Compilation of Hydrologic Data Green Creek, Brazos River Basin, Texas 1968

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - WATER RESOURCES DIVISION
Texas District
Trigg Twichell, District Chief

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

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DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
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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. In June 1968, the Soil Conservation Service estimated approximately 3,500 structures to be physically and economically feasible for installation in Texas. As of September 30, 1968, 1,271 of these structures had been built.

This watershed-development program will have varying but important effects on the surface- and ground-water resources of river basins, especially where a large number of the floodwater-retarding structures are built. Basic hydrologic data are needed to appraise the effects of structures on water 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 11 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 11 study areas were chosen to sample watersheds having different rainfall, topography, geology, and soils. In four of the study areas (Mukewater, North, Little Elm, 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 on each study area as of September 30, 1968, is shown in table 1.

Purpose and Scope of this Basic-Data Report

This report, which is the ninth in a series of basic-data reports published annually for the Green Creek study area, contains the rainfall and runoff data collected during the 1968 water year for the 46.1-square-mile area above the stream-gaging station Green

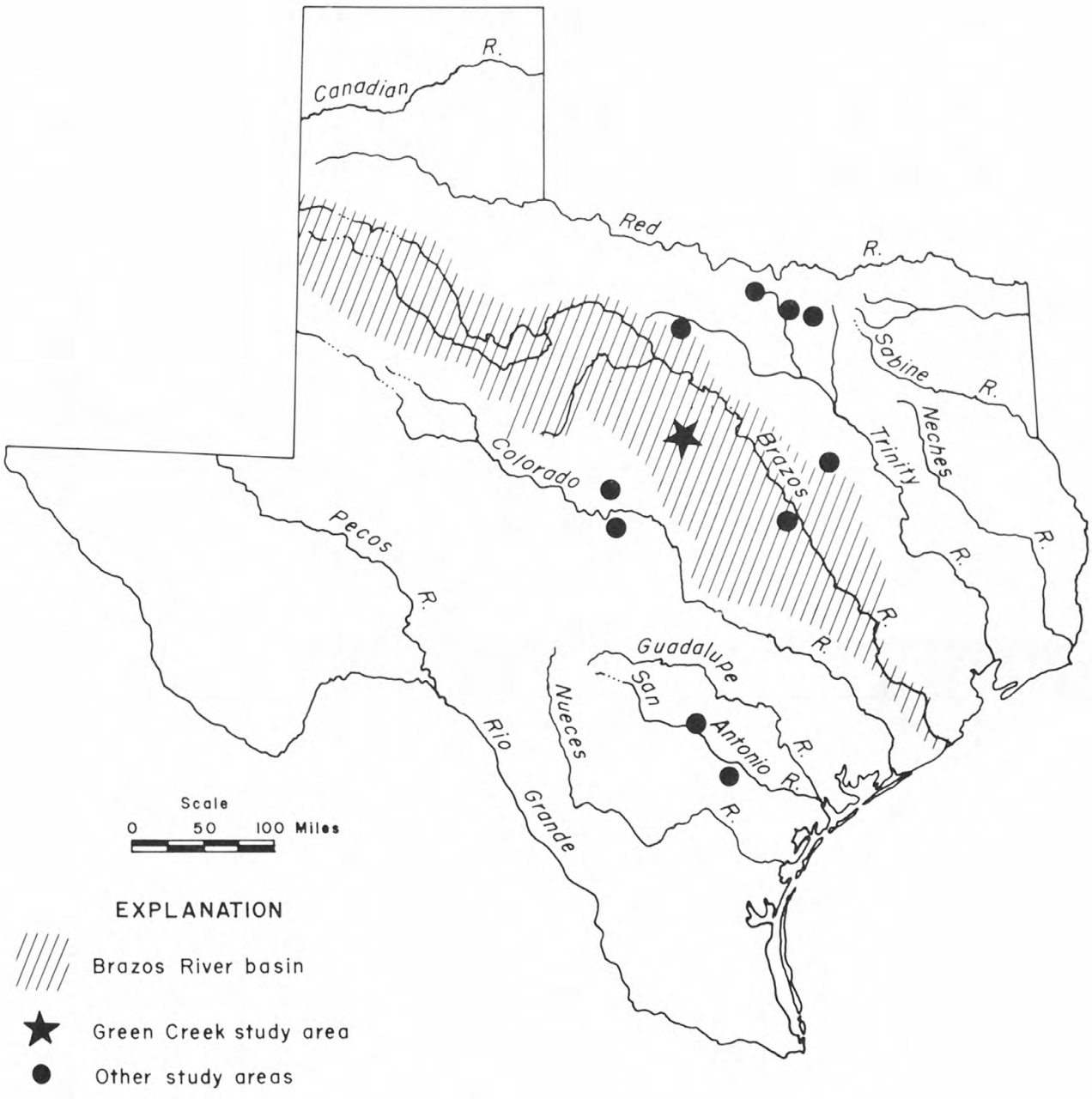

Figure 1.—Location of the Green Creek study area

Table 1.--Small watershed study areas in Texas as of Sept. 30, 1968

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	12	1951-57
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	79.6	Sept. 1954	26	1955-58, 64-65
Colorado River basin:				
Deep Creek near Mercury	*43.9	June 1951	5	1951-53
Mukewater Creek at Trickham	70.0	Aug. 1951	6	1961-62, 65
San Antonio River basin:				
Calaveras Creek near Elmendorf	77.2	Aug. 1954	7 1/	1954-58
Escondido Creek at Kenedy	**72.4	July 1954	10	1954-58

* 8.31 sq mi above Dry Prong Deep Creek near Mercury not included in this total.
** 8.43 sq mi above Escondido Creek subwatershed No. 11 (Dry Escondido Creek) near Kenedy not included in this total.
1/ Two additional structures, sites 1 and 4, were destroyed during the 1968 water year due to construction of Calaveras Dam.

Creek near Alexander, Texas. The location 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 before and after floodwater-retarding structures were built.

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.

DESCRIPTION OF THE WATERSHED

The headwaters of Green Creek originate in the western part of Erath County, about 2 miles north of Bunyon, Texas. The creek flows southeasterly for about 26 miles to the North Bosque River, near the community of Clairette in southern Erath County. The major tributaries of Green Creek above the Geological Survey stream-gaging station at State Highway 6, 1.7 miles northwest of Alexander, are Buck Branch, Cat Branch, and Bell Branch. Green Creek drains a triangular basin of 105 square miles at the mouth and 46.1 square miles above the Geological Survey stream-gaging station (study area).

Altitudes in the study area range from 1,500 feet above mean sea level at the headwater divide to 1,180 feet above mean sea level at the stream-gaging station. The total length of Green Creek from the headwater to the stream-gaging station is about 13.5 miles, with an average gradient of about 23.7 feet per mile. An escarpment rises to a gently rolling plain about 100 feet above the flood plain in the reach near the stream-gaging station. The main valley of Green Creek ranges in width from 1,300 feet in the lower reaches to 300 feet near the headwaters.

The soils in the northwestern part of the study area are mostly deep and medium textured, with some coarse-textured surface soils overlying crumbly subsoils. These soils were developed from unconsolidated gray or brown sands. Soils in the southwestern part of the watershed are developed from limestone and shale formations, dark colored, and fine textured. Approximately 54 percent of the soil in the watershed is deep, 34 percent is shallow, and 12 percent is very shallow.

The climate of the study area is temperate and subhumid with a prevailing south wind. Thunderstorms occur frequently in the

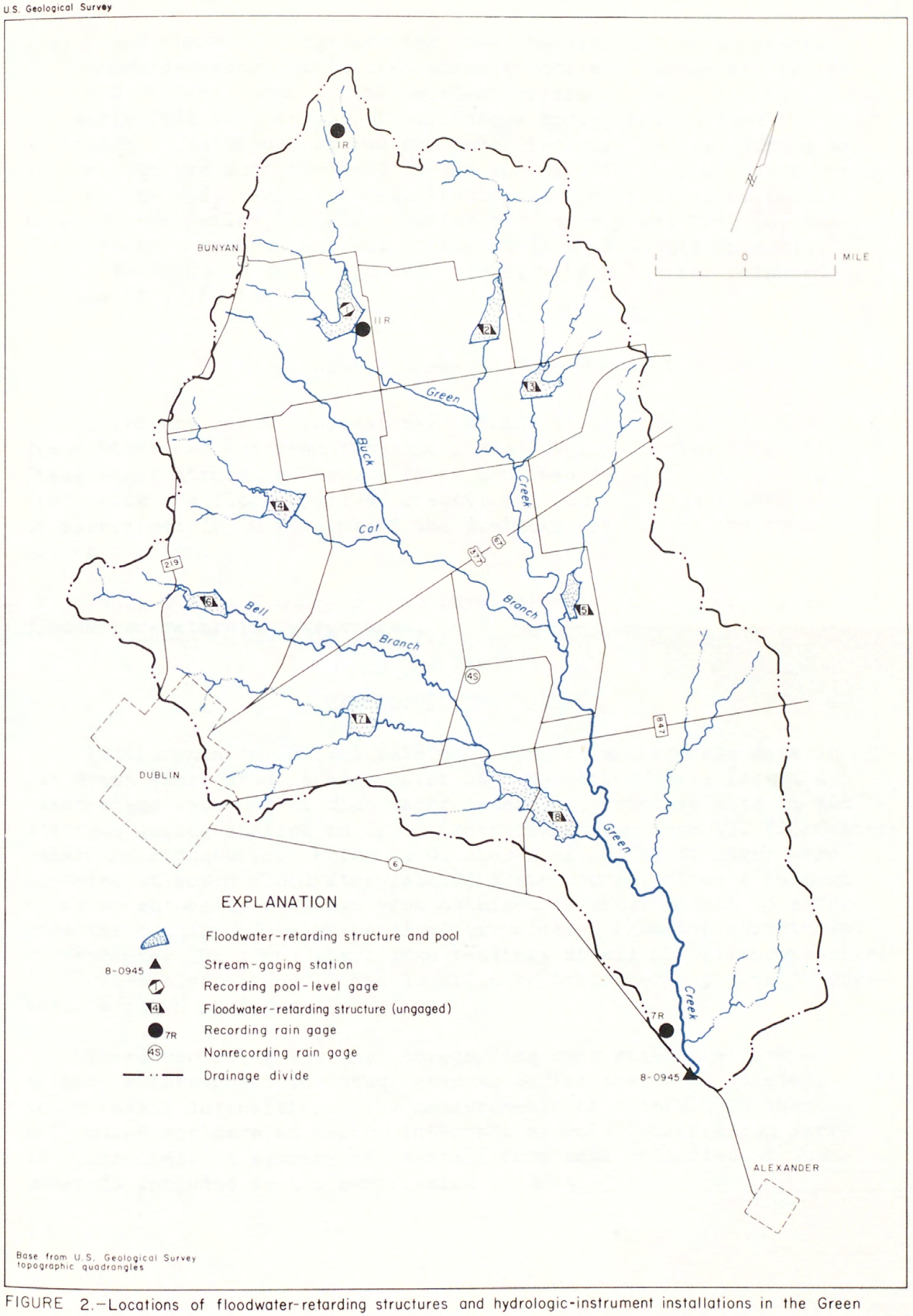

FIGURE 2.—Locations of floodwater-retarding structures and hydrologic-instrument installations in the Green Creek study area

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 normal annual rainfall at the U.S. Weather Bureau station at Dublin is 31.67 inches, based on the period 1931-60. During the water years 1955-68, the weighted-mean annual rainfall on the study area ranged from 21.03 inches in 1956, to 36.06 inches in 1968, with a 13-year weighted average of 29.69 inches.

FLOODWATER-RETARDING STRUCTURES

There are eight floodwater-retarding structures in the Green Creek watershed upstream from the stream-gaging station (fig. 2). These eight structures have a total combined capacity of 7,500 acre-feet below the flood-spillway crests, and control 22.3 square miles, or approximately 50 percent of the drainage area above the stream-gaging station.

Table 2 is a summary of the physical data at each of the eight floodwater-retarding structures.

HYDROLOGIC INSTRUMENTS

Instruments to collect rainfall, runoff, and storage data in the Green Creek study area consist of a network of rain gages, a water-stage recorder at floodwater-retarding structure site 1, and a stream-gaging station on Green Creek downstream from all floodwater-retarding structures. Prior to October 1, 1966, staff gages were operated at seven floodwater-retarding structures, sites 2 through 8, at which weekly readings were obtained to provide data to determine the quality of water retained or released from the structures. On September 30, 1966, staff gage readings at all miscellaneous sites (2-8) were discontinued. The location of instruments presently operated is shown on figure 2.

Three recording and one nonrecording rain gages are located at points throughout the study area to define the total rainfall and rainfall intensities. The measurements of rainfall at these rain gages are made at weekly intervals by Soil Conservation Service personnel. A summary of rainfall from data collected at these gages is included in the compilation of data.

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

Site Number	Drainage Area (sq mi)	Date Dam Completed	Date Gage Established	Datum of Gage above Mean Sea Level	Emergency Spillway			Drop Outlet		Portholes			Controlled Opening		Pipe through Dam (in.)	Range of Staff Gages
					Number and Width (ft)	Gage Height (ft)	Content (ac-ft)	Gage Height (ft)	Pool Content (ac-ft)	Number and Size (in.)	Gage Height at Bottom (ft)	Pool Content (ac-ft)	Gage Height at Bottom (ft)	Pool Content (ac-ft)		
1	3.34	4-25-55	5-12-55	1,408.0	1 (250)	21.8	1,097	11.0	223	-	-	-	3.76	34	14	3.4-26.6
2	2.52	2-27-55	10-18-55	1,381.0	1 (200)	25.0	726	15.0	111	1 12"x24"	10.67 plugged	28	7.33	6.0	14	
3	1.58	9- 5-54	10-18-55	1,369.8	1 (150)	24.6	590	15.0	108	-	-	-	7.00	.4	14	
4	1.99	6- 5-55	10-18-55	1,401.5	1 (175)	26.5	642	15.0	48	-	-	-	8.00	0	a/22	
5	2.20	9-29-55	4-12-56	1,306.4	1 (200)	26.4	692	15.0	147	-	-	-	1.00	4	b/22	
6	1.20	10- 5-55	10-18-55	1,422.4	1 (100)	29.9	647	15.0	68	-	-	-	7.00	6.2	c/17	
7	3.20	3-28-56	4-12-56	1,347.0	1 (200)	28.3	1,166	15.0	148	-	-	-	5.00	16.6	d/17	
8	*10.66	9-24-56	12-10-56	1,256.0	2 (100) (300)	37.0	1,906	18.0	294	2 8"x8" 2 8"x10"	15.0	188	0	40	17	

* The 4.40 sq mi above sites 6 and 7 is included in this total.
a/ 10-inch baffle.
b/ 9-inch baffle.
c/ 11-inch baffle.
d/ 12-inch baffle.

A continuous water-stage recording gage is operated at floodwater-retarding pool site 1, at which data are collected to measure the contents, and to compute the surface area, inflow, and outflow. Records at site 1 began May 12, 1955. Monthly and annual summary of the water budget for the 1968 water year at site 1 is shown in the compilation of data.

A continuous water-stage recorder at the stream-gaging station on Green Creek near Alexander 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 May 27, 1958.

SUMMARY OF DATA FOR 1968 WATER YEAR

Rainfall and Runoff

The weighted-mean rainfall over the study area during the 1968 water year was 36.06 inches, or 114 percent of the 1931-60 long-term mean annual rainfall of 31.67 inches at Dublin, Texas. The monthly-rainfall totals ranged from 1.28 inches in December to 7.58 inches in January. The mean daily discharge at the stream-gaging station Green Creek near Alexander was 14.6 cfs (cubic feet per second), compared with the 10-year average of 5.48 cfs. The annual runoff at the stream-gaging station was 10,610 acre-feet. This runoff represents an equivalent depth of 4.32 inches.

The weighted-mean rainfall above subwatershed No. 1 was 35.00 inches and the runoff was 1,160 acre-feet. This runoff represents an equivalent depth of 6.51 inches.

A storm event 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 for the storm periods selected.

Six storm periods were selected for detailed computation. These computations include detailed time breakdown of rainfall and discharge, hydrographs, and mass curves. The storms selected occurred on January 18, 1968; January 19-20, 1968; March 20, 1968; May 9, 1968; May 10-11, 1968; and May 12-13, 1968. A summary of rainfall-runoff data for these storms is shown in table 3. Computations along with hydrographs and mass curves for the storms are shown in the compilation of data.

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

ANNUAL STORM RAINFALL-RUNOFF SUMMARY DATA

Table 3.--Storm rainfall-runoff data, 1968 water year

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			
Green Creek near Alexander, Texas (Drainage area, 46.1 sq mi, of which 22.3 sq mi is above floodwater-retarding structures)								
Jan. 18, 1968	11	1.78	0.13	0.25	0.47	0.04	0.02	236
Jan. 19-21, 1968	53	4.74	.10	.16	.28	1.10	.26	1,450
Mar. 20, 1968	11	1.69	.33	.55	.94	.50	.30	2,990
May 9, 1968	4.8	.85	.26	.35	.39	n/	-	21
May 10-11, 1968	6.0	1.48	.38	.64	.96	.30	.20	1,550
May 12-13, 1968	13	1.31	.33	.52	.73	.31	.24	1,140
Green Creek subwatershed No. 1 near Dublin, Texas (Drainage area, 3.34 sq mi)								
Jan. 18, 1968	11	1.78	0.13	0.26	0.52	0.20	0.11	121
Jan 19-21, 1968	49	4.90	.12	.22	.36	1.68	.34	234
Mar. 20, 1968	4.5	1.72	.26	.51	.96	.98	.57	1,260
May 9, 1968	4.5	.74	.16	.21	.26	.02	.03	11
May 10-11, 1968	6.0	.77	.35	.40	.44	.27	.35	187
May 12, 1968	3.0	2.33	.69	1.17	1.63	1.81	.76	3,540

n/ No significant runoff.

C O M P I L A T I O N O F D A T A

8-0940. Green Creek subwatershed No. 1 near Dublin, Tex.

Location.--Lat 32°09'57", long 98°20'28", near center of dam on main headwater channel of Green Creek, 0.9 mile downstream from county road, 1.3 miles east of Farm Road 219, and 5.5 miles north of Dublin, Erath County.

Drainage area.--3.34 sq mi.

Records available.--May 1955 to September 1968.

Gage.--Water-stage recorder. Datum of gage is 1,408.00 ft above mean sea level, datum of 1929 (levels by Soil Conservation Service).

Average inflow.--13 years, 572 acre-ft per year.

Average outflow.--13 years, 410 acre-ft per year.

Extremes.--Maximum outflow during year, 15.7 cfs May 13 (gage height, 16.49 ft); no outflow most of time. Maximum inflow during year, 3,540 cfs (average for 5-minute interval) May 12, computed from change in pool contents and adjusted for outflow and rainfall on pool surface during time of peak inflow; no inflow for many days.
1955-68: Maximum outflow, 709 cfs May 1, 1956 (gage height, 23.21 ft); no outflow for most of time each year. Maximum inflow, 11,500 cfs (average for 5-minute interval) Apr. 30, 1956, computed and adjusted as above; no inflow for many days each year.

Remarks.--Records good. The pool is formed by a rolled earthfill dam 3,000 ft long. The dam was completed Apr. 25, 1955, and storage began shortly thereafter. The outlet structure consists of a 30-inch square concrete drop inlet that is connected to a 14-inch concrete outlet pipe. The gage height at top of the drop inlet is 11.0 ft. The emergency spillway is a 250-foot wide cut in natural ground at the right end of dam. The gage height at crest of emergency spillway is 21.8 ft. There is a clean-out gate valve at the end of an 8-inch pipe which connects to the lower end of the drop inlet box at a gage height of 3.76 ft. The pool capacity at the crest of emergency spillway is 1,097 acre-ft; at top of drop inlet, 223 acre-ft; and at controlled outlet pipe, 48.0 acre-ft. The dam was built by the Soil Conservation Service for flood control. A permit issued by the Texas Water Rights Commission grants 181 acre-ft per year for irrigation. During the water year 1968, no known releases were made for irrigation purposes. Two recording rain gages are located in the watershed; one at station, and one in the watershed above station. The surface area and capacity tables are based on a Soil Conservation Service sedimentation survey of June 1967.

POOL WATER BUDGET, IN ACRE-FEET, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Inflow 1/	2.5	3.8	4.1	369	17.3	290	35.1	410	7.8	22.0	1.3	2.0
Outflow	0	0	0	263	9.9	281	17.5	393	2.6	0	0	0
(++)	1.96	1.91	0.94	8.01	1.59	4.20	2.12	5.39	2.66	2.51	2.20	1.51

Calendar year 1967: Inflow 78.1 Outflow 17.0 ++ 24.49
Water year 1967-68: Inflow 1,160 Outflow 967 ++ 35.00

Peak inflow (base, 100 cfs)

Date	Time	Discharge
1-18	1215	**121
1-20	0020	*234
3-20	0745	*1,260
5-11	0300	*187
5-12	2250	*3,540

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

8-229 c
(Oct. 1951)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0940.00

Monthly and ~~annual discharge~~ yearly weighted-mean rainfall, in inches, of Subwatershed No. 1 Green Creek River at near Dublin, Tex.

[Drainage area, 3.34 square miles]

16—25489-5 U. S. GOVERNMENT PRINTING OFFICE

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL	
1955	-	-	-	-	-	-	-	-	3.88	0.50	0.73	2.96	-	
1956	1.17	0.51	0	1.11	1.46	0	14.28	2.87	.50	.16	.75	0	22.81	
1957	1.82	1.26	3.01	.71	.96	2.78	7.92	9.52	1.06	1.64	.36	3.00	34.04	
1958	4.82	5.65	1.64	2.09	1.47	2.56	5.41	1.93	2.23	5.34	1.09	4.17	38.40	
1959	2.03	1.34	.96	0	.81	.33	2.04	2.01	8.26	4.58	2.43	3.49	28.28	
1960	10.34	1.39	2.84	2.12	1.40	1.17	1.57	2.94	2.55	2.79	1.82	1.92	32.85	
1961	1.43	.20	3.34	5.40	3.53	1.60	.68	2.96	4.35	5.69	.10	3.33	32.61	
1962	4.48	2.02	.98	.16	1.12	.67	2.75	.83	3.23	2.99	1.43	6.44	27.10	
1963	4.64	1.38	.64	.26	.06	.12	3.97	4.36	2.00	1.39	1.59	2.50	22.91	
1964	1.57	6.01	.63	3.03	1.56	1.75	3.47	.45	.93	.96	4.83	10.95	36.14	
1965	1.90	3.35	.55	1.75	2.85	.39	1.40	7.72	.81	1.32	1.67	1.43	25.14	
1966	3.01	1.96	1.74	.96	1.25	.04	6.24	.82	3.82	.85	4.00	5.35	30.04	
1967	.52	.34	.11	.08	.44	1.88	2.04	3.10	2.16	3.06	.50	6.42	20.63	
1968	1.96	1.91	.94	8.01	1.59	4.20	2.12	5.39	2.66	2.51	2.20	1.51	35.00	

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(Oct. 1961)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0940.00

Monthly and ~~annual discharge~~ yearly Net Inflow, in acre-feet, of Green Creek Subwatershed No. 1 River at near Dublin, Tex.

[Drainage area, 3.34 square miles]

16—26489-5 U. S. GOVERNMENT PRINTING OFFICE

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1955	-	-	-	-	-	-	-	783	23.6	1.98	2.9	32.8	-
1956	21.3	4.2	0.2	21.1	9.4	0	1,020	95.6	1.1	.1	.3	0	1,170
1957	.7	3.3	63.3	5.1	6.0	10.5	358	619	0	20.5	.1	1.7	1,090
1958	55.7	107	3.3	5.2	.5	20.7	53.2	59.9	.4	115	.3	9.6	431
1959	.1	3.6	.2	0	1.2	.1	12.1	.1	191	14.4	.6	17.1	240
1960	501	52.9	17.7	71.7	13.6	10.0	.1	55.0	21.0	19.9	.2	0	763
1961	.2	.3	6.3	53.6	44.9	1.1	.9	5.8	3.3	65.4	.4	3.5	186
1962	229	2.6	2.1	.2	.8	.4	7.3	.3	5.4	7.2	10.3	148	414
1963	79.8	5.3	.2	0	0	.1	96.1	69.7	8.3	1.4	.7	8.2	270
1964	16.3	139	3.1	25.0	54.4	6.5	87.1	2.5	8.8	1.0	77.1	505	926
1965	15.2	69.8	7.9	9.0	65.6	12.3	8.7	245	.9	8.3	3.4	.3	446
1966	10.3	2.1	1.2	2.6	1.7	.9	87.5	25.2	79.5	3.1	6.0	43.7	264
1967	5.8	.7	2.0	.5	2.8	5.9	5.2	2.1	1.9	2.9	.8	45.6	76.2
1968	2.5	3.8	4.1	369	17.3	290	35.1	410	7.8	22.0	1.3	2.0	1,160

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(Oct. 1951)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0940.00

Monthly and ~~annual discharge~~ yearly Outflow, in acre-feet, of Green Creek Subwatershed No. 1 River at near Dublin, Tex.

[Drainage area, 3.34 square miles]

16—25480-5 U. S. GOVERNMENT PRINTING OFFICE

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL	
1955	-	-	-	-	-	-	-	414	243	0	17.3	13.1	-	
1956	6.0	6.0	0	17.9	0	0	5.8	984	14.7	21.4	12.9	12.3	1,080	
1957	0	0	0	0	0	0	128	684	57	0	0	0	869	
1958	0	46.2	3.1	3.1	4.4	3.1	17.9	75.2	0	58.1	0	0	211	
1959	0	3.0	0	0	0	0	7.2	0	46.2	0	0	0	56.4	
1960	502	59.5	.2	73.0	7.3	0	0	26.0	15.2	13.7	3.1	2.0	702	
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	
1962	158	0	0	0	0	0	0	2.0	0	0	0	44.6	205	
1963	63.8	0	0	0	0	5.0	19.8	40.6	21.5	8.9	0	5.6	165	
1964	0	29.6	0	23.2	60.1	2.3	59.3	3.8	4.8	18.4	0	329	530	
1965	111	64.6	6.1	6.1	44.0	2.0	0	245	0	0	0	0	479	
1966	0	0	0	0	0	0	0	.6	49.8	0	0	0	50.4	
1967	0	0	0	0	0	0	0	0	6.0	5.0	6.0	0	17.0	
1968	0	0	0	263	9.9	281	17.5	393	2.6	0	0	0	967	

TX-74a
Rev. 6-68

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

WATER BUDGET OF POOLS

ANNUAL SUMMARY

1968 WATER YEAR

8-0940. Green Creek subwatershed No. 1 near Dublin, Tex. Drainage Area 3.34 sq. mi.

Continuous water-stage recorder: ratio 10:12. Date of last sediment survey June 1967.

Maxima: gage height, 16.49 ft; outflow, 15.7 c.f.s.; surface area, 82.4 acres; contents, 547 acre-feet; on May 13, 1968.

Minima: gage height, 7.14 ft; surface area, 21.7 acres; contents, 106 acre-feet; on Dec. 14, 1967, Jan. 17, 1968

Maximum inflow, 3,540 c.f.s. (averaged for 5-min. interval and adjusted for rainfall on pool surface) on May 12, 1968.

Averages: 13 water years, (1955-68); inflow, 572 acre-feet/year; outflow, 410 acre-feet/year; rainfall, 29.66 inches/year.

Pool water budget, in acre-feet, water year October 1967 to September 1968.

	Oct.	Nov.	Dec.	Calendar year 1967	Jan.	Feb.	Mar.	Apr.	May.	June	July	Aug.	Sept.	Water year 1968
Total Inflow 1/	2.5	3.8	4.1	78.1	369	17.3	290	35.1	410	7.8	22.0	1.3	2.0	1,160
Total Outflow	0	0	0	17.0	263	9.9	281	17.5	393	2.6	0	0	0	967
Total Consumption	13.8	8.9	7.2	169	10.2	12.3	22.8	26.9	33.8	26.3	34.8	31.8	22.7	252
†	-8.1	-2.0	-2.0	-63.5	+119	-4.0	+1.2	-3.6	+1.2	-14.3	-5.2	-23.7	-16.4	+42.1
‡	23.0	22.2	21.9		31.0	39.6	42.2	39.6	46.3	38.7	38.7	35.3	32.0	
††	1.96	1.91	0.94	24.49	8.01	1.59	4.20	2.12	5.39	2.66	2.51	2.20	1.51	35.00

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, 100 c.f.s.)

Date	Time	Discharge	Date	Time	Discharge
1-18	1215	121**	5-11	0300	187*
1-20	0020	234*	5-12	2250	3,540*
3-20	0745	1,260*			

* 5-minute interval
**15-minute interval

8-0945. Green Creek near Alexander, Tex.

Location.--Lat 32°04'20", long 98°14'00", at downstream side of bridge on State Highway 6, 0.2 mile upstream from Missouri-Kansas-Texas Railroad Co. bridge, 1.0 mile upstream from Cottonwood Creek, and 1.7 miles northwest of Alexander, Erath County.

Drainage area.--46.1 sq mi.

Records available.--October 1954 to April 1958 (annual maximum only), May 1958 to September 1968.

Gage.--Water-stage recorder and crest-stage gage. Datum of gage is 1,172.00 ft above mean sea level, datum of 1929, Fort Worth supplementary adjustment of 1942. Prior to May 27, 1958, crest-stage gage only.

Average discharge.--10 years, 5.48 cfs (3,970 acre-ft per year).

Extremes.--Maximum discharge during year, 2,990 cfs Mar. 20 (gage height, 11.86 ft); no flow at times.
1954-68: Maximum discharge, 23,900 cfs Apr. 30, 1956 (gage height, 23.95 ft); no flow at times each year.
Maximum stage since at least 1910, 28.0 ft May 23, 1952 (discharge, 55,800 cfs, from contracted-opening measurement).

Remarks.--Records good. At end of year, flow from 22.3 sq mi above this station was partly controlled by eight floodwater-retarding structures with a total combined capacity of 7,500 acre-ft below flood-spillway crests, of which 6,570 acre-ft is floodwater-retarding capacity and 930 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. Four rain gages (1 standard and 3 recording) are operated in the basin.

DISCHARGE, IN CFS, WATER YEAR OCTOBER 1967 TO SEPTEMBER 1968

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
1				0	21	3.2	8.2	2.6	5.2	.41	.04	.03
2				0	14	2.9	7.8	2.4	7.5	24	.03	.02
3				0	7.2	2.6	6.6	2.4	4.4	5.1	.03	.02
4				0	4.6	2.4	5.7	6.6	3.8	1.8	.02	.02
5				0	3.6	2.4	5.1	4.6	4.0	.94	.02	.02
6				0	3.1	2.8	4.6	3.1	4.0	.70	.02	.02
7				0	2.6	2.6	4.0	2.8	3.4	.54	.02	.02
8				0	2.4	2.4	3.8	2.8	3.1	13	.02	.02
9				0	2.2	2.6	9.3	5.0	2.1	11	.02	.01
10				0	2.2	2.6	9.8	85	1.7	3.2	.02	.01
11				0	2.2	283	7.8	248	1.5	2.0	.01	0
12				0	2.0	99	7.5	42	1.3	1.3	.02	0
13				0	2.1	62	8.5	291	1.2	.94	.03	0
14				0	4.3	32	6.0	91	1.0	.78	119	0
15				0	4.6	20	4.4	61	.94	.62	7.6	0
16				0	3.6	15	4.2	52	.86	.47	2.9	0
17				0	3.1	12	4.0	44	1.0	.41	1.4	0
18				38	2.9	9.4	4.0	39	1.2	.32	.70	0
19				12	6.6	8.5	4.6	34	1.0	.41	.36	0
20				584	5.4	620	4.0	26	.86	2.8	.17	0
21				655	4.0	96	3.8	20	.78	.94	.11	0
22				126	4.0	84	3.6	19	.86	.41	.07	0
23				93	3.8	76	2.9	17	.78	.36	.04	0
24				88	3.4	72	3.2	13	.78	.24	.03	0
25				79	3.2	66	3.8	7.8	.78	.20	.03	0
26				66	2.8	45	4.0	7.2	.70	.20	.03	0
27				58	2.6	25	3.8	6.3	.54	.15	.03	0
28				48	3.6	20	6.0	5.1	.54	.13	.03	0
29				36	3.8	16	8.3	4.4	.62	.13	.03	0
30				24	-------	13	3.2	4.0	.47	.09	.02	0
31		-------		21	-------	10	-------	3.8	-------	.06	.03	-------
TOTAL	0	0	0	1,928	130.9	1,710.4	162.5	1,152.9	56.91	73.65	132.88	0.19
MEAN	0	0	0	62.2	4.51	55.2	5.42	37.2	1.90	2.38	4.29	0.006
MAX	0	0	0	655	21	620	9.8	291	7.5	24	119	0.03
MIN	0	0	0	0	2.0	2.4	2.9	2.4	0.47	0.06	0.01	0
AC-FT	0	0	0	3,820	260	3,390	322	2,290	113	146	264	0.4
(††)	2.20	1.93	1.28	7.58	1.77	3.86	2.34	5.30	2.18	2.95	2.89	1.77

CAL YR 1967: TOTAL 9.48 MEAN 0.026 MAX 4.5 MIN 0 AC-FT 19 †† 23.77
WTR YR 1968: TOTAL 5,348.33 MEAN 14.6 MAX 655 MIN 0 AC-FT 10,610 †† 36.06

†† Average weighted-mean rainfall, in inches.

8-220 c
(Oct. 1961)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0945.00

Monthly and ~~annual discharge~~ yearly weighted-mean rainfall, in inches, of Green Creek River at/near Alexander, Tex.

[Drainage area, 46.1 square miles]

16—26489-5 U. S. GOVERNMENT PRINTING OFFICE

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
1958	5.22	5.68	1.50	2.27	1.83	2.22	4.77	1.77	2.52	2.76	1.01	3.25	34.80
1959	1.31	1.48	1.20	0	1.00	.35	2.02	1.90	6.49	4.56	2.05	2.94	25.30
1960	9.49	1.18	3.42	2.08	1.47	1.10	1.87	2.82	2.50	2.14	1.66	1.71	31.44
1961	1.71	.29	3.91	5.46	3.11	1.36	.74	2.18	4.75	3.19	.17	2.99	29.86
1962	5.15	2.39	.87	.09	1.07	.36	3.77	.85	2.74	2.01	1.04	5.92	26.26
1963	5.39	1.72	.57	.30	.05	.27	1.81	4.35	2.99	.49	1.10	3.38	22.42
1964	2.60	2.96	.55	1.91	3.26	.68	1.27	8.21	.88	1.59	2.49	1.37	27.77
1965	2.75	2.54	1.96	.89	1.85	.26	5.57	.58	4.07	.83	4.82	4.34	30.46
*1966	2.71	2.57	1.98	.86	2.05	.27	5.74	.58	3.90	.98	4.86	4.10	30.59
1967	.45	.27	.18	.13	.59	1.61	1.90	2.47	1.60	3.50	.84	5.72	19.28
1968	2.20	1.93	1.28	7.58	1.77	3.86	2.34	5.30	2.18	2.95	2.89	1.77	36.06

* Average rainfall.

S-220 c
(Oct. 1961)

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY
WATER RESOURCES DIVISION

Sheet 1 of _____ Sheets

8-0945.00

Monthly and ~~annual~~ yearly mean discharge, in cfs, of Green Creek River at/near Alexander, Tex.

[Drainage area, 45.5 square miles]

16—26489-5 U. S. GOVERNMENT PRINTING OFFICE

YEAR	OCT.	NOV.	DEC.	JAN.	FEB.	MAR.	APR.	MAY	JUNE	JULY	AUG.	SEPT.	ANNUAL
		Station established October 1, 1954 as peak-stage station; Reestablished as											
		a daily discharge station May 27, 1958											
1958	-	-	-	-	-	-	-	-	1.09	1.43	0	0	-
1959	0	0	0	0	0	0	0	0	2.28	.23	0	.14	.22
1960	73.2	3.17	5.13	19.2	5.84	2.62	1.34	8.03	1.04	.003	0	0	10.1
1961	0	0	0	11.6	12.5	2.28	.81	.43	1.67	2.84	0	0	2.62
1962	19.7	.80	.33	.16	.06	0	.93	.09	0	0	0	11.4	2.81
1963	13.2	.26	.17	.38	.11	0	.12	1.32	4.92	0	0	1.48	1.85
1964	0	10.9	0	2.39	4.76	.65	27.1	.53	0	0	0	71.6	9.67
1965	8.81	6.48	.84	1.31	22.1	1.68	1.77	83.4	2.03	.33	.11	0	10.7
1966	0	0	0	0	1.02	0	4.86	3.59	10.7	.002	4.74	2.00	2.23
1967	0	0	0	0	0	0	0	0	0	0	0	.316	.026
1968	0	0	0	62.2	4.51	55.2	5.42	37.2	1.90	2.38	4.29	.006	14.6

Form TX-88
Rev. 10-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

RAINFALL DATA SUMMARY

STUDY AREA GREEN CREEK — 1968 WATER YEAR

Date of storm	RAIN GAGES 1-R	4-S	7-R	11-R	Average (1R & 11R)	Weighted*
Oct. 7, 1967	1.13	1.21	1.04	0.95	1.04	1.10
15	.16	.18	.10	.09	.12	.13
30	.74	.85	.97	.57	.66	.83
31	.24	.17	.11	.05	.14	.14
Oct. Total	2.27	2.41	2.22	1.66	1.96	2.20
Nov. 7, 1967	0.16	0.19	0.15	0.07	0.12	0.15
8	.11	.12	.13	.05	.08	.11
8-9	1.14	1.21	1.02	.99	1.06	1.10
10	0	0	0	.03	.02	.01
27	.06	.10	.23	.03	.04	.12
27-28	.68	.40	.33	.50	.59	.44
Nov. Total	2.15	2.02	1.86	1.67	1.91	1.93
Dec. 9-10	0.16	0.25	0.25	0.13	0.14	0.21
14-15	.74	.68	.75	.40	.57	.67
16	.36	.27	.23	.06	.21	.24
27	.04	.06	.07	T	.02	.05
31	0	0	.33	0	0	.11
Dec. Total	1.30	1.26	1.63	.59	.94	1.28
1967 Calendar Year Totals					24.47	23.77

* Weighted Mean Rainfall is computed by the Formula $\dfrac{\frac{(1R+11R)}{2}+4S+7R}{3}$

Form TX-88
Rev. 10-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

RAINFALL DATA SUMMARY

STUDY AREA GREEN CREEK — 1968 WATER YEAR

Date of storm	RAIN GAGES 1-R	4-S	7-R	11-R	Average (1R & 11R)	Weighted*
Jan. 2-3, 1968	0.42	0.55	0.34	0.50	0.46	0.45
8	.20	.10	.06	.10	.15	.10
10	0	.02	.06	.02	.01	.03
11	.09	.11	.19	.08	.08	.13
18	1.78	1.78	1.74	(1.78)	1.78	1.77
19-21	4.90	4.75	4.45	(4.90)	4.90	4.70
22	.05	.07	(.04)	(.05)	.05	.05
28	.40	.14	0	(.36)	.38	.17
30	.23	.18	.17	.18	.20	.18
Jan. Total	8.07	7.70	7.05	7.97	8.01	7.58
Feb. 1, 1968	0.35	0.36	0.39	0.22	0.28	0.34
12-13	.20	.17	.11	.12	.16	.15
13-14	.11	.15	.15	-	.06	.12
14	.14	.13	.11	-	.07	.10
15	.37	.38	.34	.31	.34	.35
18-19	.33	.40	.35	.17	.25	.33
21	.10	.04	0	0	.05	.03
28	.42	.35	.29	.33	.38	.34
Feb. Total	2.02	1.98	1.74	1.15	1.59	1.77
Mar. 5, 1968	0.11	0.11	0.07	0.07	0.09	0.09
9	.10	.04	0	.05	.08	.04
10-11	1.93	2.06	1.50	1.76	1.84	1.80
19	.56	.25	.05	.37	.46	.25
20	1.70	1.56	1.75	1.75	1.72	1.68
Mar. Total	4.40	4.02	3.37	4.00	4.20	3.86

Form TX-88
Rev. 10-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

RAINFALL DATA SUMMARY

STUDY AREA GREEN CREEK — 1968 WATER YEAR

Date of storm	RAIN GAGES 1-R	4-S	7-R	11-R	Average (1R & 11R)	Weighted*
Apr. 1-2, 1968	0.10	0.28	0	0.12	0.11	0.13
3	.55	.22	0	.19	.37	.20
8	0	.46	.53	0	0	.33
8-9	.67	.28	0	.70	.68	.32
9	0	.05	.05	0	0	.03
12	.15	.22	.15	.20	.18	.18
18	.02	0	0	0	.01	0
19	.26	.32	.20	.08	.17	.23
28	.75	.74	1.40	.45	.60	.91
Apr. Total	2.50	2.57	2.33	1.74	2.12	2.34
May 2	0.40	0.44	0.33	0.24	0.32	0.36
4	.25	.14	0	.28	.26	.13
8	0	.14	.22	0	0	.12
9	.92	.58	1.17	.74	.83	.86
10-11	.86	1.26	2.57	.77	.82	1.55
12-13	2.65	.29	.56	2.33	2.49	1.11
13	.07	.50	1.00	.05	.06	.52
17	.05	.20	0	.09	.07	.09
25	.37	.46	.32	.24	.30	.36
27	.18	.21	.13	.29	.24	.19
May Total	5.75	4.22	6.30	5.03	5.39	5.30

Form TX-88
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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY-TEXAS DISTRICT

RAINFALL DATA SUMMARY

STUDY AREA GREEN CREEK — 1968 WATER YEAR

Date of storm	RAIN GAGES 1-R	4-S	7-R	11-R	Average (1R & 11R)	Weighted*
June 1, 1968	0.77	0.63	0.68	0.63	0.70	0.67
3	.29	.83	0	.29	.29	.37
16-17	1.13	.35	.10	.87	1.00	.48
22	0	.13	.32	0	0	.15
23	.08	.07	.09	.02	.05	.07
25	.65	.38	.30	.58	.62	.43
June Total	2.92	2.39	1.49	2.39	2.66	2.18
July 2, 1968	1.25	1.24	1.32	1.29	1.27	1.28
8	1.15	1.34	1.69	1.07	1.11	1.38
14	.08	.07	0	0	.04	.04
19	.18	.18	.18	0	.09	.15
20	0	.11	.20	0	0	.10
July Total	2.66	2.94	3.39	2.36	2.51	2.95
Aug. 12, 1968	0.26	0.29	0.14	0.03	0.15	0.19
13	0	.06	.16	0	0	.07
13-14	1.72	2.85	2.80	2.26	1.99	2.55
30	.13	.18	0	0	.06	.08
Aug. Total	2.11	3.38	3.10	2.29	2.20	2.89
Sept. 14, 1968	0.25	0.47	0.34	0.19	0.22	0.34
17	.08	.13	.08	.15	.12	.11
23	0	.14	.30	0	0	.15
24	1.04	1.25	1.10	1.30	1.17	1.17
Sept. Total	1.37	1.99	1.82	1.64	1.51	1.77
1968 Water Year Totals					35.00	36.06

Form A-64
(Rev. 5-65)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period: Jan 18 & Jan 19-21, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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
		January 18														
0000	7.14	106.13														
0100	7.14	106.13	1	0	0				0				0	0	0	0.0000
0115	7.14	106.13	.25	0	0				0				0	0	0	0.0000
0130	7.15	106.34	.25	+ .21	10.2			10.2	.05	21.7	.09	4.4	5.8	.0027	.0007	.0007
0200	7.15	106.34	.50	0	0				.01				0	0	0	.0007
0300	7.15	106.34	1	0	0				.01				0	0	0	.0007
0400	7.15	106.34	1	0	0				0				0	0	0	.0007
0500	7.15	106.34	1	0	0				0				0	0	0	.0007
0530	7.15	106.34	.50	0	0				.02				0	0	0	.0007
0600	7.15	106.34	.50	0	0				.01				0	0	0	.0007
0630	7.15	106.34	.50	0	0				.06				0	0	0	.0007
0700	7.16	106.56	.50	+ .22	5.3	7.16		5.3	.02	21.8	.04	1.0	4.3	.0020	.0010	.0017
0730	7.18	107.00	.50	+ .44	10.6	7.17		10.6	.16	21.8	.29	7.0	3.6	.0017	.0008	.0025
0800	7.21	107.65	.50	+ .65	15.7	7.20		15.7	.26	21.9	.47	11.4	4.3	.0020	.0010	.0035
0830	7.24	108.31	.50	+ .66	16.0	7.22		16.0	.26	22.0	.48	11.6	4.4	.0020	.0010	.0045
0900	7.28	109.20	.50	+ .89	21.5	7.26		21.5	.18	22.1	.33	8.0	13.5	.0063	.0032	.0077
0930	7.34	110.54	.50	+ 1.34	32.4	7.31		32.4	.18	22.3	.33	8.0	24.4	.0113	.0056	.0133
1000	7.41	112.11	.50	+ 1.57	38.0	7.38		38.0	.18	22.5	.34	8.2	29.8	.0138	.0069	.0202
1015	7.46	113.25	.25	+ 1.14	55.2	7.44		55.2	.08	22.7	.15	7.3	47.9	.0222	.0056	.0258
1030	7.52	114.62	.25	+ 1.37	66.3	7.49		66.3	.04	22.9	.08	3.9	62.4	.0290	.0072	.0330
1045	7.59	116.25	.25	+ 1.63	78.9	7.56		78.9	.06	23.1	.12	5.8	73.1	.0339	.0085	.0415
1100	7.67	118.12	.25	+ 1.87	90.5	7.63		90.5	.03	23.4	.06	2.9	87.6	.0406	.0102	.0517
1115	7.76	120.26	.25	+ 2.14	104	7.72		104	.07	23.8	.14	6.8	97.2	.0451	.0113	.0630
1130	7.84	122.19	.25	+ 1.93	93.4	7.80		93.4	.06	24.1	.12	5.8	87.6	.0406	.0102	.0732
1145	7.92	124.14	.25	+ 1.95	94.4	7.88		94.4	.04	24.4	.08	3.9	90.5	.0420	.0105	.0837
1200	8.01	126.37	.25	+ 2.23	108			108	0				108	.0501	.0125	.0962
1215	8.11	128.88	.25	+ 2.51	121			121	0				121	.0561	.0140	.1102
1230	8.19	130.92	.25	+ 2.04	98.7			98.7	0				98.7	.0458	.0114	.1216
1245	8.25	132.48	.25	+ 1.56	75.5			75.5	0				75.5	.0350	.0088	.1304
1300	8.30	133.78	.25	+ 1.30	62.9			62.9	0				62.9	.0292	.0073	.1377
1315	8.35	135.10	.25	+ 1.32	63.9			63.9	0				63.9	.0296	.0074	.1451
1330	8.39	136.16	.25	+ 1.06	51.3			51.3	0				51.3	.0238	.0060	.1511

Form A-64
(Rev. 5-65)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 2 of 6

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Jan. 18 & 19-21, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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
1345	8.43	137.23	.25	+ 1.07	51.8			51.8	0				51.8	.0240	.0060	.1571
1400	8.46	138.03	.25	+ .80	38.7			38.7	0				38.7	.0180	.0045	.1616
1430	8.51	139.38	.50	+ 1.35	32.7			32.6	0				32.6	.0151	.0076	.1692
1500	8.55	140.48	.50	+ 1.10	26.6			26.6	0				26.6	.0123	.0062	.1754
1530	8.58	141.29	.50	+ .81	19.6			19.6	0				19.6	.0091	.0046	.1800
1600	8.60	141.84	.50	+ .55	13.3			13.3	0				13.3	.0062	.0031	.1831
1630	8.62	142.40	.50	+ .56	13.6			13.6	0				13.6	.0063	.0032	.1863
1700	8.63	142.67	.50	+ .27	6.5			6.5	0				6.5	.0030	.0015	.1878
1800	8.64	142.95	1	+ .28	3.4			3.4	0				3.4	.0016	.0016	.1894
1900	8.65	143.23	1	+ .28	3.4			3.4	0				3.4	.0016	.0016	.1910
2000	8.66	143.51	1	+ .28	3.4			3.4	0				3.4	.0016	.0016	.1926
2200	8.67	143.79	2	+ .28	1.7			1.7	0				1.7	.0008	.0016	.1942
2400	8.68	144.06	2	+ .27	1.6			1.6	0				1.6	.0007	.0014	.1956
			24													
									1.78		3.12					
	January 19															
0000	8.68	144.06	-	-												
0600	8.69	144.34	6.0	+ .28	.6			.6	0				.6	.0003	.0018	.1974
1100	8.69	144.34	5.0	0	0			0	0				0	0	0	.1974
1115	8.69	144.34	.25	0	0			0	0				0	0	0	.1974
1130	8.69	144.34	.25	0	0			0	0				0	0	0	.1974
1145	8.69	144.34	.25	0	0	8.69		0	.13	28.0	.30	14.5	0	0	0	.1974
1200	8.70	144.62	.25	+ .28	13.6	8.70		13.6	.07	28.0	.16	7.7	5.9	.0027	.0007	.1981
1230	8.71	144.90	.50	+ .28	6.8	8.70		6.8	.05	28.0	.12	9.9	0	0	0	.1981
1300	8.72	145.19	.50	+ .29	7.0	8.72		7.0	.06	28.1	.14	3.4	3.6	.0017	.0008	.1989
1330	8.73	145.47	.50	+ .28	6.8	8.72		6.8	.01	28.1	.02	.5	6.3	.0029	.0014	.2003
1400	8.74	145.75	.50	+ .28	6.8	8.73		6.8	0	28.2	0	0	6.8	.0032	.0016	.2019
1500	8.75	146.04	1	+ .29	3.5	8.74		3.5	0	28.2	0	0	3.5	.0016	.0016	.2035
1600	8.76	146.32	1	+ .28	3.4	8.76		3.4	.02	28.3	.05	.6	2.8	.0013	.0013	.2048
1630	8.77	146.60	.50	+ .28	6.8	8.76		6.8	.01	28.3	.02	.5	6.3	.0029	.0014	.2062

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Jan. 18 & 19-21, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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
	January 19		con't													
1700	8.78	146.88	.50	+ .28	6.8	8.78		6.8	0.05	28.4	.12	2.9	3.9	.0018	.0009	.2071
1800	8.80	147.45	1.00	+ .57	6.9	8.79		6.9	0	—		0	6.9	.0032	.0032	.2103
1815	8.80	147.45	.25	+ 0	0	8.80		0	.02	28.5	.05	2.4	0	0	.0000	.2103
1830	8.81	147.74	.25	+ .29	14.0	8.80		14.0	.03	28.5	.07	3.4	10.6	.0049	.0012	.2115
1845	8.82	148.03	.25	+ .29	14.0	8.82		14.0	.07	28.6	.17	8.2	5.8	.0027	.0007	.2122
1900	8.83	148.31	.25	+ .28	13.6	8.82		13.6	.05	28.6	.12	5.8	7.8	.0036	.0009	.2131
1930	8.85	148.89	.50	+ .58	14.0	8.84		14.0	.05	28.7	.12	2.9	11.1	.0052	.0026	.2157
2000	8.87	149.47	.50	+ .58	14.0	8.86		14.0	.07	28.8	.17	4.1	9.9	.0046	.0023	.2180
2030	8.90	150.33	.50	+ .86	20.8	8.88		20.8	.04	28.9	.10	2.4	18.4	.0085	.0042	.2222
2100	8.93	151.21	.50	+ .88	21.3	8.92		21.3	.01	29.1	.02	.5	20.8	.0097	.0048	.2270
2130	8.98	152.67	.50	+ 1.46	35.3	8.96		35.3	0	0	0	0	35.3	.0164	.0082	.2352
2145	9.00	153.25	.25	+ .58	28.1	8.99		28.1	.06	29.4	.15	7.3	20.8	.0097	.0024	.2376
2200	9.02	153.85	.25	+ .60	29.0	9.01		29.0	.05	29.6	.12	5.8	23.2	.0108	.0027	.2403
2215	9.04	154.44	.25	+ .59	28.6	9.03		28.6	.08	29.6	.20	9.7	18.9	.0088	.0022	.2425
2230	9.07	155.34	.25	+ .90	43.6	9.06		43.6	.07	29.8	.17	8.2	35.4	.0164	.0041	.2466
2245	9.11	156.53	.25	+ 1.19	57.6	9.09		57.6	.07	30.0	.17	8.2	49.4	.0229	.0057	.2523
2300	9.16	158.04	.25	+ 1.51	73.1	9.14		73.1	.12	30.2	.30	14.5	58.6	.0272	.0068	.2591
2315	9.22	159.87	.25	+ 1.83	88.6	9.18		88.6	.10	30.4	.25	12.1	76.5	.0355	.0089	.2680
2330	9.28	161.71	.25	+ 1.84	89.1	9.25		89.1	.06	30.8	.15	7.3	81.8	.0380	.0095	.2775
2345	9.35	163.90	.25	+ 2.19	106	9.32		106	.03	31.1	.08	3.9	102	.0473	.0118	.2893
2400	9.43	166.42	.25	+ 2.52	122	9.39		122	0	—	0	0	122	.0566	.0142	.3035
			24													
	January 20															
0000	9.43	166.42														
0005	9.46	167.37	.083	+ .95	138	9.44		138	0	—			138	.0640	.0053	.3088
0010	9.49	168.33	.083	+ .96	139	9.48		139	0	—			139	.0645	.0054	.3142
0015	9.53	169.62	.083	+ 1.29	187	9.51		187	0	—			187	.0868	.0072	.3214
0020	9.58	171.23	.083	+ 1.61	234	9.56		234	0	—			234	.1086	.0090	.3304
0025	9.62	172.54	.083	+ 1.31	190	9.60		190	0	—			190	.0882	.0074	.3378

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Jan. 18 & 19-21, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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
	January 20 cont't															
0030	9.66	173.85	.003	+ 1.31	190			190	0				190	.0882	.0074	.3452
0045	9.76	177.16	.25	+ 3.31	160			160	0				160	.0742	.0186	.3638
0100	9.86	180.53	.25	+ 3.37	163			163	0				163	.0756	.0189	.3827
0115	9.95	183.62	.25	+ 3.09	150			150	0				150	.0696	.0174	.4001
0130	10.03	186.39	.25	+ 2.77	134			134	0				134	.0622	.0156	.4157
0200	10.17	191.32	.50	+ 4.93	119			119	0				119	.0552	.0276	.4433
0230	10.30	195.99	.50	+ 4.67	113			113	0				113	.0524	.0262	.4695
0300	10.40	199.64	.50	+ 3.65	88.3			88.3	0				88.3	.0410	.0205	.4900
0330	10.45	201.49	.50	+ 1.85	44.8			44.8	0				44.8	.0208	.0104	.5004
0345	10.47	202.23	.25	+ .74	35.8	10.46		35.8	.04	37.1	.12	5.8	30.0	.0139	.0035	.5039
0400	10.48	202.60	.25	+ .37	17.9	10.48		17.9	.07	37.2	.22	10.6	7.3	.0034	.0008	.5047
0415	10.50	203.34	.25	+ .74	35.8	10.49		35.8	.07	37.2	.22	10.6	25.2	.0117	.0029	.5076
0430	10.52	204.09	.25	+ .75	36.3	10.51		36.3	.06	37.3	.19	9.2	27.1	.0126	.0032	.5108
0445	10.54	204.84	.25	+ .75	36.3	10.53		36.3	.04	37.4	.12	5.8	30.5	.0142	.0036	.5144
0500	10.57	205.96	.25	+ 1.12	54.2	10.56		54.2	.05	37.5	.16	7.7	46.5	.0216	.0054	.5198
0515	10.60	207.09	.25	+ 1.13	54.7	10.58		54.7	.05	37.6	.16	7.7	47.0	.0218	.0054	.5252
0530	10.63	208.23	.25	+ 1.14	55.2	10.62		55.2	.08	37.8	.25	12.1	43.1	.0200	.0050	.5302
0545	10.67	209.75	.25	+ 1.52	73.6	10.65		73.6	.08	38.0	.25	12.1	61.5	.0285	.0071	.5373
0600	10.72	211.66	.25	+ 1.91	92.4	10.70		92.4	.03	38.2	.10	4.8	87.6	.0406	.0102	.5475
0615	10.77	213.58	.25	+ 1.92	92.9	10.74		92.9	.02	38.4	.06	2.9	90.0	.0418	.0104	.5579
0630	10.83	215.90	.25	+ 2.32	112	10.80		112	.01	38.7	.03	1.5	110	.0510	.0128	.5707
0645	10.90	218.62	.25	+ 2.72	132	10.86		132	.01	39.0	.03	1.5	130	.0603	.0151	.5858
0700	10.97	221.38	.25	+ 2.76	134	10.94		134	.01	39.4	.03	1.5	132	.0612	.0153	.6011
0715	11.04	224.16	.25	+ 2.78	135	11.00	0	135	.01	39.6	.03	1.5	134	.0622	.0156	.6167
0730	11.10	226.55	.25	+ 2.39	116	11.07	1.2	117	.01	39.9	.03	1.5	116	.0538	.0134	.6301
0745	11.16	228.97	.25	+ 2.42	117	11.13	2.6	120	.01	40.2	.03	1.5	118	.0548	.0137	.6438
0800	11.22	231.41	.25	+ 2.44	118	11.19	4.3	122	.02	40.6	.07	3.4	119	.0552	.0138	.6576
0815	11.27	233.45	.25	+ 2.04	98.7	11.24	5.8	104	.04	40.9	.14	6.8	97.2	.0541	.0135	.6711
0830	11.31	235.09	.25	+ 1.64	79.4	11.29	7.4	86.8	.03	41.1	.10	4.8	82.0	.0380	.0095	.6806
0845	11.35	236.75	.25	+ 1.66	80.3	11.33	8.8	89.1	0	41.3			89.1	.0413	.0103	.6909
0900	11.39	238.41	.25	+ 1.66	80.3	11.37	10.2	90.5	0	41.6			90.5	.0420	.0105	.7014

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Jan. 18 & 19-21, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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
	January 20															
0930	11.45	240.92	.50	+ 2.51	60.7	11.42	12.0	72.7	.05	41.8	.17	4.1	68.6	.0318	.0159	.7173
1000	11.51	243.44	.50	+ 2.52	61.0	11.48	13.0	74.0	.05	42.1	.18	4.4	69.6	.0323	.0162	.7335
1030	11.56	245.57	.50	+ 2.13	51.5	11.54	13.0	64.5	.06	42.5	.21	5.1	59.4	.0276	.0138	.7473
1100	11.61	247.70	.50	+ 2.13	51.5	11.58	13.1	64.6	.05	42.7	.18	4.4	60.2	.0279	.0140	.7613
1130	11.65	249.42	.50	+ 1.72	41.6	11.63	13.1	54.7	.05	43.0	.18	4.4	50.3	.0233	.0116	.7729
1200	11.69	251.15	.50	+ 1.73	41.9	11.67	13.2	55.1	.05	43.2	.18	4.4	50.7	.0235	.0118	.7847
1300	11.80	255.94	1	+ 4.79	58.0	11.74	13.2	71.2	.13	43.6	.47	5.7	65.5	.0304	.0304	.8151
1400	11.93	261.70	1	+ 5.76	69.7	11.86	13.4	83.1	.16	44.3	.60	7.3	75.8	.0352	.0352	.8503
1500	12.08	268.47	1	+ 6.77	81.9	12.01	13.6	95.5	.08	45.2	.30	3.6	91.9	.0426	.0426	.8929
1600	12.24	275.84	1	+ 7.37	89.2	12.16	13.8	103	.08	46.1	.31	3.8	99.2	.0460	.0460	.9389
1700	12.37	281.95	1	+ 6.11	73.9	12.30	13.9	87.8	.13	47.0	.51	6.2	81.6	.0379	.0379	.9768
1800	12.49	287.68	1	+ 5.73	69.3	12.43	14.0	83.3	.18	47.8	.72	8.7	74.6	.0346	.0346	1.0114
1900	12.62	294.00	1	+ 6.32	76.5	12.56	14.2	90.7	.06	48.7	.24	2.9	87.8	.0407	.0407	1.0521
2000	12.76	300.94	1	+ 6.94	84.0	12.69	14.2	98.2	.15	49.6	.62	7.5	90.7	.0421	.0421	1.0942
2100	12.90	308.01	1	+ 7.07	85.5	12.83	14.3	99.8	.25	50.6	1.05	12.7	87.1	.0404	.0404	1.1346
2200	13.07	316.80	1	+ 8.79	106	12.98	14.5	120	.14	51.7	.60	7.3	113	.0524	.0524	1.1870
2300	13.28	327.96	1	+11.16	135	13.18	14.6	150	.15	53.1	.66	8.0	142	.0659	.0659	1.2529
2400	13.51	340.55	1	+12.59	152	13.40	14.7	167	.06	54.8	.27	3.3	164	.0761	.0761	1.3290
			24				217.175									
							9.0									
	January	21														
0000	13.51	340.55	—	—	—	—	—	—								
0100	13.67	349.58	1	+ 9.03	109	13.59	14.8	124	0				124	.0575	.0575	1.3865
0200	13.77	355.34	1	+ 5.76	69.7	13.72	14.8	84.5	0				84.5	.0392	.0392	1.4257
0400	13.83	358.83	2	+ 3.49	21.1	13.80	14.9	36.0	0				36.0	.0167	.0334	1.4591
0500	13.84	359.42	1	+ .59	7.1	13.84	14.9	22.0	0				22.0	.0102	.0102	1.4693
0530	13.84	359.42	.50	0	0	13.84	14.9	14.9	0				14.9	.0069	.0034	1.4727
0600	13.84	359.42	.50	0	0	13.84	14.9	14.9	0				14.9	.0069	.0034	1.4761
0700	13.84	359.42	1	0	0	13.84	14.9	14.9	0				14.9	.0069	.0069	1.4830
0730	13.84	359.42	.50	0	0	13.84	14.9	14.9	.02	58.6	.10	2.4	12.5	.0058	.0029	1.4859

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UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 6 of 6

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Jan. 18 & 19-21, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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	Storage		Rate		in	Acc in
	ft	ac-ft	hrs	ac-ft	cfs	ft	cfs	cfs		ac	ac-ft	cfs	cfs	in/hr		
	January 21 cont't															
0800	13 83	358.83	.50	- .59	- 14.3	13.84	14.9	.6	.06	58.6	.29	7.0	0	0	0	1.4859
0830	13.83	358.83	.50	0	0	13.83	14.9	14.9	.09	58.5	.44	10.6	4.3	.0020	.0010	1.4869
0900	13.83	358.83	.50	0	0	13.83	14.9	14.9	.03	58.5	.14	3.4	11.5	.0053	.0026	1.4895
0930	13.83	358.83	.50	0	0	13.83	14.9	14.9	.03	58.5	.14	3.4	11.5	.0053	.0026	1.4921
1000	13.83	358.83	.50	0	0	13.83	14.9	14.9	.03	58.5	.14	3.4	11.5	.0053	.0026	1.4947
1030	13.84	359.42	.50	+ .59	14.3	13.84	14.9	29.2	.08	58.6	.39	9.4	19.8	.0092	.0046	1.4993
1100	13.85	360.00	.50	+ .58	14.0	13.84	14.9	28.9	.05	58.6	.24	5.8	23.1	.0107	.0054	1.5047
1130	13.87	361.18	.50	+ 1.18	28.6	13.86	14.9	43.5	.01	58.7	.05	1.2	42.3	.0196	.0098	1.5145
1200	13.89	362.35	.50	+ 1.17	28.3	13.88	14.9	43.2	.05	58.9	.25	6.0	37.2	.0173	.0086	1.5231
1230	13.92	364.13	.50	+ 1.78	43.1	13.90	14.9	58.0	.05	59.1	.25	6.0	52.0	.0241	.0120	1.5351
1300	13.96	366.52	.50	+ 2.39	57.8	13.94	14.9	72.7	.15	59.5	.74	17.9	54.8	.0254	.0127	1.5478
1330	14.01	369.50	.50	+ 2.98	72.1	13.98	15.0	87.1	.06	59.8	.30	7.3	79.8	.0370	.0185	1.5663
1400	14.09	374.34	.50	+ 4.84	117	14.05	15.0	132	.08	60.4	.40	9.7	122	.0566	.0283	1.5946
1430	14.19	380.47	.50	+ 6.13	148	14.14	15.0	163	.02	61.3	.10	2.4	161	.0747	.0374	1.6320
1500	14.27	385.44	.50	+ 4.97	120	14.23	15.1	135	.02	62.1	.10	2.4	133	.0617	.0308	1.6628
1530	14.35	390.47	.50	+ 5.03	122	14.31	15.1	137	.02	62.8	.10	2.4	135	.0626	.0313	1.6941
1600	14.43	395.55	.50	+ 5.08	123	14.39	15.2	138	.05	63.5	.26	6.3	132	.0612	.0306	1.7247
1630	14.49	399.40	.50	+ 3.85	93.2	14.46	15.2	108					108	.0501	.0250	1.7497
1700	14.54	402.64	.50	+ 3.24	78.4	14.52	15.2	93.6					93.6	.0434	.0217	1.7714
1800	14.60	406.54	1	+ 3.90	47.2	14.57	15.3	62.5					62.5	.0290	.0290	1.8004
1900	14.63	408.52	1	+ 1.98	24.0	14.62	15.3	39.3					39.3	.0182	.0182	1.8186
2100	14.65	409.84	2	+ 1.32	8.0	14.64	15.3	23.3					23.3	.0108	.0216	1.8402
2300	14.65	409.84	2	0	0	14.65	15.3	15.3					15.3	.0071	.0142	1.8544
2400	14.64	409.18	1	- .66	- 8.0	14.64	15.3	7.3					7.3	.0034	.0034	1.8578
			24				361,000									
							15.0									

A-78 (Revised Feb. 1960)

Sheet 1 of 5

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

Comp. by: HHW
Date: JULY 3, 1969
Check by: B.B.H.
Date: 7-10-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK SUBWATERSHED NO. 1 NEAR DUBLIN, TEX. Date of storm: JANUARY 18, 19-21, 1968

Weight Factor	1.00												Accumulated Weighted Precipitation	
	Accumulated Precipitation in Inches for Recording Gages													
	Gage 1-R		Gage		Gage		Gage		Gage		Gage			
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	~~Recording Gages~~ Storm rainfall	~~All Gages (Rec. Gages x K)~~ Accumulated rainfall
JAN. 18														
0000	0.												0	0.
0100	0.												0	0.
0200	.06												.06	.06
0500	.07												.07	.07
0530	.09												.09	.09
0600	.10												.10	.10
0615	.13												.13	.13
0630	.16												.16	.16
0700	.18												.18	.18
0715	.28												.28	.28
0730	.34												.34	.34
0745	.47												.47	.47
0800	.60												.60	.60
0815	.73												.73	.73
0830	.86												.86	.86
0845	.95												.95	.95
0900	1.04												1.04	1.04
0915	1.13												1.13	1.13
0930	1.22												1.22	1.22
0945	1.34												1.34	1.34
1000	1.40												1.40	1.40
1015	1.48												1.48	1.48
1030	1.52												1.52	1.52
1045	1.58												1.58	1.58
1100	1.61												1.61	1.61
1115	1.68												1.68	1.68
1130	1.74												1.74	1.74
1145	1.78												1.78	1.78
1200	1.78												1.78	1.78

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 =

A-78 (Revised Feb. 1960)

Sheet 2 of 5

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

Comp. by: HHW
Date: JULY 3, 1969
Check by: BBH
Date: 7-10-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK SUBWATERSHED NO. 1 NEAR DUBLIN, TEX. Date of storm: JANUARY 18, 19-21, 1968

	Accumulated Precipitation in Inches for Recording Gages												Accumulated Weighted Precipitation	
Weight Factor	1.00													
Date & Time	Gage 1-R Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	~~Recording Gages~~ storm rainfall	(~~Rec. Gages x K~~) ~~All Gages~~ accumulated rainfall
JANUARY 19														
11 00	1.78												0	1.78
11 30	1.78												0	1.78
11 45	1.91												.13	1.91
12 00	1.98												.20	1.98
12 30	2.03												.25	2.03
13 00	2.09												.31	2.09
14 00	2.10												.32	2.10
15 00	2.10												.32	2.10
16 00	2.12												.34	2.12
16 30	2.13												.35	2.13
17 00	2.18												.40	2.18
18 00	2.18												.40	2.18
18 30	2.23												.45	2.23
19 00	2.35												.57	2.35
19 30	2.40												.62	2.40
20 00	2.47												.69	2.47
21 00	2.52												.74	2.52
21 30	2.52												.74	2.52
21 45	2.58												.80	2.58
22 00	2.63												.85	2.63
22 15	2.71												.93	2.71
22 30	2.78												1.00	2.78
22 45	2.85												1.07	2.85
23 00	2.97												1.19	2.97
23 15	3.07												1.29	3.07
23 30	3.13												1.35	3.13
24 00	3.16												1.38	3.16

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 =

A-78 (Revised Feb. 1960)

Sheet 3 of 5

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

Comp. by: HHW
Date. JULY 3, 1969
Check by: RBM
Date. 7-10-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK SUBWATERSHED No. 1 NEAR DUBLIN, TEX. Date of storm: JANUARY 18, 19-21, 1968

Weight Factor	1.00												Accumulated Weighted Precipitation
	Accumulated Precipitation in Inches for Recording Gages												
Date & Time	Gage 1-R Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Recording Gages Storm rainfall
JANUARY	20												
0330	3.16												1.38
0400	3.27												1.49
0430	3.40												1.62
0500	3.49												1.71
0530	3.62												1.84
0600	3.73												1.95
0630	3.76												1.96
0700	3.78												2.00
0730	3.80												2.02
0800	3.83												2.05
0830	3.90												2.12
0900	3.90												2.12
0930	3.95												2.17
1000	4.00												2.22
1030	4.06												2.28
1100	4.11												2.33
1130	4.16												2.38
1200	4.21												2.43
1230	4.28												2.50
1300	4.34												2.57
1330	4.44												2.66
1400	4.50												2.72
1430	4.53												2.75
1500	4.58												2.80
1530	4.62												2.84
1600	4.66												2.88
1630	4.72												2.94
1700	4.79												3.01
1730	4.88												3.10

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 =

A-78 (Revised Feb. 1960)

Sheet 4 of 5

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

Comp. by: HHW
Date: JULY 3, 1969
Check by: B.B.H
Date: 7-10-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK SUBWATERSHED No. 1 NEAR DUBLIN, TEX Date of storms JANUARY 18, 19-21, 1968

Weight Factor	1.00												Accumulated Weighted Precipitation	
	Accumulated Precipitation in Inches for Recording Gages													
	Gage 1-R		Gage		Gage		Gage		Gage		Gage		~~Recording Gages~~	~~(Rec Gages + Non-Rec Gages)~~
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Storm rainfall	accumulated rainfall
JANUARY 20 con't														
1800	4.97												3.19	4.97
1830	5.00												3.22	5.00
1900	5.03												3.25	5.03
1930	5.08												3.30	5.08
2000	5.18												3.40	5.18
2030	5.30												3.52	5.30
2100	5.43												3.65	5.43
2130	5.48												3.70	5.48
2200	5.57												3.79	5.57
2230	5.66												3.88	5.66
2300	5.72												3.94	5.72
2400	5.78												4.00	5.78
JANUARY 21														
0400	5.79												4.01	5.79
0700	5.79												4.01	5.79
0730	5.80												4.02	5.80
0800	5.86												4.08	5.86
0830	5.95												4.17	5.95
0900	5.98												4.20	5.98
0930	6.01												4.23	6.01
1000	6.04												4.26	6.04
1030	6.12												4.34	6.12
1100	6.17												4.39	6.17
1130	6.18												4.40	6.18
1200	6.23												4.45	6.23
1800	6.23												4.45	6.23

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 =

A-78 (Revised Feb. 1960)

Sheet 5 of 5

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

Comp. by: HHW
Date: JULY 3, 1969
Check by: B.B.H
Date: 7-10-69

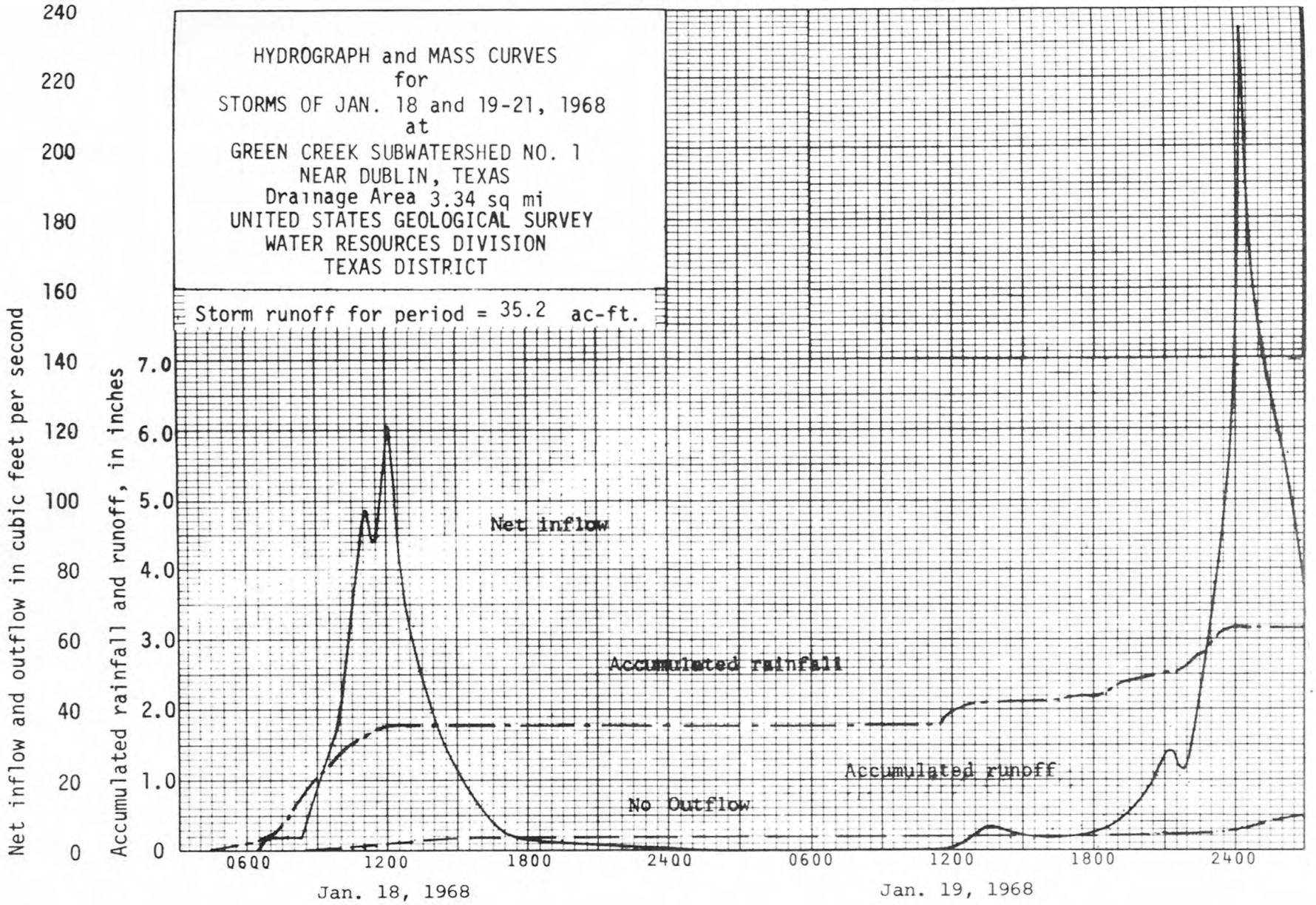
WEIGHTED PRECIPITATION RECORD

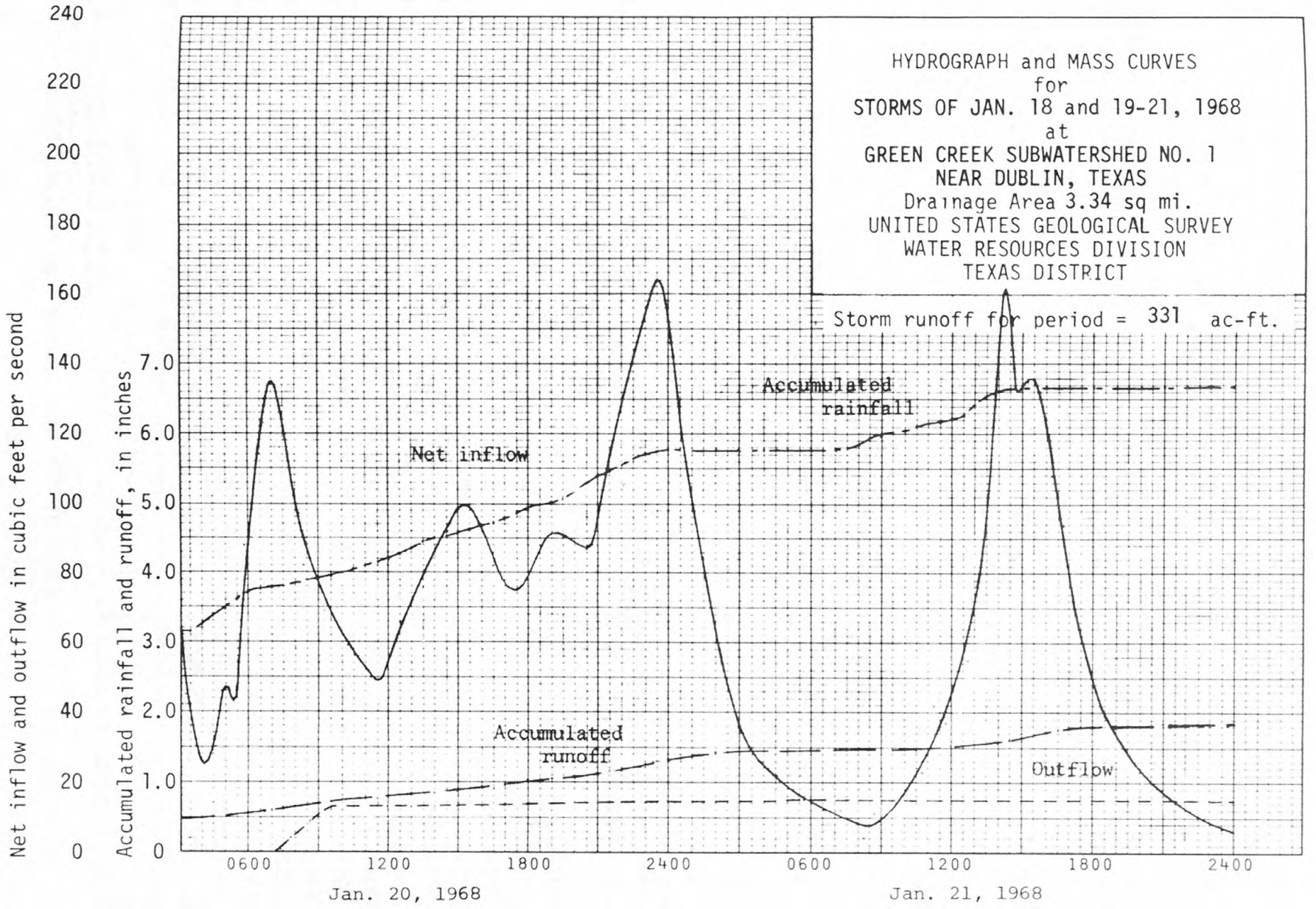
Area: GREEN CREEK SUBWATERSHED NO. 1 NEAR DUBLIN, TEX. Date of storms JANUARY 18, 19-21, 1968

	Accumulated Precipitation in Inches for Recording Gages										Accumulated Weighted Precipitation	
Weight Factor	1.00											
Date & Time	Gage 1-R Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	Gage Recorded	x Factor	~~Recording Gages~~ Storm rainfall	~~(Rec. Gages + R) All Gages~~ Accumulated rainfall
JANUARY	21 con't													
1230	6.28												4.50	6.28
1300	6.43												4.65	6.43
1400	6.57												4.79	6.57
1500	6.61												4.83	6.61
1600	6.68												4.90	6.68
2400	6.68												4.90	6.68

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
										WMR:	

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


HYDROGRAPH and MASS CURVES
for
STORMS OF JAN. 18 and 19-21, 1968
at
GREEN CREEK SUBWATERSHED NO. 1
NEAR DUBLIN, TEXAS
Drainage Area 3.34 sq mi
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 35.2 ac-ft.
Net inflow
Accumulated rainfall
Accumulated runoff
No Outflow
Net inflow and outflow in cubic feet per second
Accumulated rainfall and runoff, in inches
240
220
200
180
160
140
120
100
80
60
40
20
0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
0600
1200
1800
2400
0600
1200
1800
2400
Jan. 18, 1968
Jan. 19, 1968


HYDROGRAPH and MASS CURVES
for
STORMS OF JAN. 18 and 19-21, 1968
at
GREEN CREEK SUBWATERSHED NO. 1
NEAR DUBLIN, TEXAS
Drainage Area 3.34 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 331 ac-ft.
Net inflow and outflow in cubic feet per second
Accumulated rainfall and runoff, in inches
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
240
220
200
180
160
140
120
100
80
60
40
20
0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
0600
1200
1800
2400
0600
1200
1800
2400
Jan. 20, 1968
Jan. 21, 1968

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(Rev. 6-63)

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY-AUSTIN DISTRICT

RUNOFF COMPUTATIONS

Station 8-0945. Green Creek near Alexander, Tex.

Period of Record Jan 18-22, 1968 Drainage Area 46.1 sq. mi.

Time	G. Ht. Feet	Sh. Adj. [1] / [2]	Discharge c.f.s.	Discharge Inc.	Discharge In/hr.	Runoff Inches	Runoff Acc. In.
			Jan. 18				
0000	1.71	0	0	3.5	0.0000	0.0000	0.0000
0700	1.71	0	0	6	.0000	.0000	.0000
1200	2.03	0	0	3.5	.0000	.0000	.0000
1400	2.03	0	0	1.5	.0000	.0000	.0000
1500	3.93	0	61	.75	.0021	.0015	.0015
1530	3.82	0	51	.5	.0017	.0008	.0023
1600	5.33	+.03 / 0	236	.75	.0079	.0059	.0082
1700	5.03	0	186	1	.0063	.0063	.0144
1800	4.67	0	138	1	.0046	.0046	.0190
1900	4.35	0	102	1.5	.0034	.0051	.0241
2100	3.90	0	58	2	.0019	.0038	.0279
2300	3.62	0	35	1.5	.0012	.0018	.0297
2400	3.51	0	28	.5	.0009	.0004	.0301
			907.75	24			
			38				
			Jan. 19				
0000	3.51	0	28	1.5	.0009	.0014	.0315
0300	3.30		17	3	.0006	.0018	.0333
0600	3.15		11	4.5	.0004	.0018	.0351
1200	3.01		6.6	6	.0002	.0012	.0363
1800	2.96		5.1	3.5	.0002	.0007	.0370
1900	2.97		5.4	1.5	.0002	.0003	.0373
2100	3.03		7.2	1.5	.0002	.0003	.0376
2200	3.14		11	1	.0004	.0004	.0380
2300	3.40		22	.75	.0007	.0005	.0385
2330	3.70		41	.5	.0014	.0007	.0392
2400	4.42	0	109	.25	.0037	.0009	.0401
			294.1	24			
			12				

Time	G. Ht. Feet	Sh. Adj. [1] / [2]	Discharge c.f.s.	Discharge Inc.	Discharge In/hr.	Runoff Inches	Runoff Acc. In.
			Jan. 20				
0000	4.42	0	109	.5	.0037	.0018	.0419
0100	4.78	0	152	1	.0051	.0051	.0420
0200	5.72	+.06 / 0	326	1	.0110	.0110	.0580
0300	6.43	+.11 / 0	510	.75	.0171	.0128	.0708
0330	6.49	+.11 / 0	525	.50	.0176	.0088	.0796
0400	6.41	+.11 / 0	505	.75	.0170	.0128	.0924
0500	6.05	+.09 / 0	410	1.25	.0138	.0172	.1096
0630	5.61	+.05 / 0	302	1	.0102	.0102	.1198
0700	5.76	+.06 / 0	334	.75	.0112	.0084	.1282
0800	6.25	+.10 / 0	462	1	.0155	.0155	.1437
0900	6.58	+.11 / 0	548	1	.0184	.0184	.1621
1000	6.83	+.13 / 0	628	1	.0211	.0211	.1832
1100	6.75	+.13 / 0	604	1.5	.0203	.0304	.2136
1300	6.37	+.11 / 0	495	1.5	.0166	.0249	.2385
1400	6.41	+.11 / 0	505	1	.0170	.0170	.2555
1500	6.70	+.12 / 0	586	1	.0197	.0197	.2752
1600	7.08	+.14 / 0	706	1	.0237	.0237	.2989
1700	7.13	+.14 / 0	721	1	.0242	.0242	.3231
1800	7.12	+.14 / 0	718	1.5	.0241	.0362	.3593
2000	7.07	+.14 / 0	703	1.5	.0236	.0354	.3947
2100	7.12	+.14 / 0	718	1	.0241	.0241	.4188
2200	7.33	+.15 / 0	784	.75	.0264	.0198	.4386
2230	7.80	+.17 / 0	958	.50	.0322	.0161	.4547
2300	8.45	+.19 / 0	1,230	.50	.0413	.0206	.4753
2330	8.75	+.21 / 0	1,370	.50	.0460	.0230	.4983
2400	8.93	+.21 / 0	1,450	.25	.0487	.0122	.5105
			14,004.75	24			
			584				

[1] Adjusted gage height for drawdown
[2] Shift adjustment

Computed by BBH Date _____ Checked Computed HHW Date _____

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(Rev. 6-63)

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY-AUSTIN DISTRICT

RUNOFF COMPUTATIONS

Station 8-0945. Green Creek near Alexander, Tex.

Period of Record Jan. 18-22, 1968 Drainage Area 46.1 sq. mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge c.f.s.	Discharge Inc.	Discharge In/hr.	Runoff Inches	Runoff Acc. In.
			Jan.	21			
0000	8.93	+.21 / 0	1,450	.50	.0487	.0244	.5349
0100	8.65	+.20 / 0	1,320	1	.0444	.0444	.5793
0200	8.11	+.18 / 0	1,090	1	.0366	.0366	.6159
0300	7.35	+.17 / 0	796	1	.0268	.0268	.6427
0400	6.67	+.12 / 0	577	1	.0194	.0194	.6621
0500	6.00	+.08 / 0	395	1	.0133	.0133	.6754
0600	5.67	+.06 / 0	316	1.5	.0106	.0159	.6913
0800	5.22	+.02 / 0	219	1.5	.0074	.0111	.7024
0900	5.31	+.03 / 0	238	1	.0080	.0080	.7104
1000	5.47	+.04 / 0	272	1	.0091	.0091	.7195
1100	6.00	+.08 / 0	395	1	.0133	.0133	.7328
1200	6.52	+.11 / 0	532	1	.0179	.0179	.7507
1300	6.97	+.14 / 0	673	1	.0226	.0226	.7733
1400	7.75	+.17 / 0	938	.75	.0315	.0236	.7969
1430	8.30	+.19 / 0	1,170	.50	.0393	.0196	.8165
1500	8.62	+.20 / 0	1,310	.50	.0440	.0220	.8385
1530	8.70	+.20 / 0	1,340	.50	.0450	.0225	.8610
1600	8.62	+.20 / 0	1,310	.75	.0440	.0330	.8940
1700	8.20	+.19 / 0	1,130	1	.0380	.0380	.9320
1800	7.62	+.17 / 0	886	1	.0298	.0298	.9618
1900	7.02	+.14 / 0	688	1	.0231	.0231	.9849
2000	6.43	+.11 / 0	510	1.5	.0171	.0256	1.0105
2200	5.65	+.06 / 0	312	2	.0105	.0210	1.0315
2400	5.21	+.02 / 0	217	1	.0073	.0073	1.0388
			15,721.50	24			
			655				
BBH	BBH	BBH	BBH	BBH	BBH	BBH	BBH
EEL	EEL	EEL	EEL	EEL	HHW	HHW	HHW

Time	G. Ht. Feet	Sh. Adj.	Discharge c.f.s.	Discharge Inc.	Discharge In/hr.	Runoff Inches	Runoff Acc. In.
			Jan. 22				
0000	5.21	+.02 / 0	217	1	.0073	.0073	1.0461
0200	4.95	0	174	2	.0058	.0116	1.0577
0400	4.78		152	2	.0051	.0102	1.0679
0600	4.67		138	2	.0046	.0092	1.0771
0800	4.58		128	2	.0043	.0086	1.0857
1000	4.52		120	2	.0040	.0080	1.0937
1200	4.47		115	4	.0039	.0156	1.1093
1800	4.37		104	6	.0035	.0210	1.1303
2400	4.32	0	99	3	.0033	.0099	1.1402
			3022	24			
			126				
BBH	BBH	BBH	BBH	BBH	BBH	BBH	BBH
EEL	EEL	EEL	EEL	EEL	HHW	HHW	HHW

Computed by BBH Date

Checked ~~Computed~~ HHW Date

A-78 (Revised Feb. 1960)

Sheet 1 of 5

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

Comp. by: HHW
Date: JUNE 30, 1969
Check by: BBH
Date: 7-11-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK NEAR ALEXANDER, TEX. Date of storm JANUARY 18, 1968.

Accumulated Precipitation in Inches for Recording Gages

Weight Factor		.500		.500										Accumulated Weighted Precipitation	
Date & Time	Gage 1-R Recorded	x Factor	Gage 7-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) Rain Gages (Storm)	(Accum)
JAN. 18															
0000	0.	0.	0.	0.									0.	0	0
0100	0.	0.	0.	0.									0.	0	0
0200	.06	.030	0.	0.									.030	.03	.03
0500	.07	.035	0.	0.									.035	.04	.04
0530	.09	.045	0.	0.									.045	.04	.04
0600	.10	.050	0.	0.									.050	.05	.05
0615	.13	.065	0.	0.									.065	.06	.06
0630	.16	.080	.07	.035									.115	.12	.12
0700	.18	.090	.11	.055									.145	.15	.15
0715	.28	.140	.16	.080									.220	.22	.22
0730	.34	.170	.24	.120									.290	.29	.29
0745	.47	.235	.33	.165									.400	.40	.40
0800	.60	.300	.44	.220									.520	.53	.52
0815	.73	.365	.55	.275									.640	.65	.65
0830	.86	.430	.65	.325									.755	.76	.76
0845	.95	.475	.75	.375									.850	.86	.86
0900	1.04	.520	.84	.420									.940	.95	.95
0915	1.13	.565	.93	.465									1.030	1.04	1.04
0930	1.22	.610	1.02	.510									1.120	1.13	1.13
0945	1.34	.670	1.10	.550									1.220	1.23	1.24
1000	1.40	.700	1.19	.595									1.295	1.31	1.31
1015	1.48	.740	1.29	.645									1.385	1.39	1.40
1030	1.52	.760	1.38	.690									1.450	1.47	1.47
1045	1.58	.790	1.46	.730									1.520	1.54	1.54
1100	1.61	.805	1.52	.760									1.565	1.58	1.58
1115	1.68	.840	1.59	.795									1.635	1.66	1.66
1130	1.74	.870	1.68	.840									1.710	1.73	1.73
1145	1.78	.890	1.73	.865									1.755	1.76	1.76
1200	1.78	.890	1.74	.870									1.760	1.78	1.78
2400	1.78	.890	1.74	.870									1.760		1.78

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 = 5.648 = 1.014

A-78 (Revised Feb. 1960)

Sheet 2 of 5

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

Comp. by: HHW
Date: JUNE 30, 1969
Check by: BAH
Date: 7-11-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK NEAR ALEXANDER, TEX. Date of storm JANUARY 19-21, 1968

Weight Factor			.500										Accumulated Weighted Precipitation		
	Accumulated Precipitation in Inches for Recording Gages													(Rec. Gages x K) All Gages	
	Gage 1-R		Gage 7-R		Gage		Gage		Gage		Gage				
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recording Gages	(storm)	(accum.)
JANUARY 19															
1100	1.78	.890	1.75	.875									1.765	.01	1.79
1130	1.78	.890	1.75	.875									1.765	.01	1.79
1145	1.91	.955	1.80	.900									1.855	.10	1.88
1200	1.98	.990	1.84	.920									1.910	.15	1.93
1230	2.03	1.015	1.90	.950									1.965	.21	1.99
1300	2.09	1.045	1.95	.975									2.020	.27	2.05
1400	2.10	1.050	1.98	.990									2.040	.29	2.07
1500	2.10	1.050	1.99	.995									2.045	.29	2.07
1600	2.12	1.060	2.00	1.000									2.060	.31	2.09
1630	2.13	1.065	2.01	1.005									2.070	.32	2.10
1700	2.18	1.090	2.06	1.030									2.120	.37	2.15
1800	2.18	1.090	2.08	1.040									2.130	.38	2.16
1830	2.23	1.115	2.09	1.045									2.160	.41	2.19
1900	2.35	1.175	2.15	1.075									2.250	.50	2.28
1930	2.40	1.200	2.25	1.125									2.325	.58	2.36
2000	2.47	1.235	2.32	1.160									2.395	.65	2.43
2100	2.52	1.260	2.37	1.185									2.445	.70	2.48
2130	2.52	1.260	2.37	1.185									2.445	.70	2.48
2145	2.58	1.290	2.37	1.185									2.475	.73	2.51
2200	2.63	1.315	2.39	1.195									2.510	.76	2.54
2215	2.71	1.355	2.43	1.215									2.570	.82	2.60
2230	2.78	1.390	2.49	1.245									2.635	.89	2.67
2245	2.85	1.425	2.53	1.265									2.690	.94	2.72
2300	2.97	1.485	2.59	1.295									2.780	1.04	2.82
2315	3.07	1.535	2.61	1.305									2.840	1.10	2.88
2330	3.13	1.565	2.63	1.315									2.880	1.14	2.92
2400	3.16	1.580	2.65	1.325									2.905	1.16	2.94

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 = 6.57/6.48 = 1.014

A-78 (Revised Feb. 1960)

Sheet 3 of 5

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

Comp. by: HHW
Date: JUNE 30, 1969
Check by: BBH
Date: 7-11-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK NEAR ALEXANDER, TEX. Date of storm JANUARY 19-21, 1968

	Accumulated Precipitation in Inches for Recording Gages												Accumulated Weighted Precipitation		
Weight Factor	.500		.500												
Date & Time	Gage 1-R Recorded	x Factor	Gage 7-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	
														(Storm)	(Annual)
JANUARY 20															
0330	3.16	1.580	2.65	1.325									2.905	1.16	2.94
0400	3.27	1.635	2.72	1.360									2.995	1.25	3.03
0430	3.40	1.700	2.84	1.420									3.120	1.38	3.16
0500	3.49	1.745	2.94	1.470									3.215	1.48	3.26
0530	3.62	1.810	3.08	1.540									3.350	1.61	3.39
0600	3.73	1.865	3.17	1.585									3.450	1.71	3.49
0630	3.76	1.880	3.22	1.610									3.490	1.76	3.54
0700	3.78	1.890	3.25	1.625									3.515	1.78	3.56
0730	3.80	1.900	3.27	1.635									3.535	1.80	3.58
0800	3.83	1.915	3.34	1.670									3.585	1.85	3.63
0830	3.90	1.950	3.38	1.690									3.640	1.91	3.69
0900	3.90	1.950	3.41	1.705									3.655	1.92	3.70
0930	3.95	1.975	3.49	1.745									3.720	1.99	3.77
1000	4.00	2.000	3.52	1.760									3.760	2.03	3.81
1030	4.06	2.030	3.57	1.785									3.815	2.08	3.86
1100	4.11	2.055	3.61	1.805									3.860	2.13	3.91
1130	4.16	2.080	3.64	1.820									3.900	2.17	3.95
1200	4.21	2.105	3.68	1.840									3.945	2.22	4.00
1230	4.28	2.140	3.69	1.845									3.985	2.26	4.04
1300	4.34	2.170	3.79	1.895									4.065	2.34	4.12
1330	4.44	2.220	3.90	1.950									4.170	2.44	4.22
1400	4.50	2.250	3.93	1.965									4.215	2.49	4.27
1430	4.53	2.265	3.96	1.980									4.245	2.52	4.30
1500	4.58	2.290	4.08	2.040									4.330	2.61	4.39
1530	4.62	2.310	4.10	2.050									4.360	2.64	4.42
1600	4.66	2.330	4.12	2.060									4.390	2.67	4.45
1630	4.72	2.360	4.18	2.090									4.450	2.73	4.51
1700	4.79	2.395	4.21	2.105									4.500	2.78	4.56
1730	4.88	2.440	4.29	2.145									4.585	2.86	4.64

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 = 6.57/6.48 = 1.014

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A-78 (Revised Feb. 1960)

Sheet 4 of 5

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

Comp. by: HHW
Date: JUNE 30, 1969
Check by: BBH
Date: 7-11-69

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK NEAR ALEXANDER, TEX. Date of storm JANUARY 19-21, 1968

Weight Factor	Accumulated Precipitation in Inches for Recording Gages												Accumulated Weighted Precipitation	
	Gage 1-R		Gage 7-R		Gage		Gage		Gage		Gage			(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	Recording Gages	(storm) (Accum.)
JANUARY 20 cont														
1800	4.97	2.485	4.35	2.175									4,660	2.94 4.72
1830	5.00	2.500	4.37	2.185									4,685	2.97 4.75
1900	5.03	2.515	4.38	2.190									4,705	2.99 4.77
1930	5.08	2.540	4.41	2.205									4,745	3.03 4.81
2000	5.18	2.590	4.46	2.230									4,820	3.10 4.88
2030	5.30	2.650	4.53	2.265									4,915	3.20 4.98
2100	5.43	2.715	4.65	2.325									5,040	3.33 5.11
2130	5.48	2.740	4.70	2.350									5,090	3.38 5.16
2200	5.57	2.785	4.81	2.405									5,190	3.48 5.26
2230	5.66	2.830	4.93	2.465									5,300	3.59 5.37
2300	5.72	2.860	5.00	2.500									5,360	3.65 5.43
2400	5.78	2.890	5.01	2.505									5,395	3.69 5.47
JANUARY 21														
0400	5.78	2.890	5.01	2.505									5,395	3.69 5.47
0500	5.78	2.890	5.02	2.510									5,400	3.69 5.47
0530	5.78	2.890	5.05	2.525									5,415	3.71 5.49
0545	5.78	2.890	5.07	2.535									5,425	3.72 5.50
0600	5.78	2.890	5.15	2.575									5,465	3.76 5.54
0700	5.78	2.890	5.18	2.590									5,480	3.77 5.55
0730	5.80	2.900	5.21	2.605									5,505	3.80 5.58
0800	5.86	2.930	5.26	2.630									5,560	3.85 5.63
0830	5.95	2.975	5.36	2.680									5,655	3.95 5.73
0900	5.98	2.990	5.41	2.705									5,695	3.99 5.77
0930	6.01	3.005	5.45	2.725									5,730	4.02 5.80
1000	6.04	3.020	5.50	2.750									5,770	4.07 5.85
1030	6.12	3.060	5.60	2.800									5,860	4.16 5.94
1100	6.17	3.085	5.62	2.810									5,895	4.19 5.97

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 = 6.57/6.48 = 1.014

A-78 (Revised Feb. 1960)

Sheet 5 of 5

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

Comp. by: HHW
Date: JUNE 30, 1969
Check by: RBH
Date: 2-11-69

WEIGHTED PRECIPITATION RECORD

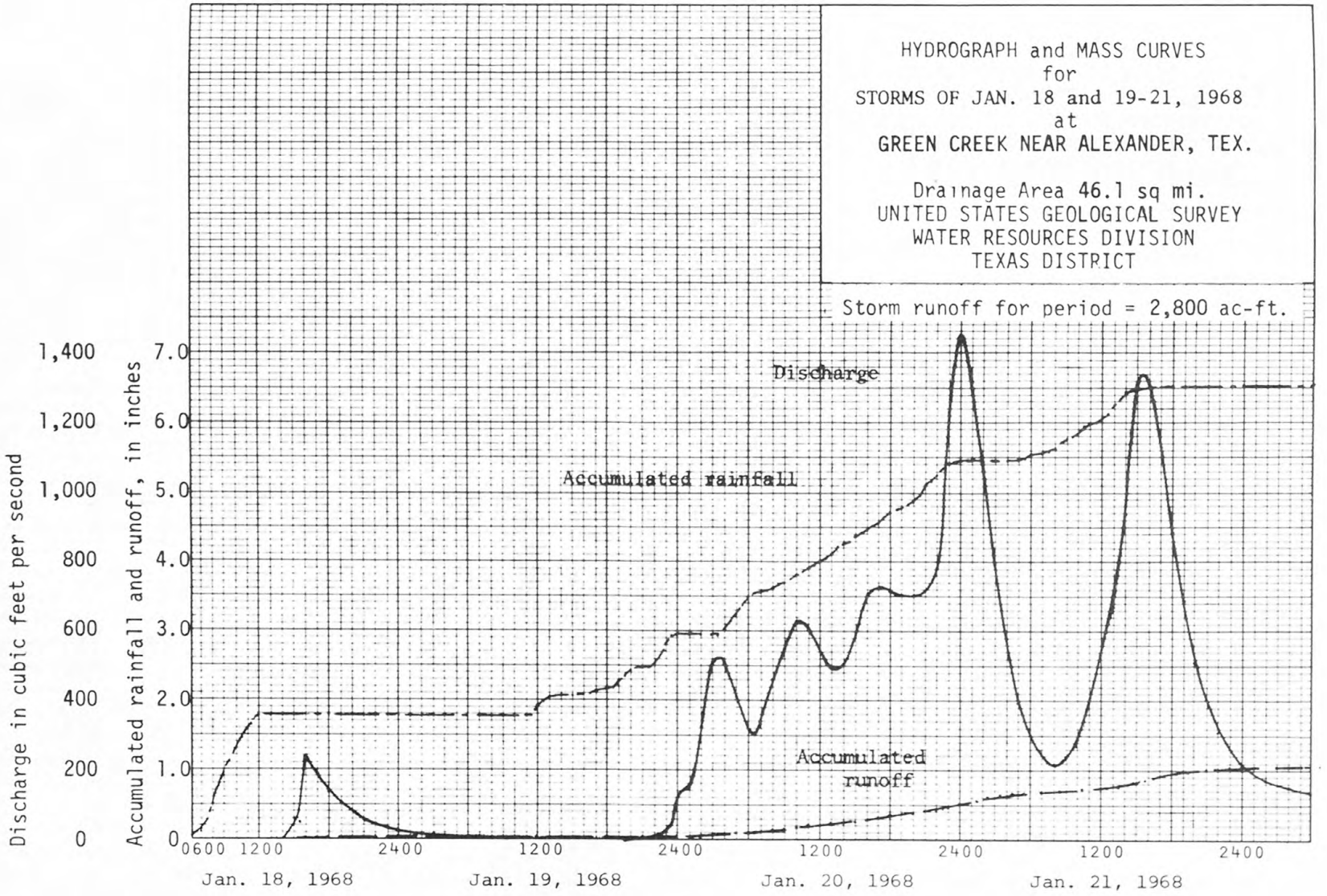
Area: GREEN CREEK NEAR ALEXANDER, TEX. Date of storm JANUARY 19-21, 1968

Weight Factor	Accumulated Precipitation in Inches for Recording Gages												Accumulated Weighted Precipitation	
	Gage 1-R .500		Gage 7-R .500		Gage		Gage		Gage		Gage			(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	Recording Gages	(storm) (Accum.)
JANUARY 21 con't														
1130	6.18	3.090	5.67	2.835									5.925	4.22 6.00
1200	6.23	3.115	5.73	2.865									5.980	4.28 6.06
1230	6.28	3.140	5.80	2.900									6.040	4.34 6.12
1300	6.43	3.215	5.90	2.950									6.165	4.47 6.25
1400	6.57	3.285	6.19	3.095									6.380	4.68 6.46
1500	6.61	3.305	6.19	3.095									6.400	4.70 6.48
1600	6.68	3.340	6.19	3.095									6.435	4.74 6.52
2400	6.68	3.340	6.19	3.095									6.435	4.74 6.52
JANUARY 22														
2400	6.73	3.365	(6.23)	(3.115)									(6.480)	(4.79) (6.57)

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-R		6.73									
4-S		6.60									
7-R		6.23									
11-R		6.73									
	TOTAL	26.29									
	AVERAGE	6.572									

WMR: 6.572

WMR = Sum of Precipitation x Weight Factor K = WMR / Total Recording Gages Weighted Precipitation = 6.572 / 6.480 = 1.014


HYDROGRAPH and MASS CURVES
for
STORMS OF JAN. 18 and 19-21, 1968
at
GREEN CREEK NEAR ALEXANDER, TEX.
Drainage Area 46.1 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 2,800 ac-ft.
Discharge
Accumulated rainfall
Accumulated runoff
Discharge in cubic feet per second
Accumulated rainfall and runoff, in inches
1,400
1,200
1,000
800
600
400
200
0
7.0
6.0
5.0
4.0
3.0
2.0
1.0
0
0600 1200 2400 1200 2400 1200 2400 1200 2400
Jan. 18, 1968
Jan. 19, 1968
Jan. 20, 1968
Jan. 21, 1968

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Mar. 20, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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								
	Mar. 20 1968						54.47									
0000	11.12	227.36	-	-	-	-	-	-					-	-	-	.0000
0300	11.12	227.36	3.0	0	0	11.12	2.4	2.4					2.4	.0011	.0033	.0033
0330	11.12	227.36	.50	0	0	11.12	2.4	2.4					2.4	.0011	.0006	.0039
0345	11.12	227.36	.25	0	0	11.12	2.4	2.4	.00				2.4	.0011	.0003	.0042
0400	11.12	227.36		0	0	11.12	2.4	2.4	.014	40.3	.050	2.4	.0	.0000	.0000	.0042
0415	11.13	227.76		+ .40	19.4	11.12	2.4	21.8	.137	40.3	.450	21.8	0	.0000	.0000	.0042
0430	11.14	228.17		+ .41	19.8	11.14	2.9	22.7	.14	40.4	.470	22.7	0	.0000	.0000	.0042
0445	11.14	228.17		0	0	11.14	2.9	2.9	.01	40.4	.034	1.6	1.3	.0006	.0002	.0044
0500	11.14	228.17		0	0	11.14	2.9	2.9	.01	40.4	.034	1.6	1.3	.0006	.0002	.0046
0515	11.15	228.57		+ .40	19.4	11.14	2.9	22.3	.01	40.4	.034	1.6	20.7	.0096	.0024	.0070
0530	11.15	228.57		0	0	11.15	3.2	3.2	.01	40.4	.034	1.6	1.6	.0006	.0002	.0072
0545	11.16	228.97		+ .40	19.4	11.16	3.4	22.8	.12	40.5	.405	19.6	3.2	.0015	.0004	.0076
0600	11.18	229.78		+ .81	39.2	11.17	3.7	42.9	.19	40.5	.641	31.0	12.9	.0060	.0015	.0091
0615	11.22	231.41		+ 1.63	78.9	11.20	4.6	83.5	.28	40.7	.950	46.0	37.5	.0174	.0044	.0135
0630	11.29	234.27		+ 2.86	138	11.26	6.4	144.4	.18	41.0	.615	29.8	115	.0534	.0134	.0269
0645	11.41	239.24		+ 4.97	241	11.35	9.4	250.4	.27	41.4	.932	45.1	205	.0951	.0238	.0507
0700	11.58	246.42		+ 7.18	348	11.50	13.0	361.0	.28	42.2	.985	47.7	313	.1452	.0363	.0870
0715	11.81	256.38	.25	+ 9.96	482	11.70	13.2	495.2	.03	43.4	.108	5.2	490	.2273	.0568	.1438
0720	11.91	260.81	.083	+ 4.43	643	11.86	13.4	656.4	.02	44.3	.074	10.7	646	.2997	.0250	.1688
0725	12.02	265.75		+ 4.94	717	11.96	13.6	730.6	.01	44.9	.037	5.4	725	.3364	.0280	.1968
0730	12.14	271.22		+ 5.47	794	12.08	13.7	807.7	.01	45.6	.038	5.5	802	.3721	.0310	.2278
0735	12.27	277.24		+ 6.02	874	12.20	13.8	887.8	.01	46.3	.038	5.5	882	.4092	.0341	.2619
0740	12.42	284.33		+ 7.09	1,030	12.34	13.9	1,044	.01	47.2	.039	5.7	1,040	.4825	.0402	.3021
0745	12.60	293.02		+ 8.69	1,260	12.51	14.1	1,274	.01	48.3	.040	5.8	1,270	.5892	.0491	.3512
0750	12.76	300.94		+ 7.92	1,150	12.68	14.2	1,164					1,160	.5382	.0448	.3960
0755	12.90	308.01		+ 7.07	1,030	12.83	14.3	1,044					1,040	.4825	.0402	.4362
0800	13.02	314.19	.083	+ 6.18	897	12.96	14.5	911.5					912	.4231	.0353	.4715
0815	13.32	330.12	.25	+ 15.93	771	13.17	14.6	785.6					786	.3647	.0912	.5627
0830	13.53	341.67		+ 11.55	559	13.42	14.7	573.7					574	.2663	.0666	.6293
0845	13.70	351.29		+ 9.62	466	13.62	14.8	480.8					481	.2232	.0558	.6851
0900	13.83	358.83		+ 7.54	365	13.76	14.9	379.9					380	.1763	.0441	.7292
0915	13.94	365.32	.25	+ 6.49	314	13.88	14.9	328.9					329	.1527	.0382	.7674

TX-64
1-69

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period Mar. 20, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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
continue Mar. 20																
0930	14.03	370.71	.25	+ 5.39	261	13.98	15.0	276					276	.1281	.0320	.7994
0945	14.10	374.94	.25	+ 4.23	205	14.06	15.0	220					220	.1021	.0255	.8249
1000	14.15	378.01	.25	+ 3.07	149	14.12	15.0	174					174	.0807	.0202	.8451
1030	14.23	382.95	.50	+ 4.94	120	14.19	15.1	135					135	.0626	.0313	.8764
1100	14.27	385.44		+ 2.49	60.3	14.25	15.1	75.4					75.4	.0350	.0175	.8939
1130	14.30	387.31		+ 1.87	45.3	14.28	15.1	60.4					60.4	.0280	.0140	.9079
1200	14.32	388.57	.50	+ 1.26	30.5	14.31	15.1	45.6					45.6	.0212	.0106	.9185
1300	14.34	389.84	1.0	+ 1.27	15.4	14.33	15.1	30.5					30.5	.0142	.0142	.9327
1400	14.35	390.47		+ .63	7.6	14.34	15.1	22.7					22.7	.0105	.0105	.9432
1500	14.35	390.47		0	0	14.35	15.2	15.2					15.2	.0071	.0071	.9503
1600	14.35	390.47		0	0	14.35	15.2	15.2					15.2	.0071	.0071	.9574
1700	14.34	389.84		- .63	- 7.6	14.34	15.1	7.5					7.5	.0035	.0035	.9609
1800	14.33	389.21		- .63	- 7.6	14.34	15.1	7.5					7.5	.0035	.0035	.9644
1900	14.31	387.94		- 1.27	- 15.4	14.32	15.1	0					0	.0000	.0000	.9644
2000	14.29	386.69		- 1.25	- 15.1	14.30	15.1	0					0	.0000	.0000	.9644
2100	14.28	386.06		- .63	- 7.6	14.28	15.1	7.5					7.5	.0035	.0035	.9679
2200	14.27	385.44		- .62	- 7.5	14.28	15.1	7.6					7.6	.0035	.0035	.9714
2300	14.24	383.57		- 1.87	- 22.6	14.26	15.1	0					0	.0000	.0000	.9714
2400	14.23	382.95	1.0	- .62	- 7.5	14.24	15.1	7.6					7.6	.0035	.0035	.9749

comp. by BBH
ch. by BCM

A-78 (Revised Feb. 1960)

Sheet 1 of 1

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

Comp. by: HHW
Date: JULY 7, 1969
Check by: RBH
Date: 7-11-69

WEIGHTED PRECIPITATION RECORD

8-0940.

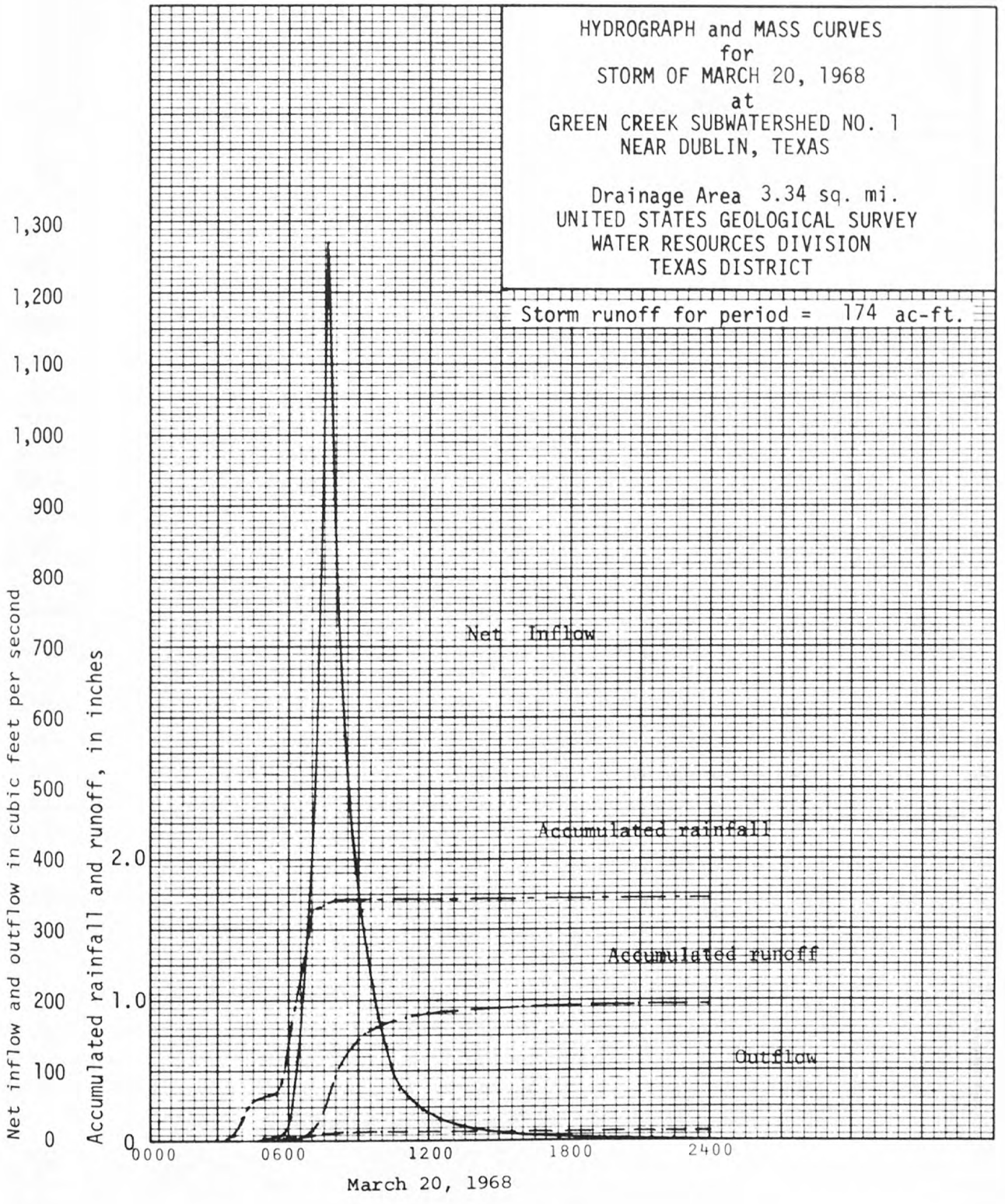
Area: GREEN CREEK SUBWATERSHED No. 1 NEAR DUBLIN, TEX. Date of storm MARCH 20, 1968

Weight Factor	Accumulated Precipitation in Inches for Recording Gages												Accumulated Weighted Precipitation	
	Gage I-R		Gage II-R		Gage		Gage		Gage		Gage			
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
MARCH 20														
0000	0.	0.	0.	0.										0
0300	0.	0.	0.	0.										0
0330	0.	0.	0.	0.										0
0345	.16	.080	0.	0.										.08
0400	.20	.100	.16	.080										.18
0430	.31	.155	.29	.145										.30
0500	.34	.170	.31	.155										.32
0530	.36	.180	.33	.165										.34
0545	.41	.205	.45	.225										.43
0600	.72	.360	.64	.320										.68
0615	.96	.480	.92	.460										.94
0630	1.16	.580	1.10	.550										1.13
0645	1.38	.690	1.37	.685										1.38
0700	1.64	.820	1.65	.825										1.64
0715	1.64	.820	1.68	.840										1.66
0730	1.65	.825	1.72	.860										1.68
0800	1.70	.850	1.75	.875										1.72
1200	1.70	.850	1.75	.875										1.72

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 =

-46-


HYDROGRAPH and MASS CURVES
for
STORM OF MARCH 20, 1968
at
GREEN CREEK SUBWATERSHED NO. 1
NEAR DUBLIN, TEXAS
Drainage Area 3.34 sq. mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 174 ac-ft.
Net Inflow
Accumulated rainfall
Accumulated runoff
Outflow
Net inflow and outflow in cubic feet per second
Accumulated rainfall and runoff, in inches
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
2.0
1.0
0
0000
0600
1200
1800
2400
March 20, 1968

A-65
(Rev. 6-63)

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY-AUSTIN DISTRICT

RUNOFF COMPUTATIONS

Station 8-0945. Green Creek near Alexander, Tex.

Period of Record March 20, 1968 Drainage Area 46.1 sq. mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge c.f.s.	Discharge Inc.	Discharge In/hr.	Runoff Inches	Runoff Acc. In.
March 20, 1968							
0000	3.08	0	8.8	.50	0.0003	0.0002	.0002
0100	3.10	0	9.4	2	.0003	.0006	.0008
0400	3.15	0	11	2.5	.0004	.0010	.0018
0600	3.32	0	18	1.25	.0006	.0008	.0026
0630	3.45	0	25	.5	.0008	.0004	.0030
0700	* 6.00	+.08 / -.18	350	.5	.0118	.0059	.0089
0730	* 8.90	+.21 / 0	1,440	.5	.0484	.0242	.0331
0800	* 10.89	+.29 / 0	2,550	.5	.0857	.0428	.0759
0830	* 11.55	+.31 / 0	2,990	.5	.1005	.0502	.1261
0900	* 11.00	+.29 / 0	2,610	.5	.0877	.0438	.1699
0930	* 10.50	+.27 / 0	2,300	.5	.0773	.0386	.2085
1000	* 10.37	+.27 / 0	2,220	.5	.0746	.0373	.2458
1030	* 10.47	+.27 / 0	2,280	.5	.0766	.0383	.2841
1100	* 10.33	+.27 / 0	2,200	.75	.0739	.0554	.3395
1200	* 9.05	+.22 / 0	1,510	1	.0508	.0508	.3903
1300	* 7.30	+.15 / -.10	745	1	.0250	.0250	.4153
1400	* 6.26	+.10 / -.21	685	1.5	.0230	.0345	.4498
1600	* 5.45	+.04 / -.10	248	2	.0083	.0166	.4664
1800	5.04	-.09	174	2	.0058	.0116	.4780
2000	4.80	-.09	143	2	.0048	.0096	.4876
2200	4.65	-.09	125	2	.0042	.0084	.4960
2400	4.55	-.09	114	1	.0038	.0038	.4998
			14882.2 24				
			620				
BBH JDB	BBH JDB	BBH EEL	BBH JDB	BBH EEL	BBH HHW	BBH HHW	BBH HHW

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

* Recorded ght. - shift col. shows adjustment for drawdown and shift.

Computed by _____ Date _____ Computed _____ Date _____

A-78 (Revised Feb. 1960)

Sheet _____ of _____

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

Comp. by: HHW
Date: JUNE 30, 1969
Check by: JDB
Date: 7-2-69

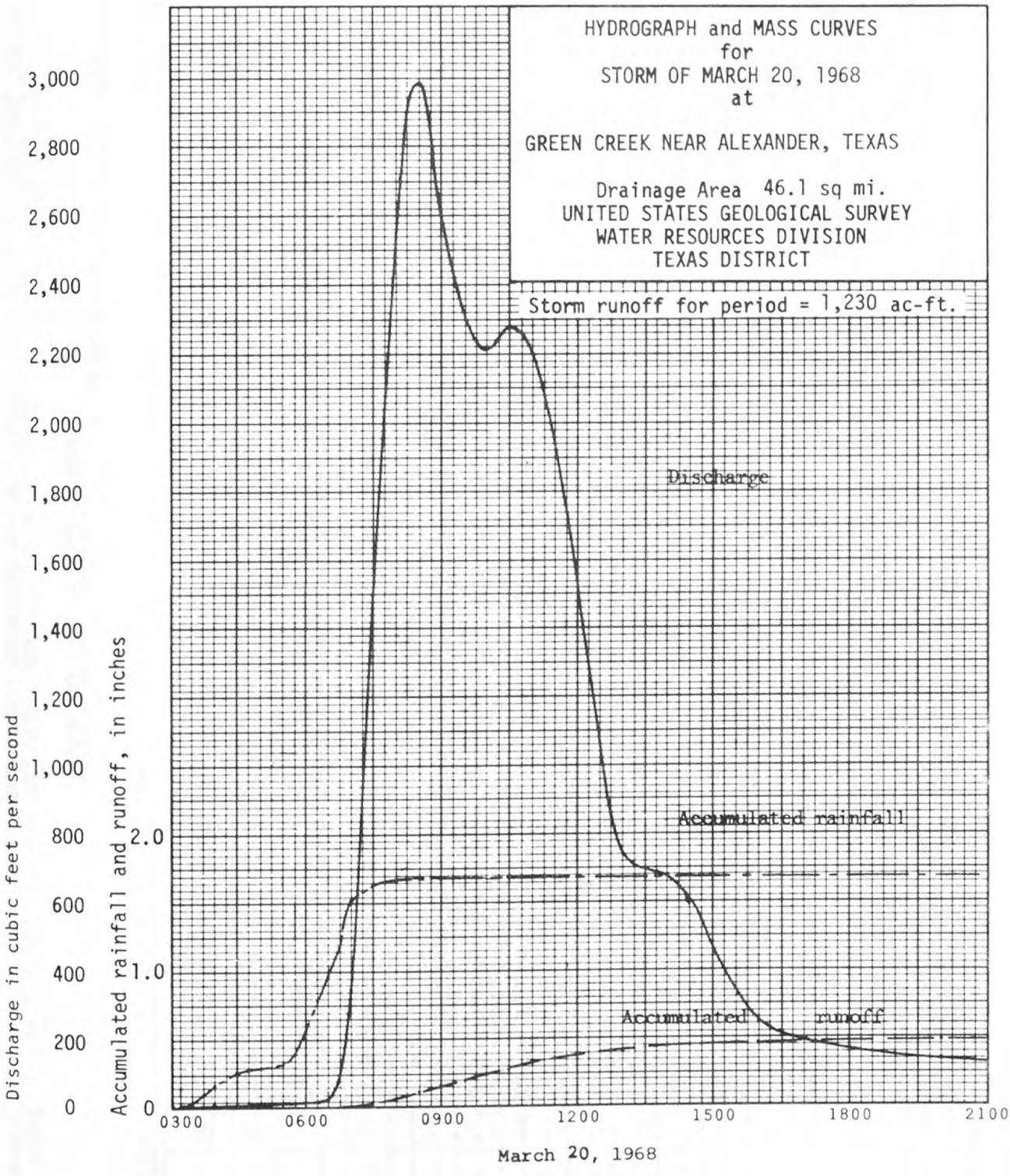
WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK NEAR ALEXANDER, TEX. Date of storm MARCH 20, 1968

Weight Factor	.3333		.3333		.3333								Accumulated Weighted Precipitation	
	Gage 1-R		Gage 7-R		Gage 11-R		Gage		Gage		Gage			
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
MARCH 20														
0100	0.	0.	0.	0.	0.	0.							0.	0.
0115	0.	0.	0.	0.	0.	0.							0.	0.
0130	0.	0.	.04	.013	0.	0.							.013	.01
0200	0.	0.	.05	.017	0.	0.							.017	.02
0300	0.	0.	.10	.033	0.	0.							.033	.03
0330	0.	0.	.13	.043	0.	0.							.043	.04
0345	.16	.053	.17	.057	0.	0.							.110	.11
0400	.20	.067	.19	.063	.16	.053							.183	.18
0430	.31	.103	.24	.080	.29	.097							.280	.27
0500	.34	.113	.32	.107	.31	.103							.323	.31
0530	.36	.120	.33	.110	.33	.110							.340	.33
0545	.41	.137	.39	.130	.45	.150							.417	.41
0600	.72	.240	.44	.147	.64	.213							.600	.58
0615	.96	.320	.55	.183	.92	.307							.810	.79
0630	1.16	.387	.71	.237	1.10	.367							.991	.97
0645	1.38	.460	.92	.307	1.37	.457							1.224	1.19
0700	1.64	.547	1.39	.463	1.65	.550							1.560	1.52
0715	1.64	.547	1.59	.530	1.68	.560							1.637	1.60
0730	1.65	.550	1.70	.567	1.72	.573							1.690	1.65
0800	1.70	.567	1.73	.577	1.75	.583							1.727	1.68
1200	1.70	.567	1.75	.583	1.75	.583							1.733	1.69
1800	1.70	.567	1.75	.583	1.75	.583							1.733	1.69

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-R		1.70									
4-S		1.56									
7-R		1.75									
11-R		1.75									
	TOTAL	6.76									
	AVERAGE	1.690								WMR:	1.690

WMP = Sum of Precipitation x Weight Factor K = WMR / Total Recording Gages Weighted Precipitation = 1.690 / 1.733 = .975


HYDROGRAPH and MASS CURVES
for
STORM OF MARCH 20, 1968
at
GREEN CREEK NEAR ALEXANDER, TEXAS
Drainage Area 46.1 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 1,230 ac-ft.
Discharge
Accumulated rainfall
Accumulated runoff
Discharge in cubic feet per second
Accumulated rainfall and runoff, in inches
3,000
2,800
2,600
2,400
2,200
2,000
1,800
1,600
1,400
1,200
1,000
800
600
400
200
0
2.0
1.0
0
0300
0600
0900
1200
1500
1800
2100
March 20, 1968

Form A-64
(Rev. 5-65)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 1 of 4

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 9 - 13, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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 9, 1968															
0000	10.90	218.62	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1800	10.89	218.23	18.0	- .39	- .3		0	0					0	.0000	.0000	.0000
1900	10.88	217.84	1.0	- .39	-4.7		0	0					0	.0000	.0000	.0000
1930	10.88	217.84	.5	0	0		0	0	0				0	.0000	.0000	.0000
1945	10.89	218.23	.25	+ .39	18.9	10.89	0	18.9	.16	39.1	.52	25.2	0	.0000	.0000	.0000
2000	10.90	218.62	.25	+ .39	18.9	10.90	0	18.9	.05	39.2	.16	7.7	11.2	.0052	.0013	.0013
2030	10.91	219.01	.50	+ .39	9.4	10.90	0	9.4	.05	39.2	.16	3.9	5.5	.0026	.0013	.0026
2100	10.91	219.01	.50	- 0	0	10.91	0	0	.08	39.2	.26	6.3	0	.0000	.0000	.0026
2130	10.92	219.41	.50	+ .40	9.7	10.92	0	9.7	.02	39.3	.07	1.7	8.0	.0037	.0018	.0044
2200	10.92	219.41	.50	0	0	10.92	0	0	.07	39.3	.23	5.6	0	.0000	.0000	.0044
2230	10.93	219.80	.50	+ .39	9.4	10.92	0	9.4	.09	39.3	.29	7.0	2.4	.0011	.0006	.0050
2300	10.94	220.20	.50	+ .40	9.7	10.94	0	9.7	.14	39.4	.46	11.1	0	.0000	.0000	.0050
2330	10.95	220.59	.50	+ .39	9.4	10.94	0	9.4	.04	39.4	.13	3.1	6.3	.0029	.0014	.0064
2400	10.96	220.98	.50	+ .39	9.4	10.96	0	9.4	.04	39.5	.13	3.1	6.3	.0029	.0014	.0078
									.74		2.41					
	May 10															
0000	10.96	220.98	—	—												
0300	10.97	221.38	3.0	+ .40	1.6		0	1.6	0				1.6	.0007	.0021	.0098
0600	10.98	221.77	3.0	+ .39	1.6		0	1.6					1.6	.0007	.0021	.0120
1200	11.00	222.56	6.0	+ .79	1.6		0	1.6					1.6	.0007	.0042	.0162
2030	11.00	222.56	8.5	0	0		0	0					0	.0000	.0000	.0162
2045	11.00	222.56	.25	0	0		0	0	0				0	.0000	.0000	.0162
2100	11.00	222.56	.25	0	0	11.00	0	0	.03	39.6	.10	4.8	0	.0000	.0000	.0162
2115	11.02	223.36	.25	+ .80	38.7	11.01	.2	38.9	.05	39.7	.17	8.2	30.7	.0142	.0036	.0198
2130	11.05	224.56	.25	+ 1.20	58.1	11.04	.7	58.8	.35	39.8	1.16	56.1	2.7	.0013	.0003	.0201
2145	11.06	224.95	.25	+ .39	18.9	11.06	1.0	19.9	.04	40.0	.13	6.3	13.6	.0063	.0016	.0217
2200	11.06	224.95	.25	0	0	11.06	1.0	1.0	0				1.0	.0005	.0001	.0218
2230	11.06	224.95	.50	0	0	11.06	1.0	1.0	0				1.0	.0005	.0002	.0220
2300	11.06	224.95	.50	0	0	11.06	1.0	1.0	0				1.0	.0005	.0002	.0222

Form A-64
(Rev. 5-65)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

Sheet 2 of 4

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 9-13, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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 10, 1968 cont'd															
2330	11.07	225.35	.50	+ .40	9.7	11.06	1.0	10.7					10.7	.0050	.0025	.0247
2400	11.07	225.35	.50	0	0	11.07	1.2	1.2					1.2	.0006	.0003	.0250
			24				)2825									
							0.1									
	May 11															
0000	11.07	225.35														
0030	11.07	225.35	.50	0	0	11.07	1.2	1.2					1.2	.0006	.0003	.0253
0045	11.07	225.35	.25	0	0	11.07	1.2	1.2					1.2	.0006	.0002	.0255
0100	11.07	225.35	.25	0	0	11.07	1.2	1.2	0				1.2	.0006	.0002	.0257
0115	11.08	225.75	.25	+ .40	19.4	11.08	1.4	20.8	.08	40.0	.27	13.1	7.7	.0036	.0009	.0266
0130	11.11	226.95	.25	+ 1.20	58.1	11.10	1.9	60.0	.22	40.2	.74	35.8	24.2	.0112	.0028	.0294
0145	11.13	227.76	.25	+ .81	39.2	11.12	2.4	41.6	0				41.6	.0193	.0098	.0342
0200	11.14	228.17	.25	+ .41	19.8	11.14	2.9	22.7					22.7	.0105	.0026	.0368
0215	11.15	228.57	.25	+ .40	19.4	11.14	2.9	22.3					22.3	.0103	.0026	.0394
0230	11.18	229.78	.25	+ 1.21	58.6	11.16	3.4	62.0					62.0	.0288	.0072	.0466
0245	11.25	232.64	.25	+ 2.86	138	11.22	5.2	143					143	.0664	.0166	.0632
0300	11.34	236.34	.25	+ 3.70	179	11.30	7.7	187					187	.0868	.0217	.0849
0315	11.42	239.66	.25	+ 3.32	161	11.38	10.5	172					172	.0798	.0200	.1049
0330	11.50	243.02	.25	+ 3.36	163	11.46	12.8	176					176	.0817	.0204	.1253
0345	11.56	245.57	.25	+ 2.55	123	11.53	13.0	136					136	.0631	.0158	.1411
0400	11.61	247.70	.25	+ 2.13	103	11.58	13.1	116					116	.0538	.0134	.1545
0430	11.69	251.15	.50	+ 3.45	83.5	11.65	13.2	96.7					96.7	.0449	.0224	.1769
0500	11.75	253.76	.50	+ 2.61	63.2	11.72	13.2	76.4					76.4	.0354	.0177	.1946
0530	11.78	255.07	.50	+ 1.31	31.7	11.76	13.3	45.0					45.0	.0209	.0104	.2050
0600	11.81	256.38	.50	+ 1.31	31.7	11.80	13.3	45.0					45.0	.0209	.0104	.2154
0700	11.83	257.27	1	+ .89	10.8	11.82	13.3	24.1					24.1	.0118	.0118	.2272
0800	11.83	257.27	1	0	0	11.83	13.4	13.4					13.4	.0062	.0062	.2334
0900	11.83	257.27	1	0	0	11.83	13.4	13.4					13.4	.0062	.0062	.2396
1000	11.83	257.27	1	0	0	11.83	13.4	13.4					13.4	.0062	.0062	.2458
1100	11.82	256.82	1	- .45	- 5.4	11.82	13.3	7.9					7.9	.0037	.0037	.2495

Form A-64
(Rev. 5-65)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 9-13, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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 11,	1968 cen't														
1200	11.80	255.94	1	- .88	- 10.6	11.81	13.3	2.7					2.7	.0013	.0013	.2508
1400	11.76	254.20	2	- 1.74	- 10.5	11.78	13.3	2.8					2.8	.0013	.0026	.2534
1800	11.67	250.29	4	- 3.91	- 11.8	11.72	13.2	1.4					1.4	.0006	.0024	.2558
2400	11.53	244.30	6	- 5.99	- 12.1	11.60	13.1	1.0					1.0	.0005	.0030	.2588
			24				)285.100									
							11.9		.77		1.01					
	May 12															
0000	11.53	244.30														
0600	11.40	238.82	6	- 5.48	- 11.1	11.46	12.8	1.7					1.7	.0008	.0048	.2636
1200	11.32	235.51	6	- 3.31	- 6.7	11.36	9.8	3.1					3.1	.0014	.0084	.2720
1800	11.26	233.04	6	- 2.47	- 5.0	11.29	7.4	2.4					2.4	.0011	.0066	.2786
2100	11.24	232.23	3	- .81	- 3.3	11.25	6.1	2.8	0				2.8	.0013	.0039	.2825
2115	11.24	232.23	.25	0	0	11.24	5.8	5.8	.26	40.9	.89	43.1	0	.0000	.0000	.2825
2130	11.26	233.04	.25	+ .81	39.2	11.25	6.1	45.3	.20	40.9	.68	32.9	12.4	.0058	.0014	.2839
2145	11.31	235.09	.25	+ 2.05	99.2	11.28	7.1	106	.48	41.1	1.64	79.4	26.6	.0123	.0031	.2870
2200	11.40	238.82	.25	+ 3.73	181	11.36	9.8	191	.69	41.5	2.39	116	75.0	.0348	.0087	.2957
2215	11.53	244.30	.25	+ 5.48	265	11.46	12.8	278	.15	42.0	.52	25.2	253	.1174	.0294	.3251
2230	11.77	254.63	.25	+10.33	500	11.65	13.2	513	.01	43.1	.04	1.9	511	.2371	.0593	.3844
2235	11.87	259.03	.083	+ 4.40	639	11.82	13.3	652	.03	44.0	.11	16.0	636	.2951	.0245	.4089
2240	12.02	265.75	.083	+ 6.72	976	11.94	13.5	990	.03	44.7	.11	16.0	974	.4519	.0375	.4464
2245	12.32	279.59	.083	+13.84	2,010	12.17	13.8	2,020	.02	46.1	.08	11.6	2,010	.9326	.0774	.5238
2250	12.82	303.95	.083	+24.36	3,540	12.57	14.2	3,550	.02	48.7	.08	11.6	3,540	1.6426	.1363	.6601
2255	13.12	319.43	.083	+15.48	2,250	12.97	14.5	2,260	.02	51.6	.09	13.1	2,250	1.0440	.0867	.7468
2300	13.33	330.66	.083	+11.23	1,630	13.22	14.6	1,640	.02	53.9	.09	13.1	1,630	.7563	.0628	.8096
2305	13.52	341.11	.083	+10.45	1,520	13.42	14.7	1,530	.01	55.0	.05	7.3	1,520	.7053	.0585	.8681
2310	13.70	351.29	.083	+10.18	1,480	13.61	14.8	1,490	0	56.6			1,490	.6914	.0574	.9255
2315	13.87	361.18	.083	+ 9.89	1,440	13.78	14.9	1,450	0				1,450	.6728	.0558	.9813
2330	14.35	390.47	.25	+29.29	1,420	14.11	15.0	1,440	.08	61.0	.41	19.8	1,420	.6589	.1647	1.1460
2345	14.79	419.16	.25	+28.69	4,390	14.57	15.3	1,410	.24	65.2	1.30	62.9	1,350	.6264	.1566	1.3026
2400	15.08	439.08	.25	+19.92	964	14.94	15.4	979	.07	68.7	.40	19.4	960	.4454	.1114	1.4140
			24				)234.0656									
							9.8		2.33		8.88					

Form A-64
(Rev. 5-65)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

INFLOW AND OUTFLOW COMPUTATIONS

Storm period May 9-13, 1968

8-0940 Green Creek subwatershed No. 1 near Dublin, Tex. D.A. 3.34 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
	May 13															
0000	15.08	439.08	—													
0015	15.29	453.98	.25	+ 14.90	721	15.18	15.4	736					736	.3415	.0854	1.4994
0030	15.48	467.82	.25	+ 13.84	670	15.38	15.5	686					686	.3183	.0796	1.5790
0045	15.65	480.49	.25	+ 12.67	613	15.56	15.5	628					628	.2914	.0728	1.6518
0100	15.80	491.91	.25	+ 11.42	553	15.72	15.5	568					568	.2636	.0659	1.7177
0130	16.01	508.19	.5	+ 16.28	394	15.90	15.6	410					410	.1902	.0951	1.8128
0200	16.20	523.23	.5	+ 15.04	364	16.10	15.6	380					380	.1763	.0882	1.9010
0230	16.30	531.27	.5	+ 8.04	195	16.25	15.6	211					211	.0979	.0490	1.9500
0300	16.38	537.77	.5	+ 6.50	157	16.34	15.7	172					172	.0798	.0399	1.9899
0400	16.45	543.49	1.0	+ 5.72	69.2	16.42	15.7	84.9					84.9	.0394	.0394	2.0293
0500	16.48	545.95	1.0	+ 2.46	29.8	16.46	15.7	45.5					45.5	.0211	.0211	2.0504
0600	16.49	546.77	1.0	+ .82	9.9	16.48	15.7	25.6					25.6	.0119	.0119	2.0603
0700	16.49	546.77	1.0	0	0	16.49	15.7	15.7					15.7	.0073	.0073	2.0696
0900	16.49	546.77	2.0	0	0	16.49	15.7	15.7	0				15.7	.0073	.0146	2.0842
1000	16.48	545.95	1.0	- .82	- 9.9	16.48	15.7	5.8	.05	823	.34	4.1	1.7	.0008	.0008	2.0850
1200	16.47	545.13	2.0	- .82	- 5.0	16.48	15.7	10.7	0				10.7	.0050	.0100	2.0950
1400	16.44	542.67	2.0	- 2.46	- 14.9	16.46	15.7	.8					.8	.0004	.0008	2.0958
1600	16.41	540.21	2.0	- 2.46	- 14.9	16.42	15.7	.8					.8	.0004	.0008	2.0966
1800	16.38	537.77	2.0	- 2.44	- 14.8	16.40	15.7	.9					.9	.0004	.0008	2.0974
2000	16.35	535.33	2.0	- 2.44	- 14.8	16.36	15.7	.9					.9	.0004	.0008	2.0982
2200	16.32	532.89	2.0	- 2.44	- 14.8	16.34	15.7	.9					.9	.0004	.0008	2.0990
2400	16.29	530.47	2.0	- 2.42	- 14.6	16.30	15.7	1.1					1.1	.0005	.0010	2.1000
			24				376.425									
							15.7				34					

comp by BBH Date Apr. 16, 1969
ck by BCM Apr 26, 1969

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: H.H.W.
Date 7-7-69
Check by B.B.H.
Date 7-11-69

Study Area 8-0940. Green Creek subwatershed No. 1 nr. Dublin, Tex. Date of storms May 9, May 10-11, May 12, 1968

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation
Weight Factor	1.00												~~Recording Gages~~ (~~Rec. Gages x K~~)
	Gage 11-R		Gage		Gage		Gage		Gage		Gage		~~All Gages~~
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Storm Rainfall / Total Rainfall
May 9, 1968													
1930	.00												.00 / .00
1945	.16												.16 / .16
2000	.21												.21 / .21
2030	.26												.26 / .26
2100	.34												.34 / .34
2130	.36												.36 / .36
2200	.43												.43 / .43
2230	.52												.52 / .52
2245	.55												.55 / .55
2300	.66												.66 / .66
2315	.68												.68 / .68
2330	.70												.70 / .70
2400	.74												.74 / .74
May 10, 1968													
2000	.74												.00 / .74
2100	.77												.03 / .77
2115	.82												.08 / .82
2130	1.17												.43 / 1.17
2145	1.21												.47 / 1.21
2200	1.21												.47 / 1.21
May N													
0100	1.21												.47 / 1.21
0115	1.29												.55 / 1.29
0200	1.51												.77 / 1.51
0300	1.51												.77 / 1.51

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

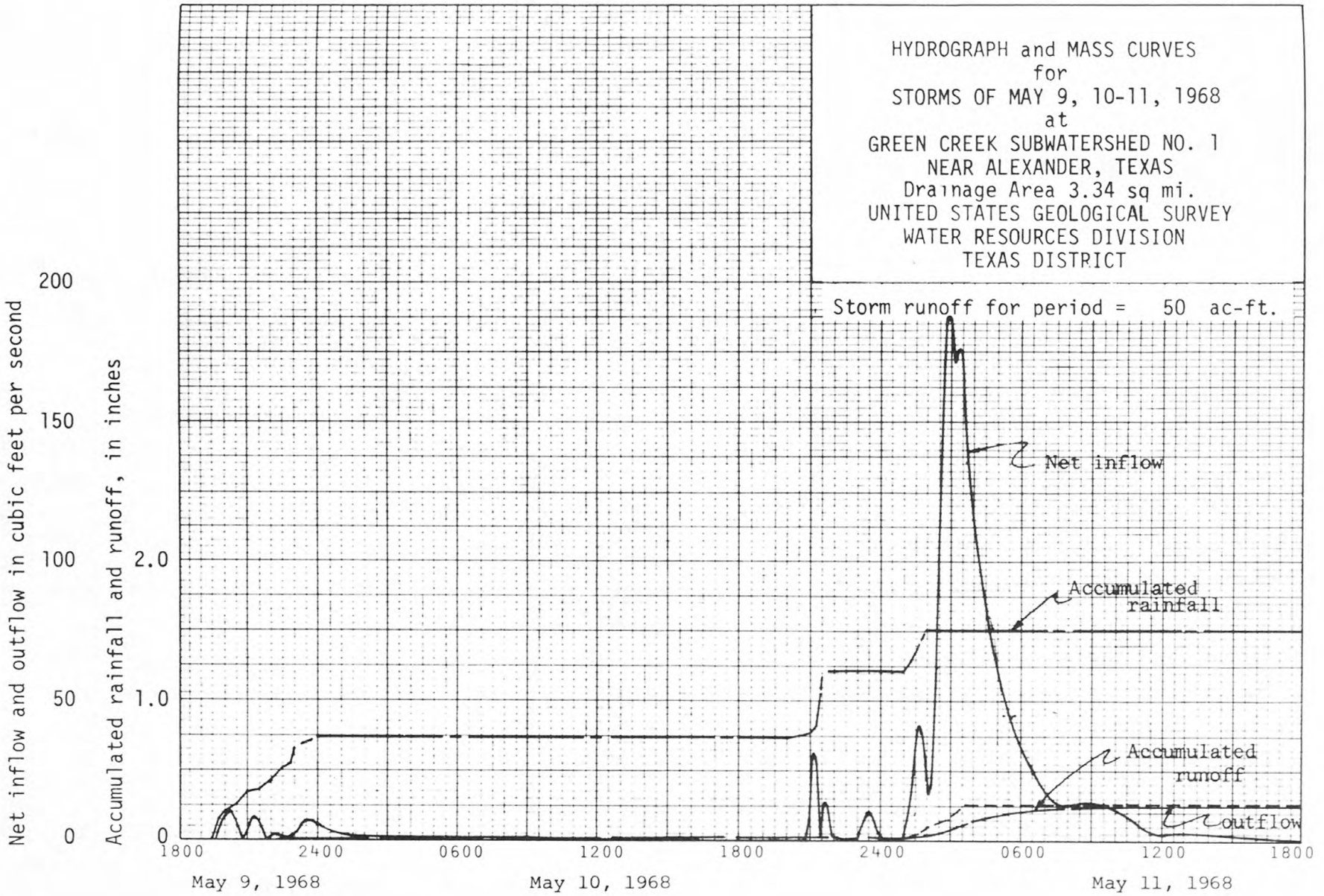
Sheet 2 of 2
Comp. by: H.H.IV.
Date 7-7-69
Check by B.B.H.
Date 7-11-69

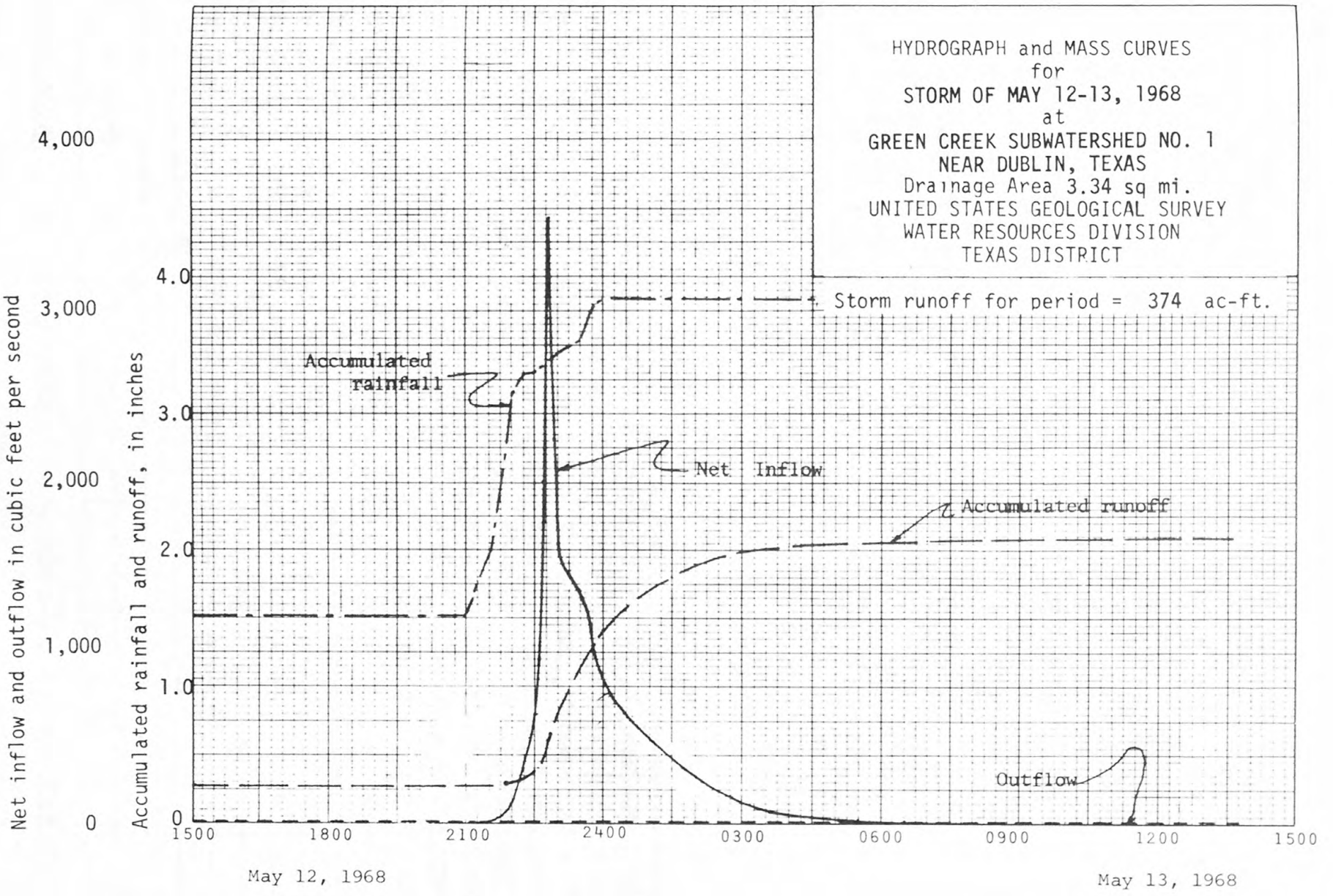
Study Area 8-0940 Green Creek subwatershed No. 1 nr. Dublin, Tex. Date of storm May 9, May 10-11, May 12, 1968

	Accumulated Precipitation in Inches for Recording Rain Gages												Accumulated Weighted Precipitation	
Weight Factor	1.00												~~Recording Gages~~	(~~Rec. Gages~~ x K)
	Gage 11-R		Gage		Gage		Gage		Gage		Gage		~~All Gages~~	~~All Gages~~
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Storm Rainfall	Total Rainfall
May 12, 1968														
2100	1.51												.00	1.51
2115	1.77												.26	1.77
2130	1.97												.46	1.97
2145	2.45												.94	2.45
2200	3.14												1.63	3.14
2215	3.29												1.78	3.29
2230	3.30												1.79	3.30
2300	3.44												1.93	3.44
2330	3.53												2.02	3.53
2345	3.77												2.26	3.77
2400	3.84												2.33	3.84

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 =


HYDROGRAPH and MASS CURVES
for
STORMS OF MAY 9, 10-11, 1968
at
GREEN CREEK SUBWATERSHED NO. 1
NEAR ALEXANDER, TEXAS
Drainage Area 3.34 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 50 ac-ft.
Net inflow
Accumulated rainfall
Accumulated runoff
Outflow
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
1800
2400
0600
1200
1800
2400
0600
1200
1800
May 9, 1968
May 10, 1968
May 11, 1968


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 12-13, 1968
at
GREEN CREEK SUBWATERSHED NO. 1
NEAR DUBLIN, TEXAS
Drainage Area 3.34 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 374 ac-ft.
Accumulated rainfall
Net Inflow
Accumulated runoff
Outflow
Net inflow and outflow 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
1500
1800
2100
2400
0300
0600
0900
1200
1500
May 12, 1968
May 13, 1968

TX-65 (Rev. 7-69)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

RUNOFF COMPUTATIONS

Station 8-0945. Green Creek near Alexander, Tex.

Period of Record May 9-11, 1968 Drainage Area 46.1 Sq mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In./Hr.	Runoff Inches	Acc. In.
	May 9, 1968						
0000	2.84	0	2.8	19	.0001	.0010	.0010
1900	2.83		2.6	20	.0001	.0010	.0020
2000	3.00		6.3	2	.0002	.0002	.0022
2100	3.20		13	2	.0004	.0004	.0026
2200	3.38		21	3	.0007	.0010	.0036
2400	3.26	0	16	2	.0005	.0005	.0041
			238.8 (48				
			5.0				
	May 10						
0000	3.26	0	16	12	.0005	.0008	.0049
0300	3.14		11	20	.0004	.0010	.0059
0500	3.09		9.1	16	.0003	.0006	.0065
0700	3.07		8.5	16	.0003	.0006	.0071
0900	3.10		9.4	36	.0003	.0014	.0085
1600	3.03		7.2	36	.0002	.0009	.0094
1800	3.11		9.8	12	.0003	.0004	.0098
1900	3.11		9.8	12	.0003	.0004	.0102
2100	3.08		8.8	12	.0003	.0004	.0106
2200	3.60	0	34	7	.0011	.0010	.0116
2245	9.00	+.18 -.10	1,430	4	.0480	.0240	.0356
2300	8.00	+.16 -.10	994	3	.0334	.0125	.0481
2330	8.10	+.16 -.10	1,030	4	.0346	.0173	.0654
2400	7.50	+.12 0	826	2	.0278	.0070	.0724
			16344 (192				
			85				

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In./Hr.	Runoff Inches	Acc. In
	May 11						
0000	7.50	+.12 0	826	2	.0278	.0139	.0863
0100	5.92	+.06 0	370	3	.0124	.0093	.0956
0130	6.40	+.08 0	495	2	.0166	.0083	.1039
0200	8.50	+.20 0	1,260	2	.0423	.0212	.1251
0230	9.14	+.22 0	1,550	2	.0521	.0260	.1511
0300	8.25	+.18 0	1,140	2	.0383	.0192	.1703
0330	7.25	+.10 0	745	3	.0250	.0188	.1891
0430	6.00	+.06 0	390	3	.0131	.0098	.1989
0500	5.70	+.05 0	320	5	.0108	.0135	.2124
0700	4.90	0	167	6	.0056	.0084	.2208
0800	4.88		164	8	.0055	.0110	.2318
1100	4.52		120	12	.0040	.0120	.2438
1400	4.25		92	12	.0031	.0093	.2531
1700	4.09		76	14	.0026	.0091	.2622
2100	3.96		63	14	.0021	.0074	.2696
2400	3.90	0	58	6	.0019	.0028	.2724
			23809 (96				
			248				

Computed by HDB Date 8-12-70 Checked by J.N.S. Date 8-13-70

TX-65 (Rev. 7-69)

UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY - TEXAS DISTRICT

RUNOFF COMPUTATIONS

Station Green Creek near Alexander, Tex.

Period of Record May 12-14, 1968 Drainage Area 46.1 sq mi.

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In./Hr.	Runoff Inches	Acc. In.
	May 12, 1968						
0000	3.90	0	58	12	.0019	.0114	.2838
1200	3.70		41	21	.0014	.0147	.2985
2100	3.55		31	11	.0010	.0055	.3040
2300	3.52		29	3	.0010	.0015	.3055
2400	3.59	0	33	1	.0011	.0006	.3061
			2,018 (48				
			42				
	May 13						
0000	3.59	0	33	2	.0011	.0006	.3067
0100	4.00		67	4	.0023	.0023	.3090
0200	4.25	0	92	3	.0031	.0023	.3113
0230	7.30	+.16 / 0	778	2	.0261	.0130	.3243
0300	7.78	+.18 / 0	954	2	.0321	.0160	.3403
0330	7.92	+.19 / 0	1,010	2	.0340	.0170	.3573
0400	7.75	+.18 / 0	943	3	.0317	.0238	.3811
0500	6.80	+.12 / 0	616	4	.0207	.0207	.4018
0600	6.00	+.08 / 0	395	4	.0133	.0133	.4151
0700	5.50	+.05 / 0	280	4	.0094	.0094	.4245
0800	5.15	0	204	6	.0069	.0104	.4349
1000	4.74		147	10	.0049	.0122	.4471
1300	4.42		108	12	.0036	.0108	.4579
1600	4.25		91	10	.0031	.0078	.4657
1800	4.17		84	8	.0028	.0056	.4713
2000	4.12		78	5	.0026	.0032	.4745
2030	4.20	0	85	2	.0029	.0014	.4759

Time	G. Ht. Feet	Sh. Adj.	Discharge C. f. s.	Inc.	In./Hr.	Runoff Inches	Acc. In.
	May 13 -- Continued						
2100	6.00	+.08 / 0	395	2	.0133	.0066	.4825
2130	7.70	+.16 / 0	914	2	.0307	.0154	.4979
2200	8.23	+.20 / 0	1,140	2	.0383	.0192	.5171
2230	6.70	+.14 / 0	592	2	.0199	.0100	.5271
2300	6.00	+.08 / 0	395	3	.0133	.0100	.5371
2400	5.15	0 / 0	204	2	.0069	.0034	.5405
			27,894 (96				
			291				
	May 14						
0000	5.15	0	204	1	.0069	.0034	.5439
0100	4.78		152	3	.0051	.0076	.5515
0300	4.45		112	4	.0038	.0076	.5591
0500	4.32		99	5	.0033	.0082	.5673
0800	4.22		89	9	.0030	.0135	.5808
1400	4.12		79	12	.0027	.0162	.5970
2000	4.05		72	10	.0024	.0120	.6090
2400	4.03	0	70	4	.0024	.0048	.6138
			4,352 (48				
			91				

Computed by H.D.B. Date 8-12-70 Checked by J.N.S. Date 8-13-70

A-78 (Revised Feb. 1960)

Sheet 1 of 3

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

Comp. by: HHW
Date: June 30, 1969
Check by: JDB
Date: July 3, 1969

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK Near ALEXANDER, TEX. Date of storm MAY 9-14, 1968

Weight Factor	Gage T-R .500		Gage T-R .500		Gage		Gage		Gage		Gage		Accumulated Weighted Precipitation	
	Accumulated Precipitation in Inches for Recording 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	Recording Gages	(Storm) (Accum)
MAY 9														
1200	0.	0.	0.	0.									0.	0 0
1900	0.	0.	0.	0.									0.	0 0
1915	0.	0.	0.	0.									0.	0 0
1930	.05	.025	0.	0.									.025	.02 .02
1945	.48	.240	.16	.080									.320	.28 .28
2000	.62	.310	.21	.105									.415	.37 .37
2030	.66	.330	.26	.130									.460	.41 .41
2100	.71	.355	.34	.170									.525	.47 .47
2130	.77	.385	.36	.180									.565	.50 .50
2200	.82	.410	.43	.215									.625	.56 .56
2230	.89	.445	.52	.260									.705	.63 .63
2245	.95	.475	.55	.275									.750	.67 .67
2300	1.00	.500	.66	.330									.830	.74 .74
2315	1.09	.545	.68	.340									.885	.78 .78
2330	1.12	.560	.70	.350									.910	.81 .81
2400	1.17	.585	.74	.370									.955	.85 .85
MAY 10														
0600	1.17	.585	.74	.370									.955	0 .85
1900	1.17	.585	.74	.370									.955	0 .85
2000	1.187	.590	.74	.370									.960	0 .85
2100	1.18	.590	.77	.385									.975	.01 .86
2115	1.19	.595	.82	.410									1.005	.04 .89
2130	1.31	.655	1.17	.585									1.240	.25 1.10
2145	1.83	.915	1.21	.605									1.520	.50 1.35
2200	1.85	.925	1.21	.605									1.530	.51 1.36
2400	1.85	.925	1.21	.605									1.530	.51 1.36

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 =

A 78 (Revised Feb. 1960)

Sheet 2 of 3

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

Comp. by: HHW
Date: June 30, 1969
Check by: JDB
Date: July 3, 1969

WEIGHTED PRECIPITATION RECORD

Area: Green Creek Near Alexander, Tex. Date of storm MAY 9-14, 1968

Weight Factor	Accumulated Precipitation in Inches for Recording Gages												Accumulated Weighted Precipitation		
	Gage T-R		Gage T1-R		Gage		Gage		Gage		Gage			(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	Recording Gages	(Storm)	(Accum)
	.500		.500												
MAY 11															
0045	1.85	.925	1.21	.605									1.530	.51	1.36
0100	1.87	.935	1.21	.605									1.540	.52	1.37
0115	1.96	.980	1.29	.645									1.625	.59	1.44
0130	2.31	1.155	1.51	.755									1.910	.85	1.70
0145	3.17	1.585	1.51	.755									2.340	1.23	2.08
0200	3.74	1.870	1.51	.755									2.625	1.48	2.33
2400	3.74	1.870	1.51	.755									2.625	1.48	2.33
MAY 12															
2000	3.74	1.870	1.51	.755									2.625	0	2.33
2030	3.74	1.870	1.51	.755									2.625	0	2.33
2045	3.79	1.895	1.51	.755									2.650	.02	2.35
2100	3.79	1.895	1.51	.755									2.650	.02	2.35
2115	3.79	1.895	1.77	.885									2.780	.14	2.47
2130	3.79	1.895	1.97	.985									2.880	.23	2.56
2145	3.80	1.900	2.45	1.225									3.125	.42	2.78
2200	3.80	1.900	3.14	1.570									3.470	.75	3.08
2215	3.80	1.900	3.29	1.645									3.545	.82	3.15
2230	3.80	1.900	3.30	1.650									3.550	.82	3.15
2300	3.81	1.905	3.44	1.720									3.625	.89	3.22
2330	3.83	1.915	3.53	1.765									3.680	.94	3.27
2345	3.96	1.980	3.77	1.885									3.865	1.10	3.43
2400	3.98	1.990	3.84	1.920									3.910	1.14	3.47
MAY 13															
0015	4.25	2.125	3.84	1.920									4.045	1.26	3.59
0100	4.26	2.130	3.84	1.920									4.050	1.27	3.60
0800	4.30	2.150	3.84	1.920									4.070	1.28	3.61
0900	4.30	2.150	3.84	1.920									4.070	1.28	3.61
0945	4.30	2.150	3.89	1.945									4.095	1.31	3.64

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 =

A-78 (Revised Feb. 1960)

Sheet 3 of 3

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

Comp. by: HHW
Date: June 30, 1969
Check by: JDB
Date: July 3, 1969

WEIGHTED PRECIPITATION RECORD

Area: GREEN CREEK NEAR ALEXANDER, TEX. Date of storm MAY 9-14, 1968

Accumulated Precipitation in Inches for Recording Gages

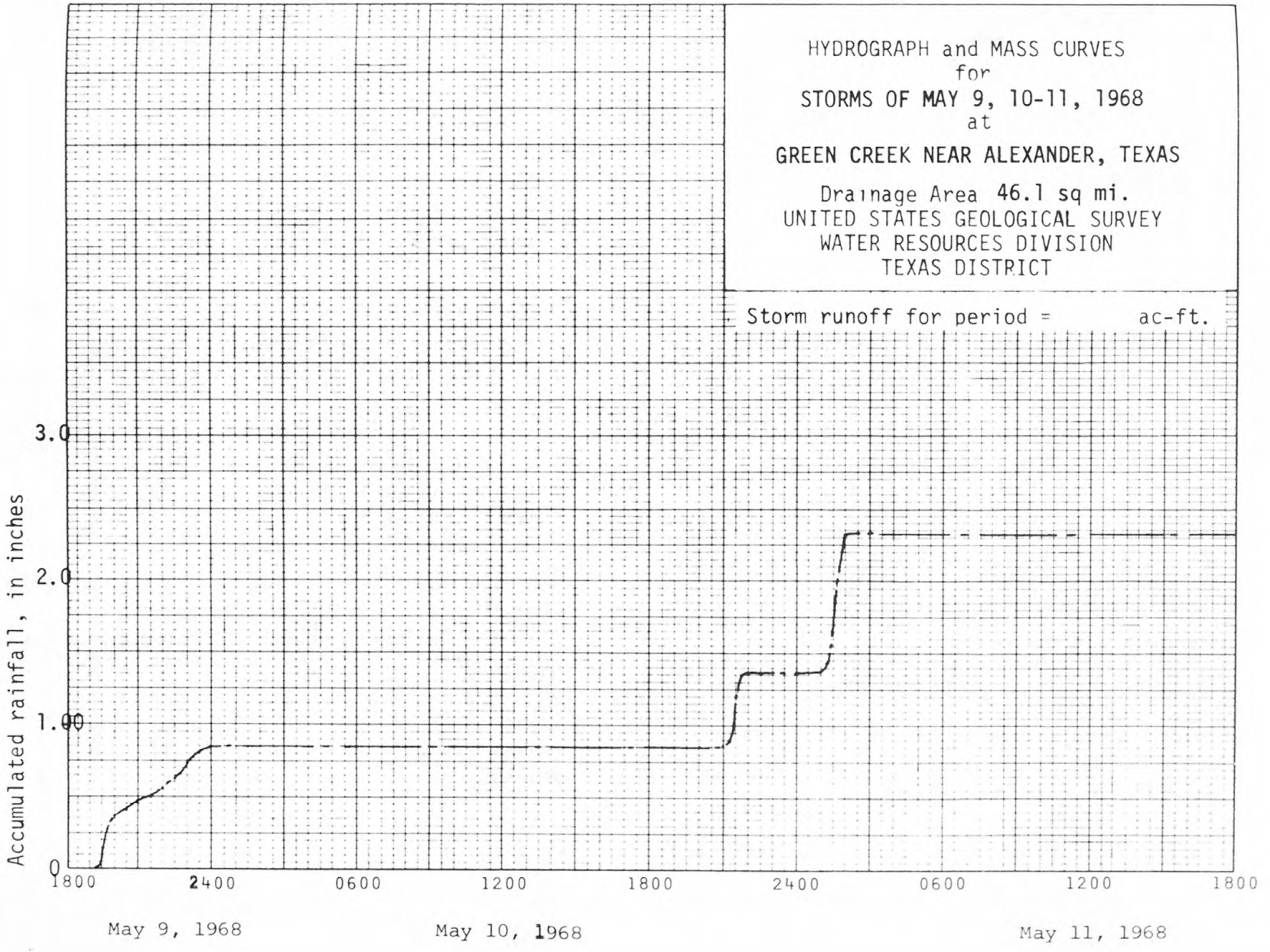
Weight Factor		.500		.500										Accumulated Weighted Precipitation	
	Gage 7-R		Gage 11-R		Gage		Gage		Gage		Gage			(Rec. Gages x K) All Gages	
Date & Time	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recorded	x Factor	Recording Gages	Storm	(Accum)
MAY 13	con't														
2000	4.30	2.150	3.89	1.945									4.095	0	3.64
2030	4.30	2.150	3.89	1.945									4.095	0	3.64
2045	4.33	2.165	3.89	1.945									4.110	.01	3.65
2100	4.85	2.425	3.89	1.945									4.370	.24	3.88
2115	5.14	2.570	3.89	1.945									4.515	.37	4.01
2130	5.30	2.650	3.89	1.945									4.595	.44	4.08
2200	5.30	2.650	3.89	1.945									4.595	.44	4.08
2400	5.30	2.650	3.89	1.945									4.595	.44	4.08

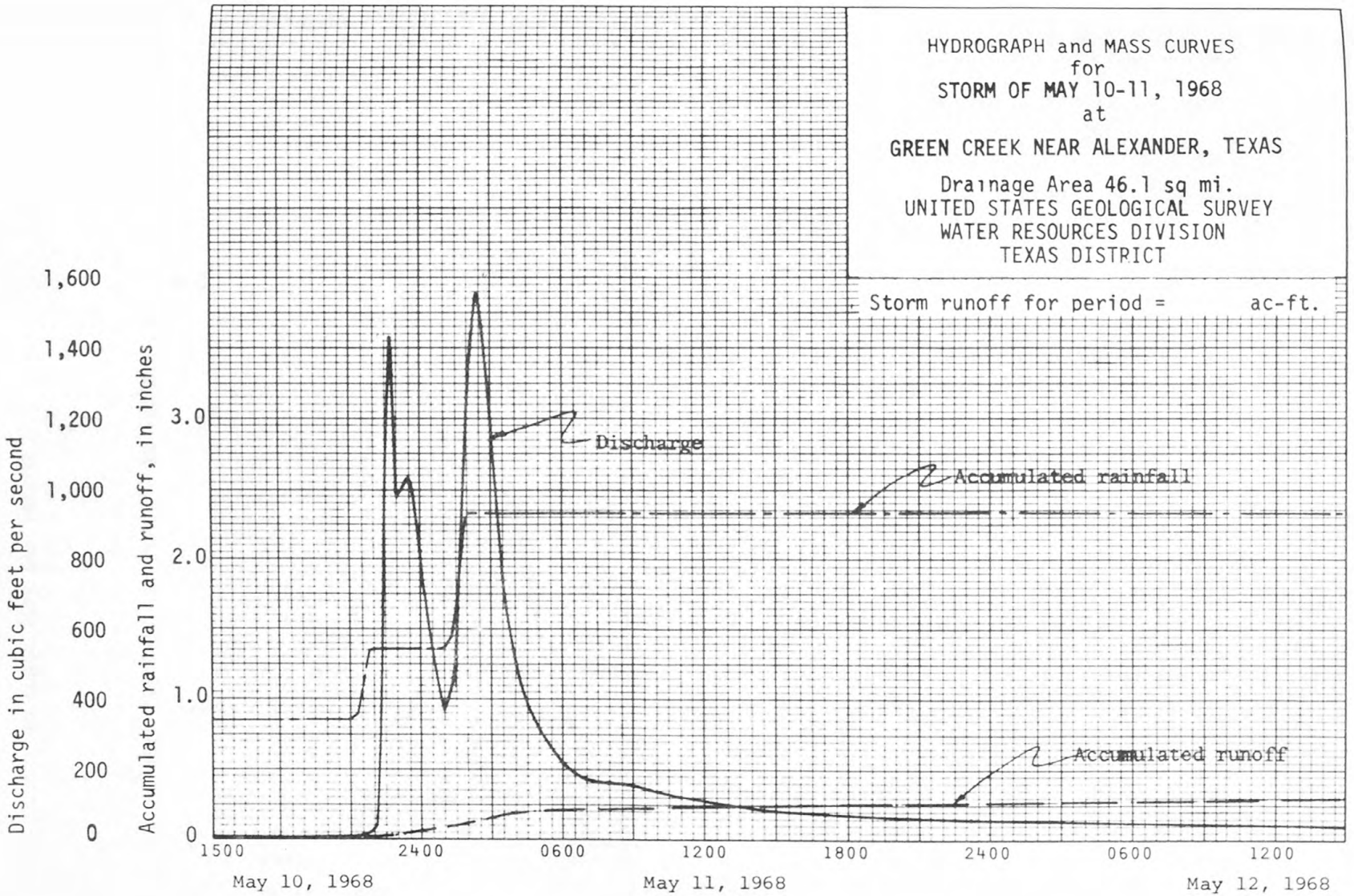
Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor	Rain Gage	Weight Factor	Precipitation	Precipitation x Weight Factor
1-R		*4.50									
4-S		2.63									
7-R		5.30									
11-R		3.89									
	TOTAL	16.32									
	AVERAGE	4.080									

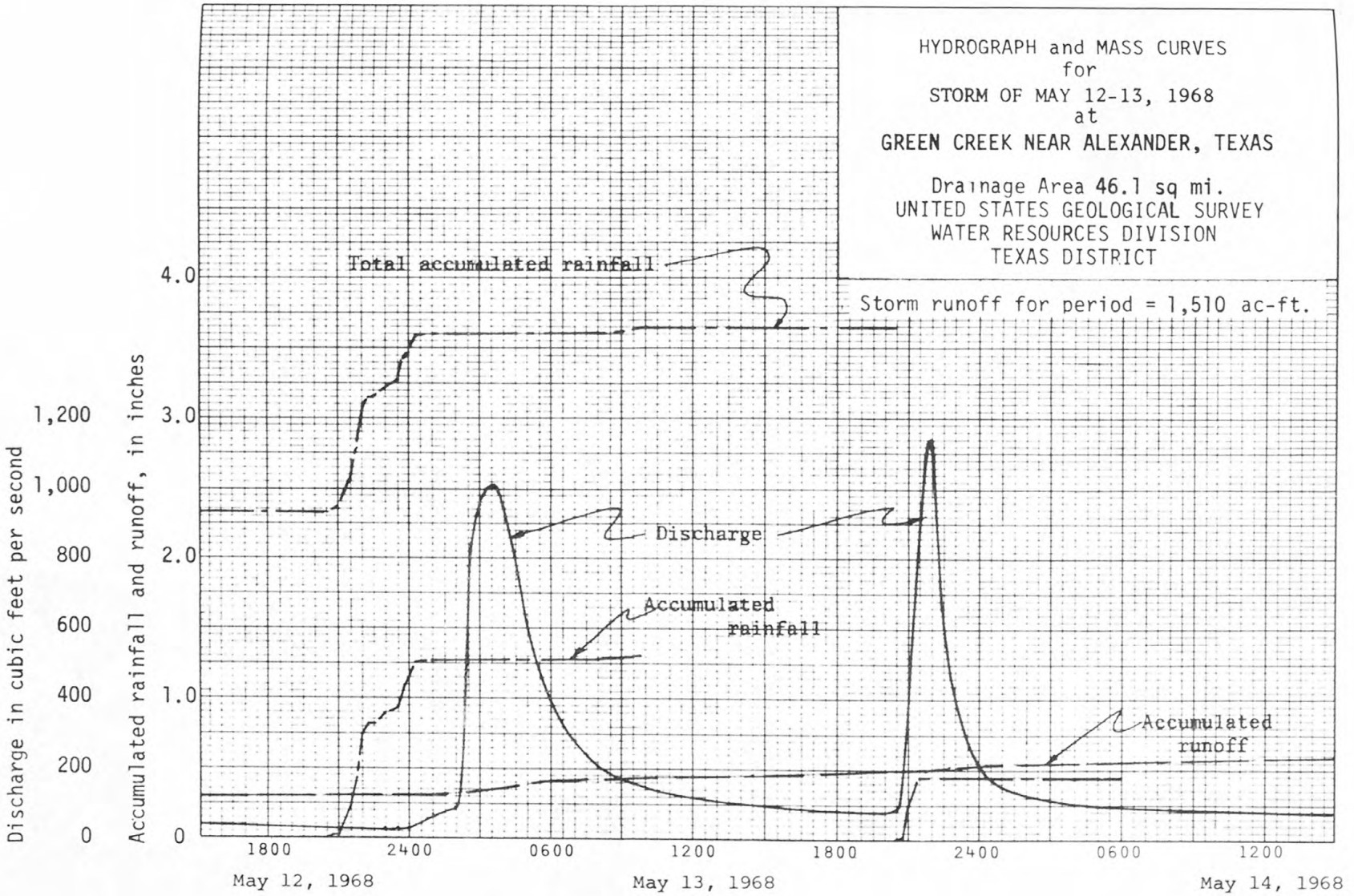
WMR: 4.080

WMR = Sum of Precipitation x Weight Factor K = WMR / Total Recording Gages Weighted Precipitation = 4.080 / 4.595 = .888

*DAILY RAINFALL DISTRIBUTED BASED ON 11-R.


HYDROGRAPH and MASS CURVES
for
STORMS OF MAY 9, 10-11, 1968
at
GREEN CREEK NEAR ALEXANDER, TEXAS
Drainage Area 46.1 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = ac-ft.
Accumulated rainfall, in inches
0
1.00
2.0
3.0
1800
2400
0600
1200
1800
2400
0600
1200
1800
May 9, 1968
May 10, 1968
May 11, 1968


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 10-11, 1968
at
GREEN CREEK NEAR ALEXANDER, TEXAS
Drainage Area 46.1 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = ac-ft.
Discharge in cubic feet per second
1,600
1,400
1,200
1,000
800
600
400
200
0
Accumulated rainfall and runoff, in inches
3.0
2.0
1.0
0
Discharge
Accumulated rainfall
Accumulated runoff
1500
2400
0600
1200
1800
2400
0600
1200
May 10, 1968
May 11, 1968
May 12, 1968


HYDROGRAPH and MASS CURVES
for
STORM OF MAY 12-13, 1968
at
GREEN CREEK NEAR ALEXANDER, TEXAS
Drainage Area 46.1 sq mi.
UNITED STATES GEOLOGICAL SURVEY
WATER RESOURCES DIVISION
TEXAS DISTRICT
Storm runoff for period = 1,510 ac-ft.
Total accumulated rainfall
Discharge
Accumulated rainfall
Accumulated runoff
Discharge in cubic feet per second
1,200
1,000
800
600
400
200
0
Accumulated rainfall and runoff, in inches
4.0
3.0
2.0
1.0
0
1800
2400
0600
1200
1800
2400
0600
1200
May 12, 1968
May 13, 1968
May 14, 1968