grazed rangeland. Vegetative cover in late July was 736.7 lb./acre (oven-dry weight.) 1/ Arithmetic mean of rain gages RL-1, RL-2, RL-3 and RL-4. 2/ Precipitation and runoff began Jan. 1963. 3/ Mean P based on 58 yr. (1910-1967) U. S. Weather Bureau record period at Cottonwood, S. D.																
NO SUITABLE SELECTED RUNOFF TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, USDA MISC. PUB. 1216, P. 72.2-4.																

MONTHLY PRECIPITATION AND RUNOFF (inches)						COTTONWOOD, SOUTH DAKOTA WATERSHED M-1 AREA—2.35 ACRES							
MONTH YEAR	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	$\frac{P1}{Q}$.32 .00	.33 .00	.47 .00	3.65 .00	2.19 .00	6.41 .77	.25 .00	.69 .00	1.58 .00	.33 .00	.18 .00	.57 .00	16.97 0.77
STA AVG (63-67)	$\frac{P2}{Q}$.25 .00	.19 .00	.75 .38	2.02 .00	3.10 .26	3.99 .34	1.09 .00	1.25 T	1.39 .00	.47 .00	.20 .00	.38 .00	15.08 0.98
58 YR. MEAN P	$\frac{P3}{Q}$.43	.38	.76	1.72	2.80	2.88	1.84	1.58	1.12	.90	.41	.35	15.17

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
1967	6-15	.25	6-15	.16	6-15	.19	6-15	.50	6-15	.72	6-15	.72	6-15	.72	6-11	.76

MAXIMUMS FOR PERIOD OF RECORD																
19 63 TO 19 67	5-30 1963	2.30	5-30 1963	.71	5-30 1963	.76	5-30 1963	1.12E	5-30 1963	1.12E	5-30 1963	1.12E	3-8 1966	1.54	3-8 1966	1.91

NOTES: Watershed conditions: 100% moderately grazed rangeland. Vegetative cover in late July was 393.4 lb./acre (oven-dry weight.) 1/ Arithmetic mean of rain gages RM-1, RM-2, RM-3 and RM-4. 2/ Precipitation and runoff began Jan. 1963. 3/ Mean P based on 58-yr. (1910-1967) U. S. Weather Bureau record period at Cottonwood, S. D.

1967 DAILY AIR TEMPERATURE (degrees F)												COTTONWOOD, SOUTH DAKOTA WATERSHED M-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	38	6	30	14	64	31	43	17	39E	23E	57	44	87	58	93	61	77	51	92	60	61	32	54	31	
2	31	22	46	8	54	23	50	23	36	22	68	49	72	46	90	56	85	49	75	53	40	29	44	8	
3	33	9	52	26	33	20	73	20	39	23	84	52	72	43	87	50	87	51	93	48	32	20	58	24	
4	36	20	50	32	35	25	72	45	43	28	80	50	74	46	90	49	84	45	79	47	30	20	58	21	
5	31	6	49	6	31	10	65	40	53	23	74	53	83	49	93	59	85	53	79	46	44	8	59	13	
6	31	9	37	10	35	7	56	30	63	35	75	58	87	59	89	57	86	53	67	45	45	12	47	24	
7	9	-2	35	22	31	-3	72	21	63	47	72	58	89	65	93	59	89	57	57	40	57	8	39	10	
8	30	-9	44	2	39	3	74	32	63	41	72	54	86	53	93	63	88	52	72	22	62	16	31	12	
9	35	17	44	40	54	30	62	35	81	39	70	49	89	61	80	44	87	53	70	41	70	25	32	22	
10	28	7	40	28	49	30	66	28	78	49	69	48	87	60	82	53	88	60	57	18	62	32	43	26	
11	43	8	35	13	31	23	67	49	53	30	68	54	85	57	89	52	94	58	77	23	63	31	48	24	
12	40	19	51	14	28	25	65	43	47	35	74	55	85	52	95	60	94	55	77	40	55	26	35	21	
13	40	20	60	33	27	11	59	45	49	38	78	52	84	46	96	61	66	44	65	34	53	28	24	0	
14	37	18	50	11	22	15	67	44	56	34	78	57	87	49	95	54	62	47	65	38	54	25	22	-5	
15	35	6	14	-4	36	-7E	68	41	62	31	66	56	90	63	98	52	63	47	60	31	67	18	30	-3	
16	43	8	15	-13	35	15	65	37	66	44	73	50	90	56	97	58	69	44	75	23	61	26	41	13	
17	10	-4	6	-7	30	14	57	27	83	38	77	48	91	56	94	52	65	46	70	27	56	23	34	23	
18	27	-4	15	-19	43	20	71E	31	82	47	85	55	86	59	92	54	62	54	63	19	50	11	30	2	
19	43	2	23	-6	41	31	71	42E	68	37	74	56	87	65	83	42	62	50	70	26	39	16	19	-10	
20	46	31	24	-1	49	33	67	40	72	36	76	55	93	59	93	49	75	39	64	22	51	11	11	7	
21	52	21	44	15	61	24	46	28	77	40	76	50	100	57	95	55	78	39	84	40	42	23	9	2	
22	60	40	30	8	65	34	44	20	90	45	77	52	100	58	90	49	93	50	75	41	49	4	14	-20	
23	40	19	30	2	74	34	45	23	87	53	58	49	93	56	95	48	90	50	67	38	46	30	52	6	
24	25	11	29	0	70	41	57	38	88	55	66	43	93	61	104	62	84	36	56	27	55	15	42	30	
25	23	12	48	13	58	36E	47	35	88	51	77	41	99	63	102	64	89	47	52	15	46	27	45	4	
26	36	12	52	26	64	35	54	38	79	51	78	46	91	57	78	41	78	48	54	33	37	13	27	-1	
27	42	10	49	33	60	35	68	31	66	42	81	54	82	55	97	47	64	22	47	19	35	12	24	-9	
28	47	20	65	29	77	41	80	43	63	45	82	60	93	52	100	62	80	30	64	25	25	-5	26	10	
29	51	25	---	---	81	49	76	42	60	50	85	59	100	54	92	57	88	38	55	35	37	1	34	10	
30	47	32	---	---	75	39	38E	24E	51	46	89	56	99	67	82	48	95	39	58	20	58	7	28	-3	
31	44	27	---	---	56	30	---	---	48	45	---	---	98	58	76	42	---	---	69	25	---	---	---	3	-31
AV.	37	14	38	12	49	24	62	34	64	40	75	52	89	56	91	54	80	47	68	33	49	18	34	8	
MEAN	25.0		25.0		36.5		47.6		51.9		63.4		72.5		72.5		63.6		50.5		33.8		21.4		
STA AV	23	6	36	9	46	19	61	32	71	42	81	53	91	59	89	55	79	46	66	33	49	20	37	10	

NOTES: TEMPERATURE DATA FROM U. S. WEATHER BUREAU METEOROLOGICAL STATION AT COTTONWOOD, S. D. FOR 24 HOURS ENDING 1700.

1967 DAILY PRECIPITATION (inches)						COTTONWOOD, SOUTH DAKOTA WATERSHED M-1						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.00	.05	.00	.00	.12S	.02	.03	.00	.00	.00	.00	.00
2	T	.00	.00	.00	T	.00	.00	.39	.00	.00	.18	.00
3	T	.01	.16	.00	.00	.09	.00	.00	.00	.00	.00	.00
4	.00	.02	.09	.00	.00	.00	.00	.00	.00	.00	.00	.00
5	.00	.01	.00	.00	.00	.00	.00	.08	.00	.00	.00	.00
6	.14	.02	.03	.00	.00	.04	.00	.00	.00	.17	.00	.00
7	.08	.10	T	.00	.00	.00	.00	.02	.00	.00	.00	.00
8	.00	.00	.00	.00	.00	.00	.00	.04	.00	.00	.00	.17
9	.00	.00	.00	.00	.00	.61	.00	.00	.35	.00	.00	.00
10	.00	.00	.00	.00	.05	.00	.00	.00	.00	.00	.00	.00
11	.00	.04	T	.00	.02	1.55	.00	.00	.02	.00	.00	.01
12	.00	.00	.00	.87	.12	.07	.00	.00	.03	.00	.00	.00
13	.00	.00	.00	.28	.00	.23	.00	.00	.07	.00	.00	.00
14	T	.04	.13	.02	.00	.04	.00	.00	.26	.00	.00	.00
15	.00	.04	.01	.00	.08	2.38	.00	.09	.33	.00	.00	.00
16	.03	.00	.00	T	.02	.00	.00	.00	.13	.00	.00	.00
17	.02	T	.00	.02	.00	.00	.00	.00	.04	.00	.00	.17
18	.00	.00	.00	.00	.00	.05	.00	.04	.02	.00	.00	.00
19	.00	.00	.05	.41	.00	.00	.00	.00	.33	.00	.00	.00
20	.00	.00	.00	.07	.00	.00	.00	.00	.00	.00	.00	.09
21	.00	T	.00	T	.00	.00	.00	.00	.00	.00	.00	.02
22	.00	.00	.00	.00	.00	T	.00	.00	.00	.00	.00	.00
23	.00	.00	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00
24	T	.00	.00	.36	.02	.04	.00	.00	.00	.00	.00	.00
25	.01	.00	.00	.00	.22	.59	.03	.00	.00	.10S	.00	.00
26	.00	.00	.00	.00	.25	.09	.14	.00	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.00	.00	.00	.00	.03	.00	.00	.00	.06	.00	.04
29	.00	-----	.00	.02	.15	.00	.00	.00	.00	.00	.00	.02
30	.04	-----	.00	1.60N	.96	.03	.00	.03	.00	.00	.00	.05
31	.00	-----	.00	-----	.18	-----	.05	.00	-----	.00	-----	.00
TOTAL	.32	.33	.47	3.65	2.19	6.41	.25	.69	1.58	.33	.18	.57
STA AV	.25	.19	.75	2.02	3.10	3.99	1.09	1.25	1.39	.47	.20	.38

NOTES: PRECIPITATION FROM JAN. 1 THROUGH MARCH 31 AND NOV. 1 THROUGH DEC. 31 IS SNOW, ALL THE REST IS RAIN EXCEPT AS INDICATED. PRECIPITATION IS ARITHMETIC MEAN OF GAGES RM-1, RM-2, RM-3 AND RM-4.

NO SUITABLE SELECTED RUNOFF TO REPORT. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, USDA MISC. PUB. 1216, P. 72.5-7.

1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						2/ AHOSSKIE, NORTH CAROLINA WATERSHED W-A1 AREA—36,480 ACRES (57.0 SQ. MILES)							75.1
MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967 P	4.45	3.47	.81	1.50	2.41	5.40	4.67	8.10	2.76	1.41	1.52	4.96	41.37
Q	2.89	1.96	.60	.27	.17	.93	.93	3.05	.64	.17	.16	1.74	13.51
STA AVG—3/ (65-67) P	3.49	3.75	2.28	1.50	3.49	4.75	4.66	6.02	2.72	1.01	1.17	2.83	37.67
O	1.58	2.54	2.26	.47	.63	.92	1.07	1.50	.34	.15	.13	.70	12.29
MEAN P4/ 58 YR	3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87

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
1967	1-8	.04	1-8	.04	1-8	.08	1-8	.25	1-8	.49	1-8	.97	1-8	1.48	8-21	2.65

MAXIMUMS FOR PERIOD OF RECORD															
1950 TO 1967	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-5 1964	10-3 1964	4.15
	.07	.07	.14	.42	.83	1.65	3.02								

Notes: Watershed conditions: Woodland, 65%; row crops, 30%; pasture, 2%; roads, urban, and homesites, 3%. 1/ Precipitation Thiessen weighted using 10 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AV Computed from rainfall and runoff records for period 1965-1967. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1945, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.

1967 DAILY AIR TEMPERATURE (degrees F)												AHOSSKIE, NORTH CAROLINA WATERSHED W-A1												75.1
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	47	36	72	41	51	28	78	35	83	57	63	46	86	63	88	67	81	61	77	40	72	38	43	31
2	52	33	70	51	59	17	88	52	83	60	66	48	86	64	90	64	76	50	76	46	69	55	53	20
3	52	38	67	35	73	43	90	59	83	53	78	46	85	67	91	70	76	44	80	44	67	48	63	42
4	50	43	52	28	72	39	85	44	69	40	79	55	86	65	91	73	75	47	84	54	66	48	55	32
5	45	30	55	30	80	39	81	34	72	47	79	57	86	53	89	69	85	51	86	51	61	28	62	25
6	46	21	63	32	82	74	88	66	73	48	81	57	83	53	85	67	83	53	84	56	47	27	57	26
7	66	28	59	24	78	56	87	66	78	70	82	53	82	63	86	65	84	52	75	57	47	19	66	31
8	64	55	40	18	57	35	87	40	78	46	85	50	87	69	85	64	84	54	72	58	50	18	68	46
9	60	43	37	24	66	29	67	30	68	50	86	52	89	71	89	63	83	60	79	63	62	21	65	40
10	46	39	39	17	73	41	85	55	71	41	89	54	87	70	85	72	75	63	77	62	69	28	56	49
11	44	29	55	31	76	58	77	55	83	55	88	54	88	73	82	64	74	57	75	47	68	31	63	44
12	45	19	53	38	74	49	65	30	83	63	91	60	90	72	69	61	67	53	67	49	75	39	69	50
13	61	27	47	26	69	45	64	28	69	53	92	61	90	71	71	61	75	53	68	43	65	47	65	35
14	55	41	65	27	78	50	82	50	81	51	91	59	78	69	81	57	77	46	72	39	56	35	70	33
15	55	45	70	60	80	53	84	60	90	78	84	63	75	67	83	57	80	48	75	43	50	32	58	42
16	54	38	71	59	67	38	86	51	87	51	90	59	83	66	85	55	78	59	79	45	42	22	48	21
17	55	25	60	32	54	37	83	50	73	39	87	55	85	60	86	61	73	65	80	53	60	21	59	21
18	50	26	37	30	43	15	77	62	76	47	85	70	85	65	87	69	82	63	76	59	67	33	60	35
19	40	26	37	27	48	16	74	40	83	53	82	68	84	67	90	69	87	53	64	41	64	31	70	53
20	---	---	18	44	27	50	20	70	85	64	81	64	86	67	87	72	84	61	63	30	56	22	67	50
21	48	28	46	40	50	37	78	42	83	56	88	65	87	65	88	67	84	62	73	36	65	37	65	43
22	68	35	49	18	52	36	78	62	68	48	88	67	86	63	77	69	83	65	73	35	58	42	78	50
23	74	35	47	35	60	26	---	---	62	48	90	71	90	63	85	67	72	49	69	32	56	42	75	27
24	76	42	44	28	58	32	76	52	59	48	92	69	89	67	88	68	73	46	77	43	48	25	39	16
25	74	49	36	11	60	28	71	35	73	40	90	71	90	71	90	66	76	40	77	50	64	42	53	24
26	73	44	37	15	74	38	61	40	78	42	86	63	88	70	89	66	77	39	70	39	70	32	50	33
27	76	56	49	15	65	39	58	50	82	42	79	53	89	69	89	70	82	53	71	34	59	43	48	24
28	70	36	55	39	71	43	63	40	93	56	80	51	87	71	85	69	85	68	70	44	55	28	54	34
29	50	32	---	---	70	55	68	33	86	55	79	50	88	72	82	60	85	66	64	27	49	18	59	35
30	51	23	---	---	65	33	76	39	85	56	79	60	83	69	83	60	75	41	66	29	40	27	46	23
31	56	22	---	---	70	28	---	---	68	50	---	---	88	65	84	66	---	---	65	31	---	---	45	25
AV.	57	34	52	31	65	38	77	46	78	52	84	58	86	66	85	65	79	54	74	45	59	33	59	34
MEAN	45.3		41.3		51.6		61.5		64.7		71.0		76.2		75.3		66.6		59.1		45.9		46.5	
STA AV	52	29	55	32	63	38	74	47	81	55	86	61	89	66	88	65	83	59	73	47	64	38	54	31

NOTES: TEMPERATURE DATA FROM U.S. WEATHER BUREAU STATION AT LEWISTON. RECORDS BEGAN MARCH 1954. FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 75.1-8.

1967 DAILY PRECIPITATION (inches)						AHOSSKIE, NORTH CAROLINA WATERSHED W-A1						75.1
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	.59
2	.00	.00	.00	.00	.00	.00	.25	.00	.00	.00	.27	.00
3	.00	.00	.00	.00	.09	.00	.15	.00	.00	.00	.00	.97
4	.35	.00	.00	.00	.12	.00	.40	.31	.00	.00	.00	.00
5	.10	.00	.00	.00	.03	.00	.00	.20	.00	.00	.00	.00
6	.00	.17	.00	.00	.00	.00	.00	.11	.00	.00	.00	.00
7	.14	.48	.00	.00	.13	.00	.67	.19	.00	.00	.00	.00
8	2.79	.00	.00	.00	.00	.00	.10	.14	.00	.00	.00	.00
9	.00	1.04	.00	.00	.00	.00	.00	.00	.76	.00	.00	.00
10	.35	.00	.00	.11	.00	.00	.00	.39	1.40	.38	.00	.54
11	.00	.00	.00	.00	.00	.00	.00	1.39	.00	.00	.00	.25
12	.00	.00	.00	.00	.11	.00	.00	.15	.00	.00	.00	.30
13	.00	.00	.00	.00	.00	.00	.79	.11	.00	.00	.00	.00
14	.27	.00	.00	.00	.09	.00	.88	.00	.00	.00	.00	.00
15	.02	.00	.00	.00	.16	.00	.84	.00	.00	.00	.00	.00
16	.00	.00	.00	.00	.30	.00	.00	.00	.11	.00	.00	.00
17	.00	.55	.00	.08	.00	.00	.00	.00	.15	.00	.00	.00
18	.00	.34	.00	.00	.00	2.34	.00	.00	.00	.46	.00	.16
19	.21	.00	.00	.00	.00	1.84	.20	.00	.00	.00	.00	.00
20	.12	.37	.00	.00	.00	.00	.00	.98	.00	.00	.00	.00
21	.08	.03	.81	.00	.00	.00	.24	2.08	.13	.00	.18	.00
22	.02	.29	.00	.69	.42	.00	.00	.60	.13	.00	.00	.98
23	.00	.00	.00	.00	.06	.26	.00	1.21	.00	.00	.52	.53
24	.00	.00	.00	.00	.00	.11	.00	.17	.00	.00	.55	.00
25	.00	.00	.00	.10	.00	.50	.11	.01	.00	.57	.00	.00
26	.00	.00	.00	.52	.00	.06	.00	.04	.00	.00	.00	.00
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
28	.00	.20	.00	.00	.26	.00	.00	.02	.05	.00	.00	.51
29	.00	-----	.00	.00	.20	.00	.03	.00	.03	.00	.00	.00
30	.00	-----	.00	.00	.00	.20	.00	.00	.00	.00	.00	.00
31	.00	-----	.00	-----	.44	-----	.01	.00	-----	.00	-----	.18
TOTAL	4.45	3.47	.81	1.50	2.41	5.40	4.67	8.10	2.76	1.41	1.52	4.36
STA AV	3.49	3.75	2.28	1.50	3.49	4.75	4.66	6.02	2.72	1.01	1.17	2.83

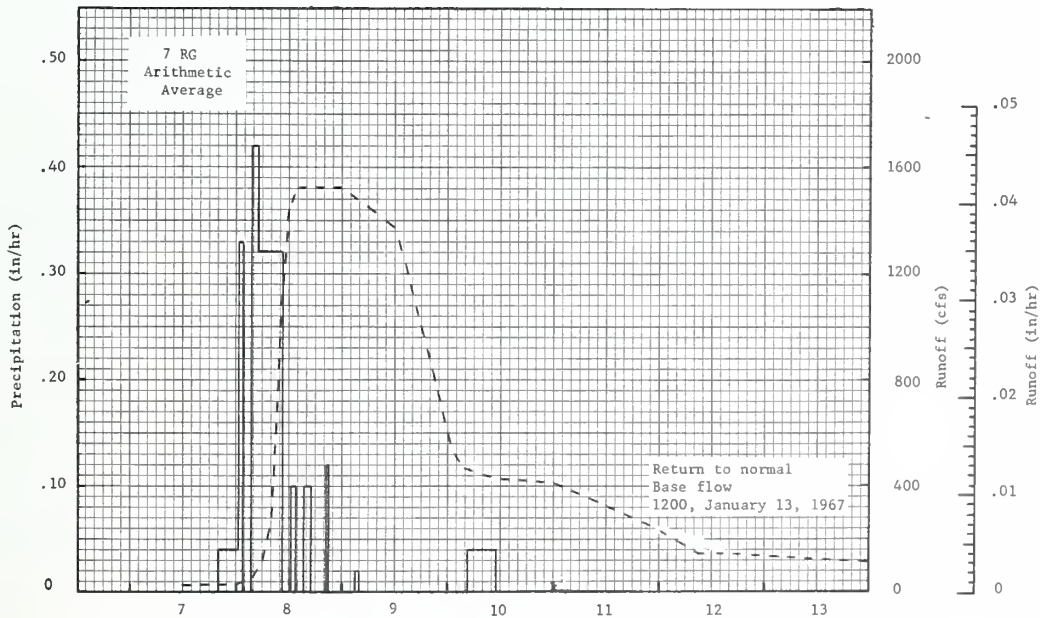
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 10 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967).

1967 MEAN DAILY DISCHARGE (cfs)						AHOSSKIE, NORTH CAROLINA WATERSHED W-A1						75.1
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	20.0	23.0	67.0	18.0	13.0	8.2	14.0	10.0	31.0	9.6	6.5	20.0
2	18.0	23.0	54.0	17.0	12.0	6.9	12.0	9.1	27.0	9.1	8.2	30.0
3	16.0	23.0	48.0	16.0	11.0	5.7	12.0	8.2	25.0	8.7	7.8	105.0
4	16.0	23.0	42.0	16.0	9.6	5.1	25.0	25.0	21.0	8.2	7.4	60.0
5	23.0	30.0	39.0	15.0	10.0	4.8	27.0	19.0	18.0	8.2	7.4	38.0
6	26.0	38.0	35.0	15.0	9.6	4.8	15.0	11.0	17.0	7.8	6.9	30.0
7	25.0	46.0	32.0	14.0	11.0	4.1	16.0	9.6	15.0	7.8	6.9	25.0
8	895.0	46.0	29.0	13.0	10.0	4.1	37.0	9.1	14.0	7.8	6.9	22.0
9	1,200.0	36.0	27.0	13.0	9.6	3.4	28.0	7.8	13.0	7.8	6.5	19.0
10	441.0	41.0	25.0	13.0	9.2	3.1	17.0	7.4	188.0	8.2	6.5	20.0
11	324.0	86.0	24.0	13.0	8.7	2.8	12.0	52.0	157.0	7.8	6.5	58.0
12	160.0	236.0	22.0	12.0	8.2	2.6	10.0	81.0	85.0	7.8	6.5	142.0
13	120.0	174.0	21.0	12.0	7.8	2.6	47.0	53.0	57.0	7.8	6.9	119.0
14	120.0	113.0	20.0	12.0	8.2	2.6	158.0	43.0	41.0	7.8	6.9	76.0
15	127.0	89.0	20.0	12.0	8.7	2.3	248.0	30.0	30.0	7.8	6.9	58.0
16	93.0	69.0	19.0	12.0	8.7	2.3	264.0	22.0	25.0	7.4	6.9	48.0
17	77.0	64.0	18.0	12.0	8.2	2.1	105.0	20.0	23.0	7.4	6.9	41.0
18	61.0	350.0	18.0	10.0	6.9	12.0	60.0	14.0	23.0	7.8	6.5	36.0
19	58.0	253.0	17.0	8.5	6.4	714.0	45.0	12.0	20.0	9.1	6.5	36.0
20	66.0	152.0	17.0	8.1	6.4	299.0	60.0	20.0	17.0	8.7	6.5	36.0
21	68.0	253.0	27.0	9.6	6.4	81.0	40.0	104.0	16.0	7.8	6.9	32.0
22	78.0	174.0	47.0	11.0	6.9	44.0	30.0	727.0	16.0	6.9	7.4	32.0
23	72.0	220.0	42.0	20.0	8.2	39.0	28.0	855.0	14.0	6.9	12.0	385.0
24	62.0	156.0	36.0	14.0	7.3	32.0	25.0	1,120.0	14.0	6.5	13.0	256.0
25	53.0	98.0	30.0	13.0	6.9	22.0	20.0	760.0	13.0	7.4	20.0	158.0
26	46.0	69.0	27.0	12.0	6.1	38.0	17.0	265.0	12.0	14.0	12.0	118.0
27	41.0	59.0	25.0	18.0	5.7	32.0	14.0	137.0	12.0	12.0	7.5	92.0
28	38.0	64.0	24.0	18.0	5.4	20.0	12.0	98.0	11.0	8.2	6.5	103.0
29	34.0	-----	22.0	16.0	7.8	15.0	12.0	67.0	11.0	7.4	5.5	223.0
30	29.0	-----	20.0	14.0	6.9	17.0	11.0	48.0	10.0	7.4	10.0	143.0
31	25.0	-----	18.0	-----	8.2	-----	11.0	38.0	-----	6.9	-----	103.0
MEAN	143.0	107.0	29.4	13.6	8.4	47.8	46.2	151.0	32.5	8.2	8.0	85.9
INCHES	2.89	1.96	.60	.27	.17	.93	.93	3.05	.64	.17	.16	1.74

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0006525. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD TO FAIR.

1967 SELECTED RUNOFF EVENT			AHOSKIE, NORTH CAROLINA				WATERSHED W-A1		75.1	
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 (cfs)	ACC. (inches)
Event of January 7-13, 1967										
1-7	7 RG1/.00	2/ .0082	1-7	2000	7 RG AVG1/.00	.00	1-7	1200	25	.0000
			1-7	0030	.04	.19		2400	29	.0088
			1-8	0130	.33	.52	1-8	0400	52	.0132
				0345	.00	.52		0600	117	.0178
				0500	.42	1.04		0800	268	.0283
				1030	.32	2.79		0900	600	.0401
				1230	.00	2.79		1200	1440	.1233
				1330	.10	2.89		1400	1520	.2037
				1530	.00	2.89		2400	1520	.6169
				1700	.10	3.04	1-9	0600	1470	.8608
				2030	.00	3.04		1200	1370	1.0924
				2045	.12	3.07		1800	900	1.2775
			1-9	0300	.00	3.07		2400	598	1.3997
				0400	.02	3.09	1-10	0400	473	1.4579
			1-10	0430	.00	3.09		0800	441	1.5077
				1100	.04	3.42		1200	430	1.5550
								1800	430	1.6251
								2400	410	1.6937
							1-11	1200	324	1.8134
								2400	228	1.9034
							1-12	0600	177	1.9365
								0900	151	1.9499
								1800	131	1.9843
							1-13	2400	3/ 113	2.0043

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00002719. 1/ PRECIPITATION IS ARITHMETIC AVERAGE OF 7 RAIN GAGES.
 2/ RUNOFF PRIOR TO 1200 ON 1-7-67. 3/ NORMAL BASE FLOW.



January 7 - 13, 1967
 AHOSKIE, NORTH CAROLINA WATERSHED W-A1

MONTHLY PRECIPITATION AND RUNOFF (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A2							75.2	
						AREA—15,360 ACRES (24.0 SQ. MILES)								
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL
1967	P	4.18	3.37	.81	1.45	2.02	5.53	4.15	7.77	2.58	1.65	1.42	4.95	39.88
	O	2.65	2.04	.48	.21	.14	.52	.44	1.91	.37	.12	.10	1.76	10.74
	STA AVG ^{3/} P	3.90	3.63	2.24	1.50	3.21	4.86	4.14	5.91	2.66	1.09	1.23	2.84	36.61
	(65-67) O	1.28	2.45	1.83	.42	.46	.81	.66	1.16	.23	.11	.10	.69	10.20
58 YR ^{4/}	MEAN P	3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87

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
1967	1-8	.07	1-8	.07	1-8	.15	1-8	.43	1-8	.78	1-8	1.23	1-8	1.57	1-8	2.12

MAXIMUMS FOR PERIOD OF RECORD															
1964 TO	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-4	10-3			
1967	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964
	.08	.08	.17	.50	.97	1.64	2.37	3.06							

Notes: Watershed conditions: Woodland, 75%; row crops, 22%; pasture, 2%; roads and homesites, 1%. 1/ Precipitation Thiessen weighted using 5 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AV computed from rainfall and runoff records for period 1965-67. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1945, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.

1967 DAILY PRECIPITATION (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A2							75.2
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	.58	
2	.00	.00	.00	.00	.00	.00	.21	.00	.00	.00	.24	.00	
3	.00	.00	.00	.00	.06	.00	.19	.00	.00	.00	.00	.95	
4	.36	.00	.00	.00	.14	.00	.26	.00	.00	.00	.00	.00	
5	.09	.00	.00	.00	.00	.00	.00	.16	.00	.00	.00	.00	
6	.00	.15	.00	.00	.00	.00	.00	.09	.00	.00	.00	.00	
7	.12	.47	.00	.00	.08	.00	.45	.23	.00	.00	.00	.00	
8	2.56	.00	.00	.00	.00	.00	.12	.17	.00	.00	.00	.00	
9	.00	1.04	.00	.00	.00	.00	.00	.00	.76	.00	.00	.00	
10	.33	.00	.00	.12	.00	.00	.00	.42	1.20	.55	.00	.53	
11	.00	.00	.00	.00	.00	.00	.00	1.28	.00	.00	.00	.28	
12	.00	.00	.00	.00	.08	.00	.00	.13	.00	.00	.00	.28	
13	.00	.00	.00	.00	.00	.00	.81	.11	.00	.00	.00	.00	
14	.30	.00	.00	.00	.07	.00	.77	.00	.00	.00	.00	.00	
15	.01	.00	.00	.00	.17	.00	.74	.00	.00	.00	.00	.00	
16	.00	.00	.00	.00	.27	.00	.00	.00	.00	.00	.00	.00	
17	.00	.50	.00	.08	.00	.00	.00	.00	.19	.00	.00	.00	
18	.00	.36	.00	.00	.00	2.62	.00	.00	.00	.51	.00	.16	
19	.09	.00	.00	.00	.00	1.81	.28	.00	.00	.00	.00	.00	
20	.12	.36	.00	.00	.00	.00	.00	1.17	.00	.00	.00	.00	
21	.17	.05	.81	.00	.00	.00	.19	1.83	.09	.00	.19	.00	
22	.03	.29	.00	.60	.43	.00	.00	.51	.14	.00	.00	.96	
23	.00	.00	.00	.00	.04	.17	.00	1.36	.04	.00	.46	.50	
24	.00	.00	.00	.00	.00	.20	.00	.24	.00	.00	.53	.00	
25	.00	.00	.00	.10	.00	.60	.13	.01	.00	.59	.00	.00	
26	.00	.00	.00	.55	.00	.00	.00	.00	.00	.00	.00	.00	
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
28	.00	.15	.00	.00	.07	.00	.00	.06	.04	.00	.00	.53	
29	.00	-----	.00	.00	.20	.00	.00	.00	.08	.00	.00	.00	
30	.00	-----	.00	.00	.00	.13	.00	.00	.00	.00	.00	.00	
31	.00	-----	.00	-----	.41	-----	.00	-----	-----	.00	-----	.18	
TOTAL	4.18	3.37	.81	1.45	2.02	5.53	4.15	7.77	2.58	1.65	1.42	4.95	
STA AV	3.30	3.63	2.24	1.50	3.21	4.86	4.14	5.91	2.66	1.09	1.23	2.84	

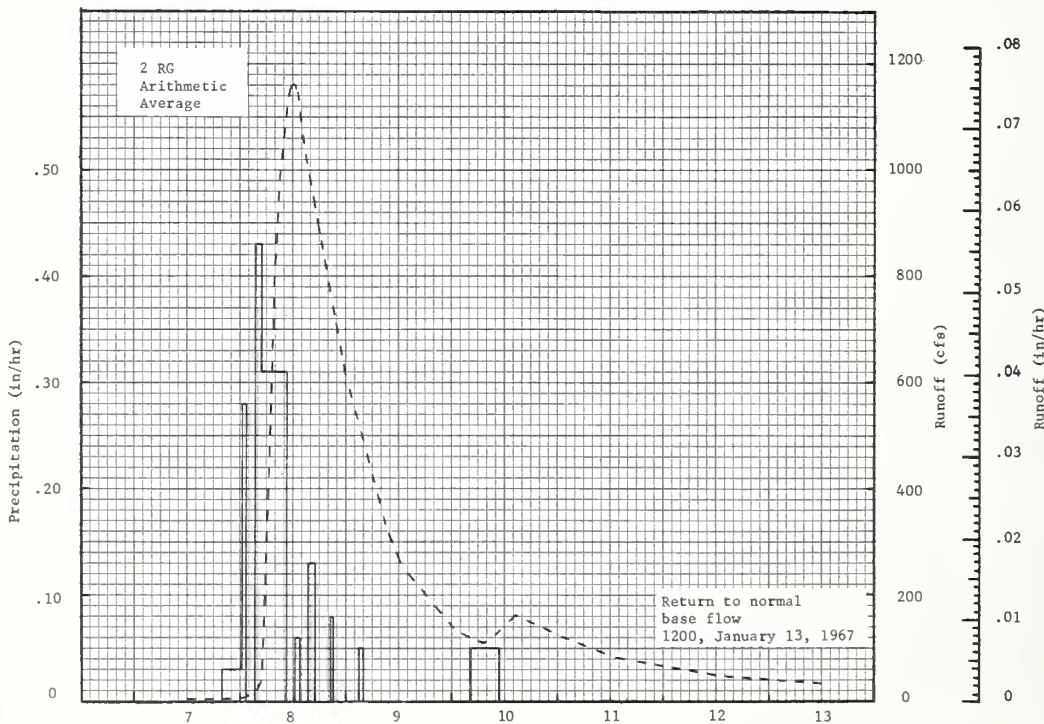
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 5 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967). FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 75.1-8.

1967 MEAN DAILY DISCHARGE (cfs)						AHOSSKIE, NORTH CAROLINA WATERSHED W-A2 75.2						
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	6.1	7.0	26.0	5.0	4.4	2.2	3.9	3.0	8.0	2.7	1.7	7.0
2	5.6	6.8	21.0	5.0	4.2	2.1	3.2	2.7	6.9	2.7	1.7	8.0
3	4.6	6.3	18.0	5.7	4.0	2.1	4.6	2.6	6.5	2.7	1.8	60.0
4	5.6	5.9	15.0	5.1	3.5	1.8	7.2	2.5	5.8	2.5	1.7	30.0
5	11.0	5.4	13.0	4.9	3.5	1.8	6.1	2.5	5.2	2.4	1.7	13.0
6	7.9	5.4	11.0	4.8	3.5	1.7	3.6	2.7	4.7	2.4	1.7	9.8
7	6.1	20.0	11.0	4.6	3.7	1.7	3.3	2.5	4.1	2.4	1.7	7.9
8	664.0	18.0	9.1	4.4	3.4	1.7	5.9	2.8	3.9	2.4	1.7	6.8
9	298.0	14.0	8.3	4.0	3.2	1.7	5.2	2.6	4.0	2.4	1.7	6.0
10	137.0	20.0	7.0	4.0	2.9	1.5	3.9	2.4	48.0	2.5	1.7	9.2
11	89.0	72.0	6.8	4.0	2.9	1.6	3.2	17.0	29.0	2.8	1.6	35.0
12	51.0	103.0	6.5	3.7	2.9	1.6	3.0	11.0	17.0	2.4	1.6	77.0
13	36.0	72.0	5.9	3.7	2.8	1.5	10.0	8.0	12.0	2.3	1.6	44.0
14	45.0	50.0	5.7	3.5	2.8	1.7	24.0	6.7	9.2	2.2	1.6	29.0
15	50.0	39.0	5.4	3.5	2.8	1.2	44.0	4.7	7.2	2.2	1.6	21.0
16	34.0	30.0	4.8	3.5	3.5	1.5	42.0	3.7	6.1	2.2	1.6	17.0
17	24.0	26.0	4.6	3.4	2.8	1.5	20.0	3.3	6.8	2.3	1.6	14.0
18	20.0	168.0	4.1	3.5	2.6	17.0	11.0	3.1	6.7	3.2	1.7	12.0
19	19.0	97.0	3.9	3.2	2.6	190.0	12.0	3.0	5.4	3.1	1.8	14.0
20	20.0	72.0	3.9	3.0	2.6	25.0	12.0	6.6	4.7	2.4	1.8	13.0
21	24.0	128.0	11.0	3.0	2.6	13.0	7.3	67.0	4.2	2.4	1.9	11.0
22	30.0	67.0	22.0	5.4	2.4	7.5	8.0	182.0	4.7	2.4	2.1	13.0
23	24.0	109.0	16.0	4.8	3.0	5.7	5.9	330.0	4.0	2.3	3.1	199.0
24	20.0	64.0	13.0	4.6	2.4	5.7	4.7	335.0	3.7	2.3	3.5	94.0
25	17.0	37.0	11.0	3.9	2.4	5.1	4.3	106.0	3.3	4.0	8.4	59.0
26	14.0	26.0	9.1	4.9	2.4	16.0	5.5	44.0	3.2	5.0	3.6	44.0
27	13.0	21.0	8.1	9.8	2.3	6.9	3.9	25.0	3.2	2.1	2.2	34.0
28	11.0	28.0	7.3	6.2	2.3	4.8	3.6	18.0	3.1	1.9	2.1	56.0
29	9.4	-----	7.0	5.1	2.3	3.9	3.3	14.0	3.4	1.9	1.9	97.0
30	8.3	-----	6.3	4.8	2.0	3.7	3.2	11.0	3.0	1.7	4.0	57.0
31	7.3	-----	6.1	-----	3.1	-----	3.0	9.1	-----	1.7	-----	41.0
MEAN	55.2	47.1	9.9	4.5	3.0	11.1	9.1	39.8	7.9	2.5	2.2	36.7
INCHES	2.65	2.04	.48	.21	.14	.52	.44	1.91	.37	.12	.10	1.76

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0015496. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD.

1967 SELECTED RUNOFF EVENT			AHOSKIE, NORTH CAROLINA			WATERSHED W-A2			75.2												
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 (cfs)	ACC. (inches)											
Event of January 7-13, 1967																					
1-7	2 RG ^{1/} .00	2/ .0050	1-7	2 RG 2000	AVG ^{1/} .00	.00	1-7	1200	6	.0000											
			1-8	0030	.03	.13		1800	5	.0023											
				0130	.28	.41		2400	6	.0045											
				0345	.00	.41	1-8	0300	11	.0062											
				0500	.43	.95		0500	44	.0097											
Watershed conditions: Approximate land use: 75% in woodland, 22% in row crops, 2% in pasture, 1% misc. (roads & homesites)																					
																		0800	748	.0865	
																		0900	968	.1419	
																		1100	1130	.2773	
																		1200	1160	.3513	
																		1300	1160	.4261	
																		1500	1030	.5675	
																		2045	617	1.0461	
														1-9	0300	.00	2.94	1-9	0900	326	1.3201
															0400	.05	2.99		1200	267	1.3775
			1-10	0430	.00	2.99		2400	142	1.5359											
				1100	.05	3.29	1-10	0300	124	1.5617											
								0730	111	1.5959											
								1100	132	1.6233											
								1430	161	1.6564											
								2400	124	1.7438											
							1-11	1200	86	1.8251											
							1-12	1200	49	1.9300											
							1-13	1200	3/ 35	1.9961											

NOTES: TO CONVERT CFS TO IN/HR MULTIPLY BY .00006457. 1/ PRECIPITATION IS ARITHMETIC AVERAGE 2 RAIN GAGES.
2/ RUNOFF PRIOR TO 1200 ON 1-7-67. 3/ NORMAL BASE FLOW.



January 7 - 13, 1967
AHOSKIE, NORTH CAROLINA WATERSHED W-A2

1/ MONTHLY PRECIPITATION AND RUNOFF (inches)						2/ AHOSKIE, NORTH CAROLINA WATERSHED W-A3 AREA—2,368 ACRES (3.70 SQ. MILES)						75.3					
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL			
1967	P	4.22	3.72	.86	1.50	2.31	4.54	3.63	8.40	2.48	1.84	1.59	5.08	40.22			
	O	.89	1.52	.27	.03	.02	.10	.06	1.15	.01	.02	.02	1.28	5.37			
	3/ STA AVG (65-67)	3.57	3.78	2.33	1.65	3.30	5.00	3.46	6.13	2.54	1.21	1.31	2.97	37.25			
	O	.50	1.76	1.18	.16	.56	.28	.16	.61	.08	.05	.03	.47	5.84			
	4/ MEAN 58 YR	3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87			
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		
1967		8-23	.03	8-23	.03	8-23	.05	8-23	.14	8-23	.23	8-23	.36	8-22	.61	8-20	1.10
MAXIMUMS FOR PERIOD OF RECORD																	
1964 TO	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-5	10-4	10-4	10-4	10-4			
1967	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964			
	.12	.12	.24	.67	1.24	1.88	2.57	3.49									
Notes: Watershed conditions: Woodland, 88%; row crops, 10%; homesites, pasture, and roads, 2%. 1/ Precipitation Thiessen weighted using 2 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AVG computed from rain-fall and runoff record for period 1965-1967. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1954, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.																	
1967 DAILY PRECIPITATION (inches)						AHOSKIE, NORTH CAROLINA WATERSHED W-A3						75.3					
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	.62					
2	.00	.00	.00	.00	.00	.00	.07	.00	.00	.00	.25	.00					
3	.00	.00	.00	.00	.00	.00	.22	.00	.00	.00	.00	.74					
4	.35	.00	.00	.00	.16	.00	.12	.00	.00	.00	.00	.00					
5	.10	.00	.00	.00	.00	.00	.00	.17	.00	.00	.00	.00					
6	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
7	.12	.52	.00	.00	.13	.00	.56	.31	.00	.00	.00	.00					
8	2.60	.00	.00	.00	.00	.00	.15	.21	.00	.00	.00	.00					
9	.00	1.13	.00	.00	.00	.00	.00	.00	.69	.00	.00	.00					
10	.31	.00	.00	.10	.00	.00	.00	.67	.97	.68	.00	.63					
	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
11	.00	.00	.00	.00	.00	.00	.00	1.17	.00	.00	.00	.34					
12	.00	.00	.00	.00	.00	.00	.00	.12	.00	.00	.00	.34					
13	.00	.00	.00	.00	.00	.00	.87	.10	.00	.00	.00	.00					
14	.33	.00	.00	.00	.10	.00	.52	.00	.00	.00	.00	.00					
15	.00	.00	.00	.00	.16	.00	.53	.00	.00	.00	.00	.00					
16	.00	.00	.00	.00	.37	.00	.00	.07	.00	.00	.00	.00					
17	.00	.60	.00	.10	.00	.00	.00	.19	.00	.00	.00	.00					
18	.00	.35	.00	.00	.00	1.80	.00	.00	.00	.58	.00	.18					
19	.19	.00	.00	.00	.00	1.84	.25	.00	.00	.00	.00	.00					
20	.09	.37	.00	.00	.00	.00	.00	1.74	.00	.00	.00	.00					
21	.10	.03	.86	.00	.00	.00	.39	1.88	.15	.00	.18	.00					
22	.03	.33	.00	.55	.51	.00	.00	.44	.15	.00	.00	1.07					
23	.00	.00	.00	.00	.03	.06	.00	1.02	.00	.00	.53	.44					
24	.00	.00	.00	.00	.00	.19	.00	.45	.00	.00	.63	.00					
25	.00	.00	.00	.12	.00	.53	.00	.07	.00	.58	.00	.00					
26	.00	.00	.00	.63	.00	.00	.00	.00	.00	.00	.00	.00					
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00					
28	.00	.19	.00	.00	.07	.00	.00	.05	.01	.00	.00	.58					
29	.00	-----	.00	.00	.22	.00	.00	.00	.25	.00	.00	.00					
30	.00	-----	.00	.00	.00	.12	.00	.00	.00	.00	.00	.00					
31	.00	-----	.00	-----	.56	-----	.00	-----	-----	.00	-----	.14					
TOTAL	4.22	3.72	.86	1.50	2.31	4.54	3.68	8.40	2.48	1.84	1.59	5.08					
STA AV	3.57	3.78	2.33	1.65	3.30	5.00	3.46	6.13	2.54	1.21	1.31	2.97					
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 2 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967). FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 75.1-8.																	

1967 MEAN DAILY DISCHARGE (cfs)						AHOSKIE, NORTH CAROLINA							75.3
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	
1	.10	.40	3.50	.30	.10	.05	.05	.05	.00	.00	.00	.50	
2	.05	.40	2.50	.30	.10	.05	.05	.05	.00	.00	.05	.30	
3	.05	.40	2.00	.20	.10	.05	.05	.05	.00	.00	.10	1.60	
4	.10	.30	1.80	.20	.10	.00	.05	.05	.00	.00	.05	1.00	
5	.30	.30	1.30	.20	.10	.00	.05	.05	.00	.00	.00	.60	
6	.10	.30	1.10	.20	.05	.00	.05	.05	.00	.00	.00	.50	
7	.05	1.60	1.00	.10	.10	.00	.05	.05	.00	.00	.00	.40	
8	25.00	1.10	.80	.10	.05	.00	.10	.20	.00	.00	.00	.40	
9	9.40	1.20	.70	.10	.05	.00	.05	.10	.00	.00	.00	.40	
10	7.50	1.80	.60	.10	.05	.00	.05	.10	.70	.10	.00	.80	
11	6.00	4.20	.50	.10	.05	.00	.05	2.20	.20	.20	.00	1.90	
12	4.10	8.50	.40	.05	.05	.00	.05	.40	.00	.00	.00	5.80	
13	3.40	7.80	.40	.05	.05	.00	.60	.40	.00	.00	.00	2.90	
14	4.10	6.40	.40	.05	.05	.00	.70	.20	.00	.00	.00	1.80	
15	4.50	5.40	.30	.05	.05	.00	1.20	.20	.00	.00	.00	1.40	
16	3.10	4.20	.30	.05	.05	.00	.80	.10	.00	.00	.00	1.20	
17	2.20	3.80	.20	.05	.05	.00	.20	.10	.00	.00	.00	1.00	
18	1.70	18.00	.20	.05	.05	.10	.10	.10	.00	.40	.00	.90	
19	1.40	12.00	.20	.05	.05	7.90	.10	.10	.00	.20	.00	1.00	
20	1.40	9.60	.20	.05	.05	.60	.20	2.10	.00	.00	.00	1.00	
21	1.80	15.00	1.00	.05	.05	.20	.10	17.00	.00	.00	.05	.90	
22	2.30	10.00	1.80	.10	.05	.10	.20	25.00	.00	.00	.05	1.40	
23	1.90	13.00	1.20	.05	.05	.05	.10	36.00	.00	.00	.30	22.00	
24	1.70	9.30	1.00	.10	.00	.05	.10	18.00	.00	.00	.30	12.00	
25	1.30	5.50	.80	.05	.00	.05	.10	7.70	.00	.20	.40	9.50	
26	1.10	3.90	.70	.10	.00	.20	.10	2.40	.00	.30	.20	7.60	
27	1.00	2.90	.60	.20	.00	.05	.05	.80	.00	.05	.05	5.80	
28	.80	4.20	.50	.10	.00	.05	.05	.30	.00	.05	.20	9.50	
29	.70	-----	.40	.10	.00	.05	.05	.10	.00	.00	.20	15.00	
30	.60	-----	.40	.10	.00	.05	.10	.05	.00	.00	.40	11.00	
31	.50	-----	.30	-----	.05	-----	.05	.00	-----	.00	-----	7.70	
MEAN	2.85	5.41	.87	.11	.05	.32	.18	3.68	.03	.05	.08	4.12	
NCHESES	.89	1.52	.27	.03	.02	.10	.06	1.15	.01	.02	.02	1.28	

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/DAY, MULTIPLY BY .0100514. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD TO FAIR.

1967 SELECTED RUNOFF EVENT			AHOSKIE, NORTH CAROLINA				WATERSHED W-A3		75.3	
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 (cfs)	ACC. (inches)
1-7	1 RG .00	1/.0030	Event of January 7-13, 1967							
					1 RG					
			1-7	2000	.00	.00	1-7	1200	.6	.0000
			1-8	0030	.02	.10		2230	.7	.0029
				0130	.25	.35	1-8	0030	.9	.0035
				0345	.00	.35		0400	1.5	.0053
				0500	.47	.94		0630	19.0	.0160
				1030	.28	2.50		0830	80.0	.0575
				1230	.00	2.50		1030	96.0	.1312
				1330	.05	2.55		1200	86.0	.1883
				1530	.00	2.55		1330	66.0	.2361
				1700	.13	2.74		1600	42.0	.2926
				2030	.00	2.74		1700	40.0	.3098
				2045	.04	2.75		1800	40.0	.3265
			1-9	0300	.00	2.75		1900	39.0	.3431
				0400	.05	2.80		2400	29.0	.4143
			1-10	0430	.00	2.80	1-9	0400	26.0	.4604
				1100	.04	3.09		1200	18.0	.5341
								2400	13.0	.6119
							1-10	0700	12.0	.6486
								1000	14.0	.6649
								1300	18.0	.6850
							1-11	1200	12.0	.8295
							1-12	1200	10.0	.9400
							1-13	1200	2/ 8.0	1.0305

Watershed conditions: Approximate land use: 88% in woodland, 10% in row crops, 2% misc. (homesites, pastures, and roads)

NOTES: TO CONVERT CFS TO IN/HR. MULTIPLY BY .00041881. 1/RUNOFF PRIOR TO 1200 ON 1-7-67. 2/NORMAL BASE FLOW.



January 7 - 13, 1967
AHOSKIE, NORTH CAROLINA WATERSHED W-A3

MONTHLY PRECIPITATION AND RUNOFF ^{1/} (inches) ^{2/}						A ROSKIE, NORTH CAROLINA WATERSHED W-A4 75.4 AREA—1,664 ACRES (2.60 SQ.MILES)										
YEAR	MONTH	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC	ANNUAL		
1967	P	4.48	3.68	.88	2.17	3.16	3.94	5.30	9.92	2.96	.92	1.82	4.79	44.02		
	O	1.28	1.01	.24	.11	.06	.07	.61	4.29	.47	.06	.11	.86	9.17		
	^{3/} STA AVG-P	3.56	3.78	2.35	1.73	4.05	3.97	4.50	6.69	3.04	.84	1.09	2.84	38.44		
	(65-67)O	.63	1.59	1.17	.18	.57	.27	.34	1.65	.23	.06	.06	.33	7.08		
	MEAN															
58 YR	^{4/} P	3.55	3.69	3.65	3.26	3.53	4.86	5.71	4.70	3.98	2.83	2.75	3.36	45.87		
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
1967	8-22	.11	8-22	.11	8-22	.22	8-21	.54	8-21	.76	8-23	.92	8-23	1.64	8-21	3.48
MAXIMUMS FOR PERIOD OF RECORD																
1964 TO	5-30		5-30		5-30		5-29		5-29		10-5		8-23		8-21	
1967	1966	.16	1966	.16	1966	.32	1966	.82	1966	1.01	1964	1.28	1967	1.64	1967	3.48
Notes: Watershed conditions: Woodland, 60%; row crops, 39%; homesites, pasture, and roads, 1%. 1/ Precipitation Thiessen weighted using 2 gages. 2/ Runoff data furnished by U.S. Geological Survey. 3/ STA AVG computed from rainfall and runoff records for period 1965-1967. 4/ Mean P based on 58-yr (1910-1967) U.S. Weather Bureau record period at Scotland Neck, N.C. Missing records for Oct. 1920, May 1945, Jan. and May 1949, Jan., Feb., and Mar. 1950, and Nov. 1951 estimated from nearby station.																
1967 DAILY PRECIPITATION (inches)						A ROSKIE, NORTH CAROLINA WATERSHED W-A4 75.4										
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	.63				
2	.00	.00	.00	.00	.00	.00	.19	.00	.00	.00	.41	.00				
3	.00	.00	.00	.00	.21	.00	.10	.00	.00	.00	.00	.86				
4	.27	.00	.00	.00	.10	.00	.56	1.76	.00	.00	.00	.00				
5	.14	.00	.00	.00	.05	.00	.00	.21	.00	.00	.00	.00				
6	.00	.20	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
7	.20	.55	.00	.00	.35	.00	1.01	.23	.00	.00	.00	.00				
8	2.70	.00	.00	.00	.00	.00	.06	.00	.00	.00	.00	.00				
9	.00	1.04	.00	.00	.00	.00	.00	.00	.56	.00	.00	.00				
10	.36	.00	.00	.10	.00	.00	.00	.59	1.61	.32	.00	.50				
11	.00	.00	.00	.00	.00	.00	.00	1.51	.00	.00	.00	.17				
12	.00	.00	.00	.00	.17	.00	.00	.14	.00	.00	.00	.31				
13	.00	.00	.00	.00	.00	.00	.63	.12	.00	.00	.00	.00				
14	.29	.00	.00	.00	.14	.00	.80	.00	.00	.00	.00	.00				
15	.02	.00	.00	.00	.12	.00	.69	.00	.00	.00	.00	.00				
16	.00	.00	.00	.00	.37	.00	.00	.00	.14	.00	.00	.00				
17	.00	.57	.00	.10	.00	.00	.00	.00	.16	.00	.00	.00				
18	.00	.33	.00	.00	.00	1.42	.00	.00	.00	.37	.00	.16				
19	.39	.00	.00	.00	.00	1.26	.41	.00	.00	.00	.00	.00				
20	.11	.37	.00	.00	.00	.00	.00	1.22	.00	.00	.00	.00				
21	.00	.02	.88	.00	.00	.00	.52	2.08	.19	.00	.14	.00				
22	.00	.35	.00	1.34	.45	.00	.00	.64	.11	.00	.00	.86				
23	.00	.00	.00	.00	.09	.30	.00	1.02	.00	.00	.62	.62				
24	.00	.00	.00	.00	.00	.04	.00	.18	.00	.00	.65	.00				
25	.00	.00	.00	.13	.00	.43	.17	.00	.00	.23	.00	.00				
26	.00	.00	.00	.50	.00	.13	.00	.22	.00	.00	.00	.00				
27	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00				
28	.00	.25	.00	.00	.37	.00	.00	.00	.19	.00	.00	.49				
29	.00	-----	.00	.00	.26	.00	.05	.00	.00	.00	.00	.00				
30	.00	-----	.00	.00	.00	.36	.00	.00	.00	.00	.00	.00				
31	.00	-----	.00	-----	.48	-----	.11	.00	-----	.00	-----	.19				
MEAN	4.48	3.68	.88	2.17	3.16	3.94	5.30	9.92	2.96	.92	1.82	4.79				
INCHES	3.56	3.78	2.35	1.73	4.05	3.97	4.50	6.69	3.04	.84	1.09	2.84				
NOTES: PRECIPITATION VALUES ARE THIESSEN WEIGHTED AVERAGES OF 2 GAGES. STA AV BASED ON 3-YEAR PERIOD (1965-1967). FOR MAP OF WATERSHED, SEE HYDROLOGIC DATA FOR EXPERIMENTAL AGRICULTURAL WATERSHEDS IN THE UNITED STATES, 1965, P. 75.1-8.																

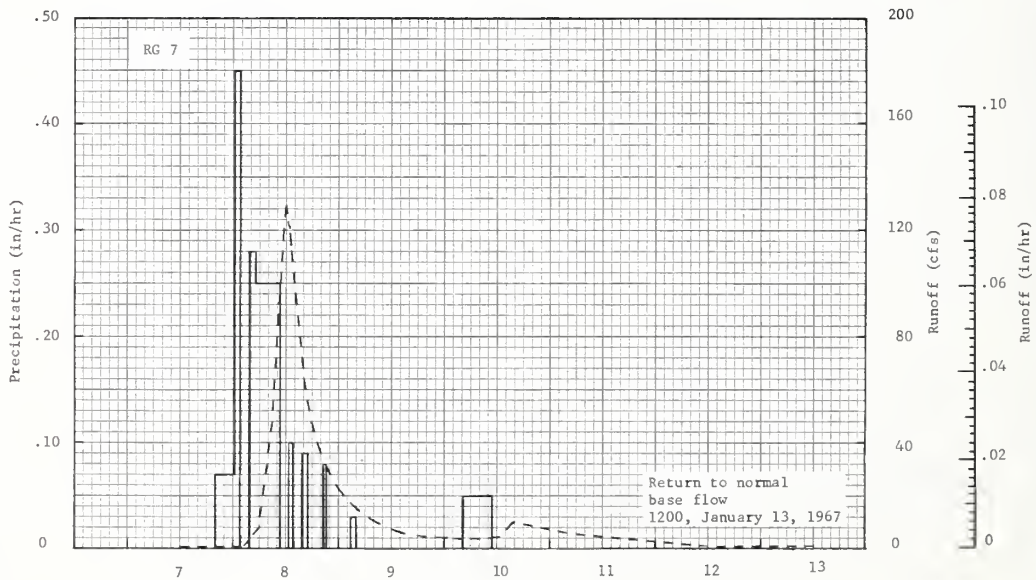
Cooperative Research Project of ARS and SCS of USDA, North Carolina Agricultural Experiment Station,
North Carolina Department of Water and Air Resources, and U. S. Geological Survey.

1967 MEAN DAILY DISCHARGE (cfs)						AHOSKIE, NORTH CAROLINA		WATERSHEO W-A4				75.4
DAY	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
1	.20	.20	1.20	.30	.20	.10	.20	.10	.60	.10	.10	.50
2	.20	.20	.90	.30	.20	.10	.10	.10	.50	.10	.20	.40
3	.10	.20	.80	.30	.20	.10	.10	.10	.40	.10	.20	1.80
4	.20	.10	.80	.20	.20	.10	1.60	7.60	.40	.10	.20	1.70
5	.30	.10	.60	.20	.20	.10	.40	5.40	.40	.10	.20	.90
6	.20	.10	.50	.20	.20	.10	.20	.80	.40	.20	.20	.60
7	.20	2.00	.50	.20	.40	.10	2.50	.40	.40	.20	.20	.50
8	52.00	1.00	.50	.20	.20	.10	2.20	.40	.40	.10	.20	.50
9	6.40	.60	.40	.20	.20	.10	.50	.30	.40	.10	.20	.40
10	7.60	1.00	.40	.20	.10	.10	.30	.20	18.00	.10	.20	.60
11	3.20	6.90	.40	.20	.10	.10	.20	22.00	3.70	.10	.20	1.70
12	1.60	7.60	.40	.20	.10	.10	.10	5.70	1.50	.10	.20	3.30
13	1.10	3.40	.40	.20	.10	.10	1.80	3.00	.70	.10	.20	1.90
14	2.60	2.20	.40	.20	.10	.10	14.00	1.60	.40	.10	.20	1.10
15	2.10	1.70	.40	.20	.10	.10	6.30	.70	.40	.10	.20	.80
16	1.20	1.20	.30	.10	.10	.20	3.20	.40	.30	.10	.20	.70
17	.70	1.10	.30	.10	.10	.20	.60	.40	.40	.10	.20	.60
18	.40	11.00	.30	.10	.10	.30	.20	.30	.40	.10	.20	.50
19	.60	3.90	.30	.10	.10	.70	1.60	.30	.30	.10	.20	.60
20	1.00	2.40	.30	.10	.10	.20	.70	2.90	.30	.10	.20	.60
21	1.40	7.00	1.20	.10	.10	.10	3.90	41.00	.30	.10	.30	.60
22	1.70	2.70	1.40	.80	.20	.10	.80	50.00	.30	.10	.30	.90
23	1.20	6.30	.80	.60	.20	.20	.30	64.00	.30	.10	.50	20.00
24	.90	3.00	.60	.30	.10	.20	.20	51.00	.30	.10	.40	4.10
25	.60	1.60	.50	.20	.10	.20	.10	16.00	.30	.10	.60	1.90
26	.40	1.00	.40	.30	.10	.40	.10	6.10	.20	.20	.40	1.40
27	.40	.90	.40	.50	.10	.20	.10	7.50	.20	.20	.30	1.00
28	.40	1.50	.40	.40	.10	.10	.10	7.60	.20	.20	.30	2.60
29	.30	-----	.40	.30	.10	.10	.10	1.90	.20	.20	.30	4.80
30	.20	-----	.30	.30	.10	.30	.10	1.10	.20	.20	.50	1.90
31	.20	-----	.30	-----	.20	-----	.10	.80	-----	.20	-----	1.30
MEAN	2.89	2.53	.54	.25	.15	.17	1.38	9.67	1.09	.13	.26	1.94
INCHES	1.28	1.01	.24	.11	.06	.07	.61	4.29	.47	.06	.11	.86

NOTES: TO CONVERT MEAN DAILY DISCHARGE IN CFS TO IN/OAY, MULTIPLY BY .0143039. RUNOFF DATA FURNISHED BY U.S. GEOLOGICAL SURVEY. RECORDS ARE GOOD.

1967 SELECTED RUNOFF EVENT			AHO SKIE, NORTH CAROLINA				WATERSHED W-A4		75.4	
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 7-13, 1967										
1-7	RG 7 .00	<u>1</u> / .0014	1-7	2000	.00	.00	1-7	1200	.2	.0000
			1-8	0030	.07	.30		2300	.2	.0011
				0130	.45	.75		2400	.5	.0012
				0345	.00	.75	1-8	0300	2.0	.0030
				0500	.28	1.10		0600	8.6	.0123
Watershed conditions: Approximate land use: 60% in woodland, 39% in row crops, 1% misc. (homesites, pasture, and roads)				1030	.25	2.50		0900	50.0	.0645
				1230	.00	2.50		1130	126.0	.1952
				1330	.10	2.60		1200	130.0	.2333
				1530	.00	2.60		1230	126.0	.2714
				1700	.09	2.74		1500	84.0	.4276
				2030	.00	2.74		1730	47.0	.5251
				2045	.08	2.76		2300	25.6	.6439
				0300	.00	2.76	1-9	0800	11.4	.7420
				0400	.03	2.79		2200	5.2	.8092
				0430	.00	2.79	1-10	0600	4.0	.8300
				1100	.05	3.10		0900	4.0	.8369
								1230	5.5	.8463
								1530	10.1	.8601
								1700	10.9	.8694
					0500	6.0	.9282			
					1200	4.5	.9492			
					1200	1.1	.9876			
					1200	<u>2</u> / 1.4	1.0044			

NOTES: TO CONVERT CFS TO IN/HR, MULTIPLY BY .00059599. 1/ RUNOFF PRIOR TO 1200 ON 1-7-67. 2/ NORMAL BASE FLOW.



January 7 --13, 1967
AHO SKIE, NORTH CAROLINA WATERSHED W-A4







