UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

ANNUAL COMPILATION AND ANALYSIS OF HYDROLOGIC DATA FOR HONEY CREEK, TRINITY RIVER BASIN, TEXAS
1969

By

J. N. Sansom

Prepared in cooperation with the Texas Water Development Board
and the Soil Conservation Service

July, 1971

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ANNUAL COMPILATION AND ANALYSIS OF HYDROLOGIC DATA FOR HONEY CREEK, TRINITY RIVER BASIN, TEXAS 1969

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INTRODUCTION

History of Small Watershed Projects in Texas

The U.S. Soil Conservation Service is actively engaged in the installation of flood and soil erosion reducing measures in Texas under the authority of "The Flood Control Act of 1936 and 1944" and "Watershed Protection and Flood Prevention Act" (Public Law 566), as amended. The Soil Conservation Service has found a total of approximately 3,500 floodwater-retarding structures to be physically and economically feasible in Texas. As of September 30, 1969, 1,355 of these structures had been built.

This watershed-development program will have varying but important effects on the natural surface- and ground-water resources of river basins, especially where a large number of the floodwater-retarding structures are built. Basic hydrologic data under natural and developed conditions are needed to appraise the effects of the structures on the yield and mode of occurrence of runoff.

Hydrologic investigations of these small watersheds were begun by the U.S. Geological Survey in 1951 and are now being made in 12 areas (fig. 1). These studies are being made in cooperation with the Texas Water Development Board, the Soil Conservation Service, the San Antonio River Authority, the city of Dallas, and the Tarrant County Water Control and Improvement District No. 1. The 12 study areas were chosen to sample watersheds having different rainfall, topography, geology, and soils. In five of the study areas (North, Little Elm, Mukewater, North Elm-Little Pond, and Pin Oak Creeks), streamflow and rainfall records were collected prior to construction of the floodwater-retarding structures, thus affording the opportunity for analyses of the conditions "before and after" development. Structures have now been built in three of these study areas. A summary of the development of the floodwater-retarding structures in each study area as of September 30, 1969, is shown in table 1.

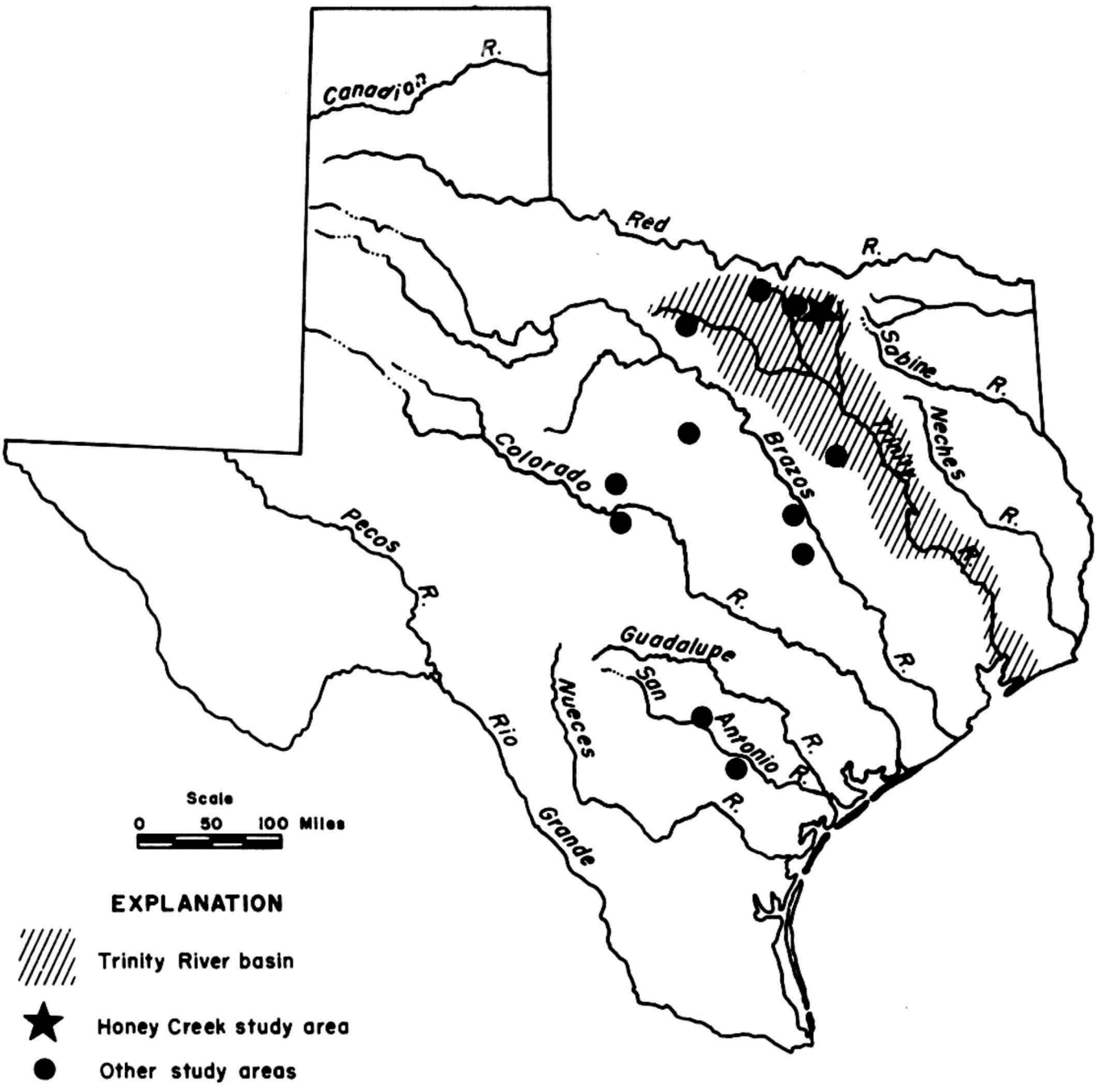

FIGURE 1. – Location of the Honey Creek study area

Table 1.--Small watershed study areas in Texas as of September 30, 1969

Watershed	Drainage area above stream-gaging station (sq mi)	Hydrologic data collection began	Floodwater-retarding structures above stream-gaging station	Period the structures were built
Trinity River basin:				
North Creek near Jacksboro	21.6	Aug. 1956	None	-
Elm Fork Trinity River near Muenster	46.0	July 1956	14	1954-57, 63
Little Elm Creek near Aubrey	75.5	June 1956	8	1966
Honey Creek near McKinney	39.0	July 1951	13	1951-57, 69
Pin Oak Creek near Hubbard	17.6	Sept. 1956	6	1962-63, 65
Brazos River basin:				
Green Creek near Alexander	46.1	Oct. 1954	8	1954-56
Cow Bayou near Mooreville	85.0	Sept. 1954	26	1955-58, 64-65
1/Little Pond Creek at Burlington	22.2	Oct. 1962	None	-
1/North Elm Creek near Cameron	48.6	Oct. 1962	None	-
Colorado River basin:				
Mukewater Creek at Trickham	70.0	Aug. 1951	6	1961-62, 65
Deep Creek near Mercury	a/43.9	June 1951	5	1951-53
San Antonio River basin:				
Calaveras Creek near Elmendorf	77.2	Aug. 1954	7	1954-58
Escondido Creek at Kenedy	b/72.4	July 1954	10	1954-58

1/ Adjacent watersheds; considered as one study area.
a/ 8.31 sq mi above Dry Prong Deep Creek near Mercury not included in this total.
b/ 8.43 sq mi above Escondido Creek subwatershed No. 11 (Dry Escondido Creek) near Kenedy not included in this total.

Objectives of the Texas Small Watershed Project

The purpose of these investigations is to collect sufficient data to meet the following objectives:

1. To determine the net effect of floodwater-retarding structures on the regimen of streamflow at downstream points.

2. To determine the effectiveness of the structures as groundwater recharge facilities.

3. To determine the effect of the structures on the sediment yield at downstream points.

4. To develop relationships between maximum rates and/or volumes of runoff with rainfall in small natural watersheds.

5. To develop a stream-system model for basins with floodwater-retarding structures.

6. To determine the minimum instrumentation necessary for estimating the flood hydrographs below a system of structures, as needed for downstream water-management operation.

Purpose and Scope of this Basic-Data Report

This report, which is the tenth in a series of basic-data reports published annually for the Honey Creek study area, contains the rainfall, runoff, and storage data collected during the 1969 water year for the 39.0-square-mile area above the stream-gaging station Honey Creek near McKinney, Texas. The locations of floodwater-retarding structures and hydrologic instruments in the area are shown on figure 2.

The investigation is scheduled to continue through a period of both above- and below-normal precipitation to define the various factors used in the analyses of rainfall-runoff relationships.

To facilitate the publication and distribution of this report at the earliest feasible time, certain material contained herein does not conform to the formal publication standards of the U.S. Geological Survey.

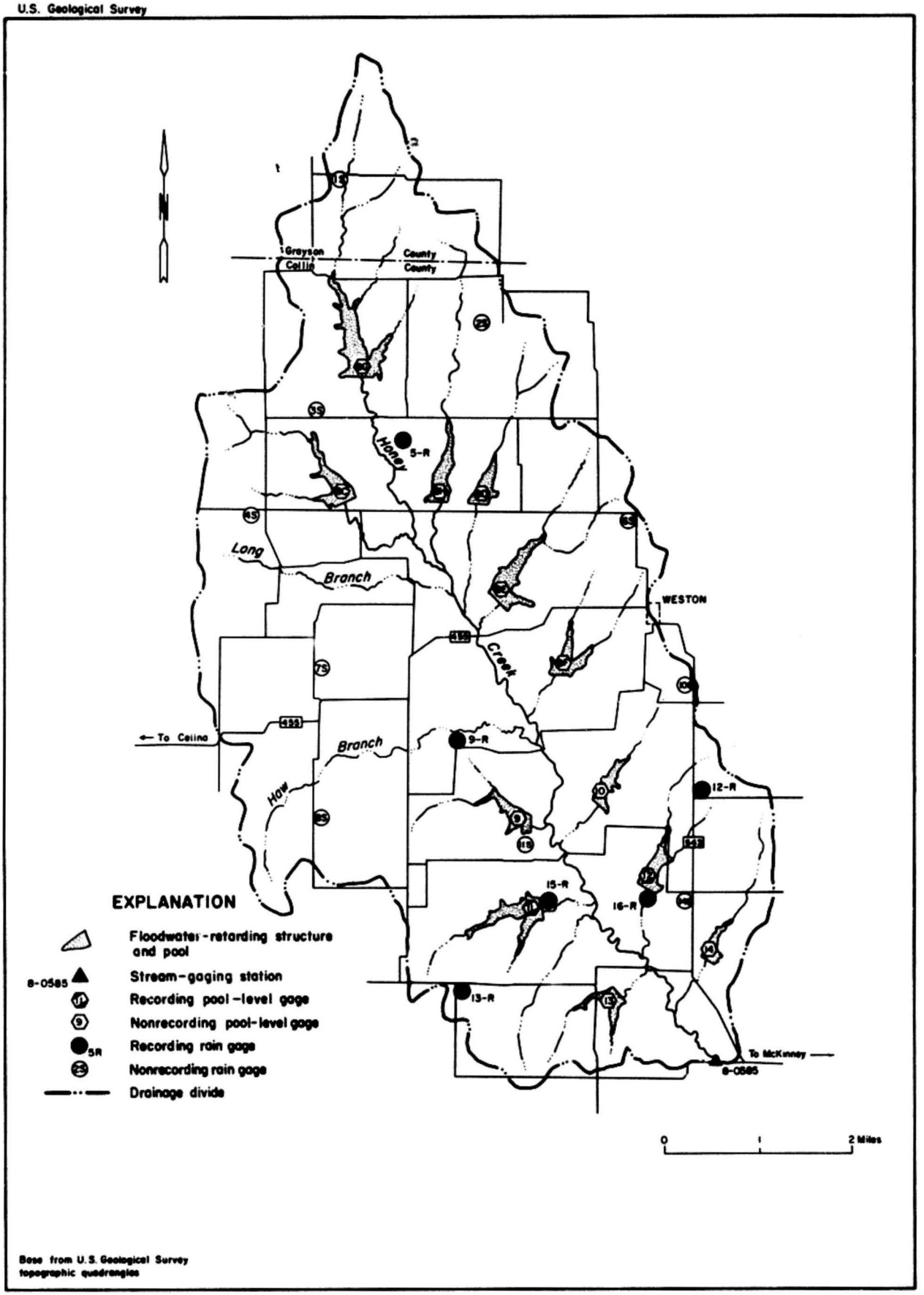

FIGURE 2.– Locations of floodwater-retarding structures and hydrologic-instrument installations in the Honey Creek study area

DESCRIPTION OF THE WATERSHED

Honey Creek originates near Gunter in Grayson County. The creek flows southeasterly for about 15 miles to the East Fork Trinity River, 3 miles north of McKinney in Collin County. Its two principal tributaries are Long Branch and Haw Branch. Honey Creek drains a roughly rectangular basin with an average width of about 4 miles; it has a drainage area of 50.7 square miles at the mouth and 39.0 square miles above the Geological Survey stream-gaging station near McKinney, Texas.

The rural economy of the watershed is agricultural with cotton, grain sorghums, corn, and Johnson Grass hay being the predominant crops. About two-thirds of the total area of the watershed is used for crop production; the remainder is used for pasture.

The Austin Chalk underlies all of the basin except for the narrow fringe of Eagle Ford Shale along the northwestern divide. Soils in the area have formed from chalks and marls and the alluvial soils in the creek bottoms are very productive. The soils are fine to medium textured and are low to moderately permeable.

The topography of the watershed ranges from moderately steep slopes along the divides to flat plains in the central section. Altitudes range from about 810 feet above mean sea level at the headwaters to about 525 feet at the mouth. The altitude of the streambed at the stream-gaging station is about 564 feet above mean sea level. The length of Honey Creek is about 15 miles; the average gradient is about 19 feet per mile.

The climate of the area is temperate and subhumid with a prevailing south wind. Thunderstorms occur frequently in the spring and summer. Long-duration, low-intensity storms triggered by southward-moving continental polar fronts are common during the fall and winter. Some of the heaviest rainfall occurs in late summer and early fall as a result of hurricanes moving inland from the Gulf of Mexico. Individual storms may cause serious flooding during any season, but are most frequent in the spring. The annual rainfall at McKinney has ranged from a minimum of 20.76 inches in 1925 to a maximum of 76.12 inches in 1877, with a mean annual of 39.24 inches for a 58-year period of record.

FLOODWATER-RETARDING STRUCTURES

There are 13 floodwater-retarding structures located in the Honey Creek watershed. Six structures were completed between August 1951 and February 1952, six additional structures were completed between August 1955 and July 1957, and one structure was completed in December 1968. These 13 structures provide capacity for flood-detention storage of 6,900 acre-feet of flood runoff from 24.6 square miles of the 39.0-square-mile drainage area.

Table 2 contains a summary of the physical data at each of the 13 floodwater-retarding structures.

HYDROLOGIC INSTRUMENTS

Instruments to collect rainfall and stage data in the study area consist of a network of rain gages, staff gages, and water-stage recorders. Location of instruments are shown on figure 2.

Six recording and ten nonrecording rain gages are located at points throughout the study area to define the total rainfall and rainfall intensities. Measurements of rainfall at all rain gages are observed at weekly intervals by Soil Conservation Service personnel.

Two recording pool-level gages are operated at floodwater-retarding structures sites 11 and 12. Data collection at these sites began September 11, 1952. These records include contents, surface area, inflow, and outflow. Weekly readings of the staff gages are made by Soil Conservation Service personnel at the other ten structures.

A continuous water-stage recorder at the stream-gaging station on Honey Creek near McKinney provides records of the stage, which together with measurements of streamflow, are used to compute the total runoff from the study area. Streamflow records at this gage began July 23, 1951.

SUMMARY OF DATA FOR THE 1969 WATER YEAR

Rainfall

The average rainfall in the study area for the 1969 water year was 36.49 inches, or 105 percent of the 16-year (1954-69) average. The monthly rainfall totals ranged from 0.21 inch in July to 8.41 inches in May.

The weighted-mean rainfall for subwatershed No. 11 was 34.25 inches, or 99.6 percent of the 17-year (1953-69) average for the area above site 11.

The weighted-mean rainfall for subwatershed No. 12 was 31.85 inches, or 94.3 percent of the 17-year (1953-69) average for the area above site 12.

Table 2.--Floodwater-retarding structure data, Honey Creek study area.

Site Number	Drainage Area (sq mi)	Date Dam Completed	Date Gages Established	Datum of Gage above Mean Sea Level	Emergency Spillway			Drop Inlet		Portholes or weir notches			Controlled opening		Pipe Diameter through dam (in.)	Inside Dimensions of Drop Inlet Box	Inside Dimensions of Orifice Plate	Range of Staff Gages
					Width (ft)	Gage Height (ft)	Contents (ac-ft)	Gage Height (ft)	Pool Content (ac-ft)	size (in.)	Gage Height at Bottom (ft)	Pool Content (ac-ft)	Gage Height at Bottom (ft)	Pool Content (ac-ft)				
S-A	3.71	12-15-68	*	*	170	29.0	1,265	17.5	323	10"x20"	14.5	195	3.6	14.0	24	2.0'x6.0'	-	-
S-C	2.10	9-15-56	3-18-57†	694.80	100	27.5	629	18.00	152	-	-	-	0.5	1.0	17	2.5'x2.5'	13"	6.8-30.5
S-D	1.46	7-18-57	11- 5-57†	679.70	100	26.9	464	18.00	120	-	-	-	6.0	1.6	17	2.5'x2.5'	12"	13.3-27.1
S-E	1.93	7-18-57	11- 5-57†	654.00	150	26.3	738	16.00	220	-	-	-	1.0	10	17	2.5'x2.5'	13"	10.2-30.5
S-F	1.45	7-21-55	9- 2-55†	651.19	150	24.0	550	12.00	120	-	-	-	6.3	36	12	2.5'x2.5'	-	6.8-27.1
S-G	3.96	7-21-55	9-16-55†	706.26	250	26.5	1276	12.00	195	6"x30"	11.5	180	2.5	24	17	2.5'x2.5'	-	3.4-30.5
S-H	2.18	9-15-56	3-28-57†	677.00	150	28.2	748	16.00	188	-	-	-	6.5	43	17	2.5'x2.5'	14"	0.0-27.1
9	1.37	12-29-51	12- 9-54†	624.42	150	25.6	526	12.00	119	-	-	-	2.5	28	12	2.5'x2.5'	-	3.4-30.5
10	1.25	1- 9-52	3-31-55†	635.86	140	26.1	429	12.00	82	-	-	-	2.5	4.3	12	2.5'x2.5'	-	10.2-27.1
11	2.14	2- 9-52	9-11-52	629.00	200	26.8	1213	14.84	431	-	-	-	4.8	1.23	12	2.5'x2.5'	-	6.8-30.5
12	1.26	1-11-52	9-11-52	623.00	150	27.0	507	14.99	121	-	-	-	5.0	5.5	12	2.5'x2.5'	-	0.0-29.9
13	.89	2- 9-52	12- 3-54†	612.06	80	23.1	427	12.00	140	-	-	-	2.5	28	12	2.5'x2.5'	-	3.4-27.1
14	.91	8-30-51	12- 9-54†	618.12	100	24.1	350	12.00	85	-	-	-	2.5	8.7	12	2.5'x2.5'	-	6.8-27.1

* Gage not established at this site.

† Gage discontinued September 30, 1969.

Runoff

The mean daily discharge at the stream-gaging station Honey Creek near McKinney was 39.6 cfs (cubic feet per second), compared with the 18-year average of 18.7 cfs. Annual runoff at the stream-gaging station was 28,650 acre-feet, or 13.79 inches.

Inflow was 1,580 acre-feet at subwatershed No. 11; outflow was 1,470 acre-feet with a net change in pool content of -71.5 acre-feet. Total runoff into site 11 during the 1969 water year was 13.84 inches.

Inflow into subwatershed No. 12 was 761 acre-feet; outflow was 724 acre-feet with a net change in pool content of -28.6 acre-feet. Total runoff into site 12 during the 1969 water year was 11.32 inches.

A storm is defined as a period of rainfall separated by at least 6 hours from other rainfall. Storms are selected for detailed rainfall-runoff computations on the basis of rainfall totals and distribution, the peak discharge produced from the rainfall at the stream-gaging station, and the assurance of good rainfall and runoff records.

Five storm periods were selected for detailed computations. These computations include a detailed time breakdown of rainfall and discharge, hydrographs, and mass curves. The storms selected occurred on Feb. 21, 1969; May 6-7, 1969; May 14, 1969; May 17, 1969; and June 23, 1969. A summary of rainfall-runoff data for these five storms is shown in table 3.

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ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 3.--Storm rainfall-runoff data, water year 1969.

Date of Storm	Rainfall (inches)					Runoff (inches)	Ratio runoff to rainfall	Maximum discharge (cfs)
	Duration (hours)	Total	Maximum increment					
			15-minute	30-minute	60-minute			
8-0575. Honey Creek subwatershed No. 11 near McKinney, Tex. (Drainage area, 2.14 sq. mi.)								
Feb. 21, 1969	9.8	0.83	0.09	0.18	0.32	0.46	0.55	196
May 6-7 , 1969	21	3.14	.55	.97	1.38	2.20	.70	783
May 14, 1969	2.2	1.35	.50	.75	1.09	.41	.30	329
May 17, 1969	5.2	2.14	.45	.68	1.28	1.73	.81	958
June 23, 1969	1.7	1.34	.66	1.07	1.31	.18	.13	167
8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex. (Drainage area, 1.26 sq. mi.)								
Feb. 21, 1969	———	RECORD		MISSING				
May 6-7 , 1969	21	2.89	0.50	0.91	1.37	2.40	0.83	858
May 14, 1969	2.7	1.18	.30	.60	1.01	.32	.27	200
May 17, 1969	3.5	1.68	.29	.51	.89	1.32	.79	654
June 23, 1969	1.2	1.09	.49	.81	1.06	.21	.19	149

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 3.--Storm rainfall-runoff data, water year 1969--Continued

Date of Storm	Rainfall (inches)					Runoff (inches)	Ratio runoff to rainfall	Maximum discharge (cfs)
	Duration (hours)	Total	Maximum increment					
			15-minute	30-minute	60-minute			
8-0585. Honey Creek near McKinney, Tex. (Drainage area, 39.0 sq. mi., of which 20.9 sq. mi. is above floodwater-retarding structures)								
Feb. 21, 1969	9.8	1.02	0.09	0.19	0.35	0.43	0.42	1,440
May 6-7 , 1969	21	3.15	.45	.90	1.46	1.32	.42	3,540
May 14, 1969	3.8	1.08	.19	.37	.62	.40	.37	632
May 17, 1969	4.0	1.88	.27	.53	.79	.78	.41	2,220
June 23 , 1969	1.2	1.22	.48	.96	1.21	.21	.17	525

COMPILATION AND ANALYSIS OF DATA

8-0575. Honey Creek subwatershed No. 11 near McKinney, Tex.

LOCATION.--Lat 33°18'12", long 96°41'22", Collin County, near center of dam on unnamed tributary of Honey Creek, 1.5 miles west of Farm Road 543, and 8.4 miles northwest of McKinney.

DRAINAGE AREA.--2.14 sq mi.

PERIOD OF RECORD.--September 1952 to current year.

GAGE.--Water-stage recorder. Datum of gage is 629.00 ft above mean sea level (Soil Conservation Service bench mark).

AVERAGE INFLOW.--17 years, 879 acre-ft per year.

AVERAGE OUTFLOW.--17 years, 671 acre-ft per year.

EXTREMES.--Current year: Maximum outflow, 7.4 cfs May 19 (gage height, 22.99 ft); no outflow at times. Maximum inflow, 958 cfs (average for 5-minute interval) May 17, computed from change in pool contents and adjusted for outflow and rainfall on pool surface during time of peak inflow.
Period of record: Maximum outflow, 716 cfs May 26, 1957 (gage height, 28.77 ft); no outflow at times each year. Maximum inflow, 3,360 cfs (average for 5-minute interval) Apr. 30, 1966, computed and adjusted as above.

REMARKS.--Records fair. The pool is formed by a rolled earthfill dam, 1,303 ft long with an emergency spillway located at right end of dam. The dam was completed Feb. 9, 1952, but no appreciable storage began until April 1952. The first outflow occurred on Apr. 21, 1957. The outlet structure consists of an uncontrolled 2.5-foot square concrete drop-inlet structure that is connected to a 12-inch concrete outlet pipe. The emergency spillway crest is at gage height 26.8 ft; crest of drop-inlet structure is at gage height 14.84 ft; and invert at bottom of outlet pipe is at gage height 4.8 ft. There is also an 8-inch controlled outlet pipe connected to the drop inlet at gage height 4.8 ft. Pool capacity is 1,170 acre-ft at crest of emergency spillway, 428 acre-ft at crest of drop inlet, and 123 acre-ft at the controlled outlet pipe. The area and capacity tables presently in use are based on a sedimentation survey by the Soil Conservation Service in July 1967. The dam was built by the Soil Conservation Service for flood control and conservation. Three rain gages (two recording and one nonrecording) are located in the watershed above station.

POOL WATER BUDGET, IN ACRE-FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Inflow 1/	8.3	34.5	80.8	109	194	252	139	680	71.4	1.7	5.0	2.8
Outflow	0	2.8	68.8	66.4	216	258	126	387	348	0	0	0
(††)	1.29	3.19	1.14	2.34	2.57	3.59	2.71	8.85	4.45	.25	1.71	2.16

CAL YR 1968: Inflow 1,610 Outflow 1,500 †† 41.00
WTR YR 1969: Inflow 1,580 Outflow 1,470 †† 34.25

PEAK INFLOW (BASE, 100 CFS)

DATE	TIME	DISCHARGE
2-21	1320	*196
5- 6	2155	*783
5-14	1705	*329
5-17	0300	*958
6-23	2010	*167

1/ Inflow adjusted for rainfall on pool and pool losses.
†† Weighted-mean rainfall, in inches.
* 5-minute interval.

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yearly weighted-mean rainfall
Monthly and ~~annual discharge~~, in inches, of Honey Creek Subwatershed No. 11 River at near McKinney, Tex.
[Drainage area, 2.14 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1953	*0.15	*7.40	*3.09	*0.76	*1.69	*3.19	*7.74	*3.10	*0.29	2.64	2.25	2.19	*32.35
1954	3.01	3.28	1.71	2.36	.40	.62	5.44	5.12	4.48	2.77	1.76	3.92	34.87
1955	4.06	.95	1.54	1.88	2.88	2.37	2.26	4.96	2.39	1.27	.32	6.52	31.40
1956	.91	.60	.19	.80	5.25	.42	1.91	3.02	1.06	.88	.49	.56	16.09
1957	3.00	3.40	2.03	2.32	1.69	5.85	11.84	17.40	.49	.17	.05	4.41	52.65
1958	3.07	7.72	1.78	2.12	.67	3.83	8.35	3.58	1.91	1.63	1.79	3.29	39.74
1959	.85	2.48	.71	.15	1.21	2.79	1.02	2.99	6.86	4.95	1.66	.73	26.40
1960	4.63	.71	3.39	2.14	2.05	.98	2.03	2.77	3.29	6.82	5.45	2.26	36.52
1961	2.05	.52	4.65	1.96	2.14	3.30	2.56	4.37	3.88	3.88	.14	4.69	34.14
1962	2.61	2.46	2.79	1.27	1.48	2.49	4.85	1.20	6.84	2.80	1.56	6.57	36.92
1963	2.56	3.19	1.20	.39	.41	1.25	4.35	7.16	1.60	2.21	.87	.41	25.60
1964	0	1.20	1.17	1.89	1.56	3.84	5.00	5.09	1.38	.08	6.00	11.44	38.65
1965	1.12	7.70	.94	2.17	4.05	.76	1.38	6.50	3.41	.06	2.49	3.81	34.39
1966	1.30	1.75	1.13	.91	2.19	.90	14.85	.92	3.79	1.93	7.06	3.09	39.82
1967	.57	.75	1.27	.28	.67	2.33	3.81	6.49	.45	1.29	5.09	5.88	28.88
1968	3.28	.89	2.27	3.11	1.35	6.07	4.47	4.53	4.27	3.59	2.19	5.80	41.82
1969	1.29	3.19	1.14	2.34	2.57	3.59	2.71	8.85	4.45	.25	1.71	2.16	34.25

* From U.S. Weather Bureau Station at McKinney, Texas

(Oct. 1951)

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Monthly and ~~annual discharge~~ yearly Net Inflow, in acre-feet, of Honey Creek Subwatershed No. 11 River at or near McKinney, Tex.
[Drainage area, 2.14 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL.	
1953	0.2	15.4	16.3	8.6	11.4	37.7	91.2	109	4.5	8.9	5.2	8.5	317	
1954	6.6	10.0	6.9	20.1	12.3	2.4	58.0	138	54.8	8.5	6.1	19.0	343	
1955	25.9	4.3	6.1	14.4	54.9	59.8	38.3	45.2	6.6	2.7	.8	25.0	284	
1956	1.8	1.4	.7	4.4	107	3.7	6.7	36.6	2.2	1.6	.8	.6	168	
1957	3.4	14.0	5.4	4.8	10.3	92.3	957	1605	107	42.7	.8	13.1	2,856	
1958	13.2	234	96.0	144	58.6	173	442	448	33.6	5.8	6.6	14.4	1,669	
1959	2.6	9.1	4.8	4.5	8.1	16.6	10.4	19.6	38.0	34.8	8.9	4.6	162	
1960	1.6	.9	12.4	66.6	85.8	37.5	10.3	15.1	2.9	33.6	60.8	6.0	334	
1961	5.8	8.1	68.5	145	139	115	92.3	220	14.3	5.1	0	4.3	817	
1962	17.7	9.6	104	54.0	52.7	72.6	211	26.8	67.5	5.6	.4	41.5	663	
1963	7.0	46.2	92.6	30.8	22.3	15.6	61.9	239	19.0	2.5	1.5	7.0	545	
1964	0	.2	.1	.1	0	5.1	83.7	61.8	10.8	.1	9.0	392	563	
1965	30.3	526	70.5	102	295	57.3	26.6	150	37.9	.2	2.5	.7	1,300	
1966	.8	3.2	13.0	2.1	20.8	4.8	992	239	12.7	.2	2.2	9.1	1,300	
1967	1.5	7.2	5.8	5.2	3.6	11.8	42.2	177	14.4	4.4	30.3	85.3	389	
1968	8.8	46.0	105	198	116	535	285	267	40.3	8.8	7.2	30.8	1,650	
1969	8.3	34.5	80.8	109	194	252	139	680	71.4	1.7	5.0	2.8	1,580	

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(Oct. 1951)

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8-0575.00

Monthly and yearly Outflow ~~annual discharge~~, in acre-feet, of Honey Creek Subwatershed No. 11 River at near McKinney, Tex.

[Drainage area, 2.14 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1953	0.4	0	0	0	0	0	0	38.8	9.7	12.0	4.5	4.4	70
1954	0	0	0	0	0	0	0	0	0	24.0	12.9	30.2	67
1955	0	0	0	0	0	0	0	0	5.5	31.7	34.0	3.5	75
1956	0	0	0	0	0	0	9.8	0	7.0	20.0	27.0	0	64
1957	0	0	0	0	0	0	133	1340	449	352	24.9	0	2,300
1958	0	117	83.0	131	47.0	147	120	454	256	0	0	0	1,360
1959	0	0	0	0	0	0	0	0	0	0	0	0	0
1960	0	0	0	0	0	0	0	0	0	0	14.7	2.0	17
1961	0	0	7.7	150	135	102	55.0	247	1.6	3.0	0	0	701
1962	0	0	39.6	48.5	46.1	43.8	160	83.6	47.1	3.2	0	0	472
1963	0	4.8	82.4	25.2	24.6	148	28.6	20.2	88.6	0	0	0	422
1964	0	0	0	0	0	0	0	0	0	0	0	133	133
1965	177	240	364	101	271	79.3	16.7	109	70.6	0	0	0	1,430
1966	0	0	0	0	0	0	97.2	628	399	8.6	0	0	1,130
1967	0	0	0	0	0	0	0	14.9	102	0	0	26.2	143
1968	.6	28.1	95.3	167	136	298	401	383	36.3	2.9	0	0	1,550
1969	0	2.8	68.8	66.4	216	258	126	387	348	0	0	0	1,470

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Rev. 6-68

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

8-0575. Honey Creek subwatershed No. 11 near McKinney, Tex. Drainage Area 2.14 sq. mi.

Continuous water-stage recorder: ratio 1:6. Date of last sediment survey July 1967.

Maxima: gage height, 22.99 ft; outflow, 7.4 c.f.s.; surface area, 70.3 acres; contents, 875 acre-feet; on May 18, 1969.

Minima: gage height, 12.74 ft; surface area, 37.1 acres; contents, 345 acre-feet; on Sept. 30, 1969.

Maximum inflow, 958 c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on May 17, 1969.

Averages: 17 water years, (1952-69); inflow, 879 acre-feet/year; outflow, 671 acre-feet/year; rainfall, 34.25 inches/year.

Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct.	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	8.3	34.5	80.8	1,610	109	194	252	139	680	71.4	1.7	5.0	2.8	1,580
Total Outflow	0	2.8	68.8	1,500	66.4	216	258	126	387	348	0	0	0	1,470
Total Consumption	19.8	16.4	16.9	264	14.4	12.1	12.5	23.0	36.8	41.0	46.0	34.8	23.7	297
†	-7.0	+25.4	-2.5	-1.2	+35.9	-24.4	-6.8	-0.4	+291	-300	-43.6	-23.7	-15.4	-71.5
‡	41.2	41.0	42.3	-	42.4	43.2	43.2	42.6	58.4	48.8	40.7	38.6	37.6	-
††	1.29	3.19	1.14	41.00	2.34	2.57	3.59	2.71	8.85	4.45	0.25	1.71	2.16	34.25

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.
* 5-minute increment.

Peak inflow - (base, 100 c.f.s.)

Date	Time	Discharge	Date	Time	Discharge
2-21-69	1320	*196	5-17-69	0300	*958
5- 6-69	2155	*783	6-23-69	2010	*167
5-14-69	1705	*329			

8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex.

LOCATION.--Lat 33°18'20", long 96°40'12", Collin County, near center of dam on unnamed tributary of Honey Creek, 0.5 mile west of Farm Road 543, and 7.8 miles northwest of McKinney.

DRAINAGE AREA.--1.26 sq mi.

PERIOD OF RECORD.--September 1952 to current year.

GAGE.--Water-stage recorder and concrete drop inlet. Datum of gage is 623.00 ft above mean sea level (levels by Soil Conservation Service).

AVERAGE INFLOW.--17 years, 530 acre-ft per year.

AVERAGE OUTFLOW.--17 years, 445 acre-ft per year.

EXTREMES.--Current year: Maximum outflow, 7.3 cfs May 7 (gage height, 21.15 ft); no outflow for many days. Maximum inflow, 858 cfs (average for 5-minute interval) May 6, computed from change in pool contents and adjusted for outflow and rainfall on pool surface during time of peak inflow.
Period of record: Maximum outflow, 766 cfs May 26, 1957 (gage height, 29.23 ft); no outflow most of time each year. Maximum inflow, 1,490 cfs (average for 15-minute interval) May 21, 1957, computed and adjusted as above.

REMARKS.--Records good. The pool is formed by a rolled earthfill dam, 1,253 ft long with an emergency spillway located at right end of dam. The dam was completed Jan. 11, 1952, but no appreciable storage began until April 1952. The first outflow occurred on May 12, 1954. The outlet structure consists of an uncontrolled 2.5-foot square concrete drop-inlet structure that is connected to a 12-inch concrete outlet pipe. The emergency spillway crest is at gage height 27.0 ft; crest of drop-inlet structure is at gage height 14.99 ft; and invert at bottom of outlet pipe is at gage height 5.0 ft. There is also an 8-inch controlled outlet pipe connected to the drop inlet at gage height 5.0 ft. Pool capacity is 507 acre-ft at the emergency spillway crest, 122 acre-ft at the crest of drop inlet, and 5.5 acre-ft at the controlled outlet pipe. The area and capacity tables presently in use are based on a resurvey made by the U.S. Geological Survey in 1958-59. The dam was built by the Soil Conservation Service for flood control and conservation. Three rain gages (two recording and one nonrecording) are located in the watershed above station.

POOL WATER BUDGET, IN ACRE-FEET, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.
Inflow 1/	27.5	31.6	35.7	54.5	97.2	130	51.0	292	36.0	1.9	2.3	1.5
Outflow	22.3	25.5	34.4	45.7	101	126	45.2	295	29.2	0	0	0
(††)	1.72	3.12	.97	2.27	2.38	3.27	2.48	7.68	4.14	.12	2.43	1.27

CAL YR 1968: Inflow 992 Outflow 946 †† 40.78
WTR YR 1969: Inflow 761 Outflow 724 †† 31.85

PEAK INFLOW (BASE, 100 CFS)

DATE	TIME	DISCHARGE
5- 6	2135	*858
5-14	1740	*200
5-17	0305	*654
6-23	2045	*149

1/ Inflow adjusted for rainfall on pool and pool losses.
†† Weighted-mean rainfall, in inches.
* 5-minute interval.

9-329e
(Oct. 1951)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0580.00

Monthly and ~~annual discharge~~ yearly weighted-mean rainfall, in inches, of Subwaterahed No. 12 River at near Honey Creek McKinney, Tex.
[Drainage area, 1.26 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL	
1953										3.03	2.02	2.39	*32.35	
1954	3.15	3.10	1.62	2.29	.37	.62	5.28	5.34	4.04	1.57	2.75	4.41	34.54	
1955	4.57	.92	1.25	1.99	2.96	2.25	2.61	4.16	2.52	1.06	.32	3.68	28.29	
1956	.51	.63	.22	.98	5.22	.40	2.00	3.62	.37	.73	.44	.62	15.74	
1957	2.93	3.16	2.04	2.29	2.02	5.59	13.39	17.70	1.08	.08	.15	4.62	55.05	
1958	2.95	7.85	1.77	2.06	.69	3.83	9.02	3.22	2.38	1.21	1.67	4.24	40.89	
1959	1.11	2.25	.68	.11	1.06	3.09	.72	3.10	5.86	4.32	3.09	.90	26.29	
1960	4.56	.87	4.01	2.17	2.11	1.14	1.25	3.72	4.58	5.14	4.39	3.11	37.05	
1961	2.13	.57	4.88	1.72	2.30	3.13	2.91	3.45	3.67	2.47	1.17	5.72	34.12	
1962	2.80	2.66	2.56	1.14	1.45	2.72	4.82	1.20	5.37	3.06	1.39	7.17	36.34	
1963	2.13	2.76	.78	.42	.39	1.08	4.26	8.27	.54	2.45	.54	.48	24.10	
1964	.01	1.09	1.15	1.74	1.54	3.71	4.87	4.69	.83	.07	3.99	11.22	34.91	
1965	.77	7.13	1.01	2.12	3.74	.68	1.45	8.13	3.56	.26	2.71	3.93	35.49	
1966	1.17	1.67	.98	.84	2.20	.72	14.88	.90	2.24	3.39	6.96	3.50	39.45	
1967	.33	.65	1.24	.33	.65	2.28	4.25	6.66	.64	1.33	1.72	5.79	25.87	
1968	3.48	.88	2.31	2.73	1.68	5.88	5.06	5.12	3.70	3.67	1.06	6.07	41.64	
1969	1.72	3.12	.97	2.27	2.38	3.27	2.48	7.68	4.14	.12	2.43	1.27	31.85	

* From U.S. Weather Bureau Station at McKinney, Tex.

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(Oct. 1951)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of ______ Sheets

8-0580.00

Monthly and Yearly Net Inflow ~~annual discharge~~, in acre-feet, of Honey Creek Subwatershed No. 12 River at McKinney, Tex.

[Drainage area, 1.26 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1953	0.1	14.0	20.0	1.0	2.8	8.0	94.6	75.1	2.3	5.6	2.7	3.2	229
1954	3.7	5.1	4.9	11.8	6.8	3.2	40.0	100	46.7	3.1	10.2	27.0	262
1955	66.0	9.4	7.1	21.1	67.5	58.1	44.8	34.5	6.4	1.2	.5	6.0	323
1956	.8	1.4	.3	3.8	80.8	.8	9.1	41.9	.7	.8	.7	.4	142
1957	4.2	6.9	4.2	3.5	6.9	34.0	684	1023	4.2	.2	.8	7.6	1,780
1958	5.4	151	50.3	67.8	33.2	86.2	352	173	9.1	2.5	2.6	7.1	940
1959	2.4	3.8	1.7	1.2	2.8	9.0	5.5	11.1	16.5	14.8	6.2	2.6	78
1960	14.4	3.3	41.1	43.8	44.9	16.5	6.9	16.4	21.7	10.4	14.5	3.9	238
1961	4.2	2.9	49.7	65.0	56.3	47.9	44.0	122	7.4	3.5	.2	12.0	415
1962	54.9	11.9	57.0	21.5	17.2	37.7	113	18.1	49.0	4.9	1.2	77.4	464
1963	4.3	49.6	31.8	9.3	5.0	8.2	33.1	170	11.9	2.2	0	.7	326
1964	.7	.7	2.2	2.6	1.5	9.2	67.3	35.3	4.6	.4	4.1	221	350
1965	8.8	247	26.5	37.3	145	20.2	8.7	15.1	52.1	.9	.8	6.3	705
1966	.7	5.9	4.1	4.3	29.4	6.0	632	51.4	5.6	2.4	18.9	25.4	786
1967	3.7	2.8	4.4	4.5	1.8	8.7	13.0	154	2.0	2.9	2.4	66.5	267
1968	4.9	7.4	37.4	75.8	51.8	268	167	213	41.0	26.6	2.7	51.3	947
1969	27.5	31.6	35.7	54.5	97.2	130	51.0	292	36.0	1.9	2.3	1.5	761

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UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0580.00

Monthly and ~~annual discharge~~ yearly Outflow, in acre-feet, of Honey Creek Subwatershed No. 12 River at or near McKinney, Tex.

[Drainage area, 1.26 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL	
1953	0.7	0	3.6	3.1	0.5	3.1	13.0	79.8	11.4	0	0.6	0.1	116	
1954	0	0	0	0	0	0	0	27.0	37.0	0	0	0	64	
1955	54.5	0	0	13.0	61.0	48.0	39.0	23.0	0	0	0	0	238	
1956	0	0	0	0	15.0	1.0	0	29.0	0	0	0	0	45	
1957	0	0	0	0	0	0	226	1050	344	0	0	0	1,620	
1958	0	108	47.0	64.0	30.0	79.0	101	395	.2	0	0	0	824	
1959	0	0	0	0	0	0	0	0	0	0	0	0	0	
1960	0	0	0	39.2	44.0	12.9	0	11.1	17.4	0	0	0	125	
1961	0	0	39.9	67.2	55.3	43.8	13.5	143	2.2	0	0	0	365	
1962	42.5	8.0	55.5	19.6	15.1	29.1	114	9.8	42.7	.1	0	59.0	395	
1963	.3	44.4	31.3	6.5	.2	2.4	26.2	91.8	84.3	0	0	0	287	
1964	0	0	0	0	0	0	23.6	26.8	2.2	0	0	152	205	
1965	50.2	214	64.1	37.1	146	16.7	4.8	139	61.3	0	0	0	733	
1966	0	0	0	0	5.3	2.1	235	463	0	0	0	26.9	732	
1967	.9	0	0	0	0	0	4.0	20.3	125	0	0	43.3	194	
1968	0	2.5	34.7	76.0	50.0	246	189	212	33.2	17.0	.2	40.1	901	
1969	22.3	25.5	34.4	45.7	101	126	45.2	295	29.2	0	0	0	724	

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

8-0580. Honey Creek subwatershed No 12 near McKinney, Tex. Drainage Area 1.26 sq. mi.

Continuous water-stage recorder: ratio 1:6. Date of last sediment survey April 1960

Maxima: gage height, 21.15 ft; outflow, 7.34 c.f.s; surface area, 31.5 acres; contents, 276 acre-feet; on May 7, 1969

Minima: gage height, 13.47 ft; surface area, 16.9 acres; contents, 94.1 acre-feet; on Sept. 30, 1969.

Maximum inflow, 858 c.f.s (averaged for 5-min. interval and adjusted for rainfall on pool surface) on May 6, 1969

Averages: 17 water years, (1952-69); inflow, 530 acre-feet/year; outflow, 445 acre-feet/year; rainfall, 33.76 inches/year

Pool water budget, in acre-feet, water year October 1968 to September 1969

	Oct	Nov	Dec.	Calendar year 1968	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep*	Water year 1969
Total Inflow 1/	27.5	31.6	35.7	992	54.5	97.2	130	51.0	292	36.0	1.9	2.3	1.5	761
Total Outflow	22.3	25.5	34.4	946	45.7	101	126	45.2	295	29.2	0	0	0	724
Total Consumption	8.7	7.1	5.0	111	4.9	5.1	7.2	9.2	12.4	14.0	16.8	13.3	7.7	111
†	-1.4	+3.3	-2.3	-1.0	+7.4	-6.1	+0.4	-0.4	-1.6	+0.4	-14.8	-8.4	-5.1	-28.6
‡	19.3	19.3	19.4	-	19.5	19.6	19.6	19.5	23.4	19.4	18.7	17.7	17.1	-
††	1.72	3.12	0.97	40.78	2.27	2.38	3.27	2.48	7.68	4.14	0.12	2.43	1.27	31.85

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres
†† Weighted mean rainfall, in inches.
* 5-minute increment.

Peak inflow - Base, 100 c.f.s.

Date	Time	Discharge	Date	Time	Discharge
5- 6-69	2135	*858			
5-14-69	1740	*200	5-17-69	0305	*654
			6-23-69	2045	*149

8-0585. Honey Creek near McKinney, Tex.

LOCATION.--Lat 33°16'42", long 96°39'27", Collin County, on right bank at downstream side of bridge on county road, 4.5 miles downstream from Haw Branch, 5.6 miles upstream from mouth, and 6.0 miles northwest of McKinney.

DRAINAGE AREA.--39.0 sq mi.

PERIOD OF RECORD.--July 1951 to current year.

GAGE.--Water-stage recorder and concrete control. Datum of gage is 563.68 ft above mean sea level (Soil Conservation Service reference mark).

AVERAGE DISCHARGE.--18 years, 18.7 cfs (13,550 acre-ft per year).

EXTREMES.--Current year: Maximum discharge, 3,540 cfs May 7 (gage height, 17.84 ft); no flow Aug. 10-25, Aug. 30 to Sept. 23, Sept. 30.
Period of record: Maximum discharge, 7,920 cfs May 26, 1957 (gage height, 20.29 ft); no flow at times.
Maximum stage since at least 1930, 23.0 ft in spring of 1950, from information by local resident.

REMARKS.--Records good. Station operated as part of the Honey Creek basin hydrologic cooperative program of the Geological Survey and Soil Conservation Service to evaluate rainfall-runoff relations, and the effects of floodwater retarding structures. At end of year, flow from 24.6 sq mi above this station was partly controlled by 13 floodwater-retarding structures with a total combined capacity of 9,080 acre-ft below the flood-spillway crests, of which 6,930 acre-ft is floodwater-retarding capacity and 2,150 acre-ft is sediment-pool capacity. One structure was built during the current year and has a capacity below flood-spillway crest of 1,260 acre-ft, of which 195 acre-ft is sediment-pool capacity. The capacity in these pools allocated to sediment storage will be used for conservation storage until eliminated by sedimentation. Diversions for irrigation above station. Sixteen rain gages (10 standard and 6 recording) were operated in basin above station. Operation of the 10 standard rain gages discontinued at end of current water year.

DISCHARGE, IN CUBIC FEET PER SECOND, WATER YEAR OCTOBER 1968 TO SEPTEMBER 1969

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1	1.0	.87	35	13	45	28	30	24	29	3.8	.10	0
2	.87	1.2	25	11	31	37	27	18	27	3.3	.10	0
3	.76	3.8	21	11	24	91	26	16	23	2.6	.06	0
4	.76	1.6	17	9.0	22	47	22	10	22	2.2	.05	0
5	.87	1.3	13	8.0	22	43	20	149	19	1.8	.18	0
6	.76	1.0	12	8.3	21	46	17	196	18	1.5	.10	0
7	.50	1.0	11	8.3	21	44	17	1,190	16	1.3	.04	0
8	.43	1.5	9.3	7.8	17	63	16	350	14	1.2	.02	0
9	125	1.8	8.3	7.8	14	33	16	310	14	1.0	.01	0
10	30	1.2	8.0	5.3	14	27	14	269	13	.87	0	0
11	12	1.0	8.3	5.1	14	24	13	234	11	.87	0	0
12	5.8	1.0	8.6	5.1	13	22	69	215	10	.76	0	0
13	4.3	1.0	7.5	5.1	12	22	160	178	65	1.3	0	0
14	3.1	1.2	6.1	5.1	58	20	52	198	20	2.4	0	0
15	2.4	2.0	5.6	5.6	172	213	34	226	18	2.4	0	0
16	2.0	2.4	5.8	18	52	194	24	135	18	2.4	0	0
17	2.0	1.3	5.8	15	34	116	22	811	23	1.6	0	0
18	1.6	1.0	38	13	26	202	15	312	18	1.5	0	0
19	1.5	.87	22	11	24	79	13	256	150	1.5	0	0
20	1.5	.87	13	9.3	73	50	13	210	65	1.6	0	0
21	1.3	.87	26	9.7	457	40	12	178	25	.76	0	0
22	1.3	.87	97	9.0	242	35	12	157	18	.58	0	0
23	1.3	1.0	25	8.0	187	138	10	124	63	.37	0	0
24	1.2	.87	18	7.5	129	167	8.0	102	175	.18	0	.04
25	1.0	1.0	15	6.1	67	62	7.5	82	46	.18	0	.01
26	1.2	58	15	6.1	57	44	7.5	71	22	.37	.18	.02
27	1.2	174	23	6.4	51	37	271	60	15	.22	.58	.37
28	.87	213	25	7.0	35	31	152	52	12	.18	.04	.22
29	1.0	43	19	54	------	28	58	45	9.7	.10	.01	.01
30	1.0	22	17	288	------	31	40	39	5.1	.06	0	0
31	1.0	------	15	79	------	33	------	35	------	.06	0	------
TOTAL	209.52	542.52	575.3	662.6	1,934	2,047	1,198.0	6,252	983.8	38.96	1.47	0.67
MEAN	6.76	18.1	18.6	21.4	69.1	66.0	39.9	202	32.8	1.26	.047	.022
MAX	125	213	97	288	457	213	271	1,190	175	3.8	.58	.37
MIN	.43	.87	5.6	5.1	12	20	7.5	10	5.1	.06	0	0
AC-FT	416	1,080	1,140	1,310	3,840	4,060	2,380	12,400	1,950	77	2.9	1.3

CAL YR 1968 TOTAL 13,936.33 MEAN 38.1 MAX 1,380 MIN 0 AC-FT 27,640
WTR YR 1969 TOTAL 14,445.84 MEAN 39.6 MAX 1,190 MIN 0 AC-FT 28,650

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(Oct. 1951)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0585.00

Monthly and ~~annual discharge~~ yearly average rainfall, in inches, of Honey Creek River at McKinney, Tex.

[Drainage area, 39.0 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL.	
1954	3.91	3.43	1.39	2.53	0.34	0.67	5.48	5.32	4.07	2.01	2.09	4.74	35.99	
1955	4.55	.82	1.75	1.95	3.12	2.76	1.93	4.74	2.82	1.04	.58	3.49	29.55	
1956	.66	.60	.21	.96	4.50	.34	2.29	3.52	.33	.98	.49	.36	15.24	
1957	3.08	3.31	2.18	2.32	1.96	6.09	13.64	17.41	.71	.49	.23	5.32	56.75	
1958	2.78	7.44	1.72	2.04	.71	3.61	8.72	2.56	3.07	1.37	1.78	3.23	39.01	
1959	1.00	2.63	.72	.22	1.32	2.57	.80	2.60	6.88	5.35	2.17	.83	27.09	
1960	5.28	1.68	3.77	2.03	2.26	1.21	1.57	3.01	4.30	5.70	4.26	2.71	37.78	
1961	1.64	.63	4.75	1.83	2.43	2.94	2.13	2.84	3.95	3.40	1.25	4.66	32.45	
1962	2.67	2.38	2.46	1.11	1.34	2.72	5.49	1.19	6.61	3.23	1.81	8.60	39.61	
1963	2.40	3.00	1.05	.38	.38	.93	4.41	7.21	.71	2.30	.49	.36	23.62	
1964	0	1.02	1.15	1.71	1.61	4.11	4.57	5.16	1.07	.21	4.25	11.41	36.27	
1965	1.87	6.99	.98	2.24	3.79	1.18	1.32	7.03	3.69	.56	2.99	4.43	37.07	
1966	1.21	1.82	1.18	.90	2.20	.96	14.32	1.11	2.67	2.43	7.42	3.44	39.66	
1967	.58	.71	1.56	.33	.81	2.66	4.73	6.94	.78	1.41	1.99	5.58	28.08	
1968	3.24	1.04	2.40	3.07	1.65	6.16	4.83	5.09	3.86	3.14	1.17	6.22	41.87	
1969	1.75	3.60	1.52	2.13	2.82	3.80	2.98	8.41	4.65	.21	2.67	1.95	36.49	

9-329.c
(Oct. 1951)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of 1 Sheets

08058500

Monthly and yearly mean discharge, in cfs, of Honey Creek at McKinney, Tex.
[Drainage area, 39.0 square miles]

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1951	-	-	-	-	-	-	-	-	-	-	0.12	0	-
1952	0	0.02	0.07	0.09	0.51	0.99	52.5	21.6	6.6	0.84	0	0	6.82
1953	0	1.33	2.28	1.30	1.25	4.71	43.9	46.3	.85	.04	0	0	8.52
1954	1.58	1.87	.28	6.15	1.23	.28	17.4	33.0	17.5	0	.01	1.67	6.76
1955	6.56	.41	.87	3.03	22.9	10.7	7.68	7.66	2.90	.05	0	0	5.11
1956	0	0	0	0	12.1	.02	.80	10.0	0	0	0	0	1.87
1957	0	.94	.01	0	.20	9.25	223	434	57.8	6.42	.03	.47	61.4
1958	.25	48.3	16.3	25.9	15.8	29.9	90.8	150	15.4	.30	0	.71	32.9
1959	0	.34	1.14	.95	1.18	1.39	1.65	.50	5.76	13.6	.003	0	2.22
1960	.98	21.6	14.2	24.9	20.3	7.20	2.73	3.95	4.22	4.34	2.07	.07	8.83
1961	.04	.17	8.19	31.6	39.2	20.7	6.54	33.1	1.82	1.37	.12	2.25	12.0
1962	4.85	1.72	14.9	6.73	6.02	13.5	78.9	12.0	26.7	1.83	.36	65.0	19.2
1963	2.30	15.7	17.3	5.06	2.71	4.39	14.6	63.2	19.6	.60	.003	0	12.2
1964	0	0	0	0	.15	1.90	12.9	13.1	1.32	0	0	83.4	9.28
1965	14.0	151	22.5	22.6	85.5	15.9	7.49	54.9	28.8	1.09	.03	3.56	33.4
1966	.15	.49	.51	.57	8.23	1.47	212	126	7.62	.51	8.38	6.44	30.9
1967	.84	.37	.56	.68	.73	4.11	24.3	52.3	39.0	.24	.12	4.77	10.7
1968	.61	1.16	8.08	32.8	19.8	160	90.6	85.7	12.6	3.41	.42	6.28	35.3
1969	6.76	18.1	18.6	21.4	69.1	66.0	39.9	202	32.8	1.26	.047	.022	39.6

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Rev. 6-68

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

____. Honey Creek subwatershed No. 8-C near McKinney, Tex. Drainage Area 2.10 sq. mi.

~~Continuous water-stage recorder~~ Staff Gage; ratio —. Date of last sediment survey September 1959.

Maxima: gage height, 24.10 ft; outflow, 22.5 c.f.s.; surface area, 59.0 acres; contents, 382 acre-feet; on May 7.

Minima: gage height, 13.50 ft; surface area, 13.6 acres; contents, 74.7 acre-feet; on Sept. 21.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: — water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct.	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	8.4	46.1	26.8	988	31.3	180	139	100	582	62.8	1.9	1.3	8.0	1,183
Total Outflow	5.0	7.5	40	883	20	170	150	70	600	60.0	10.0	0	0	1,132
Total Consumption	9.6	5.6	7.0	128	6.7	8.4	8.9	9.9	14.4	16.9	17.7	18.0	12.6	136
†	-3.2	+38.6	-16.8	+43.2	+7.3	+7.6	-13.1	+25.0	-17.6	-5.6	-25.4	-13.5	-7.1	-23.8
‡	16.0	16.0	18.8	-	17.7	21.1	19.0	19.0	24.0	18.8	17.0	15.0	14.0	-
††	2.01	4.34	1.73	41.93	1.75	3.13	3.91	3.58	8.53	4.68	0.10	2.87	2.52	39.15

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, _____ c.f.s.)

Date	Time	Discharge	Date	Time	Discharge

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

____. Honey Creek subwatershed No. 8-D near McKinney, Tex. Drainage Area 1.46 sq. mi.

~~Continuous water stage recorder ratio~~ Staff gage Date of last sediment survey —.

Maxima: gage height, 23.80 ft; outflow, 25.3 c.f.s.; surface area, 42.7 acres; contents, 310 acre-feet; on May 7.

Minima: gage height, 16.30 ft; surface area, 18.8 acres; contents, 83.2 acre-feet; on Sept. 30.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: — water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

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Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	13.7	46.5	65.1	1,080	48.2	202	70.4	130	608	132	5.1	1.1	2.3	1,320
Total Outflow	5.3	38.6	61.0	1,020	42.3	206	67.2	120	622	126	0	0	0	1,290
Total Consumption	11.8	8.8	9.6	155	7.4	6.2	9.3	12.3	15.3	17.0	19.3	16.0	13.6	147
†	+4.6	+7.3	-1.0	+6.2	+2.2	-3.7	+2.5	+5.0	-12.3	0	-13.6	-10.4	-7.7	-27.1
‡	23.7	23.7	24.6	-	24.6	24.9	24.6	24.6	27.4	24.3	22.7	21.3	19.4	-
††	2.05	4.02	1.91	42.54	1.81	3.17	4.14	3.31	8.56	6.03	0.28	3.68	1.74	39.70

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, _____ c.f.s.)

Date	Time	Discharge	Date	Time	Discharge

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

Honey Creek subwatershed No. 8-E near McKinney, Tex. Drainage Area 1.93 sq. mi.

~~Continuous water stage recorder~~ Staff gage: ratio —. Date of last sediment survey September 1959

Maxima: gage height, 21.60 ft; outflow, 27.5 c.f.s.; surface area, 50.6 acres; contents, 449 acre-feet; on May 7.

Minima: gage height, 14.30 ft; surface area, 25.5 acres; contents, 172 acre-feet; or Sept. 21.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: — water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct.	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	18.9	123	32.4	1,620	44.1	195	73.5	90.9	696	100	8.7	3.0	12.0	1,400
Total Outflow	0	105	32.5	1,530	36.5	197	70.1	84.4	699	96.0	0	0	0	1,320
Total Consumption	15.3	12.6	10.4	208	9.2	8.7	12.4	14.5	22.6	23.0	28.5	26.8	20.6	205
†	+8.8	+13.7	-4.6	0	+4.6	-3.1	+1.6	0	-3.1	-4.3	-19.2	-16.4	-5.2	-27.2
‡	29.5	30.0	30.7	-	30.7	31.2	30.9	30.9	34.8	30.7	28.5	26.8	25.8	-
††	2.21	3.42	2.28	43.56	2.37	2.77	4.11	3.07	7.80	5.45	0.24	3.55	1.65	38.90

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, _____ cfs)

Date	Time	Discharge	Date	Time	Discharge

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

Honey Creek subwatershed No. 8-F near McKinney, Tex. Drainage Area 1.45 sq. mi.

~~Continuous water stage recorder~~ staff gage ~~ratio~~. Date of last sediment survey September 1959.

Maxima: gage height, 18.96 ft; outflow, 10.5 c.f.s.; surface area, 35.5 acres; contents, 294 acre-feet; on May 7.

Minima: gage height, 10.10 ft; surface area, 16.1 acres; contents, 85.5 acre-feet; on Sept. 30.

Maximum inflow, - c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: - water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct.	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	12.3	48.6	20.8	1,125	28.2	91.2	62.2	26.3	418	42.7	2.3	0.9	0.7	760
Total Outflow	9.0	41.0	18.8	1,060	24.6	93.3	58.8	30.8	420	32.2	0	0	0	728
Total Consumption	9.6	7.1	6.1	138	5.6	4.6	8.2	10.2	16.7	18.0	17.2	15.8	9.8	129
†	-3.0	+6.1	-2.1	+1.0	+2.1	-2.1	+2.1	0	-6.1	+1.2	-14.5	-10.6	-6.6	-33.5
‡	20.0	20.2	20.2	-	20.2	20.7	20.5	20.5	26.1	20.0	19.1	17.6	16.4	-
††	2.08	9.34	1.73	42.62	2.38	2.64	4.05	2.89	8.17	5.03	0.24	3.22	1.73	37.50

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, _____ c.f.s.)

Date	Time	Discharge	Date	Time	Discharge

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

_____. Honey Creek subwatershed No. 8-G near McKinney, Tex. Drainage Area 3.96 sq. mi.

~~Continuous water-stage recorder~~ staff gage; ratio —. Date of last sediment survey September 1959

Maxima: gage height, 21.20 ft; outflow, 25.1 c.f.s.; surface area, 86.1 acres; contents, 722 acre-feet; on May 17.

Minima: gage height, 9.40 ft; surface area, 21.9 acres; contents, 127 acre-feet; on Sept. 30.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: — water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

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Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct.	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	6.0	138	123	2,420	67.4	488	283	258	1,168	327	2.2	3.7	4.3	2,870
Total Outflow	0	98.4	127	2,290	58.6	476	298	230	1,135	384	5.0	0	0	2,810
Total Consumption	13.2	10.6	9.3	183	7.3	9.0	11.8	17.5	33.7	23.8	27.6	26.3	17.9	208
†	-2.6	+43.6	-9.5	+59.6	+6.3	+18.1	-16.3	+19.7	+36.6	-68.5	-30.2	-16.8	-9.0	-39.6
‡	26.4	26.9	31.0	—	30.5	34.6	31.8	31.8	61.2	31.8	27.6	23.9	22.4	—
††	1.72	4.26	1.68	41.40	1.82	3.09	3.88	3.45	9.30	4.93	0.09	2.61	2.02	29.85

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow – (base, _____ c.f.s.)

Date	Time	Discharge	Date	Time	Discharge
	—			—	

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1962 WATER YEAR

_____. Honey Creek subwatershed No. 8-H near McKinney, Tex. Drainage Area 2.18 sq. mi.

~~Continuous water-stage recorder: ratio~~ Staff gage. Date of last sediment survey September 1959

Maxima: gage height, 21.0 ft; outflow, 25.4 c.f.s.; surface area, 40.4 acres; contents, 356 acre-feet; on May 7.

Minima: gage height, 13.7 ft; surface area, 18.9 acres; contents, 137 acre-feet; on Sept. 30.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: — water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

Pool water budget, in acre-feet, water year October 1961 to September 1962.

	Oct.	Nov.	Dec.	Calendar year 1961	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1962
Total Inflow 1/	16.4	117	49.4	1,540	51.2	218	102	174	841	144	0	1.9	2.5	1,720
Total Outflow	0	88.8	54.8	1,430	39.6	228	95.4	164	864	128	0	0	0	1,660
Total Consumption	13.9	8.5	7.4	162	7.6	6.3	10.6	12.4	14.4	20.6	29.3	18.9	16.8	166
†	+6.8	+27.8	-8.0	+39.2	+8.0	-8.0	+5.3	+5.5	-18.5	+7.7	-28.8	-12.6	-9.8	-24.6
‡	23.2	28.6	26.6	-	26.2	27.3	26.6	26.9	30.6	25.8	24.0	21.0	19.7	-
††	1.98	4.09	1.79	42.07	1.73	3.19	4.13	3.34	8.80	4.90	0.27	3.90	1.70	39.82

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, _____ c.f.s.)

Date	Time	Discharge	Date	Time	Discharge

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

Honey Creek subwatershed No. 9 near McKinney, Tex. Drainage Area 1.37 sq. mi.

~~Continuous water-stage recorder~~ Staff gage ratio —. Date of last sediment survey September 1959

Maxima: gage height, 20.80 ft; outflow, 13.0 c.f.s.; surface area, 34.4 acres; contents, 330 acre-feet; on May 7.

Minima: gage height, 9.60 ft; surface area, 12.4 acres; contents, 86.2 acre-feet; on Sept. 30.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on —.

Averages: — water years, ( ); inflow, — acre-feet/year; outflow, — acre-feet/year; rainfall, — inches/year.

Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct.	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	3.8	67.0	20.3	1,007	25.7	137	93.6	76.3	495	27.2	0.2	0	4.3	950
Total Outflow	3.4	54.4	21.6	963	21.7	140	91.6	72.0	499	24.0	0	0	0	928
Total Consumption	9.1	7.5	5.1	103	3.8	4.0	5.5	7.8	12.5	12.4	15.2	14.1	11.3	108
†	-4.7	+9.2	-4.7	-.9	+3.1	-3.1	+1.5	0	0	-3.0	-14.5	-12.0	-5.1	-33.3
‡	15.2	15.0	15.4	-	15.4	15.8	15.7	15.5	20.2	15.5	14.5	13.3	12.6	-
††	1.70	3.30	1.55	42.35	2.36	2.80	3.81	2.81	8.75	4.57	0.41	2.12	1.99	36.17

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, — c.f.s)

Date	Time	Discharge	Date	Time	Discharge

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

Honey Creek subwatershed No. 10 near McKinney, Tex. Drainage Area 1.25 sq. mi.

~~Continuous water stage recorder: ratio~~ staff gage. Date of last sediment survey September 1959.

Maxima: gage height, 20.10 ft; outflow, 10.2 c.f.s.; surface area, 25.4 acres; contents, 232 acre-feet; on May 17.

Minima: gage height, 10.10 ft; surface area, 10.8 acres; contents, 59.3 acre-feet; on Sept. 30.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: — water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct.	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	20.7	93.2	25.8	1,097	28.0	100	63.9	50.8	467	27.8	2.4	2.2	2.5	884
Total Outflow	16.7	87.0	27.3	933	24.2	102	60.7	49.0	466	27.0	0	0	0	860
Total Consumption	6.0	4.6	4.8	82.8	3.8	4.0	5.2	6.0	10.1	10.2	12.3	10.4	8.2	85.6
†	0	+5.2	-5.2	+.1	+2.5	-2.5	+1.2	-1.2	+2.5	-5.1	-9.8	-5.7	-4.4	-22.5
‡	12.8	13.0	13.0	-	13.0	13.2	13.0	13.0	17.1	12.8	12.3	11.5	10.9	-
††	1.92	3.33	1.15	42.03	2.35	2.54	3.94	2.75	8.38	4.51	0.21	2.86	1.75	35.69

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, _____ c.f.s)

Date	Time	Discharge	Date	Time	Discharge

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

____ Honey ____ Creek subwatershed No. 13 near McKinney, Tex. Drainage Area 0.89 sq. mi.

~~Continuous water-stage recorder; ratio ____~~ staff gage. Date of last sediment survey September 1969

Maxima: gage height, 17.30 ft; outflow, 6.14 c.f.s.; surface area, 25.0 acres; contents, 250 acre-feet; on May 17.

Minima: gage height, 5.10 ft; surface area, 9.5 acres; contents, 50.2 acre-feet; on Nov. 25.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on ____.

Averages: — water years, ( ); inflow, ____ acre-feet/year; outflow, ____ acre-feet/year; rainfall, ____ inches/year.

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Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct	Nov	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	2.4	16.2	9.3	577	28.7	96.0	103	32.1	289	17.4	1.0	2.8	1.2	599
Total Outflow	0	0	0	523	0	51.2	99.4	28.3	282	e60.0	0	0	0	521
Total Consumption	5.0	4.9	3.8	103	6.0	5.3	8.1	9.6	16.6	13.6	15.2	16.3	8.6	113
†	-1.5	+13.8	+6.7	+2.3	+25.1	+43.2	+1.0	-1.8	+5.2	-51.6	-14.0	-11.6	-5.4	+9.1
‡	9.7	9.7	11.0	-	11.9	16.0	17.3	17.2	20.1	13.6	12.7	11.6	10.7	-
††	1.34	3.06	1.28	42.90	2.42	2.69	3.93	2.72	8.85	4.36	0.23	2.04	2.29	35.21

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.
e Releases through 8" drain valve

Peak inflow - (base, ____ c.f.s.)

Date	Time	Discharge	Date	Time	Discharge

TX-74a
Rev. 6-68

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1969 WATER YEAR

_____ Honey _____ Creek subwatershed No. 14 near McKinney, Tex. Drainage Area 0.91 sq. mi.

~~Continuous water stage recorder~~ Staff gage ~~ratio~~.

Date of last sediment survey —.

Maxima: gage height, 19.70 ft; outflow, 14.0 c.f.s.; surface area, 24.8 acres; contents, 221 acre-feet; on May 7.

Minima: gage height, 10.1 ft; surface area, 10.9 acres; contents, 62.9 acre-feet; on Sept 30.

Maximum inflow, — c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on _____.

Averages: — water years, ( ); inflow, _____ acre-feet/year; outflow, _____ acre-feet/year; rainfall, _____ inches/year.

Pool water budget, in acre-feet, water year October 1968 to September 1969.

	Oct	Nov.	Dec.	Calendar year 1968	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1969
Total Inflow 1/	8.7	12.0	14.1	700	29.2	71.8	51.7	27.2	336	19.2	1.0	1.9	2.4	575
Total Outflow	6.1	7.5	12.4	672	25.1	75.1	50.6	23.3	339	26.6	0	0	0	556
Total Consumption	6.6	4.3	4.4	78.7	2.9	3.6	5.8	6.0	7.7	9.0	12.0	10.8	8.3	81.4
†	-2.5	+3.8	-1.3	-.6	+3.8	-3.8	0	+.8	-.8	-1.8	-10.8	-6.2	-3.9	-22.7
‡	12.5	12.4	12.5	-	12.6	12.7	12.6	12.6	14.5	12.5	12.0	11.4	11.1	-
††	1.61	3.44	1.21	45.62	2.41	2.80	4.19	2.75	8.26	4.28	0.16	2.79	1.97	35.87

1/ Inflow adjusted for rainfall on pool and pool losses.
† Change in contents, in acre-feet.
‡ Mean surface area, in acres.
†† Weighted mean rainfall, in inches.

Peak inflow - (base, _____ c.f.s.)

Date	Time	Discharge	Date	Time	Discharge

Form TX-88
10-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

RAINFALL DATA SUMMARY

STUDY AREA Honey Creek

RAIN GAGES

1969 WATER YEAR

Date of storm	1-S	2-S	3-S	4-S	5-R	6-S	7-S	8-S	9-R	10-S	11-S	12-R	13-R	14-S	15-R	16-R		Total	Avg.	ey	
Oct. 5 1968	0.20	0.17	0.20	0.19	0.00	0.02	0.07	0.03	0.02	0.06	0.06	0.00	0.01	0.01	0.00	0.00					
9	1.22	1.61	1.71	1.64	2.18	2.10	1.54	1.87	1.75	1.75	1.35	1.73	1.15	1.32	1.27	(1.27)					
16	.03	.04	.05	.03	.00	.01	.03	.01	.05	.12	.06	.10	.05	.13	.00	.00					
21	.07	.07	.12	.06	.05	.08	.04	.04	.05	.04	.03	.05	.05	.03	.03	(.03)					
Oct. Totals	1.52	1.89	2.08	1.92	2.23	2.21	1.61	1.95	1.87	1.97	1.50	1.88	1.26	1.49	1.30	(1.30)		27.98	1.75		
Nov. 2	.71	.70	.69	.64	.70	.45	.52	.47	.42	.59	.67	.51	.49	.55	(.50)	(.80)					
10	.02	.02	.03	.04	.00	.05	.04	.01	.00	.02	.00	.00	.00	.02	.00	.00					
15	.59	.46	.37	.52	.41	.28	.40	.24	.17	.26	.27	.24	.21	.26	(.20)	.18					
23	.04	.01	.08	.06	.02	.03	.04	.25	.02	.05	.01	.02	.05	.09	.02	.02					
26	1.96	1.91	2.04	2.16	2.00	1.70	1.68	1.46	1.53	1.38	1.40	1.34	1.42	1.37	(1.10)	1.04					
27-28	.62	.61	.65	.69	.64	.54	.85	.74	.78	.70	.71	.86	.72	.88	(.65)	.66					
30	.38	.34	.37	.39	.36	.31	.41	.36	.38	.34	.35	.33	.36	.33	(.45)	.25					
Nov. Totals	4.32	4.05	4.23	4.50	4.13	3.36	3.94	3.53	3.30	3.34	3.21	3.30	3.28	3.50	(2.92)	2.65		57.56	3.60		
Dec. 9-10	.12	.12	.11	.12	.10	.12	.13	.12	.12	.10	.09	T	.10	.10	T	T					
18	.45	.51	.48	.49	.70	.84	.76	.74	.60	.33	.50	.31	.52	.36	.24	.23					
20	.14	.16	.15	.15	.22	.26	.23	.22	.18	.18	.15	.17	.19	.20	(.17)	.16					
21	.44	.48	.46	.47	.68	.80	.63	.62	.50	.42	.41	.41	.31	.47	(.20)	.39					
27	.54	.37	.50	.49	.48	.27	.35	.18	.25	.15	.16	.12	.14	.17	(.05)	.05					
Dec. Totals	1.69	1.64	1.70	1.72	2.18	2.29	2.10	1.88	1.65	1.18	1.31	1.01	1.26	1.30	(.66)	.83		24.40	1.52		
Cal. yr. Totals	41.86	41.50	40.54	43.27	43.65	43.58	39.18	43.89	40.59	41.92	42.61	42.42	41.17	46.94	40.45	38.15		671.72	41.98		
Jan. 3. 1969	.01	.01	.01	.01	.01	.01	T	.01	.00	.01	T	.00	.00	T	.00	.00					
15-16	.42	.57	.41	.45	.60	.64	.56	.74	.75	.66	.57	.50	.50	.48	.36	.42					
26	.03	.02	.02	.01	.00	.02	T	T	.00	.00	.00	.00	.00	.00	.00	.00					
29-30	1.44	1.09	1.23	1.35	1.21	1.73	1.21	1.82	1.66	1.69	1.66	1.83	1.92	1.95	1.78	1.68					
Jan. Totals	1.92	1.69	1.67	1.82	1.82	2.40	1.77	2.57	2.41	2.36	2.23	2.33	2.42	2.43	2.14	2.10		34.08	2.13		
Feb. 5	.02	.03	.02	.03	.00	.05	.03	.03	.00	.02	T	.00	.00	T	.00	.00					
13-14	1.27	1.26	1.23	1.32	1.35	1.18	1.23	1.36	1.25	1.18	1.19	1.22	1.23	1.39	(1.25)	.80					
19-20	.56	.58	.55	.58	.60	.46	.60	.69	.61	.56	.49	.56	.51	.68	(.50)	.47					
21	1.25	1.30	1.23	1.29	1.33	1.04	1.02	1.17	1.04	.78	.84	.78	.88	.88	(.85)	.65					
Feb. Totals	3.10	3.17	3.03	3.22	3.28	2.73	2.88	3.25	2.90	2.54	2.52	2.56	2.57	2.90	(2.60)	1.92		45.17	2.82		

Figures in parentheses estimated on basis of nearby gage.

Form TX-88
10-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

RAINFALL DATA SUMMARY

STUDY AREA Honey Creek

1969 WATER YEAR

RAIN GAGES

Date of storm	1-S	2-S	3-S	4-S	5-R	6-S	7-S	8-S	9-R	10-S	11-S	12-R	13-R	14-S	15-R	16-R		Total	Avg.	By ✓
Mar. 2-3	0.66	0.65	0.58	0.62	0.70	0.71	0.56	0.61	0.61	0.71	0.66	0.71	0.57	0.83	(0.63)	0.46				[illegible]
5	.21	.23	.19	.21	.24	.24	.21	.23	.21	.24	.25	.24	.25	.31	(.25)	.07				
7	.22	.25	.21	.22	.26	.25	.29	.31	.28	.32	.32	.31	.35	.39	.35	.32				
14-15	1.11	1.12	1.33	(1.20)	1.19	1.12	1.20	(1.20)	1.10	1.18	1.13	1.03	1.13	1.29	1.05	.65				
17	.39	.39	.35	(.28)	.37	.38	.41	.44	.40	.44	.41	.35	.40	.45	.50	.38				
23	1.00	1.00	.89	(.70)	.93	.98	.91	.97	.88	.94	.90	.75	[illegible]	.97	(.44)	.59				
28	.04	.12	.12	.13	.12	.11	.00	.00	.00	.00	.00	.00	.08	.00	.00	.00				
29-31	.14	.38	.36	.39	.36	.32	.32	.17	.18	.22	.18	.15	.07	.21	(.05)	.00				
Mar. Totals	3.77	4.14	4.03	3.75	4.17	4.11	3.90	3.93	3.88	4.06	3.83	3.54	3.65	4.45	(3.29)	2.47		60.76	3.80	
Apr. 4	T	.01	.02	.02	T	T	.01	.02	T	.02	T	T	T	.01	(.02)	.00				
12-13	1.24	1.28	1.26	1.36	1.35	1.21	1.21	1.55	1.23	1.32	1.32	1.42	1.41	1.49	1.35	.78				
15-16	.03	.08	.07	.04	.00	.09	.03	.04	.00	.11	.05	T	.00	.06	.08	.00				
27	2.15	1.95	2.22	2.17	2.08	1.74	1.93	1.62	1.52	1.30	1.25	1.33	1.30	1.18	1.32	1.00				
Apr. Totals	3.42	3.29	3.57	3.59	3.43	3.04	3.18	3.23	2.75	2.75	2.62	2.75	2.71	2.74	2.75	1.78		47.60	2.98	
May 5	1.14	1.16	1.21	1.12	1.25	1.19	1.16	1.28	1.35	1.36	1.43	1.36	1.32	1.53	1.30	1.28				
6-7	3.41	3.37	3.72	3.39	3.06	3.15	3.14	2.95	2.99	3.16	3.02	2.95	2.90	3.16	3.00	3.70				
8	.22	.22	.24	.22	.20	.20	.10	.09	.10	.10	.09	.09	.15	.10	.10	.05				
11	.04	.03	.04	.03	.02	.04	.03	.03	.01	.00	.04	.01	[illegible]	.00	.00	.00				
14	.90	.93	.80	.62	.68	.60	1.04	1.48	1.38	1.40	1.35	1.28	1.39	1.29	1.20	.88				
17	2.28	2.35	2.02	1.57	1.72	1.51	1.41	1.99	2.03	2.02	1.81	1.65	2.38	1.87	(1.80)	1.70				
18	.75	.77	.66	.52	.56	.49	.37	.51	.29	.26	.46	.40	.38	.24	(.25)	.24				
25-26	.68	.21	.30	.46	.45	.60	.44	.50	.45	.15	.49	.12	.51	.18	(.40)	.06				
28	.04	.04	.04	.14	.10	.00	.04	.04	.02	.02	.04	.04	.02	.03	(.03)	.00				
May Totals	9.48	9.08	9.03	8.07	8.04	7.78	7.73	8.87	8.62	8.47	8.73	7.90	9.27	8.40	8.08	6.91		134.49	8.41	
June 4	.25	.26	.26	.26	.30	.23	.22	.22	.30	.22	.17	.20	.20	.19	(.15)	.05				
12-13	1.04	.84	.95	.97	1.01	1.14	1.10	.75	1.12	1.10	1.22	.92	1.09	1.13	(1.20)	1.19				
14	.96	.78	.87	.91	.94	1.05	1.20	.82	1.20	.90	1.39	1.01	.90	.93	(1.00)	1.05				
18	.65	.84	.76	.57	.82	.85	.68	.54	.59	.80	.51	.59	.40	.68	.45	.50				
19	.72	.93	.84	.63	.91	.95	.44	.35	.38	.39	.32	.29	.37	.34	.55	.25				
23	1.42	1.08	1.11	1.27	1.34	1.24	1.20	1.13	1.32	1.21	1.24	1.05	1.40	1.10	1.20	1.16				
June Totals	5.04	4.73	4.79	4.61	5.32	5.46	4.86	3.81	4.91	4.62	4.79	4.06	4.36	4.37	4.55	4.20		74.46	4.65	
July 25	.06	.30	.08	.08	.27	.24	.04	.56	.31	.23	.41	.12	.25	.19	(.20)	.09				
July Totals	.06	.30	.08	.08	.27	.24	.04	.56	.31	.23	.41	.12	.25	.19	(.20)	.09		3.45	0.21	

Figures in parentheses estimated on basis of nearby gage.

Form TX-88
10-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

STUDY AREA Honey Creek

RAINFALL DATA SUMMARY

RAIN GAGES

1969 WATER YEAR

Date of storm	1-S	2-S	3-S	4-S	5-R	6-S	7-S	8-S	9-R	10-S	11-S	12-R	13-R	14-S	15-R	16-R		Total	Avg.	By / ✓
Aug. 5	0.19	0.19	0.22	0.28	0.20	0.18	0.14	0.14	0.20	0.40	0.20	0.40	0.12	0.49	(0.10)	0.25				
15	.37	.34	.40	.35	.45	.33	.30	.45	.51	.30	.28	.50	.35	.25	(.25)	.20				
26	3.20	3.95	2.38	2.12	1.95	3.12	1.84	1.97	1.30	2.26	1.48	1.75	1.14	2.10	1.54	1.34				
Aug. Totals	3.76	4.48	3.00	2.75	2.60	3.63	2.28	2.56	2.01	2.96	1.96	2.65	1.61	2.84	1.89	1.79		42.71	2.67	
Sept. 2-3	.49	.37	.84	.59	.30	.59	.56	.73	.35	.48	.51	.24	.90	.90	(.61)	(.25)				
11	.30	.32	.52	.47	.20	.22	.17	.16	.10	.16	.12	.08	.08	.00	.00	.00				
22	.49	.49	.49	.44	.40	.49	.47	.45	.42	.44	.34	.45	.71	.44	.40	.10				
23	.60	.29	1.13	1.09	1.27	.29	1.40	.90	1.22	.75	.83	.67	.65	.85	.74	.40				
Sept. Totals	1.88	1.47	2.48	2.59	2.17	1.59	2.60	2.24	2.09	1.83	1.80	1.44	2.34	2.19	1.75	.75		31.21	1.95	
Water Year Totals	39.94	39.93	39.69	38.62	39.64	38.84	39.87	38.38	36.66	36.30	34.91	33.58	34.81	36.80	32.13	26.79		581.88	36.49	

Figures in parentheses estimated on basis of nearby gage.

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 1

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Feb. 21, 1969

8-0575 Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi

Date and time	Gage height	Storage	Time int.	Change in storage		Mean G. Ht.	Outflow	Total inflow	Rainfall on Pool				Net Inflow			
										area	Storage		Rate			Acc
	ft	ac-ft	hrs	ac-ft	cfs	ft	cfs	cfs	in	ac	ac-ft	cfs	cfs	in/hr	in	in
Feb 21 1969																
0000	15.19	443.07	—	—	—	—	—	—	—	—	—	—	—	—	—	.1020
0400	15.19	443.07	4.0	.00	.00	15.19	4.85	4.85	.00				485	.0035	.0140	.0140
0500	15.19+	443.27	1.0	+ .20	+ 2.42	15.19	4.85	7.27	.12	42.9	.429	5.19	2.08	.0015	.0015	.0155
0600	15.20	443.50		+ .23	+ 2.78	15.20	4.90	7.68	.02	42.9	.072	.87	6.81	.0049	.0049	.0204
0700	15.21	443.93		+ .43	+ 5.20	15.20	4.90	10.1	.02	42.9	.072	.87	9.2	.0067	.0067	.0271
0800	15.22	444.36		+ .43	+ 5.20	15.22	5.00	10.2	.04	42.9	.143	1.73	8.5	.0062	.0062	.0333
0900	15.24	445.22		+ .86	+ 10.41	15.23	5.05	15.5	.06	43.0	.215	2.60	12.9	.0093	.0093	.0426
1000	15.26	446.08		+ .86	+ 10.41	15.25	5.15	15.6	.02	43.0	.072	.87	14.7	.0106	.0106	.0532
1100	15.28	446.94		+ .86	+ 10.41	15.27	5.23	15.6	.02	43.1	.072	.87	14.7	.0106	.0106	.0638
1200	15.32	448.66	1.0	+ 1.72	+ 20.81	15.30	5.35	26.2	.24	43.1	.862	10.43	14.8	.0107	.0107	.0745
1230	15.40	452.12	.50	+ 3.46	+ 83.7	15.36	5.52	89.2	.18	43.3	.650	15.7	78.5	.0592	.0266	.1011
1300	15.52	457.34	.50	+ 5.22	+ 126.3	15.46	5.71	132.0	.10	43.5	.362	8.8	123.2	.0892	.0446	.1457
1305	15.54	458.22	.083	+ .88	+ 127.8	15.53	5.80	133.6	.004	43.7	.014	2.0	131.6	.0952	.0079	.1536
1310	15.57	459.53		+ 1.31	+ 190.2	15.56	5.89	196.0	.004	43.7	.015	2.2	193.8	.1403	.0117	.1653
1315	15.60	460.84		+ 1.31	+ 190.2	15.58	5.84	196.0	.008	43.8	.011	1.6	194.4	.1408	.0117	.1770
1320	15.63	462.16		+ 1.32	+ 191.7	15.62	5.86	197.6	.008	43.9	.011	1.6	196.0	.1419	.0118	.1888
1325	15.65	463.04		+ .88	+ 127.8	15.64	5.87	133.7	.008	44.0	.011	1.6	132.1	.0957	.0080	.1968
1330	15.67	463.92	.083	+ .88	+ 127.8	15.66	5.88	133.7	.002	44.0	.007	1.0	132.7	.0961	.0080	.2048
1345	15.79	466.57	.25	+ 2.65	+ 128.3	15.70	5.90	134.2	.006	44.1	.022	1.1	133.1	.0964	.0241	.2289
1400	15.80	469.66	.25	+ 3.09	+ 149.6	15.76	5.93	155.5	.004	44.2	.015	.7	154.8	.1121	.0280	.2569
1500	15.96	476.79	1.0	+ 7.13	+ 86.3	15.88	5.99	92.3					92.3	.0668	.0668	.3237
1600	16.04	480.38		+ 3.59	+ 43.4	16.00	6.05	49.4					49.4	.0358	.0358	.3595
1700	16.09	482.63		+ 2.25	+ 27.22	16.06	6.07	33.3					33.3	.0241	.0241	.3836
1800	16.12	483.98		+ 1.35	+ 16.34	16.10	6.09	22.4					22.4	.0162	.0162	.3998
1900	16.14	484.89		+ .91	+ 11.01	16.13	6.10	16.11					16.1	.0117	.0117	.4115
2000	16.16	485.79		+ .90	+ 10.89	16.15	6.11	17.00					17.0	.0123	.0123	.4238
2100	16.17	486.24		+ .45	+ 5.44	16.16	6.11	11.55					11.6	.0084	.0084	.4322
2200	16.18	486.70		+ .46	+ 5.57	16.18	6.12	11.69					11.7	.0085	.0085	.4407
2300	16.19	487.15		+ .45	+ 5.44	16.18	6.12	11.56					11.6	.0084	.0084	.4491
2400	16.20	487.60	1.0	+ .45	+ 5.44	16.20	6.19	11.57					11.6	.0084	.0084	.4575

Comp. by RNM
Ck. by JAS

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

Sheet 1 of 1
Comp. by: JNS
Date 7-22-70
Check by RON
Date 7-22-70

Study Area Honey Creek subwatershed No. 11 near McKinney, Texas Date of storm Feb. 21, 1969

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	.6943		.3057											
	Gage 13-R		Gage 15-R		Gage		Gage		Gage		Gage		Recording Gages	(Rec. Gages x K)
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	All Gages	All Gages
Feb. 21, 1969														
0820	0	0	0	0									0	0
0340	.02	.01	.02	.01									.01	.01
0400	.04	.03	.04	.01									.04	.04
0420	.10	.07	.10	.03									.10	.10
0440	.13	.09	.12	.04									.13	.13
0500	.15	.10	.13	.04									.14	.14
0520	.16	.11	.13	.04									.15	.15
0540	.16	.11	.14	.04									.15	.15
0600	.17	.12	.14	.04									.16	.16
0740	.18	.12	.16	.05									.17	.17
0800	.20	.14	.20	.06									.20	.20
0820	.22	.15	.23	.07									.22	.22
0830	.24	.17	.25	.08									.25	.25
1000	.27	.19	.28	.09									.28	.28
1100	.29	.20	.30	.09									.29	.29
1110	.30	.21	.32	.10									.31	.31
1120	.35	.24	.37	.11									.36	.35
1130	.39	.27	.41	.12									.39	.39
1140	.42	.29	.44	.13									.42	.41
1150	.49	.34	.51	.16									.50	.49
1200	.54	.37	.54	.17									.54	.53
1210	.60	.42	.60	.18									.60	.59
1230	.72	.50	.72	.22									.72	.71
1240	.79	.55	.80	.24									.79	.78
1250	.81	.56	.82	.25									.81	.80
1300	.82	.57	.84	.26									.83	.82
1320	.83	.58	.85	.26									.84	.83

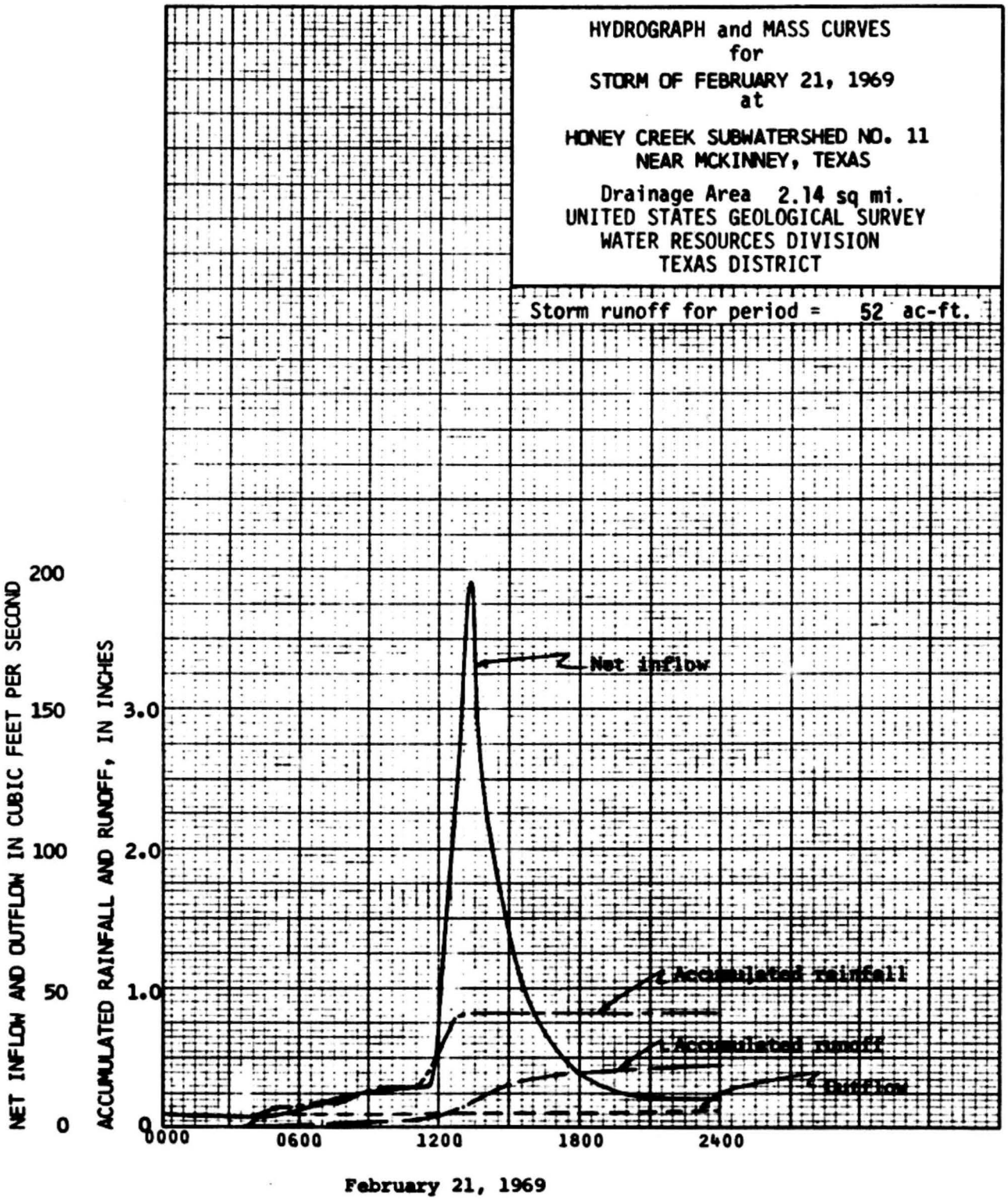
Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
11-S	.0965	.84	.08
13-R	.6879	.83	.67
15-R	.2166	.85	.18
		WMR =	.83

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor

WMR = 0.83

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation : 0.83 / 0.84 = .988


HYDROGRAPH and MASS CURVES
for
STORM OF FEBRUARY 21, 1969
at
HONEY CREEK SUBWATERSHED NO. 11
NEAR MCKINNEY, TEXAS
Drainage Area 2.14 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 52 ac-ft.
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
200
150
100
50
0
3.0
2.0
1.0
0
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
0000
0600
1200
1800
2400
February 21, 1969

TX.-65 (Rev. 7-69)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

RUNOFF COMPUTATIONS

Station 8-0585. Honey Creek near McKinney, Tex.

Period of Record Feb. 21, 1969 Drainage Area 39.0 sq. mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Discharge Inc.	Discharge In/Hr	Runoff Inches	Runoff Acc. In.
Feb. 21, 1969							
0000	2.60	0	119	2.0	.0047	.0094	.0094
0400	2.41		93	2.5	.0037	.0092	.0186
0500	2.40		92	1.0	.0036	.0036	.0222
0600	2.43		96	1.0	.0038	.0038	.0260
0700	2.53		109	1.0	.0043	.0043	.0303
0800	2.68		132	1.0	.0052	.0052	.0355
0900	2.98		166	1.0	.0066	.0066	.0421
1000	3.34		195	1.0	.0077	.0077	.0498
1100	3.89		239	1.0	.0095	.0095	.0593
1200	4.73		306	1.0	.0122	.0122	.0715
1300	6.68		479	1.0	.0190	.0190	.0905
1400	8.30		653	1.0	.0259	.0259	.1164
1500	9.70		838	.75	.0333	.0250	.1414
1530	10.85		1,030	.50	.0409	.0204	.1618
1600	12.62		1,380	.50	.0548	.0274	.1892
1630	12.87		1,440	.50	.0572	.0286	.2178
1700	12.70		1,400	.75	.0556	.0417	.2595
1800	11.58		1,170	1.0	.0465	.0465	.3060
1900	(10.00)		886	1.0	.0352	.0352	.3412
2000	(8.70)		700	1.0	.0278	.0278	.3690
2100	(7.50)		565	1.0	.0224	.0224	.3914
2200	(6.50)		463	1.0	.0184	.0184	.4098
2300	(5.75)		396	1.0	.0157	.0157	.4255
2400	(5.12)	0	339	.50	.0135	.0068	.4323

Time	G. Ht. Feet	Sh. Adj.	Discharge C.f.s.	Discharge Inc.	Discharge In/Hr.	Runoff Inches	Runoff Acc. In

Computed by B.B.H. Date 6-15-70 Checked by J.N.S. Date 7-13-70

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

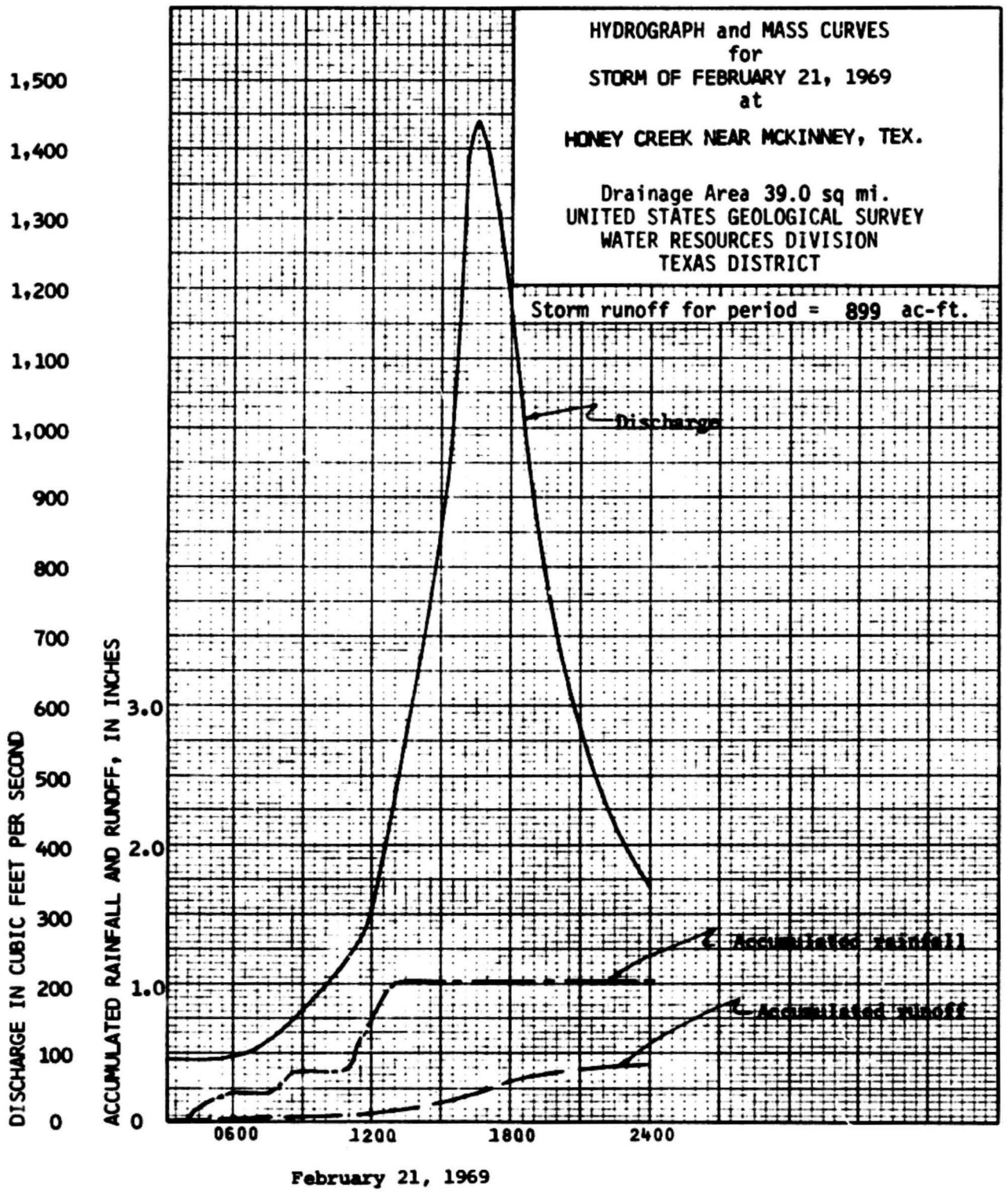
Sheet 1 of 1
Comp. by: J.N.S.
Date 7-17-70
Check by RAH
Date 7-21-70

Study Area Honey Creek near McKinney, Tex. Date of storm Feb. 21, 1969

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	.4616		.2254		.0868		.0714		.0648		.0900			
	Gage 5-R		Gage 9-R		Gage 12-R		Gage 13-R		Gage 15-R		Gage 16-R		Recording Gages	(Rec. Gages x K)
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	All Gages	All Gages
Feb 21/1969														
0320	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0340	0	0	[illegible]	0	0	0	.02	0	.02	0	.01	0	0	0
0400	.02	.01	.02	0	.02	0	.04	0	.04	0	.02	0	.01	.01
0420	.10	.05	.12	.03	.04	0	.10	.01	.10	.01	.04	0	.10	.09
0440	.14	.06	.18	.04	.06	.01	.13	.01	.12	.01	.08	.01	.14	.13
0500	.17	.08	.20	.05	.10	.01	.15	.01	.13	.01	.10	.01	.17	.16
0520	.19	.09	.20	.05	.11	.01	.16	.01	.13	.01	.11	.01	.18	.17
0540	.27	.12	.22	.05	.12	.01	.16	.01	.14	.01	.11	.01	.21	.20
0600	.30	.14	.24	.05	.15	.01	.17	.01	.14	.01	.12	.01	.23	.22
0740	.30	.14	.26	.06	.16	.01	.18	.01	.16	.01	.14	.01	.24	.22
0800	.32	.15	.30	.07	.17	.01	.20	.01	.20	.01	.17	.02	.27	.25
0820	.43	.20	.33	.07	.20	.02	.22	.02	.23	.01	.20	.02	.34	.32
0830	.50	.23	.34	.08	.22	.02	.26	.02	.25	.02	.21	.02	.39	.37
1000	.52	.24	.36	.08	.25	.02	.27	.02	.28	.02	.24	.02	.40	.37
1100	.54	.25	.38	.09	.26	.02	.29	.02	.30	.02	.25	.02	.42	.39
1110	.68	.31	.40	.09	.27	.02	.30	.02	.32	.02	.27	.02	.48	.46
1120	.76	.35	.50	.11	.29	.03	.35	.02	.37	.02	.31	.03	.56	.52
1130	.86	.40	.57	.13	.30	.03	.39	.03	.41	.03	.35	.03	.65	.61
1140	.91	.42	.60	.14	.34	.03	.42	.03	.44	.03	.37	.03	.68	.64
1150	.97	.45	.65	.15	.36	.03	.49	.03	.51	.03	.43	.04	.73	.68
1200	1.04	.48	.72	.16	.40	.03	.54	.04	.54	.03	.45	.04	.78	.73
1210	1.12	.52	.80	.18	.50	.04	.60	.04	.60	.04	.50	.04	.86	.80
1230	1.20	.55	.88	.20	.60	.05	.72	.05	.72	.05	.59	.05	.95	.89
1240	1.25	.58	.92	.21	.66	.06	.79	.06	.80	.05	.62	.06	1.02	.95
1250	1.30	.60	1.00	.23	.71	.06	.81	.06	.82	.05	.63	.06	1.06	.99
1300	1.32	.61	1.03	.23	.77	.07	.82	.06	.84	.05	.64	.06	1.08	1.01
1330	1.33	.61	1.04	.23	.78	.07	.83	.06	.85	.06	.66	.06	1.09	1.02

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
1-S		1.25		7-S		1.02		13-R		0.83	
2-S		1.30		8-S		1.17		14-S		.88	
3-S		1.23		9-R		1.04		15-R		.85	
4-S		1.29		10-S		.78		16-R		.65	
5-R		1.33		11-S		.84				(6) 16.28	
6-S		1.04		12-R		.78				WMR: 1.02	

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation : 1.02 / 1.09 = 0.936


HYDROGRAPH and MASS CURVES
for
STORM OF FEBRUARY 21, 1969
at
HONEY CREEK NEAR MCKINNEY, TEX.
Drainage Area 39.0 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 899 ac-ft.
Discharge
Accumulated rainfall
Accumulated runoff
DISCHARGE IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
3.0
2.0
1.0
0
0600
1200
1800
2400
February 21, 1969

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 2

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 6-7 1969

8-0575. Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi

Date and time	Gage height	Storage	Time int.	Change in storage		Mean G. Ht.	Outflow	Total inflow	Rainfall on Pool				Net Inflow			
									in	area ac	Storage ac-ft	Storage cfs	Rate cfs	Rate in/hr	in	Acc in
	ft	ac-ft	hrs	ac-ft	cfs	ft	cfs	cfs								
May 6 1969																
0000	15.37	450.82	-	-	-	-	-	-					-	-	-	.0000
0400	15.33	449.10	4.0	- 1.72	- 5.19	15.35	5.50	.31					.31	.0002	.0008	.0008
0800	15.30	447.80	|	- 1.30	- 3.93	15.32	5.41	1.48					1.48	.0011	.0044	.0052
1200	15.27	446.51	|	- 1.29	- 3.90	15.28	5.27	1.37					1.37	.0010	.0040	.0092
1600	15.24	445.22	|	- 1.29	- 3.90	15.26	5.19	1.29					1.29	.0009	.0036	.0128
2000	15.22	444.36	4.0	- .86	- 2.60	15.23	5.05	2.45					2.45	.0018	.0072	.0200
2080	15.21+	444.20	.50	- .16	- 9.6	15.22	5.00	1.19					1.19	.0008	.0004	.0204
2045	15.22	444.36	.25	+ .16	+ 7.74	15.22	5.00	12.7	.02	42.9	.07	3.99	9.35	.0068	.0017	.0221
2100	15.32	448.66	|	+ 4.30	+ 208.1	15.27	5.23	213.3	.68	43.0	2.44	118.1	95.2	.0689	.0172	.0393
2115	15.49	456.04	|	+ 7.38	+ 357.2	15.40	5.60	362.8	.35	43.4	1.27	61.5	301.3	.2182	.0546	.0939
2130	15.76	467.89	|	+ 11.85	+ 573.5	15.62	5.86	579.4	.25	43.9	.91	44.0	535.4	.3877	.0969	.1908
2145	16.05	480.83	.25	+ 12.94	+ 626.3	15.90	6.00	632.3	.20	44.6	.74	35.8	596.5	.4319	.1080	.2988
2150	16.17	486.24	.083	+ 5.41	+ 785.5	16.11	6.09	791.6	.04	46.1	.15	21.8	762.8	.5574	.0464	.3452
2155	16.29	491.70	.083	+ 5.46	+ 792.8	16.23	6.14	798.9	.03	45.4	.11	16.0	782.9	.5669	.0472	.3924
2200	16.40	496.72	.083	+ 5.02	+ 728.9	16.34	6.18	735.1	.08	45.7	.11	16.0	719.1	.5207	.0434	.4358
2215	16.73	511.99	.25	+ 15.27	+ 739.1	16.56	6.26	745.4	.20	46.3	.77	37.3	708.1	.5127	.1282	.5640
2230	17.04	526.63	|	+ 14.64	+ 708.6	16.88	6.36	715.0	.08	47.1	.31	15.0	700.0	.5069	.1267	.6907
2245	17.27	537.67	|	+ 11.04	+ 536.3	17.16	6.44	540.7	.04	48.0	.16	7.7	533.0	.3859	.0965	.7872
2300	17.46	546.92	|	+ 9.25	+ 447.7	17.36	6.49	454.2	.08	48.7	.32	15.5	438.7	.3177	.0794	.8666
2315	17.61	554.31	|	+ 7.39	+ 357.7	17.54	6.54	364.2	.02	49.3	.08	3.9	360.3	.2609	.0652	.9318
2330	17.75	561.28	|	+ 6.97	+ 337.3	17.68	6.57	343.9	.06	49.8	.25	12.1	331.8	.2403	.0601	.9919
2345	17.85	566.30	|	+ 5.02	+ 243.0	17.80	6.60	249.6	.02	50.2	.08	3.9	245.7	.1779	.0445	1.0364
2400	17.96	571.86	.25	+ 5.56	+ 269.1	17.90	6.62	275.7	.14	50.6	.59	28.6	247.1	.1789	.0447	1.0811
May 7																
0015	18.07	577.47	.25	+ 5.61	+ 271.5	18.02	6.66	278.2	.12	51.0	.51	24.7	253.5	.1836	.0459	1.1270
0030	18.20	584.14	|	+ 6.67	+ 322.8	18.14	6.68	329.5	.06	51.4	.26	12.6	316.9	.2295	.0574	1.1844
0045	18.32	590.36	|	+ 6.22	+ 301.0	18.26	6.71	307.7	.08	51.8	.35	16.9	290.8	.2106	.0526	1.2370
0100	18.46	597.68	|	+ 7.32	+ 354.3	18.39	6.74	361.0	.10	52.3	.44	21.3	339.7	.2460	.0616	1.2986
0115	18.61	605.59	|	+ 7.91	+ 382.8	18.54	6.77	389.6	.10	52.8	.44	21.3	368.3	.2667	.0667	1.3653
0130	18.75	613.06	.25	+ 7.47	+ 361.5	18.68	6.80	368.3	.10	53.3	.44	21.3	347.0	.2518	.0629	1.4282

comp. by BNM
ck. by JNS

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 2 of 2

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 6-7, 1969

8-0575. Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi

Date and time	Gage height ft	Storage ac-ft	Time int. hrs	Change in storage ac-ft	Change in storage cfs	Mean G. Ht. ft	Outflow cfs	Total inflow cfs	Rainfall on Pool in	Rainfall on Pool area ac	Rainfall on Pool Storage ac-ft	Rainfall on Pool Storage cfs	Net Inflow Rate cfs	Net Inflow Rate in/hr	Net Inflow in	Acc in
continue May 7																
0145	18.90	621.12	.25	+ 8.06	390.1	18.82	6.82	396.9	.10	53.8	.45	21.8	375.1	.2716	.0679	1.4252
0200	19.02	627.63	|	+ 6.51	315.1	18.96	6.85	322.0	.05	54.2	.23	11.1	310.9	.2251	.0563	1.4815
0215	19.12	633.10	|	+ 5.47	264.7	19.07	6.87	271.6	.03	54.6	.14	6.8	264.8	.1917	.0479	1.5294
0230	19.21	638.04	|	+ 4.94	239.1	19.16	6.89	246.0	.02	55.0	.09	4.4	241.6	.1749	.0437	1.5731
0245	19.29	642.47	|	+ 4.43	214.4	19.25	6.90	221.3					221.3	.1602	.0400	1.6131
0300	19.35	645.80	.25	+ 3.33	161.2	19.32	6.91	168.1					168.1	.1217	.0304	1.6435
0330	19.44	650.83	.50	+ 5.03	121.7	19.40	6.92	128.6					128.6	.0931	.0466	1.6901
0400	19.50	654.19	|	+ 3.36	81.31	19.47	6.94	88.2					88.2	.0639	.0320	1.7221
0430	19.54	656.45	|	+ 2.26	54.69	19.52	6.94	61.6					61.6	.0446	.0223	1.7444
0500	19.57	658.14	.50	+ 1.69	40.91	19.56	6.95	47.8					47.8	.0346	.0173	1.7617
0600	19.62	660.97	1.0	+ 2.83	34.26	19.60	6.96	41.2					41.2	.0298	.0298	1.7915
0700	19.65	662.67	1.0	+ 1.70	20.57	19.64	6.96	27.5					27.5	.0199	.0199	1.8114
0800	19.70	665.51	1.0	+ 2.84	34.36	19.68	6.97	41.3					41.3	.0299	.0299	1.8413
1000	19.82	672.37	2.0	+ 6.86	41.50	19.76	6.98	48.5					48.5	.0351	.0702	1.9115
1200	19.89	676.40	|	+ 4.03	24.38	19.86	6.99	31.4					31.4	.0227	.0454	1.9569
1400	19.94	679.29	|	+ 2.89	17.46	19.92	7.00	24.5					24.5	.0177	.0354	1.9923
1600	19.98	681.60	2.0	+ 2.31	13.96	19.96	7.01	21.0					21.0	.0152	.0304	2.0227
2000	20.08	687.42	4.0	+ 5.82	17.56	20.03	7.02	24.6					24.6	.0178	.0712	2.0939
2400	20.12	689.76	4.0	+ 2.34	7.07	20.10	7.03	14.10					14.1	.0102	.0408	2.1347

A-78 (Revised Feb. 1960)

Sheet 1 of 2

UNITED STATES DEPARTMENT OF INTERIOR
GEOLOGICAL SURVEY, SURFACE WATER BRANCH
AUSTIN DISTRICT

Comp. by: J.N.S.
Date: 8-4-70
Check by: B.N.M
Date: 8-5-70

WEIGHTED-PRECIPITATION RECORD

Area: 8-0575. Honey Creek subwatershed No. 11 nr. McKinney, Tex. Date of storm May 6-7, 1969

Weight Factor	.6955		.3067										Accumulated Weighted Precipitation
	Accumulated Precipitation in Inches for Recording Gages												
Date & Time	Gage 19-R Recorded	x Factor	Gage 15-R Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Recording Gages	(Rec. Gages x K) All Gages
May 6 1969														
2025	0	0	0	0									0	0
2030	.02	.01	0	0									.01	.01
2035	.10	.07	0	0									.07	.07
2040	.40	.28	.01	0									.28	.28
2045	.60	.42	.02	.01									.43	.43
2050	.80	.56	.20	.06									.62	.62
2055	.92	.64	.50	.15									.79	.79
2100	1.00	.69	.75	.23									.92	.92
2110	1.28	.89	.90	.28									1.17	1.17
2120	1.38	.96	1.10	.34									1.30	1.30
2130	1.44	1.00	1.28	.99									1.39	1.39
2140	1.53	1.06	1.43	.44									1.50	1.50
2150	1.68	1.17	1.48	.45									1.62	1.62
2200	1.74	1.21	1.55	.47									1.68	1.68
2230	1.89	1.31	1.83	.56									1.87	1.87
2300	1.97	1.37	1.95	.60									1.97	1.97
2330	2.10	1.46	2.05	.63									2.09	2.09
2400	2.24	1.56	2.22	.68									2.2	2.24
May 7														
0030	2.40	1.67	2.40	.73									2.40	2.40
0100	2.55	1.77	2.58	.79									2.56	2.56
0130	2.67	1.85	2.78	.85									2.70	2.70
0200	2.73	1.90	2.90	.89									2.79	2.79
0300	2.75	1.91	2.99	.92									2.81	2.81
0700	2.80	1.94	2.94	.90									2.84	2.84
0800	2.98	2.07	2.98	.91									2.98	2.98
0900	3.07	2.13	2.99	.91									3.04	3.04
1000	3.08	2.14	3.00	.92									3.06	3.06
1200	3.10	2.15	3.00	.92									3.07	3.07

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
11-S	.0955	3.02	.288								
19-R	.6879	3.20	2.201								
15-R	.2166	3.00	.650								
			3.139								

WMR = Sum of Precipitation x Weight Factor K = WMR / Total Recording Gages Weighted Precipitation = 3.14/3.14 = 1.00

WMR:

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

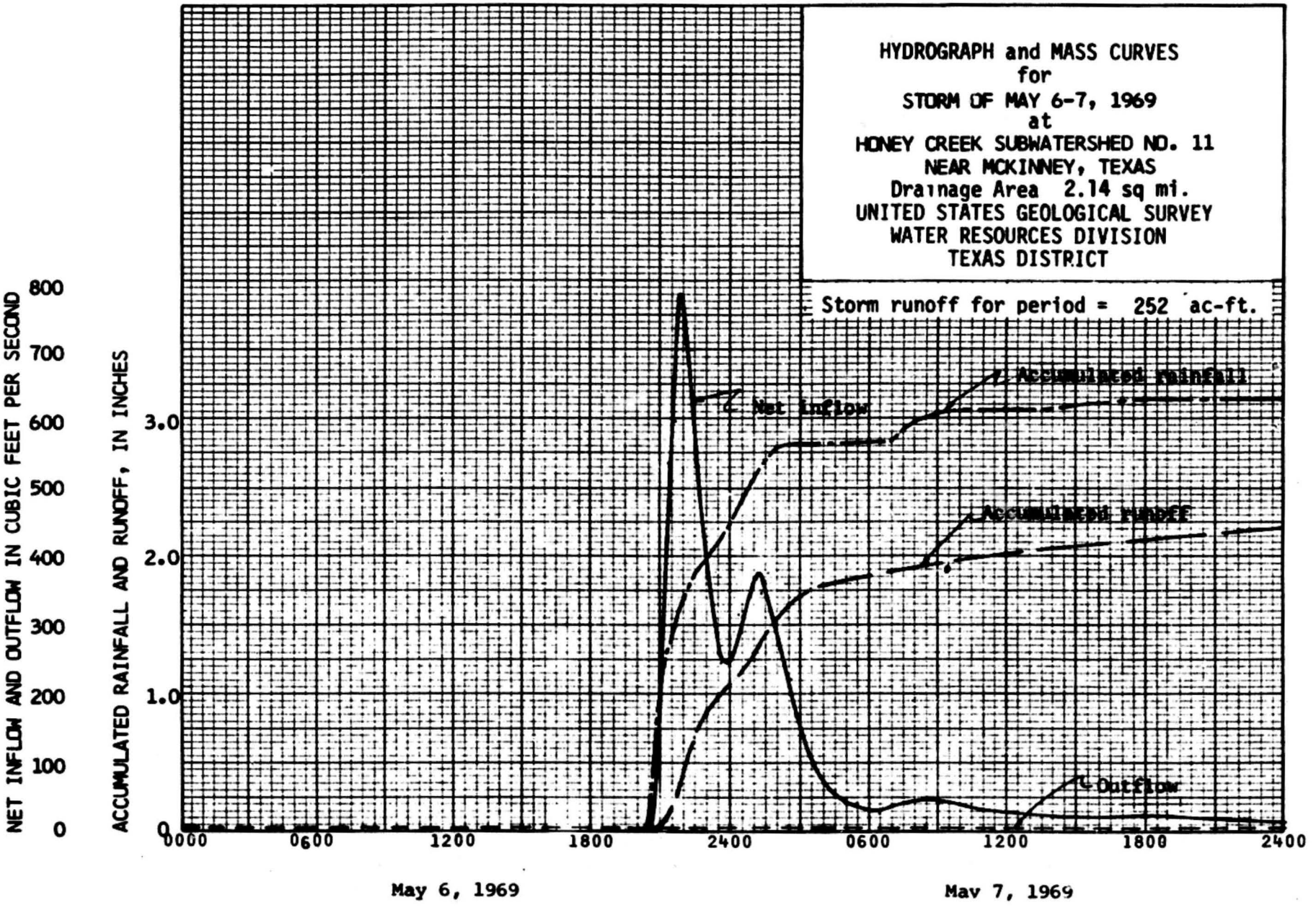
Sheet 2 of 2
Comp. by: J.N.S.
Date 8-4-70
Check by B.N.M.
Date 8-5-70

Study Area 8-0575. Honey Creek subwatershed No. 11 nr. McKinney Date of storm May 6-7, 1969

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor		.6943		.3057										
Date & Time	Gage Recorded	13-R x Factor	Gage Recorded	13-R x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Recording Gages All Gages	(Rec. Gages x K) All Gages
Continue May 7														
1400	3.10	2.15	3.00	.92									3.07	3.07
1600	3.16	2.19	3.00	.92									3.11	3.11
1700	3.20	2.22	3.00	.92									3.14	3.14
1800	3.20	2.22	3.00	.92									3.14	3.14

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation :


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 6-7, 1969
at
HONEY CREEK SUBWATERSHED NO. 11
NEAR MCKINNEY, TEXAS
Drainage Area 2.14 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 252 ac-ft.
Accumulated rainfall
Net inflow
Accumulated runoff
Outflow
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
0
100
200
300
400
500
600
700
800
1.0
2.0
3.0
0000
0600
1200
1800
2400
0600
1200
1800
2400
May 6, 1969
May 7, 1969

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 2

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 6-7, 1969

8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex. D.A. 1.26 sq mi

Date and time	Gage height ft	Storage ac-ft	Time int. hrs	Change in storage ac-ft	Change in storage cfs	Mean G. Ht. ft	Outflow cfs	Total inflow cfs	Rainfall on Pool in	Rainfall on Pool area ac	Rainfall on Pool Storage ac-ft	Rainfall on Pool Storage cfs	Net Inflow Rate cfs	Net Inflow Rate in/hr	Net Inflow in	Net Inflow Acc in
May 6 1969																
0000	15.46	130.88	—	—	—	—	—	—					—	—	—	—
0300	15.29+	129.62	3.0	- 1.26	- 5.08	15.42	-08 5.10	.02					.02	.0000	.0001	.0001
0600	15.24	128.49		- 1.13	- 4.55	15.26	-02 5.10	.55					.55	.0007	.0021	.0022
0900	15.30	127.70		- .79	- 3.18	15.32	4.20	1.02					1.02	.0013	.0038	.0061
1200	15.26+	127.01		- .69	- 2.78	15.28	3.40	.62					.62	.0008	.0024	.0085
1500	15.23+	126.42		- .59	- 2.38	15.25	2.80	.42					.42	.0005	.0015	.0100
1800	15.21	125.93	3.0	- .49	- 1.97	15.22	2.20	.23					.23	.0003	.0002	.0102
2000	15.20	125.73	2.0	- .20	- 1.21	15.21	2.03	.82					.82	.0010	.0026	.0128
2030	15.20	125.73	.50	.00	.00	15.20	1.87	1.87	.01	19.6	.016	.21	1.66	.0018	.0009	.0138
2045	15.26	126.72	.25	+ .99	47.92	15.22	2.20	50.12	.29	19.6	.474	22.96	27.2	.0335	.0084	.0222
2100	15.96	128.89	.25	+ 2.17	105.0	15.20	-02 3.80	108.8	.56	19.8	.926	44.77	64.1	.0788	.0197	.0419
2115	15.72	196.13	.25	+ 7.24	350.4	15.54	-13 6.40	356.8	.24	20.1	.402	19.46	337	.4145	.1036	.1455
2120	15.95	140.86	.083	+ 4.73	686.8	15.84	-11 6.50	693.3	.02	20.6	.034	1.94	691	.8462	.0705	.2160
2125	16.19	145.89		+ 5.03	780.4	16.07	-10 6.79	787.2	.07	21.0	.085	5.08	782	.9004	.0750	.2910
2130	16.46	151.45		+ 5.56	807.3	16.32	-06 6.76	814.1	.06	21.4	.107	15.5	799	.9828	.0819	.3729
2135	16.72	157.95		+ 5.90	856.7	16.58	-12 6.76	863.5	.02	21.8	.036	5.22	858	1.0553	.0879	.4608
2140	16.97	162.94		+ 5.59	811.7	16.84	-06 6.82	818.5	.04	22.3	.074	10.7	808	.9938	.0828	.5436
2145	17.20	168.17	.083	+ 5.23	759.4	17.08	-10 6.87	766.2	.12	22.8	.228	33.1	733	.9016	.0751	.6187
2200	17.72	180.42	.25	+12.25	592.9	17.46	-07 6.85	599.8	.02	23.6	.059	1.85	598	.7355	.1839	.8026
2215	18.15	191.00		+10.58	512.1	17.94	-03 6.96	519.0	.18	24.6	.369	17.9	501	.6162	.1540	.9566
2230	18.50	199.92		+ 8.92	431.7	18.32	-08 7.00	438.7	.04	25.5	.085	4.11	435	.5350	.1338	1.0904
2245	18.77	206.99		+ 7.07	342.2	18.64	-08 7.05	349.2	.04	26.2	.087	4.21	345	.4244	.1061	1.1965
2300	18.95	211.80	.25	+ 4.81	232.8	18.86	-07 7.05	239.9	.04	26.7	.089	4.31	236	.2902	.0726	1.2691
2330	19.21	218.85	.50	+ 7.05	170.6	19.08	-08 7.05	177.7	.08	27.2	.181	4.88	173	.2128	.1064	1.3755
2400	19.42	224.67	.50	+ 5.82	140.8	19.32	-08 7.12	147.9	.07	27.7	.163	2.92	144	.1771	.0886	1.4641
May 7																
0030	19.63	230.58	.50	+ 5.91	143.0	19.52	-04 7.15	150.2	.15	28.1	.351	8.6	142	.1747	.0874	1.5515
0100	19.88	237.73		+ 7.15	173.0	19.76	-09 7.18	180.2	.13	28.6	.310	7.5	173	.2128	.1064	1.6579
0130	20.15	245.62		+ 7.89	190.9	20.02	-14 7.20	198.1	.10	29.2	.243	5.9	192	.2362	.1181	1.7760
0200	20.40	253.05	.50	+ 7.43	179.8	20.28	-13 7.22	187.0	.09	29.8	.223	5.4	182	.2239	.1120	1.8880

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 6-7, 1969

8-0580 Honey Creek subwatershed No. 12 near McKinney, Tex. D.A. 1.26 sq mi

Date and time	Gage height	Storage	Time int.	Change in storage		Mean G. Ht.	Outflow	Total inflow	Rainfall on Pool				Net Inflow			
										area	Storage		Rate			Acc
	ft	ac-ft	hrs	ac-ft	cfs	ft	cfs	cfs	in	ac	ac-ft	cfs	cfs	in/hr	in	in
continue	May 7															
0300	20.72	262.75	1.0	+ 2.70	+117.4	20.56	7.26	124.6					12.5	.1538	.1538	2.0612
0400	20.81	265.52		+ 2.77	+ 33.5	20.76	7.28	40.8					4.0	.0502	.0502	2.0922
0500	20.83	266.14		+ .62	+ 7.56	20.82	7.29	14.8					1.48	.0182	.0182	2.1102
0600	20.84	266.45		+ .31	+ 3.75	20.84	7.30	11.04					1.10	.0136	.0136	2.1238
0700	20.84	266.45		.00	.00	20.84	7.30	7.30	.04	20.9	.109	1.25	6.0	.0074	.0074	2.1311
0800	20.87	267.37		+ .92	+ 11.13	20.86	7.30	18.43	.14	20.9	.360	4.26	14.1	.0173	.0173	2.1484
0900	21.01	271.72		+ 4.35	+ 52.64	20.94	7.31	59.94	.08	21.1	.207	2.50	57.4	.0706	.0706	2.2190
1000	21.08	273.91		+ 2.19	+ 26.50	21.04	7.35	33.85	.01	21.3	.026	.31	33.5	.0412	.0412	2.2602
1100	21.09	274.23		+ .32	+ 3.87	21.08	7.35	11.20	.01	21.4	.026	.31	10.9	.0134	.0134	2.2736
1200	21.10	274.54		+ .31	+ 3.75	21.10	7.34	11.09					11.1	.0137	.0137	2.2873
1300	21.10	274.54		.00	.00	21.10	7.34	7.34					7.3	.0090	.0090	2.2963
1400	21.10	274.54		.00	.00	21.10	7.34	7.34					7.3	.0090	.0090	2.3053
1500	21.09	274.23		- .31	- 3.75	21.10	7.34	3.59					3.6	.0044	.0044	2.3097
1600	21.09	274.23		.00	.00	21.09	7.33	7.33	.08	21.4	.209	2.58	4.8	.0059	.0059	2.3156
1700	21.11	274.86		+ .63	+ 7.62	21.10	7.34	14.96	.02	21.4	.052	.65	14.3	.0176	.0176	2.3332
1800	21.14	275.80		+ .94	+ 11.37	21.12	7.34	18.71					18.7	.0230	.0230	2.3562
1900	21.16	276.12		+ .32	+ 3.87	21.14	7.34	11.21					11.2	.0138	.0138	2.3700
2000	21.16	276.12		.00	.00	21.15	7.34	7.34					7.3	.0090	.0090	2.3790
2100	21.14	275.80		- .32	- 3.87	21.14	7.34	3.47					3.5	.0043	.0043	2.3833
2200	21.13	275.49		- .32	- 3.87	21.14	7.34	3.47					3.5	.0043	.0043	2.3876
2300	21.12	275.17		- .32	- 3.75	21.12	7.34	3.59					3.6	.0044	.0044	2.3920
2400	21.11	274.86	1.0	- .31	- 3.75	21.12	7.34	3.59					3.6	.0044	.0044	2.3964

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

Sheet 1 of 2
Comp. by: J.N.S.
Date 8-4-70
Check by B.N.M.
Date 8-5-70

Study Area 8-0580. Honey Creek subwatershed No. 12 nr. McKinney Date of storm May 6-7, 1969

Accumulated Precipitation in Inches for Recording Rain Gages													Accumulated Weighted Precipitation	
Weight Factor	.7209		.2791											
Date & Time	Gage 12-R Recorded	x Factor	Gage 16-R Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Recording Gages All Gages	(Rec. Gages x K) All Gages
May 6, 1969														
2025	0	0	0	0									0	0
2025	0	0	0	0									0	0
2030	0	0	.01	0									0	0
2035	.11	.08	.12	.03									.11	.11
2040	.28	.20	.35	.10									.30	.30
2045	.32	.23	.45	.13									.36	.36
2050	.55	.40	.55	.15									.55	.55
2055	.83	.60	.70	.20									.80	.80
2100	.92	.66	.86	.24									.90	.90
2110	1.16	.84	1.07	.30									1.14	1.14
2120	1.39	1.00	1.10	.31									1.31	1.31
2130	1.46	1.05	1.16	.32									1.37	1.37
2140	1.50	1.08	1.26	.35									1.43	1.43
2150	1.52	1.10	1.39	.39									1.49	1.49
2200	1.76	1.27	1.42	.40									1.67	1.68
2230	1.87	1.35	1.58	.44									1.79	1.80
2300	1.94	1.40	1.69	.47									1.87	1.88
2330	2.03	1.46	1.79	.50									1.96	1.97
2400	2.13	1.54	1.86	.52									2.06	2.07
May 7														
0030	2.22	1.60	2.01	.56									2.16	2.17
0100	2.38	1.72	2.10	.59									2.31	2.32
0130	2.51	1.81	2.24	.62									2.43	2.44
0200	2.59	1.87	2.30	.64									2.51	2.52
0300	2.61	1.88	2.34	.65									2.53	2.54
0700	2.68	1.93	2.38	.66									2.59	2.60

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
										WMR	

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation :

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

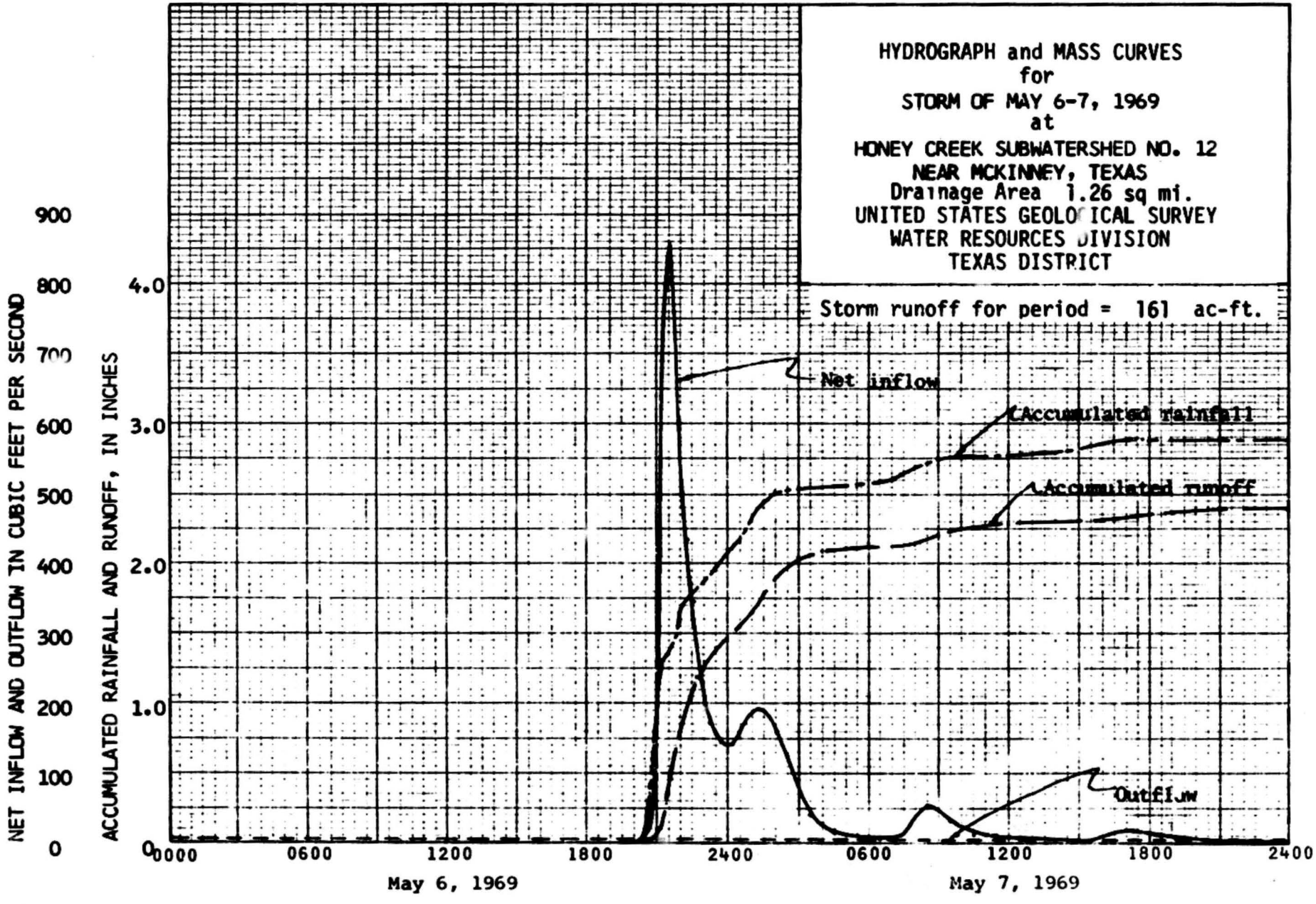
Sheet 2 of 2
Comp. by: J.N.S.
Date 8-4-70
Check by B.N.M.
Date 8-5-70

Study Area 8-0580, Honey Creek subwatershed No.12 nr. McKinney, Tex. Date of storm May 6-7, 1969

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor		.7209		.2791										
Date & Time	Gage 12-R Recorded	x Factor	Gage 16-R Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Recording Gages All Gages	(Rec. Gages x K) All Gages
continue May 7														
0800	2.75	1.98	2.52	.70									2.68	2.69
0900	2.81	2.03	2.57	.72									2.75	2.76
1000	2.82	2.03	2.59	.72									2.75	2.76
1200	2.82	2.03	2.62	.73									2.76	2.77
1400	2.85	2.05	2.62	.73									2.78	2.79
1600	2.91	2.10	2.69	.75									2.85	2.86
1700	2.95	2.13	2.70	.75									2.88	2.89
1800	2.95	2.13	2.70	.75									2.88	2.89

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
10-S	.0581	3.16	.184								
12-R	.6628	2.95	1.955								
16-R	.2791	2.70	.754								
			WMR = 2.893								

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation : 2.89 / 2.88 = 1.003


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 6-7, 1969
at
HONEY CREEK SUBWATERSHED NO. 12
NEAR MCKINNEY, TEXAS
Drainage Area 1.26 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 161 ac-ft.
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
0
100
200
300
400
500
600
700
800
900
1.0
2.0
3.0
4.0
0000
0600
1200
1800
2400
0600
1200
1800
2400
May 6, 1969
May 7, 1969

TX.-65 (Rev.7-69)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

RUNOFF COMPUTATIONS

Station 8-0585. Honey Creek near McKinney, Tex.

Period of Record May 6-7, 1969 Drainage Area 39.0 sq. mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In/Hr.	Runoff Inches	Acc. In.
	May 6, 1969						
0000	2.40	0	92	3.0	.0087	.0111	.0111
0600	2.18		69	6.0	.0027	.0162	.0273
1200	2.03		55	6.0	.0022	.0132	.0405
1800	1.93		46	4.5	.0018	.0081	.0486
2100	1.90		44	1.75	.0017	.0030	.0516
2130	2.15		66	.875	.0026	.0010	.0526
2145	5.00		328	.25	.0130	.0032	.0558
2200	7.20		532	.25	.0211	.0053	.0611
2215	9.30		778	.25	.0309	.0077	.0688
2230	11.00		1,060	.25	.0421	.0105	.0793
2245	12.50		1,350	.25	.0536	.0134	.0927
2300	13.90		1,700	.375	.0675	.0253	.1180
2330	15.30		2,140	.50	.0850	.0425	.1605
2400	16.20	0	2,500	.25	.0993	.0248	.1853
	May 7						
0000	16.20	0	2,500	.25	.0993	.0248	.2101
0030	16.88		2,820	.50	.1120	.0560	.2661
0100	17.25		3,060	.50	.1216	.0608	.3269
0130	17.59		3,810	.50	.1315	.0658	.3927
0200	17.79		3,490	.50	.1387	.0694	.4621
0230	17.84		3,540	.50	.1406	.0705	.5326
0300	17.79		3,490	.50	.1387	.0694	.6018
0330	17.61		3,330	.50	.1323	.0662	.6680
0400	17.34		3,120	.50	.1240	.0620	.7300
0430	16.95	0	2,860	.50	.1136	.0568	.7868

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In/Hr.	Runoff Inches	Acc. In
0500	16.35	0	2,560	.50	.1017	.0508	.8376
0530	15.50		2,200	.50	.0874	.0437	.8813
0600	14.49		1,880	.50	.0747	.0374	.9187
0630	13.49		1,580	.50	.0628	.0314	.9501
0700	12.30		1,310	.50	.0520	.0260	.9761
0730	11.14		1,080	.50	.0429	.0214	.9975
0800	10.15		910	.50	.0362	.0181	1.0156
0830	9.26		772	.50	.0307	.0154	1.0310
0900	8.73		704	.75	.0280	.0210	1.0520
1000	7.88		607	1.0	.0241	.0241	1.0761
1100	7.51		566	1.0	.0225	.0225	1.0986
1200	7.34		547	1.0	.0217	.0217	1.1203
1300	7.09		520	1.0	.0207	.0207	1.1410
1400	6.70		481	1.0	.0191	.0191	1.1601
1500	6.93		448	1.0	.0178	.0178	1.1779
1600	6.08		425	1.0	.0169	.0169	1.1948
1700	6.00		418	1.0	.0166	.0166	1.2114
1800	6.10		427	1.0	.0170	.0170	1.2284
1900	6.24		440	1.0	.0175	.0175	1.2459
2000	6.27		442	1.0	.0176	.0176	1.2635
2100	6.18		434	1.0	.0172	.0172	1.2807
2200	5.98		416	1.0	.0165	.0165	1.2972
2300	5.80		400	1.0	.0159	.0159	1.3131
2400	5.64	0	386	.50	.0153	.0076	1.3207

Computed by B.B.H. Date 5-7-70 Checked by GRD Date 5-7-70

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

Sheet 1 of 2
Comp. by: J.N.S.
Date 7-22-70
Check by ROH
Date 7-22-70

Study Area Honey Creek near McKinney, Tex. Date of storm May 6-7, 1969

Weight Factor	.4616		.2254		.0868		.0714		.0648		.0900		Accumulated Weighted Precipitation	
	Accumulated Precipitation in Inches for Recording Rain Gages													
Date & Time	Gage 5-R Recorded	x Factor	Gage 9-R Recorded	x Factor	Gage 12-R Recorded	x Factor	Gage 13-R Recorded	x Factor	Gage 15-R Recorded	x Factor	Gage 16-R Recorded	x Factor	Recording Gages	(Rec. Gages x K) All Gages
May 6, 1969														
1950	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1955	.02	.01	0	0	0	0	0	0	0	0	0	0	.01	.01
2000	.07	.03	0	0	0	0	0	0	0	0	0	0	.03	.03
2010	.18	.08	0	0	0	0	0	0	0	0	0	0	.08	.08
2015	.22	.10	0	0	0	0	0	0	0	0	0	0	.10	.10
2020	.35	.16	0	0	0	0	0	0	0	0	0	0	.16	.17
2025	.71	.35	0	0	0	0	0	0	0	0	0	0	.35	.37
2030	1.02	.47	0	0	0	0	.02	0	0	0	.01	0	.50	.52
2035	1.18	.54	.11	.02	.11	.01	.10	.01	0	0	.12	.01	.59	.62
2040	1.35	.62	.28	.06	.28	.02	.40	.03	.01	0	.36	.03	.76	.80
2045	1.46	.67	.32	.07	.32	.03	.60	.04	.02	0	.45	.04	.86	.89
2050	1.55	.72	.56	.13	.55	.05	.80	.06	.20	.01	.55	.05	1.02	1.07
2055	1.63	.76	.84	.19	.83	.07	.92	.07	.50	.03	.70	.06	1.17	1.23
2100	1.67	.77	.93	.21	.92	.08	1.00	.07	.76	.05	.86	.08	1.26	1.32
2110	1.75	.81	1.18	.27	1.16	.10	1.28	.09	.90	.06	1.07	.10	1.43	1.50
2120	1.79	.83	1.41	.32	1.39	.12	1.38	.10	1.10	.07	1.10	.10	1.54	1.62
2130	1.83	.86	1.48	.33	1.46	.13	1.44	.10	1.28	.09	1.16	.10	1.58	1.66
2140	1.88	.87	1.52	.34	1.50	.13	1.53	.11	1.43	.09	1.26	.11	1.65	1.73
2150	1.92	.89	1.54	.35	1.52	.13	1.68	.12	1.48	.10	1.39	.12	1.71	1.80
2200	1.95	.90	1.79	.40	1.76	.15	1.74	.12	1.65	.10	1.42	.13	1.80	1.89
2230	2.01	.93	1.90	.43	1.87	.16	1.89	.13	1.83	.12	1.58	.14	1.91	2.01
2300	2.07	.96	1.97	.44	1.94	.17	1.97	.14	1.95	.13	1.69	.15	1.99	2.09
2330	2.22	1.02	2.06	.46	2.03	.18	2.10	.15	2.05	.13	1.79	.16	2.10	2.20
2400	2.30	1.06	2.16	.49	2.13	.18	2.24	.16	2.22	.14	1.86	.17	2.20	2.31
May 7, 1969														
0030	2.48	1.14	2.25	.51	2.22	.19	2.40	.17	2.40	.16	2.01	.18	2.35	2.47
0100	2.60	1.20	2.41	.54	2.38	.21	2.55	.18	2.58	.17	2.10	.19	2.49	2.61

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
										WWR:	

WWR : Sum of Precipitation x Weight Factor K : WWR / Total Recording Gages Weighted Precipitation :

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

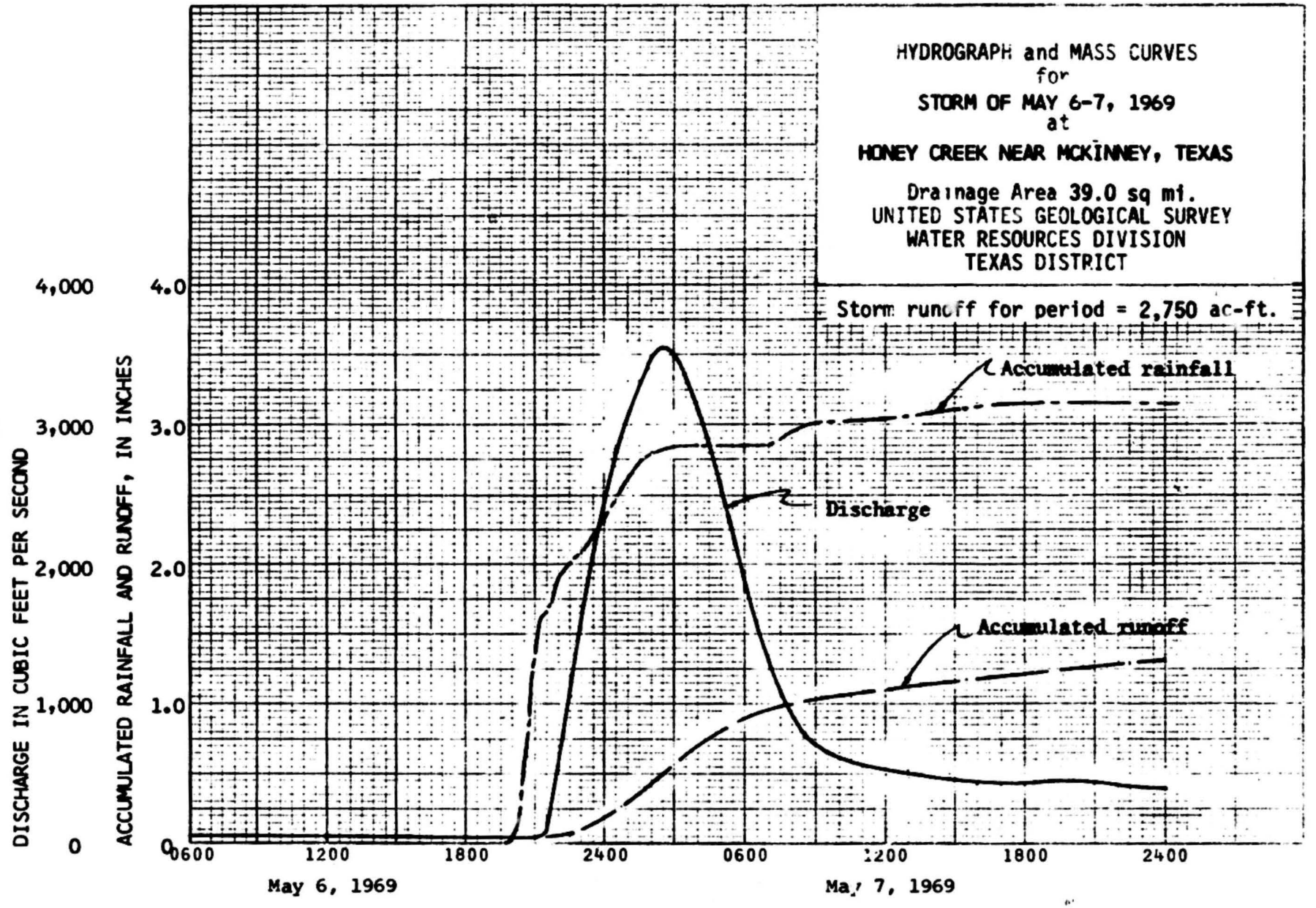
Sheet 2 of 2
Comp. by: J.N.S.
Date 7-22-70
Check by ROH
Date 7-22-70

Study Area Honey Creek near McKinney, Tex. Date of storm May 6-7, 1969

Weight Factor			.4616		.2254		.0868		.0714		.0648		.0900		Accumulated Weighted Precipitation	
Date & Time		Gage 5-R Recorded	x Factor	Gage 9-R Recorded	x Factor	Gage 12-R Recorded	x Factor	Gage 13-R Recorded	x Factor	Gage 15-R Recorded	x Factor	Gage 16-R Recorded	x Factor	Recording Gages All Gages	(Rec. Gages x K) All Gages
May 7, cont'd.															
	0130	2.69	1.24	2.54	.57	2.51	.22	2.67	.19	2.78	.18	2.24	.20	2.60	2.73
	0300	2.75	1.27	2.63	.59	2.59	.22	2.73	.19	2.90	.19	2.30	.21	2.67	2.80
	0500	2.75	1.27	2.65	.60	2.61	.23	2.75	.20	2.93	.19	2.34	.21	2.70	2.84
	0700	2.76	1.27	2.72	.61	2.68	.23	2.80	.20	2.94	.19	2.38	.21	2.71	2.85
	0800	2.84	1.31	2.79	.63	2.75	.24	2.98	.21	2.98	.19	2.52	.23	2.81	2.95
	0900	2.92	1.35	2.86	.64	2.81	.24	3.07	.22	2.99	.19	2.57	.23	2.87	3.01
	1000	2.97	1.37	2.86	.64	2.82	.24	3.08	.22	3.00	.19	2.59	.23	2.89	3.03
	1200	2.97	1.37	2.86	.64	2.82	.24	3.10	.22	3.00	.19	2.62	.24	2.90	3.04
	1400	3.00	1.38	2.89	.65	2.85	.25	3.10	.22	3.00	.19	2.62	.24	2.93	3.08
	1600	3.04	1.40	2.95	.66	2.91	.25	3.16	.23	3.00	.19	2.69	.24	2.97	3.12
	1700	3.06	1.41	2.99	.67	2.95	.26	3.20	.23	3.00	.19	2.70	.24	3.00	3.15
	1800	3.06	1.41	2.99	.67	2.95	.26	3.20	.23	3.00	.19	2.70	.24	3.00	3.15

Main Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Main Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Main Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
1-S		3.41		7-S		3.14		13-R		3.20	
2-S		3.37		8-S		2.98		14-S		3.16	
3-S		3.72		9-R		2.99		15-R		3.00	
4-S		3.39		10-S		3.16		16-R		2.70	
5-R		3.06		11-S		3.02				(16) 50.37	
6-S		3.16		12-R		2.95				WMR: 3.15	

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation : 3.15/3.00 = 1.050


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 6-7, 1969
at
HONEY CREEK NEAR MCKINNEY, TEXAS
Drainage Area 39.0 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 2,750 ac-ft.
Accumulated rainfall
Discharge
Accumulated runoff
DISCHARGE IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
4,000
3,000
2,000
1,000
0
4.0
3.0
2.0
1.0
0
0600
1200
1800
2400
0600
1200
1800
2400
May 6, 1969
May 7, 1969

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 1

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 14, 1969

8-0575 Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi

Date and time	Gage height	Storage	Time int.	Change in storage		Mean G. Ht.	Outflow	Total inflow	Rainfall on Pool				Net Inflow			
										area	Storage		Rate			Acc
	ft	ac-ft	hrs	ac-ft	cfs	ft	cfs	cfs	in	ac	ac-ft	cfs	cfs	in/hr	in	in
May 14	1969															
0000	19.35	645.80	-	-	-	-	-	-								.0000
0600	19.30	643.02	6.0	- 2.78	- 5.6	19.32	6.91	1.3					1.3	.0002	.0054	.0054
1200	19.26	640.81	6.0	- 2.21	- 4.5	19.28	6.91	2.4					2.4	.0017	.0102	.0156
1600	19.23	639.15	4.0	- 1.66	- 5.0	19.24	6.90	1.9					1.9	.0014	.0056	.0212
1615	19.24	639.70	.25	+ .55	+ 26.6	19.24	6.90	33.5	.10	55.3	.46	22.3	11.2	.0081	.0020	.0232
1630	19.26	640.81	.25	+ 1.11	53.7	19.25	6.90	60.6	.20	55.3	.92	44.5	16.1	.0116	.0029	.0261
1645	19.31	643.58	.25	+ 2.77	134.1	19.28	6.91	141.0	.48	55.4	2.22	107.4	33.6	.0243	.0061	.0322
1650	19.34	645.25	.083	+ 1.67	242.5	19.32	6.91	249.4	.10	55.6	.46	66.8	182.6	.1322	.0110	.0432
1655	19.38	647.48		+ 2.23	329.8	19.36	6.92	336.7	.10	55.7	.46	66.8	269.9	.1911	.0159	.0591
1700	19.42+	650.10		+ 2.62	380.4	19.40	6.92	387.3	.10	55.8	.46	66.8	320.5	.2321	.0139	.0786
1705	19.47	652.51		+ 2.41	349.9	19.44	6.93	356.8	.04	56.0	.19	27.6	329.2	.2384	.0139	.0869
1710	19.51	654.75		+ 2.24	325.2	19.49	6.94	332.1	.04	56.2	.19	27.6	304.5	.2205	.0184	.1167
1715	19.55	657.01		+ 2.26	328.2	19.53	6.94	335.1	.02	56.3	.09	13.1	322.0	.2332	.0194	.1361
1720	19.59	659.27		+ 2.26	328.2	19.57	6.95	335.2	.01	56.5	.05	7.2	327.9	.2374	.0198	.1559
1725	19.62	660.97		+ 1.70	246.8	19.60	6.96	253.8					253.8	.1838	.0153	.1712
1730	19.65	662.67	.083	+ 1.70	246.8	19.63	6.96	253.8					253.8	.1838	.0153	.1865
1745	19.74	667.79	.25	+ 5.12	247.8	19.70	6.97	254.8					254.8	.1845	.0461	.2326
1800	19.80	671.22	.25	+ 3.43	166.0	19.77	6.98	173.0					173.0	.1253	.0313	.2639
1830	19.88	675.82	.50	+ 4.60	111.3	19.84	6.99	118.3					118.3	.0857	.0428	.3067
1900	19.92	678.13	.50	+ 2.31	55.9	19.90	7.00	62.9					62.9	.0455	.0228	.3295
2000	19.97	681.02	1.0	+ 2.89	35.0	19.94	7.01	42.0					42.0	.0304	.0304	.3599
2100	20.00	682.76	1.0	+ 1.74	21.0	19.98	7.01	28.1					28.1	.0203	.0203	.3802
2200	20.01	683.34	1.0	+ .58	7.0	20.00	7.02	14.0					14.0	.0101	.0101	.3903
2400	20.02	683.93	2.0	+ .59	3.6	20.02	7.02	10.6					10.6	.0077	.0154	.4057

Comp. by RNM.
Ch. by JNS.

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

Sheet 1 of 1
Comp. by: JNS
Date 8-4-70
Check by ROH
Date 8-24-70

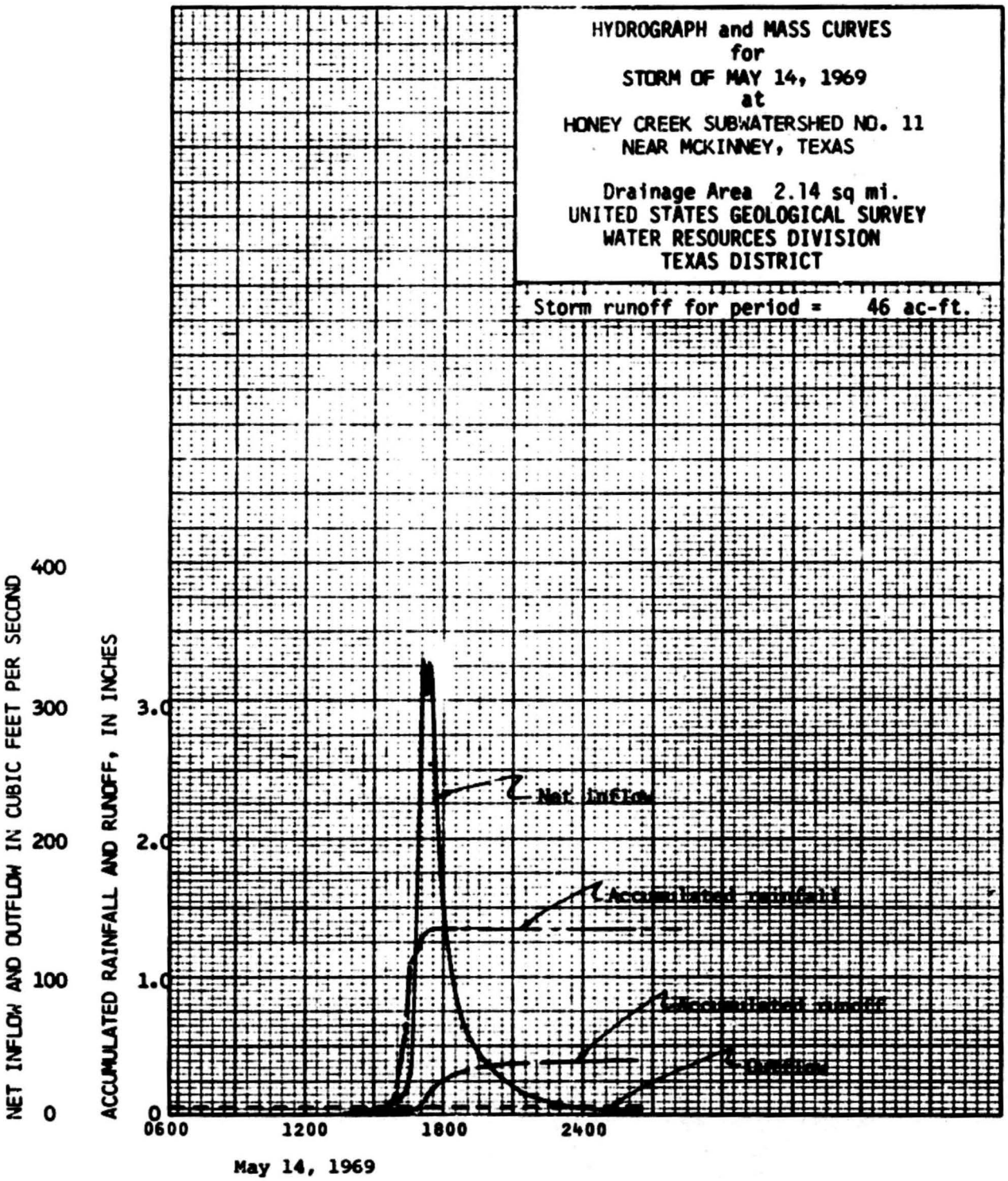
WEIGHTED-PRECIPITATION RECORD

Study Area 8-0575, Honey Creek Subwatershed No. 11 nr. McKinney, Tex. Date of storm May 14, 1969

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	.6943		.3057											
	Gage 13-R		Gage 15-R		Gage		Gage		Gage		Gage		Recording Gages	(Rec. Gages x K)
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	All Gages	All Gages
May 14, 1969														
1430	.00	.00	.00	.00									.00	.00
1500	.00	.00	.00	.00									.00	.00
1520	.00	.00	.00	.00									.00	.00
1530	.05	.03	.00	.00									.03	.03
1540	.13	.09	.00	.00									.09	.09
1550	.17	.12	.01	.00									.12	.12
1600	.30	.21	.02	.01									.22	.22
1620	.75	.52	.10	.03									.55	.55
1630	1.25	.87	.30	.09									.96	.97
1640	1.33	.92	.60	.18									1.10	1.11
1650	1.36	.94	.80	.24									1.18	1.19
1700	1.37	.95	1.16	.36									1.30	1.31
1730	1.39	.97	1.20	.37									1.34	1.35
1800	1.39	.97	1.20	.37									1.34	1.35
1810	1.39	.97	1.20	.37									1.34	1.35
1820	1.39	.97	1.20	.37									1.34	1.35
1830	1.39	.97	1.20	.37									1.34	1.35
1900	1.39	.97	1.20	.37									1.34	1.35
2000	1.39	.97	1.20	.37									1.34	1.35

Main Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Main Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Main Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
11-S	.0955	1.35	0.13								
13-R	.6879	1.39	.96								
15-R	.2166	1.20	.26								
										WMR = 1.35	

WMR : Sum of Precipitation x Weight Factor   K : WMR / Total Recording Gages Weighted Precipitation : 1.35 / 1.34 = 1.007


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 14, 1969
at
HONEY CREEK SUBWATERSHED NO. 11
NEAR MCKINNEY, TEXAS
Drainage Area 2.14 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 46 ac-ft.
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
400
300
200
100
0
3.0
2.0
1.0
0
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
0600
1200
1800
2400
May 14, 1969

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 1

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 14, 1969

8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex. D.A. 1.26 sq mi

Date and time	Gage height ft	Storage ac-ft	Time int. hrs	Change in storage ac-ft	Change in storage cfs	Mean G. Ht. ft	Outflow cfs	Total inflow cfs	Rainfall on Pool in	Rainfall on Pool area ac	Rainfall on Pool Storage ac-ft	Rainfall on Pool Storage cfs	Net Inflow Rate cfs	Net Inflow Rate in/hr	Net Inflow in	Net Inflow Acc in
May 14 1969																
0000	17.87	184.07	-	-	-	-	-	-					-	-	-	-
0300	17.80	182.36	3.0	-1.71	-6.89	17.84	6.91	.00					0	.0000	.0000	.0000
0600	17.72	180.42		-1.94	-7.82	17.76	6.85	.00					0	.0000	.0000	.0000
0900	17.65	178.74		-1.68	-6.77	17.68	6.82	.00					0	.0000	.0000	.0000
1200	17.57	176.83		-1.91	-7.70	17.61	6.79	.00					0	.0000	.0000	.0000
1500	17.50	175.16	3.0	-1.67	-6.73	17.54	6.79	.00					0	.0000	.0000	.0000
1600	17.47	174.46	1.0	-.70	-8.47	17.48	6.79	.00					0	.0000	.0000	.0000
1615	17.47	174.46	.25	.00	.00	17.47	6.79	6.79	.07	23.6	.138	6.7	.1	.0000	.0000	.0000
1630	17.50	175.16		+.70	+28.88	17.48	6.79	40.67	.33	23.6	.649	31.5	3.2	.0113	.0028	.0028
1645	17.55	176.35		+1.19	+57.60	17.52	6.79	64.39	.30	23.7	.592	28.6	35.8	.0440	.0110	.0138
1700	17.58	177.06		+.71	+34.30	17.56	6.82	41.12	.10	23.8	.198	9.7	31.5	.0387	.0097	.0235
1715	17.69	179.70		+2.64	+127.8	17.64	6.82	134.6	.06	24.0	.120	5.8	129	.1587	.0397	.0632
1730	17.82	182.85	.25	+3.15	+152.5	17.76	6.85	159.4	.02	24.2	.040	1.9	158	.1943	.0486	.1118
1735	17.86	183.82	.083	+.97	+140.8	17.84	6.86	147.7					148	.1820	.0152	.1270
1740	17.91+	185.15	.083	+1.33	+192.1	17.89	6.91	200.0					200	.2460	.0205	.1476
1745	17.96	186.28	.083	+1.13	+164.1	17.94	6.94	171.0					171	.2103	.0175	.1650
1800	18.06	188.75	.25	+2.47	+119.5	18.01	6.97	126.5					126	.1550	.0388	.2038
1830	18.16	191.26	.50	+2.51	+60.7	18.11	7.00	67.7					67.7	.0833	.0416	.2454
1900	18.20	192.26	.50	+1.00	+48.4	18.18	7.00	55.4					55.4	.0681	.0340	.2794
2000	18.22	192.77	1.0	+.51	+6.2	18.21	7.02	13.2					13.2	.0162	.0162	.2956
2100	18.22+	192.87		+.10	+1.2	18.22	7.09	8.2					8.2	.0101	.0101	.3057
2200	18.21	192.61		-.26	-4.4	18.22	7.09	2.6					2.6	.0032	.0032	.3089
2300	18.20	192.26		-.25	-3.0	18.20	7.00	4.0					4.0	.0049	.0049	.3138
2400	18.19	192.01	1.0	-.25	-3.0	18.20	7.00	4.0					4.0	.0049	.0049	.3187

Comp. by RMS
Ch. by JNS

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

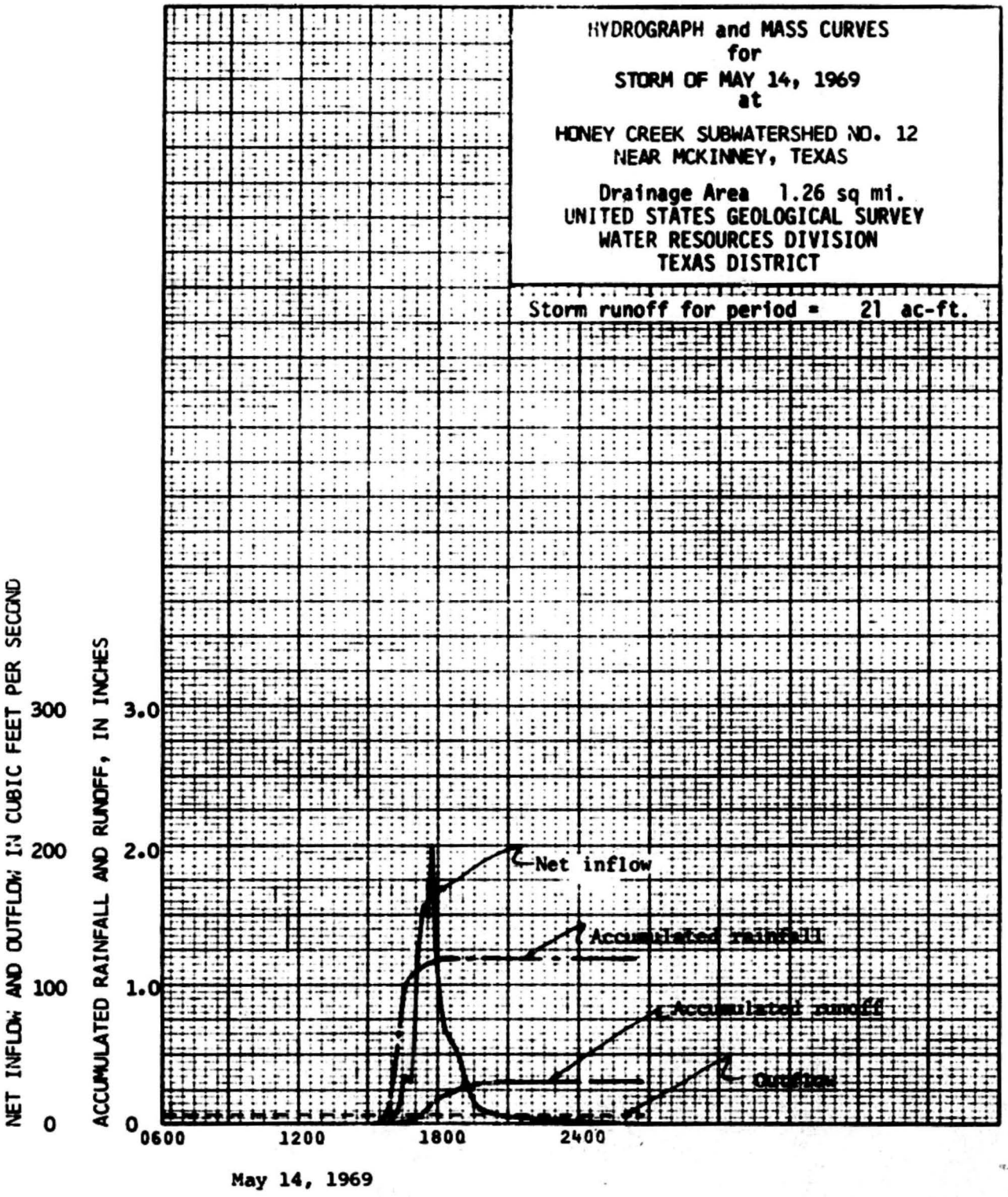
Sheet 1 of 1
Comp. by: JNS
Date 8-4-70
Check by RON
Date 8-24-70

Study Area B-0580. Honey Creek Subwatershed No. 12 nr. McKinney, Tex. Date of storm May 14, 1969

Weight Factor		.7209		.2791										Accumulated Weighted Precipitation	
		Accumulated Precipitation in Inches for Recording Rain Gages													
Date & Time		Gage 12-R Recorded	x Factor	Gage 16-R Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Recording Gages	Rec. Gages x K / All Gages
May 14, 1969															
1430		.00	.00	.00	.00									.00	.00
1500		.00	.00	.00	.00									.00	.00
1520		.00	.00	.00	.00									.00	.00
1530		.02	.01	.00	.00									.01	.01
1540		.06	.04	.00	.00									.04	.04
1550		.10	.07	.00	.00									.07	.07
1600		.35	.25	.01	.00									.25	.25
1620		.75	.54	.37	.10									.64	.65
1630		1.00	.72	.45	.13									.85	.86
1640		1.15	.83	.62	.17									1.00	1.01
1650		1.18	.85	.78	.22									1.07	1.08
1700		1.20	.87	.80	.22									1.09	1.10
1730		1.25	.90	.85	.24									1.14	1.15
1800		1.27	.92	.88	.25									1.17	1.18
1810		1.28	.92	.88	.25									1.17	1.18
1820		1.28	.92	.88	.25									1.17	1.18
1830		1.28	.92	.88	.25									1.17	1.18
1900		1.28	.92	.88	.25									1.17	1.18
2000		1.28	.92	.88	.25									1.17	1.18

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
10-S	.0581	1.40	0.08								
12-R	.7628	1.28	.85								
16-R	.2791	.88	.25								
											$\Sigma WR = 1.18$

ΣWR : Sum of Precipitation x Weight Factor K : ΣWR / Total Recording Gages Weighted Precipitation : $1.18 / 1.17 = 1.009$


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 14, 1969
at
HONEY CREEK SUBWATERSHED NO. 12
NEAR MCKINNEY, TEXAS
Drainage Area 1.26 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 21 ac-ft.
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
300
200
100
0
3.0
2.0
1.0
0
0600
1200
1800
2400
May 14, 1969
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow

TX.-65 (Rev.7-69)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

RUNOFF COMPUTATIONS

Station 8-0585. Honey Creek near McKinney, Tex.

Period of Record May 14-15, 1969 Drainage Area 39.0 sq. mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge C.f.s.	Inc.	In/Hr.	Runoff Inches	Acc. In.
May 14 1969							
0000	2.62	0	122	3.0	.0048	.0144	.0144
0600	2.54		111	6.0	.0044	.0264	.0408
1200	2.48		102	5.0	.0041	.0205	.0613
1600	2.45		98	2.75	.0039	.0088	.0701
1630	2.48		102	.50	.0041	.0020	.0721
1700	2.60		119	.50	.0047	.0024	.0745
1730	2.95		164	.50	.0065	.0032	.0777
1800	3.90		240	.375	.0095	.0036	.0813
1815	5.00		328	.25	.0130	.0032	.0845
1830	6.00		418	.375	.0166	.0062	.0907
1900	7.40		554	.50	.0220	.0110	.1017
1930	8.02		622	.375	.0247	.0093	.1110
1945	8.11		632	.25	.0251	.0063	.1173
2000	8.06		627	.375	.0249	.0093	.1266
2030	7.60		576	.50	.0229	.0114	.1380
2100	6.90		500	.50	.0199	.0100	.1480
2130	6.16		432	.50	.0172	.0086	.1566
2200	5.73		394	.75	.0157	.0118	.1684
2300	5.32		357	1.0	.0142	.0142	.1826
2400	4.89	0	314	.50	.0125	.0062	.1888
May 15							
0000	4.83	0	314	.50	.0125	.0062	.1950
0100	4.50		288	1.0	.0114	.0114	.2064
0200	4.31		273	1.5	.0108	.0162	.2226
0400	4.12		258	2.0	.0103	.0206	.2432
0600	3.98	0	246	2.5	.0098	.0245	.2677

Time	G. Ht. Feet	Sh. Adj.	Discharge C.f.s.	Inc.	In/Hr.	Runoff Inches	Acc. In
continue May 15							
0900	3.80	0	282	3	.0092	.0276	.2953
1200	3.61		217	3	.0086	.0258	.3211
1500	3.40		200	3	.0079	.0237	.3448
1800	3.25		188	3	.0075	.0225	.3673
2100	3.13		178	3	.0071	.0213	.3886
2400	3.06	0	173	1.5	.0069	.0104	.3990

Computed by J.N.S. Date 7-20-70 Checked by R.O.H. Date 8-25-70

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

Sheet 1 of 1
Comp. by: JNS
Date 8-4-70
Check by ROH
Date 8-25-70

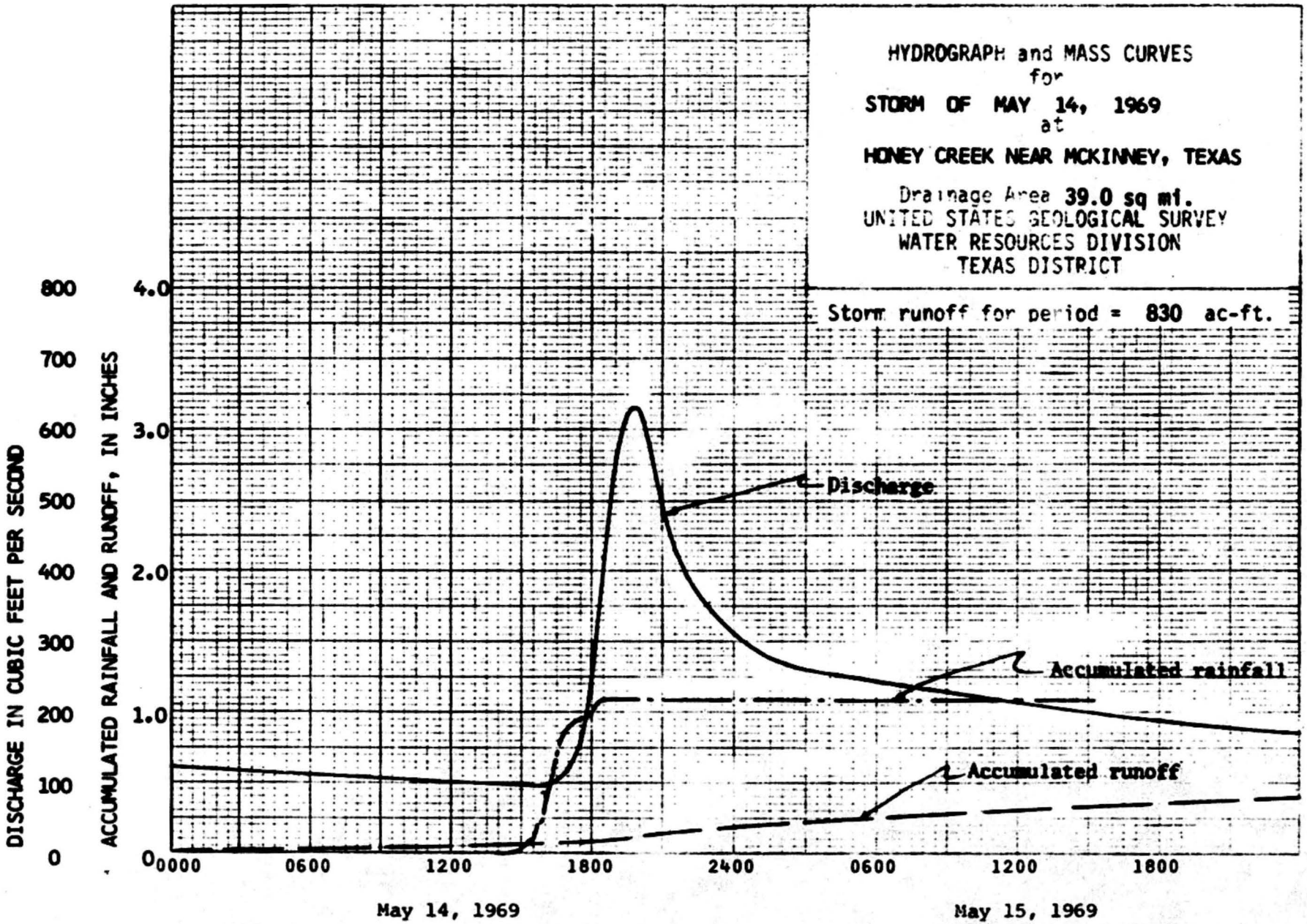
Study Area B-0585. Honey Creek near McKinney, Tex. Date of storm May 14, 1969

Weight Factor			.2254		.0868		.0714		.0648		.0900		Accumulated Weighted Precipitation	
	Gage 5-R		Gage 9-R		Gage 12-R		Gage 13-R		Gage 15-R		Gage 16-R			
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recording Gages	(Rec. Gages x K) All Gages
May 14, 1969														
1430	.00	.00	(.00)[A]	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1500	.05	.02	(.00)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.02	.02
1520	.15	.07	(.00)	.00	.00	.00	.00	.00	.00	.00	.00	.00	.07	.08
1530	.20	.09	(.02)	.00	.02	.00	.05	.00	.00	.00	.00	.00	.09	.10
1540	.30	.14	(.06)	.01	.06	.01	.13	.01	.00	.00	.00	.00	.17	.19
1550	.40	.18	(.11)	.02	.10	.01	.17	.01	.01	.00	.00	.00	.22	.24
1600	.40	.18	(.38)	.09	.35	.03	.30	.02	.02	.00	.01	.00	.32	.35
1620	.40	.18	(.81)	.18	.75	.07	.75	.05	.10	.01	.37	.03	.52	.57
1630	.40	.18	(1.08)	.24	1.00	.09	1.25	.09	.30	.02	.45	.04	.66	.72
1640	.40	.18	(1.24)	.28	1.15	.10	1.33	.09	.60	.04	.62	.06	.75	.82
1650	.40	.18	(1.27)	.29	1.18	.10	1.36	.10	.80	.05	.78	.07	.79	.86
1700	.40	.18	(1.29)	.29	1.20	.10	1.37	.10	1.16	.08	.80	.07	.82	.89
1730	.45	.21	(1.35)	.30	1.25	.11	1.39	.10	1.20	.08	.85	.08	.88	.96
1800	.47	.22	(1.37)	.31	1.27	.11	1.39	.10	1.20	.08	.88	.08	.90	.98
1810	.60	.28	(1.38)	.31	1.28	.11	1.39	.10	1.20	.08	.88	.08	.96	1.05
1820	.67	.31	(1.38)	.31	1.28	.11	1.39	.10	1.20	.08	.88	.08	.99	1.08
1830	.68	.31	(1.38)	.31	1.28	.11	1.39	.10	1.20	.08	.88	.08	.99	1.08
1900	.68	.31	(1.38)	.31	1.28	.11	1.39	.10	1.20	.08	.88	.08	.99	1.08
2000	.68	.31	(1.38)	.31	1.28	.11	1.39	.10	1.20	.08	.88	.08	.99	1.08

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
1-S		0.90		7-S		1.04		13-R		1.39	
2-S		.93		8-S		1.48		14-S		1.29	
3-S		.80		9-R		1.38		15-R		1.20	
4-S		.62		10-S		1.40		16-R		.88	
5-R		.68		11-S		1.35				16) 17.22	
6-S		.60		12-R		1.28				M = 1.08	

WM : Sum of Precipitation x Weight Factor K : WM / Total Recording Gages Weighted Precipitation : 1.08/0.99 = 1.091

[A] Incremental amounts based on gage 12-R.


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 14, 1969
at
HONEY CREEK NEAR MCKINNEY, TEXAS
Drainage Area 39.0 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 830 ac-ft.
Discharge
Accumulated rainfall
Accumulated runoff
DISCHARGE IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
800
700
600
500
400
300
200
100
0
4.0
3.0
2.0
1.0
0
0000
0600
1200
1800
2400
0600
1200
1800
May 14, 1969
May 15, 1969

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 1

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 17, 1969

8-0575 Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi

Date and time	Gage height ft	Storage ac-ft	Time int. hrs	Change in storage ac-ft	Change in storage cfs	Mean G. Ht. ft	Outflow cfs	Total inflow cfs	Rainfall on Pool in	Rainfall on Pool area ac	Storage ac-ft	Storage cfs	Net Inflow Rate cfs	Net Inflow Rate in/hr	Net Inflow in	Acc in
	May 17, 1969															
0000	19.77	669.51	-	-	-	-	-	-					-			.0000
0100	19.76+	669.24	1.0	- .27	- 8.3	19.77	6.38	3.7					3.7	.0027	.0027	.0027
0130	19.76+	669.20	.50	- .04	- 1.0	19.76	6.38	6.0					6.0	.0043	.0022	.0049
0145	19.84	673.52	.25	+ 4.32	+ 209.1	19.80	6.98	216.1	.80	57.3	3.82	184.9	81.2	.0226	.0056	.0105
0200	19.90	676.97		+ 3.45	167.0	19.87	7.00	174.0	.50	57.6	2.40	116.2	57.8	.0419	.0105	.0210
0215	20.00	682.76		+ 5.79	280.2	19.95	7.01	287.2	.20	57.9	.96	46.5	240.7	.1743	.0436	.0646
0230	20.16	692.11		+ 9.35	452.5	20.08	7.03	459.5	.10	58.4	.49	28.7	430.8	.3156	.0789	.1435
0245	20.40	706.29	.25	+14.18	686.3	20.28	7.06	693.4	.10	59.1	.49	28.7	664.7	.4849	.1212	.2647
0250	20.49	711.67	.083	+ 5.38	781.2	20.44	7.08	788.3	.05	59.7	.25	36.3	752.0	.5445	.0454	.3101
0255	20.59	717.69		+ 6.02	874.1	20.54	7.10	881.2	.03	60.1	.15	21.8	859.4	.6223	.0518	.3619
0300	20.70	724.34		+ 6.65	964.6	20.64	7.11	972.7	.02	60.5	.10	14.5	958.2	.6938	.0578	.4197
0305	20.80	730.43		+ 6.09	884.3	20.75	7.12	891.4					891.4	.6455	.0538	.4735
0310	20.90	736.56		+ 6.13	890.1	20.85	7.14	897.2					897.2	.6497	.0539	.5274
0315	21.00	742.73	.083	+ 6.17	895.9	20.95	7.16	903.1					903.1	.6539	.0545	.5819
0330	21.27	759.59	.25	+16.86	816.0	21.14	7.19	823.2					823.2	.5961	.1490	.7309
0345	21.50	774.18	.25	+14.59	706.2	21.38	7.23	713.4					713.4	.5166	.1292	.8601
0400	21.73	789.01	.25	+14.83	717.8	21.62	7.26	725.1					725.1	.5250	.1312	.9913
0430	22.10	819.33	.50	+24.32	588.5	21.92	7.29	595.8					595.8	.4314	.2157	1.2070
0500	22.31	827.41	.50	+ 14.08	340.7	22.20	7.32	348.0					348.0	.2520	.1260	1.3330
0600	22.54	843.03	1.0	+ 15.62	189.0	22.42	7.34	196.3					196.3	.1421	.1421	1.4751
0700	22.63	849.21	1.0	+ 6.18	74.8	22.58	7.36	82.1					82.1	.0594	.0594	1.5345
0800	22.68	852.65	1.0	+ 3.44	41.6	22.66	7.37	49.0					49.0	.0355	.0355	1.5700
1000	22.74	856.80	2.0	+ 4.15	25.1	22.71	7.37	32.5					32.5	.0235	.0470	1.6170
1200	22.77	859.88		+ 2.08	12.6	22.76	7.38	20.0					20.0	.0145	.0290	1.6460
1400	22.78	859.57		+ .69	4.2	22.78	7.38	11.6					11.6	.0084	.0168	1.6628
1600	22.79	860.27		+ .70	4.2	22.78	7.38	11.6					11.6	.0084	.0168	1.6796
1800	22.79+	860.40		+ .13	.8	22.79	7.38	8.2					8.2	.0059	.0118	1.6914
2000	22.79+	860.55	2.0	+ .15	.9	22.79	7.38	8.3					8.3	.0060	.0120	1.7034
2400	22.80	860.96	4.0	+ .41	1.2	22.80	7.38	8.6					8.6	.0062	.0248	1.7282

Comp. by BNM
Ck. by JNS

TX-78 (Revised July 1969)

Sheet 1 of 1

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

Comp. by: J.N.S.
Date 8-5-70
Check by R.O.H.
Date 8-25-70

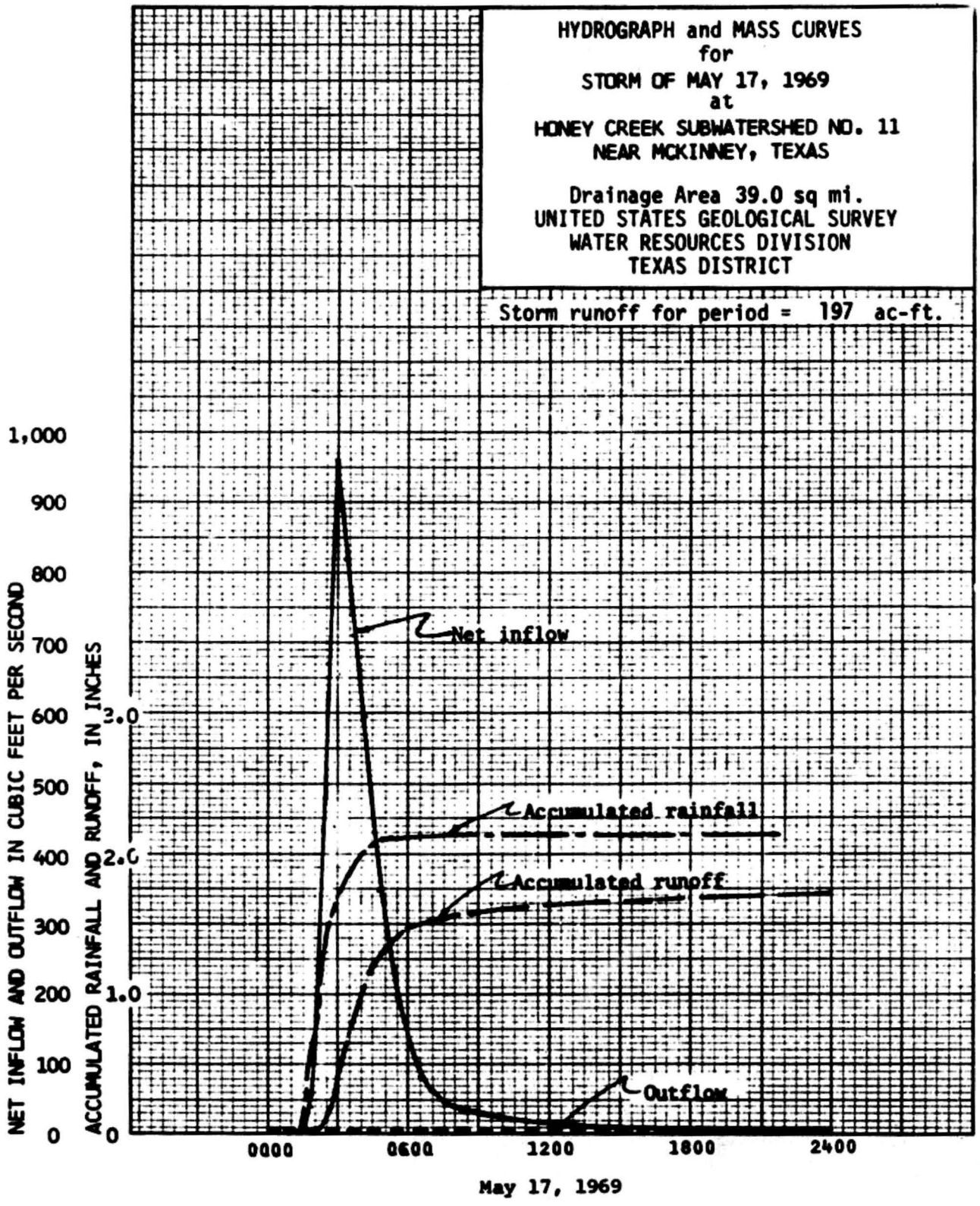
WEIGHTED-PRECIPITATION RECORD

Study Area 8-0575. Honey Creek subwatershed No. 11 nr. McKinney Date of storm May 17, 1969

Accumulated Precipitation in Inches for Recording Rain Gages													Accumulated Weighted Precipitation	
Weight Factor		.6943		.3057										
	Gage 15-R		Gage 18-R		Gage		Gage		Gage		Gage		Recording Gages All Gages	(Rec. Gages x K) All Gages
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor		
May 17, 1969														
0120	.00	.00	.00	.00									.00	.00
0130	.10	.07	.20	.06									.13	.13
0140	.30	.21	.90	.28									.49	.49
0150	.38	.26	1.20	.37									.63	.63
0200	.42	.29	1.45	.44									.73	.73
0210	.90	.62	1.55	.47									1.09	1.08
0220	1.15	.80	1.65	.50									1.30	1.29
0230	1.33	.92	1.70	.52									1.44	1.43
0240	1.43	.99	1.76	.53									1.52	1.51
0250	1.54	1.07	1.78	.54									1.61	1.60
0300	1.65	1.15	1.79	.55									1.70	1.69
0330	1.92	1.33	1.80	.55									1.88	1.87
0400	2.10	1.46	1.80	.55									2.01	2.00
0430	2.22	1.54	1.80	.55									2.09	2.08
0500	2.26	1.57	1.80	.55									2.12	2.11
0530	2.28	1.58	1.80	.55									2.13	2.12
0600	2.29	1.59	1.80	.55									2.14	2.13
0630	2.30	1.60	1.80	.55									2.15	2.14
0700	2.30	1.60	1.80	.55									2.15	2.14

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
11-R	.0955	1.81	.17								
18-R	.6879	2.30	1.58								
15-R	.2166	1.80	.39								
			2.14								
										WMR.	2.14

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation : 2.14/2.15 = .995


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 17, 1969
at
HONEY CREEK SUBWATERSHED NO. 11
NEAR MCKINNEY, TEXAS
Drainage Area 39.0 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 197 ac-ft.
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
1,000
900
800
700
600
500
400
300
200
100
0
3.0
2.0
1.0
0
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
0000
0600
1200
1800
2400
May 17, 1969

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 1

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 17, 1969

8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex. D.A. 1.26 sq mi

Date and time	Gage height	Storage	Time int.	Change in storage		Mean G. Ht.	Outflow	Total inflow	Rainfall on Pool				Net Inflow			
										area	Storage		Rate			Acc
	ft	ac-ft	hrs	ac-ft	cfs	ft	cfs	cfs	in	ac	ac-ft	cfs	cfs	in/hr	in	in
	May 17 1969															
0000	16.97	162.94	-	-	-	-	-	-								
0100	16.94	162.26	1.0	- .68	- 8.2	16.96	6.76	.00					0	.0000	.0000	.0000
0130	16.93	162.04	.50	- .22	- 5.3	16.94	6.70	1.40	.01	22.5	.019	.5	.9	.0011	.0006	.0006
0145	16.96	162.71	.25	+ .67	+ 32.4	16.94	6.70	39.1	.89	22.5	.781	85.4	8.7	.0046	.0012	.0018
0200	17.01	163.84		+ 1.13	+ 54.7	16.98	6.82	61.5	.22	22.6	.414	20.0	41.5	.0510	.0128	.0146
0215	17.10	165.88		+ 2.04	+ 98.7	17.06	6.85	105.5	.29	22.7	.435	21.1	84.4	.1088	.0260	.0406
0230	17.32	170.95		+ 5.07	+245.9	17.21	6.88	252.3	.17	23.0	.326	15.8	236	.2903	.0726	.1132
0245	17.62	178.02		+ 7.07	+342.2	17.47	6.94	349.1	.14	23.6	.275	13.3	336	.4133	.1033	.2165
0300	18.00	187.26	.25	+ 9.24	+447.2	17.81	6.97	454.2	.15	24.3	.304	14.7	440	.5412	.1353	.3518
0305	18.18	191.76	.083	+ 4.50	+653.4	18.09	7.00	660.4	.02	25.0	.042	6.1	654	.8044	.0670	.4188
0310	18.25	196.06		+ 4.30	+624.4	18.26	7.09	631.5	.02	25.2	.042	6.1	625	.7688	.0641	.4829
0315	18.50	199.92		+ 3.86	+560.5	18.42	7.11	567.6	.08	25.7	.064	9.3	558	.6865	.0572	.5401
0320	18.65	203.83		+ 3.91	+567.7	18.58	7.11	574.8	.04	26.1	.087	12.6	562	.6918	.0576	.5977
0325	18.79	207.52		+ 3.69	+535.8	18.72	7.14	542.9	.03	26.4	.066	9.6	533	.6560	.0546	.6523
0330	18.93	211.26	.083	+ 3.74	+543.0	18.86	7.17	550.2	.03	26.7	.067	9.7	540	.6642	.0553	.7076
0345	19.23	219.40	.25	+ 8.14	+394.0	19.08	7.18	401.2	.06	27.2	.136	6.6	395	.4856	.1214	.8290
0400	19.47	226.07	.25	+ 6.67	+322.8	19.25	7.19	330.0	.06	27.8	.139	6.7	324	.3975	.0993	.9283
0430	19.83	236.29	.50	+10.22	+247.3	19.65	7.19	254.5	.05	28.4	.118	2.8	252	.3100	.1550	1.0833
0500	20.01	241.50		+ 5.21	+126.1	19.92	7.20	133.3	.03	29.0	.072	1.7	132	.1624	.0812	1.1645
0530	20.10	244.14		+ 2.64	+ 63.9	20.06	7.20	71.1	.01	29.3	.024	.6	70.5	.0867	.0434	1.2079
0600	20.14	245.32	.50	+ 1.18	+ 28.6	20.12	7.21	35.8	.01	29.4	.024	.6	35.2	.0433	.0216	1.2295
0700	20.19	246.80	1.0	+ 1.48	+ 17.9	20.16	7.21	25.1					25.1	.0309	.0309	1.2604
0800	20.20	247.09		+ .29	+ 3.6	20.20	7.21	10.7					10.7	.0132	.0132	1.2736
0900	20.20	247.09		.00	.0	20.20	7.21	7.2					7.2	.0089	.0089	1.2825
1000	20.20	247.09		.00	.0	20.20	7.21	7.2					7.2	.0089	.0089	1.2914
1100	20.19	246.80		- .29	- 3.5	20.20	7.21	3.7					3.7	.0046	.0046	1.2960
1200	20.18	246.50	1.0	- .30	- 3.6	20.18	7.20	3.6					3.6	.0044	.0044	1.3004
1400	20.15	245.62	2.0	- .88	- 5.3	20.16	7.19	1.9					1.9	.0023	.0046	1.3050
1600	20.12	244.73	2.0	- .89	- 5.4	20.14	7.19	1.8					1.8	.0022	.0044	1.3094
1800	20.09	243.85	2.0	- .88	- 5.3	20.10	7.17	1.9					1.9	.0023	.0046	1.3140
2100	20.03	242.09	3.0	- 1.76	- 7.1	20.06	7.14	.0					.0	.0000	.0000	1.3140
2400	19.99	240.92	3.0	- 1.17	- 4.7	20.02	7.11	2.4					2.4	.0030	.0030	1.3170

comp. by JNS
ck. by RWM

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

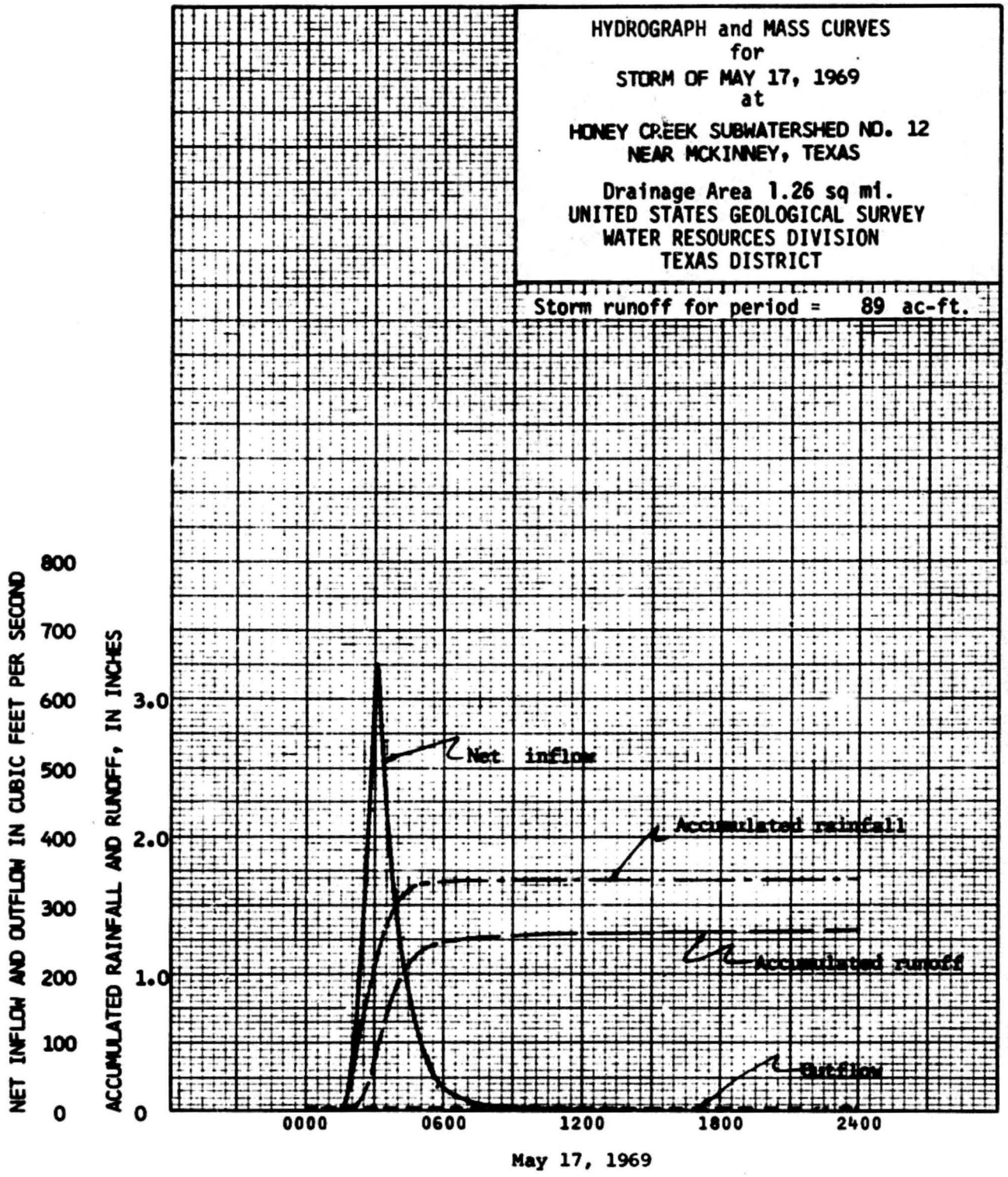
Sheet 1 of 1
Comp. by: J.N.S.
Date 8-5-70
Check by R.O.H.
Date 8-25-70

Study Area E-0580. Honey Creek subwatershed No. 12 nr. McKinney, Tex. Date of storm May 17, 1969

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	.7209		.2791											
	Gage 12-R		Gage 16-R		Gage		Gage		Gage		Gage		Recording Gages	(Rec. Gages x K)
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	All Gages	All Gages
May 17, 1969														
0130	.00	.00	.01	.00									.00	.00
0140	.00	.00	.20	.06									.06	.06
0150	.05	.04	.42	.12									.16	.16
0200	.39	.28	.60	.17									.45	.46
0210	.45	.32	.75	.21									.53	.54
0220	.55	.40	.85	.24									.64	.65
0230	.69	.50	.95	.27									.77	.78
0240	.85	.61	1.05	.29									.90	.91
0250	.95	.68	1.15	.32									1.00	1.01
0300	1.07	.77	1.30	.36									1.13	1.14
0330	1.35	.97	1.40	.39									1.36	1.38
0400	1.55	1.12	1.60	.45									1.57	1.59
0430	1.60	1.15	1.65	.46									1.61	1.63
0500	1.65	1.19	1.68	.47									1.66	1.68
0510	1.65	1.19	1.68	.47									1.66	1.68
0520	1.65	1.19	1.68	.47									1.66	1.68
0600	1.65	1.19	1.70	.47									1.66	1.68
0700	1.65	1.19	1.70	.47									1.66	1.68

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
10-R	.0581	2.02	.12								
12-R	.6628	1.65	1.09								
16-R	.2791	1.70	.47								
			1.68							RMR	1.68

RMR : Sum of Precipitation x Weight Factor K : RMR / Total Recording Gages Weighted Precipitation : 1.68 / 1.66 = 1.012


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 17, 1969
at
HONEY CREEK SUBWATERSHED NO. 12
NEAR MCKINNEY, TEXAS
Drainage Area 1.26 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 89 ac-ft.
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
800
700
600
500
400
300
200
100
0
3.0
2.0
1.0
0
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
0000
0600
1200
1800
2400
May 17, 1969

TX.-65 (Rev. 7-69)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

RUNOFF COMPUTATIONS

Station 8-0585. Honey Creek near McKinney, Tex.

Period of Record May 17, 1969 Drainage Area 29.0 sq. mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In/Hr.	Runoff Inches	Acc. In.
	May 17, 1969						
0000	2.55	0	112	.75	.0044	.0033	.0033
0130	2.55	|	112	1.0	.0044	.0044	.0077
0200	5.00	|	328	.50	.0130	.0065	.0142
0230	8.40	|	664	.50	.0264	.0132	.0274
0300	10.65	|	995	.50	.0395	.0198	.0472
0330	12.40	|	1,330	.50	.0528	.0264	.0736
0400	13.85	|	1,690	.50	.0671	.0336	.1072
0430	14.65	|	1,920	.50	.0763	.0382	.1454
0500	15.05	|	2,050	.50	.0814	.0407	.1861
0530	15.30	|	2140	.50	.0850	.0425	.2286
0600	15.49	|	2,170	.60	.0862	.0431	.2717
0630	15.55	|	2,220	.50	.0882	.0441	.3158
0700	15.35	|	2150	.50	.0854	.0427	.3585
0730	14.90	|	2,000	.50	.0795	.0398	.3983
0800	14.10	|	1,760	.50	.0699	.0350	.4333
0830	13.15	|	1,500	.50	.0596	.0298	.4631
0900	(12.05)	|	1,260	.60	.0501	.0250	.4881
0930	(11.05)	|	1,070	.60	.0425	.0212	.5093
1000	(10.30)	|	994	.75	.0371	.0278	.5371
1100	(8.80)	|	712	1.0	.0283	.0283	.5654
1200	(7.70)	|	587	1.5	.0233	.0350	.6004
1400	(6.60)	|	472	2.0	.0188	.0376	.6380
1600	(6.13)	|	430	2.0	.0171	.0343	.6723
2000	(5.55)	|	378	4.0	.0150	.0600	.7323
2400	(5.22)	0	349	2.0	.0139	.0278	.7601

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In/Hr.	Runoff Inches	Acc. In

Computed by B.B.H. Date 5-7-70 Checked by GRD Date 5-7-70

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

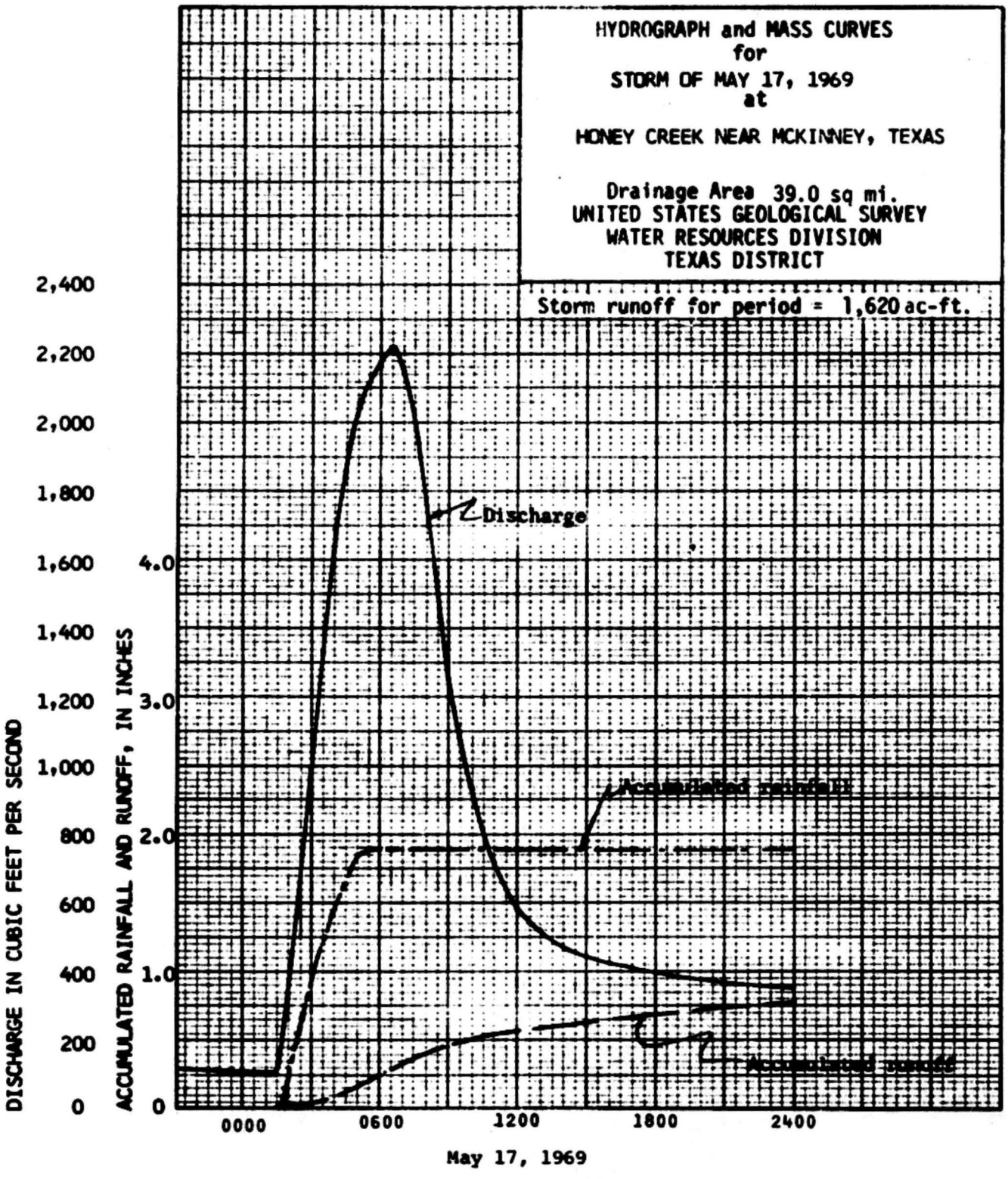
Sheet 1 of 1
Comp. by: J.N.S.
Date 8-5-70
Check by R.O.H.
Date 8-25-70

Study Area 8-0525. Honey Creek near McKinney Tex. Date of storm May 17, 1969

Date & Time	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	.4616		.2252		.0858		.0718		.0649		.0200			
	Gage 3-K		Gage 9-K		Gage 14-K		Gage 18-K		Gage 19-K		Gage 16-K		Recording Gages	(Rec. Gages x K) All Gages
	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor		
May 17, 1969														
0120	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
0130	.00	.00	.00	.00	.00	.00	.10	.01	.20	.01	.01	.00	.02	.02
0140	.00	.00	.00	.00	.00	.00	.80	.07	.90	.06	.20	.02	.10	.10
0150	.00	.00	.06	.01	.05	.00	.98	.09	1.20	.08	.42	.04	.16	.17
0200	.00	.00	.48	.11	.39	.03	.43	.09	1.45	.09	.60	.05	.31	.32
0210	.10	.05	.55	.12	.45	.04	.90	.06	1.56	.10	.75	.07	.44	.45
0220	.20	.09	.68	.16	.55	.05	1.15	.08	1.65	.11	.85	.08	.56	.58
0230	.26	.12	.85	.19	.69	.06	1.33	.09	1.70	.11	.95	.09	.66	.68
0240	.30	.14	1.05	.24	.85	.07	1.48	.10	1.75	.11	1.06	.09	.75	.77
0250	.35	.16	1.17	.26	.95	.08	1.54	.11	1.78	.12	1.15	.10	.83	.86
0300	.60	.28	1.32	.30	1.07	.09	1.65	.12	1.79	.12	1.30	.12	1.03	1.06
0330	.70	.32	1.66	.37	1.35	.12	1.92	.14	1.80	.12	1.40	.13	1.20	1.24
0400	.96	.44	1.91	.43	1.55	.13	2.10	.16	1.80	.12	1.60	.14	1.41	1.46
0430	1.30	.60	1.97	.44	1.60	.14	2.22	.16	1.80	.12	1.65	.15	1.61	1.66
0500	1.65	.76	2.03	.46	1.65	.14	2.26	.16	1.80	.12	1.67	.15	1.79	1.85
0510	1.70	.78	2.09	.46	1.65	.14	2.27	.16	1.80	.12	1.68	.15	1.81	1.87
0520	1.72	.79	2.09	.46	1.65	.14	2.28	.16	1.80	.12	1.68	.15	1.82	1.88
0600	1.72	.79	2.09	.46	1.65	.14	2.29	.16	1.80	.12	1.69	.15	1.82	1.88
0700	1.72	.79	2.09	.46	1.65	.14	2.30	.16	1.80	.12	1.70	.15	1.82	1.88

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
1-S		2.28		7-S		1.41		13-K		2.30	
2-S		2.35		8-S		1.99		14-S		1.87	
3-S		2.02		9-K		2.09		15-K		1.80	
4-S		1.57		10-S		2.02		16-K		1.70	
5-K		1.72		11-S		1.81				16) 30.03	
6-S		1.51		12-K		1.65				WMP: 1.88	

WMP : Sum of Precipitation x Weight Factor K : WMP / Total Recording Gages Weighted Precipitation : 1.88 / 1.82 = 1.033


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 17, 1969
at
HONEY CREEK NEAR MCKINNEY, TEXAS
Drainage Area 39.0 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 1,620 ac-ft.
Discharge
Accumulated rainfall
Accumulated runoff
DISCHARGE IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
4.0
3.0
2.0
1.0
0
0000
0600
1200
1800
2400
May 17, 1969

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 1

INFLOW AND OUTFLOW COMPUTATIONS

Storm period June 23 1969

8-0575 Honey Creek subwatershed No. 11 near McKinney, Tex. D.A. 2.14 sq mi

Date and time	Gage height	Storage	Time int.	Change in storage		Mean G. Ht.	Outflow	Total inflow	Rainfall on Pool				Net Inflow			
										area	Storage		Rate			Acc
	ft	ac-ft	hrs	ac-ft	cfs	ft	cfs	cfs	in	ac	ac-ft	cfs	cfs	in/hr	in	in
	June	23 1969														
0000	15.78	468.78	-	-	-	-	-	-								
0200	15.75	467.45	2.0	- 1.33	- 8.05	15.76	5.93	0								
0400	15.72+	466.34		- 1.11	- 6.72	15.74	5.92	0								
0600	15.70	465.24		- 1.10	- 6.66	15.71	5.90	0								
0800	15.67+	464.14		- 1.10	- 6.66	15.69	5.90	0								
1000	15.65	463.04		- 1.10	- 6.66	15.66	5.89	0								
1200	15.62+	461.94		- 1.10	- 6.66	15.64	5.87	0								
1400	15.60	460.84		- 1.10	- 6.66	15.61	5.86	0								
1600	15.57+	459.75		- 1.09	- 6.59	15.59	5.84	0								
1800	15.55	458.66	2.0	- 1.09	- 6.59	15.56	5.83	0								
1900	15.53+	458.00	1.0	- .66	- 7.99	15.54	5.81	0					0			.0000
1915	15.53+	458.00	.25	.00	.00	15.53+	5.80	5.8					5.8	.0042	.0010	.0010
1930	15.65	458.66	.25	+ .66	+ 31.9	15.54	5.81	37.7	.06	48.7	.22	10.6	27.1	.0196	.0049	.0059
1945	15.61	461.28	.25	+2.62	+126.8	15.58	5.84	132.6	.34	48.8	1.24	60.0	72.6	.0526	.0132	.0191
1950	15.63	462.16	.083	+ .88	+127.8	15.62	5.86	133.7	.15	48.9	.55	79.9	53.8	.0390	.0032	.0223
1955	15.66	463.48		+ 1.32	+191.7	15.64	5.87	197.6	.13	440	.48	69.7	127.9	.0926	.0077	.0300
2000	15.69	464.80		+ 1.32	+191.7	15.68	5.89	197.6	.10	44.1	.37	53.7	143.9	.1042	.0087	.0387
2005	15.72	466.12		+ 1.32	+191.7	15.70	5.90	197.6	.08	44.1	.29	42.1	155.5	.1126	.0094	.0481
2010	15.75	467.45		+ 1.33	+193.1	15.74	5.92	199.0	.06	44.2	.22	31.9	167.1	.1210	.0101	.0582
2015	15.77+	468.55		+ 1.10	+159.7	15.76	5.93	165.6	.08	44.3	.30	43.6	122.0	.0883	.0074	.0656
2020	15.80	469.66		+ 1.11	+161.2	15.79	5.94	167.1	.05	44.3	.18	26.1	141.0	.1021	.0085	.0741
2025	15.82+	470.77		+ 1.11	+161.2	15.81	5.96	167.2	.05	44.4	.18	26.1	141.1	.1022	.0085	.0826
2030	15.85	471.88	.083	+ 1.11	+161.2	15.84	5.97	167.2	.05	44.5	.19	27.6	139.6	.1011	.0084	.0910
2045	15.89	473.66	.25	+ 1.78	+ 86.2	15.87	5.98	92.2	.03	44.5	.11	8.8	83.4	.0629	.0157	.1067
2100	15.92	475.00	.25	+ 1.34	+ 64.8	15.90	6.00	70.8	.02	44.6	.07	3.4	67.4	.0488	.0122	.1189
2200	16.00	478.58	1.0	+ 3.58	+ 43.5	15.96	6.05	49.6					49.6	.0359	.0358	.1547
2300	16.03	479.93	1.0	+ 1.35	+ 16.3	16.02	6.06	22.4					22.4	.0162	.0162	.1709
2400	16.05	480.83	1.0	+ .90	+ 10.9	16.04	6.07	17.0					17.0	.0123	.0123	.1832

comp. by RAM
ch. by JNP

TX-78 (Revised July 1969)

Sheet 1 of 1

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

Comp. by: J.N.S.
Date 8-5-70
Check by R.O.H.
Date 8-25-70

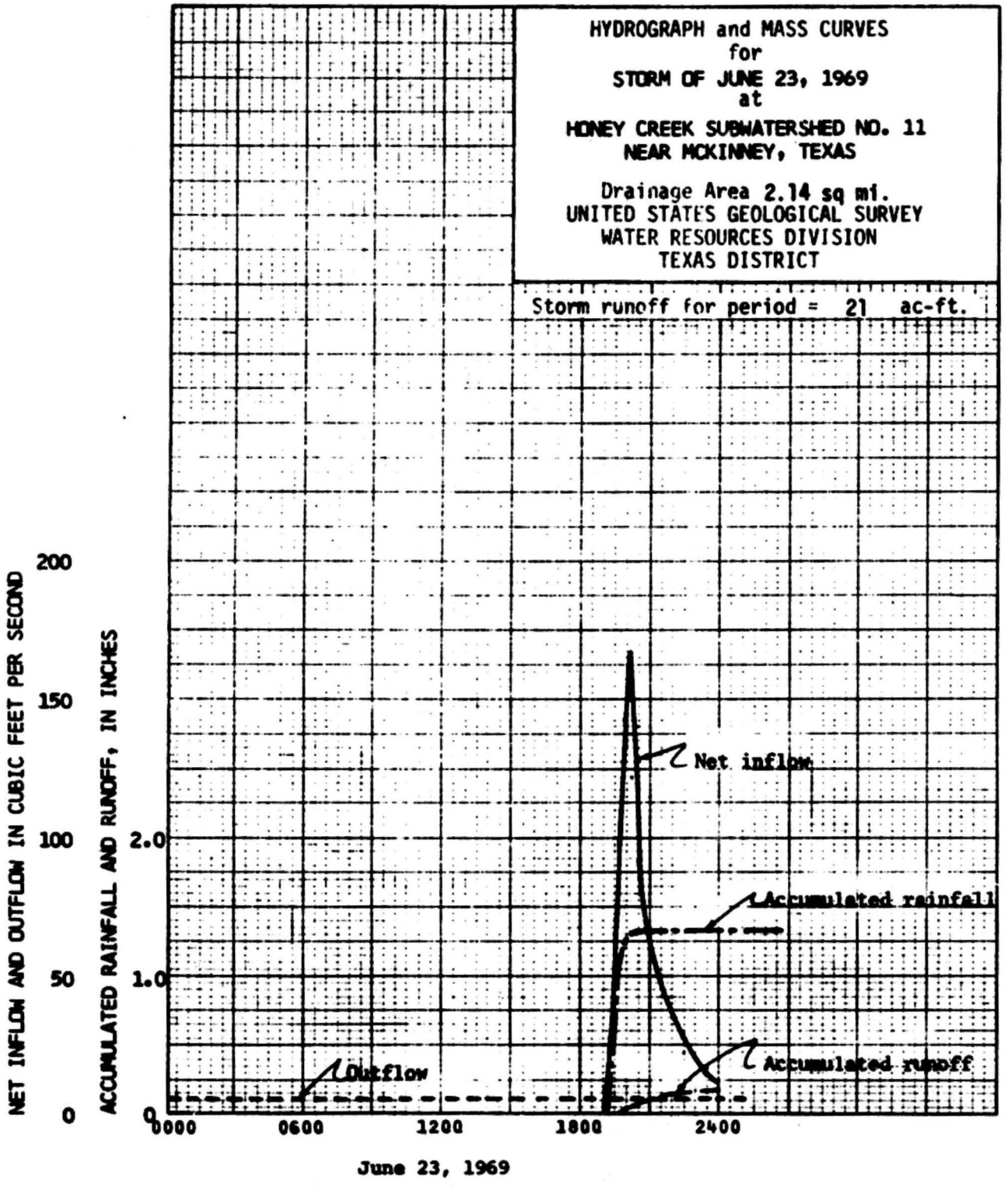
WEIGHTED-PRECIPITATION RECORD

Study Area 8-0575. Honey Creek subwatershed No. 11 nr. McKinney, Tex. Date of storm June 23, 1969

Date & Time	Accumulated Precipitation in Inches of Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	.6943		.3057											
	Gage 18-R		Gage 18-R		Gage		Gage		Gage		Gage		Recording Gages All Gages	Rec. Gages x K All Gages
	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor		
June 23, 1969														
1900	.00	.00	.00	.00									.00	.00
1910	.02	.01	.00	.00									.01	.01
1916	.10	.07	.01	.00									.07	.07
1920	.25	.17	.10	.03									.20	.20
1930	.90	.62	.22	.07									.69	.69
1940	1.25	.87	.55	.17									1.04	1.04
1950	1.35	.94	.80	.24									1.18	1.18
1955	1.37	.95	.95	.29									1.24	1.24
2000	1.40	.97	1.01	.31									1.28	1.28
2010	1.40	.97	1.19	.35									1.32	1.32
2020	1.40	.97	1.17	.36									1.33	1.33
2030	1.40	.97	1.19	.36									1.33	1.33
2040	1.40	.97	1.20	.37									1.34	1.34
2100	1.40	.97	1.20	.37									1.34	1.34

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
18-S	.0956	1.24	.12								
18-R	.6879	1.40	.96								
15-R	.2166	1.20	.26								
			1.34								
										ΣPW	1.34

ΣPW : Sum of Precipitation x Weight Factor K : ΣPW / Total Recording Gages Weighted Precipitation : 1.34/1.34 = 1.00


HYDROGRAPH and MASS CURVES
for
STORM OF JUNE 23, 1969
at
HONEY CREEK SUBWATERSHED NO. 11
NEAR MCKINNEY, TEXAS
Drainage Area 2.14 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 21 ac-ft.
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
200
150
100
50
0
2.0
1.0
0
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
0000
0600
1200
1800
2400
June 23, 1969

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 1

INFLOW AND OUTFLOW COMPUTATIONS

Storm period June 23, 1969

8-0580. Honey Creek subwatershed No. 12 near McKinney, Tex. D.A. 1.26 sq mi

Date and time	Gage height ft	Storage ac-ft	Time int. hrs	Change in storage ac-ft	Change in storage cfs	Mean G. Ht. ft	Outflow cfs	Total inflow cfs	Rainfall on Pool in	Rainfall on Pool area ac	Rainfall on Pool Storage ac-ft	Rainfall on Pool Storage cfs	Net Inflow Rate cfs	Net Inflow Rate in/hr	Net Inflow in	Net Inflow Acc in
June 23 1969																
0000	15.05	122.81	-	-	-	-	-	-					-	-	-	-
0400	15.04+	122.66	4.0	- .15	- .45	15.05 -29	.06	0					0	.0000	.0000	.0000
0800	15.04+	122.64	|	- .02	- .06	15.04+	.05	0					0	.0000	.0000	.0000
1200	15.04	122.62	|	- .02	- .06	15.04	.03	0					0	.0000	.0000	.0000
1600	15.04-	122.61	4.0	- .01	- .03	15.04	.03	0					0	.0000	.0000	.0000
1800	15.04-	122.60	2.0	- .01	- .06	15.04-	.03	0					0	.0000	.0000	.0000
1900	15.04-	122.59	1.0	- .01	- .12	15.04-	.03	0					0	.0000	.0000	.0000
1945	15.05	122.81	.25	+ .22	+ 10.6	15.05	.06	10.7	.04	19.4	.065	2.1	7.6	.0023	.0023	.0023
1990	15.07	123.20	|	+ .39	+ 18.9	15.06 -09	.11	19.0	.03	19.4	.048	2.3	16.7	.0205	.0051	.0074
1945	15.11	123.98	|	+ .78	+ 37.8	15.09 -14	.24	38.0	.33	19.4	.534	25.8	12.2	.0150	.0088	.0112
2000	15.15	124.76	|	+ .78	+ 37.8	15.13 -25	.50	38.3	.49	19.5	.796	38.5	0	.0000	.0000	.0112
2015	15.19	125.54	|	+ .78	+ 37.8	15.17 -35	.95	38.8	.23	19.6	.376	18.2	20.6	.0253	.0069	.0175
2030	15.27	127.11	.25	+ 1.57	+ 76.0	15.23 -44	2.05	78.0	.04	19.6	.065	3.1	74.9	.0921	.0230	.0405
2035	15.31	127.90	.083	+ .79	+114.7	15.29 -53	3.40	118.1					118	.1451	.0121	.0526
2040	15.36	128.89	.083	+ .99	+143.7	15.34 -62	4.60	148.3					148	.1820	.0152	.0678
2045	15.41	129.88	.083	+ .99	+143.7	15.38 -73	5.92	149.0					149	.1832	.0153	.0831
2100	15.53	132.28	.25	+ 2.40	+116.2	15.47 -83	6.50	122.7					123	.1513	.0378	.1209
2130	15.67	135.11	.50	+ 2.83	+ 68.5	15.60 -98	6.50	75.0					75.0	.0922	.0461	.1670
2200	15.72	136.13	.50	+ 1.02	+ 24.7	15.70 -98	6.50	31.2					31.2	.0384	.0192	.1862
2300	15.76	136.94	1.0	+ .81	+ 9.8	15.74 -72	6.50	16.3					16.3	.0200	.0200	.2062
2400	15.76	136.94	1.0	.00	.0	15.76 -74	6.50	6.5					6.5	.0080	.0080	.2142

comp. by JWS
ck. by MWM

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

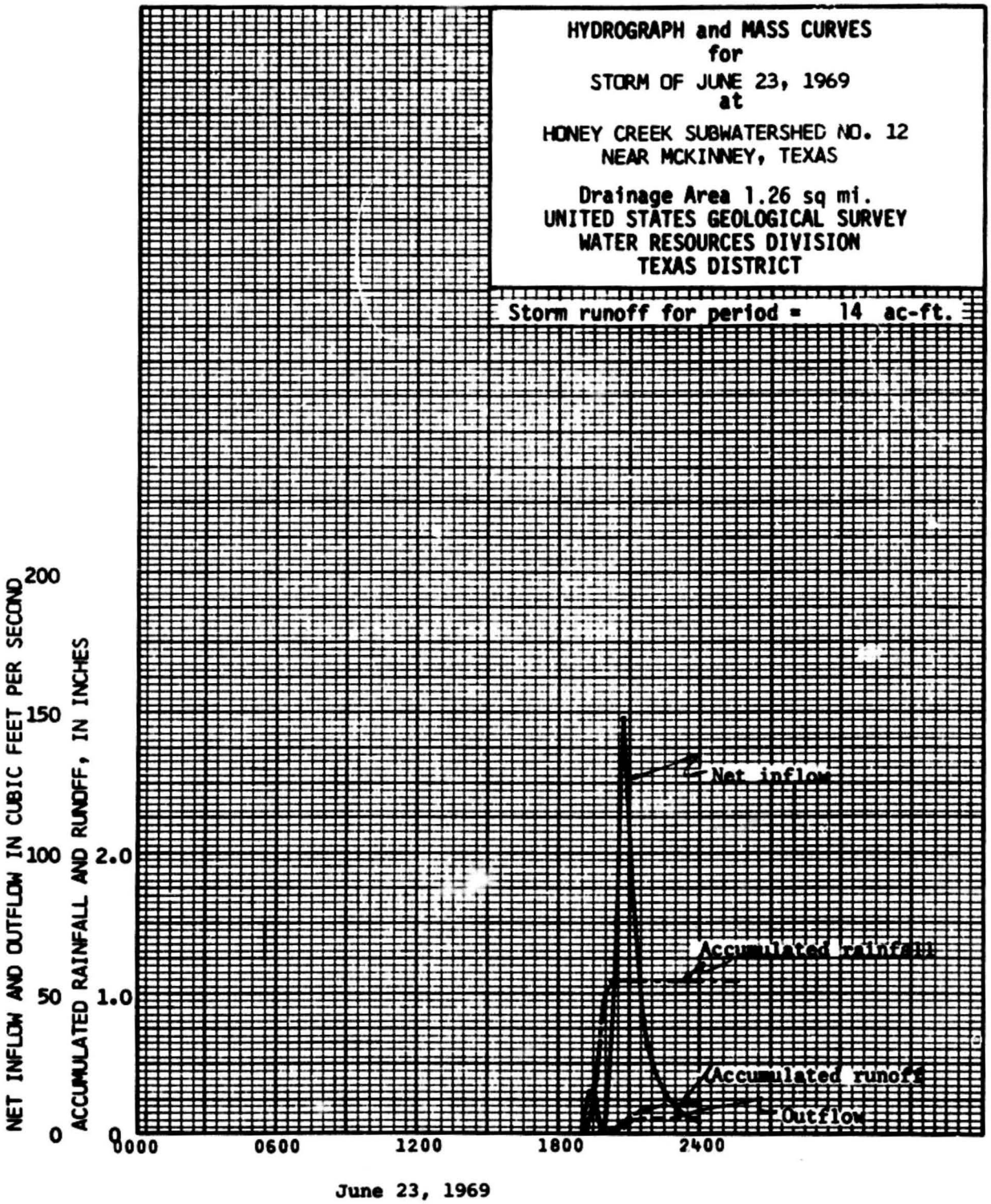
Sheet 1 of 1
Comp. by: JNS
Date 8-5-70
Check by RAN
Date 8-25-70

Study Area B-0580. Honey Creek Subwatershed No. 12 nr. McKinney, Tex. Date of storm June 23, 1969

Weight Factor		.7209		.2791										Accumulated Weighted Precipitation	
		Gage 12-R		Gage 16-R		Gage		Gage		Gage		Gage		Recording Gages	All Gages
Date & Time		Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	(Rec. Gages x K)	
June 23, 1969															
	1900	.00	.00	.00	.00									.00	.00
	1910	.00	.00	.00	.00									.00	.00
	1915	.01	.01	.00	.00									.01	.01
	1920	.06	.04	.00	.00									.04	.04
	1930	.18	.13	.20	.06									.19	.19
	1940	.48	.35	.65	.18									.53	.53
	1950	.78	.56	.90	.25									.81	.82
	1955	.88	.63	1.05	.29									.92	.93
	2000	.94	.68	1.12	.31									.99	1.00
	2010	1.00	.72	1.15	.32									1.04	1.05
	2020	1.05	.76	1.16	.32									1.08	1.09
	2030	1.05	.76	1.16	.32									1.08	1.09
	2040	1.05	.76	1.16	.32									1.08	1.09

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
10-S	.0581	1.21	0.07								
12-R	.6628	1.05	.70								
16-R	.2791	1.16	.32								
										WMR = 1.09	

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation : 1.09/1.08 = 1.009


HYDROGRAPH and MASS CURVES
for
STORM OF JUNE 23, 1969
at
HONEY CREEK SUBWATERSHED NO. 12
NEAR MCKINNEY, TEXAS
Drainage Area 1.26 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 14 ac-ft.
NET INFLOW AND OUTFLOW IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
200
150
100
50
0
2.0
1.0
0
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
0000
0600
1200
1800
2400
June 23, 1969

TX.-65 (Rev. 7-69)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

RUNOFF COMPUTATIONS

Station 8-0585. Honey Creek near McKinney, Tex.

Period of Record June 23-24, 1969 Drainage Area 39.0 sq. mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge C.f.s.	Inc.	In/Hr.	Runoff Inches	Acc. In.
	June 23, 1969						
0000	1.44	0	15	2.0	.0006	.0018	.0018
0600	1.43		15	6.0	.0006	.0036	.0054
1200	1.42		14	6.0	.0006	.0036	.0090
1800	1.41		14	3.5	.0006	.0021	.0111
1900	1.41		14	.75	.0006	.0004	.0115
1930	1.42		14	.50	.0006	.0003	.0118
2000	1.80		36	.50	.0014	.0007	.0125
2030	2.25		76	.50	.0030	.0015	.0140
2100	2.65		127	.50	.0050	.0025	.0165
2130	3.70		224	.50	.0089	.0044	.0209
2200	5.10		337	.50	.0134	.0067	.0276
2230	6.20		436	.50	.0173	.0086	.0362
2300	6.90		500	.50	.0199	.0100	.0462
2330	7.14		525	.50	.0209	.0104	.0566
2400	7.03	0	513	.25	.0204	.0051	.0617
	June 24						
0000	7.03	0	513	.25	.0204	.0051	.0668
0030	6.62		474	.50	.0188	.0094	.0762
0100	6.00		418	.50	.0166	.0083	.0845
0130	5.33		358	.50	.0142	.0071	.0916
0200	4.70		304	.50	.0121	.0060	.0976
0230	4.25		268	.50	.0106	.0053	.1029
0300	3.95		244	.50	.0097	.0044	.1073
0330	3.73		226	.50	.0090	.0045	.1118
0400	3.58	0	214	.50	.0085	.0042	.1160
0500	3.35	0	196	.75	.0078	.0058	.1218
0600	3.20		184	1.5	.0073	.0110	.1328
0800	2.98		166	2.0	.0066	.0132	.1460
1000	2.82		151	2.0	.0060	.0120	.1580
1200	2.67		130	2.0	.0052	.0104	.1684
1400	2.57		115	2.0	.0046	.0092	.1776
1600	2.46		100	2.0	.0040	.0080	.1856
1800	2.39		91	2.0	.0036	.0072	.1928
2000	2.32		83	2.0	.0033	.0066	.1994
2200	2.26		77	2.0	.0031	.0062	.2056
2400	2.21	0	72	1.0	.0029	.0029	.2085

Computed by J.N.S. Date 7-14-70 Checked by R.O.H. Date 8-25-70

TX-78 (Revised July 1969)

UNITED STATES DEPTMENT OF INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
TEXAS DISTRICT

WEIGHTED-PRECIPITATION RECORD

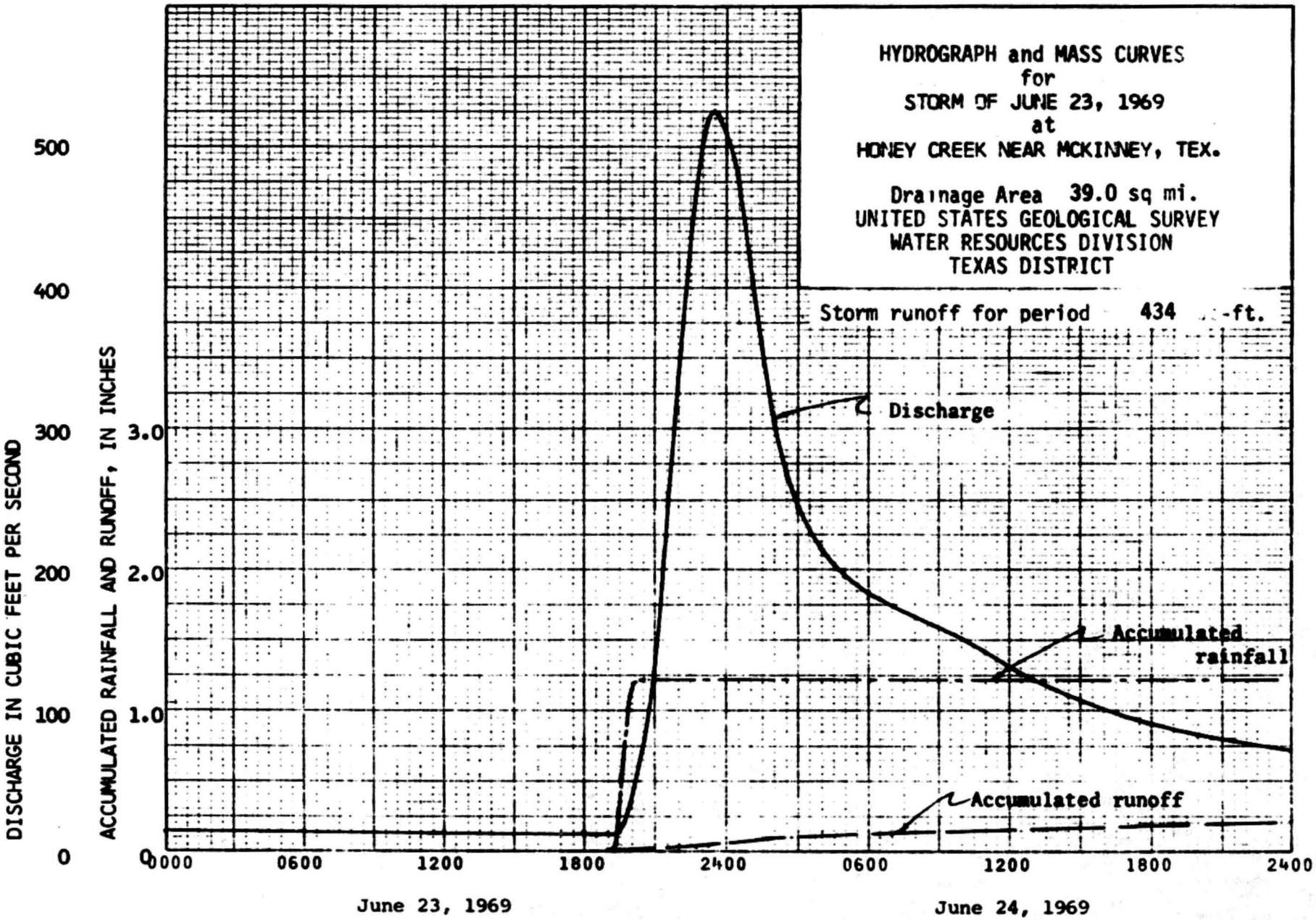
Sheet 1 of 1
Comp. by: JNS
Date 8-5-70
Check by ROH
Date 8-25-70

Study Area 8-0585. Honey Creek near McKinney, Tex. Date of storm June 23, 1969

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	.4616		.2254		.0868		.0714		.0648		.0900			
	Gage 5-R		Gage 9-R		Gage 12-R		Gage 13-R		Gage 15-R		Gage 16-R		Recording Gages	(Rec. Gages x K)
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	All Gages	All Gages
June 23, 1969														
1900	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1910	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
1915	.00	.00	.02	.00	.01	.00	.01	.00	.00	.00	.00	.00	.00	.00
1920	.08	.03	.11	.02	.04	.01	.02	.00	.00	.00	.00	.00	.05	.05
1930	.54	.25	.30	.07	.18	.02	.25	.02	.05	.00	.20	.02	.38	.36
1940	.75	.35	.80	.18	.48	.04	.90	.06	.20	.01	.65	.06	.70	.66
1950	1.15	.53	1.20	.27	.78	.07	1.25	.09	.50	.03	.90	.08	1.07	1.01
1955	1.25	.58	1.26	.28	.88	.08	1.35	.10	.75	.05	1.05	.09	1.18	1.12
2000	1.30	.60	1.30	.29	.94	.08	1.37	.10	.86	.06	1.12	.10	1.23	1.16
2010	1.34	.62	1.32	.30	1.00	.09	1.40	.10	1.07	.07	1.15	.10	1.28	1.21
2020	1.34	.62	1.32	.30	1.05	.09	1.40	.10	1.14	.07	1.16	.10	1.28	1.21
2030	1.34	.62	1.32	.30	1.05	.09	1.40	.10	1.18	.08	1.16	.10	1.29	1.22
2040	1.34	.62	1.32	.30	1.05	.09	1.40	.10	1.20	.08	1.16	.10	1.29	1.22

Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
1-S		1.42		7-S		1.20		13-R		1.40	
2-S		1.08		8-S		1.13		14-S		1.10	
3-S		1.11		9-R		1.32		15-R		1.20	
4-S		1.27		10-S		1.21		16-R		1.16	
5-R		1.34		11-S		1.24				K 19.47	
6-S		1.24		12-R		1.05				WMR = 1.22	

WMR : Sum of Precipitation x Weight Factor K : WMR / Total Recording Gages Weighted Precipitation : 1.22/1.29 = 0.946


HYDROGRAPH and MASS CURVES
for
STORM OF JUNE 23, 1969
at
HONEY CREEK NEAR MCKINNEY, TEX.
Drainage Area 39.0 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period 434 -ft.
Discharge
Accumulated rainfall
Accumulated runoff
DISCHARGE IN CUBIC FEET PER SECOND
ACCUMULATED RAINFALL AND RUNOFF, IN INCHES
0
100
200
300
400
500
1.0
2.0
3.0
0000
0600
1200
1800
2400
0600
1200
1800
2400
June 23, 1969
June 24, 1969