Water-Data Report TX-2005

08102500 Leon River near Belton, TX

Brazos River Basin

LOCATION.--Lat 31°04′12″, long 97°26′28″ referenced to North American Datum of 1927, Bell County, Hydrologic Unit 12070201, on left bank 1,400 ft upstream from bridge on Farm Road 817, 2,000 ft upstream from concrete dam, 1.0 mi upstream from bridge on Interstate Highway 35 and U.S. Highway 81, 1.6 mi northeast of Belton, 3.2 mi downstream from Belton Dam, 5.2 mi upstream from Nolan Creek, and 13.1 mi upstream from mouth.

DRAINAGE AREA.--3,542 mi^2.

WATER-DISCHARGE RECORDS

PERIOD OF RECORD.--Oct. 1923 to current year. Water-quality records: Chemical data: Mar. 1961 to Aug. 1964, Jan. 1994 to Aug. 1998. Biochemical data: Mar. 1961 to Aug. 1964, Jan. 1994 to Aug. 1998. Water temperature: Mar. 1957 to Oct. 1972.

REVISED RECORDS.--WSP 1442: 1925(M), 1935(M), 1936, 1938(M), 1941-42(M), 1944-45(M). WSP 1712: 1937(M). WDR TX-76-2: Drainage area.

GAGE.--Water-stage recorder and concrete dam. Datum of gage is 476.68 ft above NGVD of 1929. Prior to May 21, 1931, nonrecording gage. Satellite telemeter at station.

REMARKS.--No estimated daily discharges. Records good. Since Mar. 8, 1954, at least 10% of contributing drainage area has been regulated. The city of Temple diverts water from the pool at gage and returns wastewater effluent to Little Elm Creek downstream from station. The Brazos River Authority returns wastewater effluent to the Leon River downstream from station for their Temple-Belton plant. No flow at times.

AVERAGE DISCHARGE FOR PERIOD PRIOR TO REGULATION.--30 years (water years 1924-53) prior to regulation by Belton Lake, 659 ft^3/s (477,400 acre-ft/yr).

EXTREMES OUTSIDE PERIOD OF RECORD.--Flood in Dec. 1913 reached a stage of 25 ft, and a flood in Sept. 1921 reached a stage of 21 ft, from information by local residents.

EXTREMES FOR PERIOD PRIOR TO REGULATION.--WATER YEARS, 1924-1953: Maximum discharge, 56,500 ft^3/s Apr. 22, 1945 (gage height, 24.41 ft). No flow at times.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2004 TO SEPTEMBER 2005
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	42	713	3,710	3,060	1,710	4,750	2,090	444	827	27	43	755
2	57	700	3,960	3,060	1,710	4,760	1,420	378	828	38	30	366
3	55	712	3,960	3,060	1,710	3,830	378	244	830	38	31	377
4	52	711	3,970	3,060	1,710	3,840	717	243	834	35	40	378
5	59	725	3,990	3,050	1,720	4,640	949	157	829	28	43	380
6	130	731	3,990	3,030	1,720	4,650	938	73	834	32	45	380
7	256	726	4,810	3,030	1,720	4,670	930	68	830	24	45	204
8	376	720	5,910	3,020	1,960	4,650	928	68	603	28	47	71
9	461	729	5,890	3,030	2,420	4,650	927	70	259	26	67	71
10	462	634	5,870	3,040	2,420	4,650	924	67	257	24	98	69
11	457	490	5,880	3,050	2,420	4,640	1,360	190	257	23	68	75
12	465	349	5,880	3,050	2,430	4,650	1,670	361	258	21	470	77
13	472	264	5,830	3,010	2,430	4,630	1,660	366	148	24	1,720	73
14	462	262	5,830	2,050	2,130	4,620	1,150	362	57	29	2,450	72
15	233	263	5,530	780	1,480	4,620	247	364	52	34	2,450	70
16	53	266	4,940	765	584	4,610	252	362	54	51	2,450	69
17	46	298	4,930	770	838	4,600	242	362	46	40	2,450	71
18	43	87	4,920	1,060	1,320	3,400	460	361	36	41	2,450	72
19	35	73	4,910	1,580	1,330	2,110	621	358	39	44	2,450	65
20	42	1,370	4,930	1,590	1,340	2,110	624	283	36	35	2,440	66
21	56	2,720	4,920	1,600	1,340	2,130	623	228	37	40	2,430	66
22	54	2,740	4,870	1,580	1,340	2,120	619	220	36	37	2,430	68
23	58	1,580	4,350	1,580	1,360	2,130	615	130	34	40	2,420	67
24	43	105	3,970	1,040	1,350	2,130	615	48	31	47	2,400	71
25	411	92	3,970	627	1,990	2,130	554	55	30	47	2,390	61
26	716	862	3,950	606	3,180	2,130	441	55	37	43	2,020	37
27	712	1,860	3,960	599	3,190	2,120	438	60	32	43	1,750	20
28	700	1,870	3,950	594	3,720	2,120	438	62	36	39	1,750	18
29	709	2,320	3,460	595	---	2,120	438	87	39	38	1,280	25
30	705	3,050	3,090	598	---	2,110	436	75	32	51	950	29
31	713	---	3,070	1,120	---	2,100	---	447	---	59	954	---
Total	9,135	28,022	143,200	58,684	52,572	108,420	23,704	6,648	8,258	1,126	40,661	4,223
Mean	295	934	4,619	1,893	1,878	3,497	790	214	275	36.3	1,312	141
Max	716	3,050	5,910	3,060	3,720	4,760	2,090	447	834	59	2,450	755
Min	35	73	3,070	594	584	2,100	242	48	30	21	30	18
Ac-ft	18,120	55,580	284,000	116,400	104,300	215,100	47,020	13,190	16,380	2,230	80,650	8,380

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1954 – 2005[2], BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	325	298	391	510	514	915	787	1,000	1,034	755	327	184
Max	3,918	3,058	4,619	5,066	2,902	6,621	5,170	4,560	6,002	6,287	3,084	1,657
(WY)	(1960)	(1960)	(2005)	(1992)	(1961)	(1997)	(1992)	(1990)	(1957)	(1957)	(1992)	(1986)
Min	2.79	1.07	0.67	2.51	2.19	2.56	1.70	0.87	0.05	0.26	1.86	0.25
(WY)	(1969)	(1955)	(1955)	(1955)	(1981)	(1955)	(1954)	(1954)	(1954)	(1954)	(1954)	(1954)

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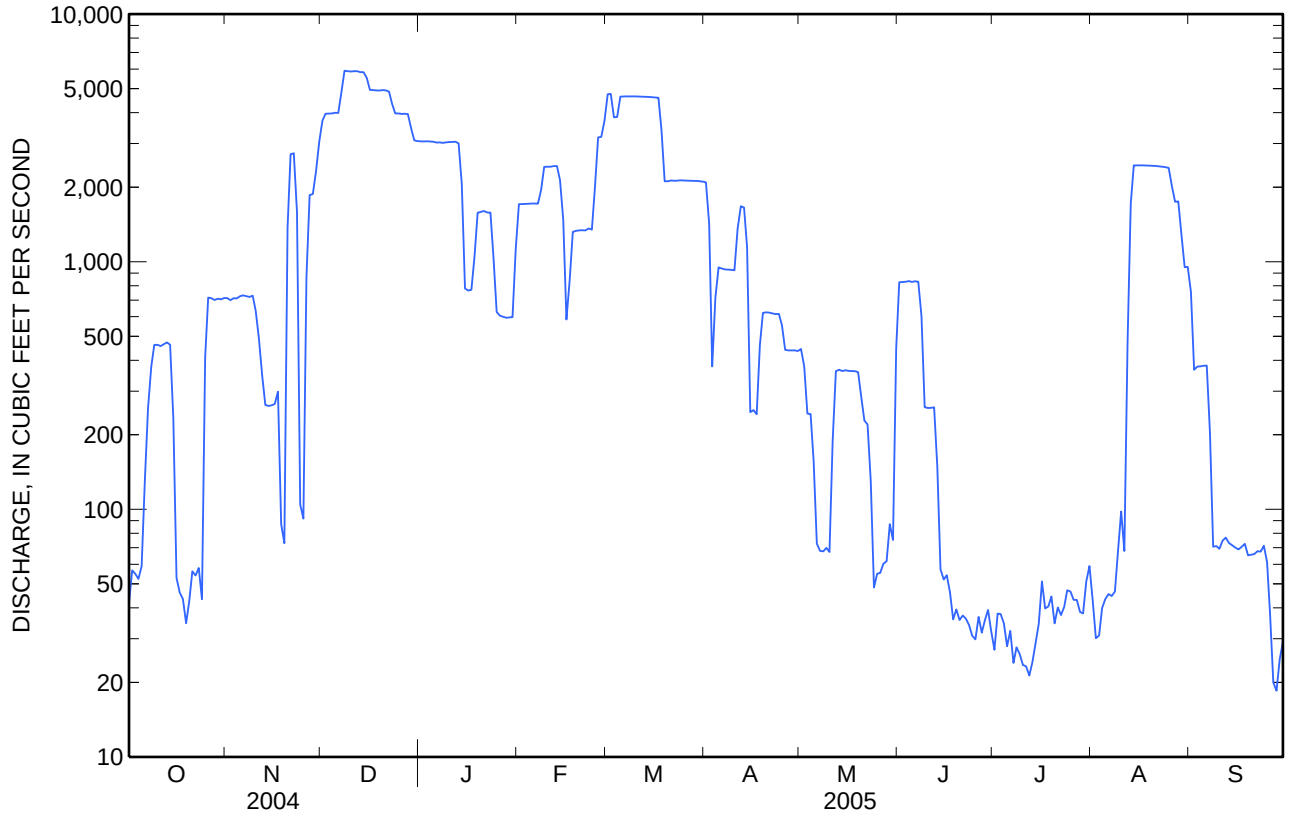
SUMMARY STATISTICS

	Calendar Year 2004		Water Year 2005		Water Years 1954 – 2005[z]	
Annual total	426,419		484,653			
Annual mean	1,165		1,328		587	
Highest annual mean					3,067	1992
Lowest annual mean					4.71	1955
Highest daily mean	5,910	Dec 8	5,910	Dec 8	10,200	Mar 6, 1992
Lowest daily mean	16	Jan 13	18	Sep 28	0.00	Oct 1, 1953
Annual seven-day minimum	20	Jan 9	24	Jul 7	0.00	Oct 1, 1953
Maximum peak flow			5,940	Dec 8	10,200	Mar 6, 1992
Maximum peak stage			8.17	Dec 8	9.74	Mar 6, 1992
Annual runoff (ac-ft)	845,800		961,300		425,400	
10 percent exceeds	3,540		3,970		2,120	
50 percent exceeds	568		621		47	
90 percent exceeds	42		38		5.2	

[z] Period of regulated streamflow.