KANSAS-NEBRASKA BIG BLUE RIVER COMPACT REPORT
U.S. Geological Survey—Water Year 2024

The U.S. Geological Survey (USGS) continues to operate two streamflow gaging stations for the Compact Administration—Big Blue River at Barneston, NE (06882000), and Little Blue River at Hollenberg, KS (06884025). A Data Collection Platform (DCP) at each station automatically records streamflow stage every 15 minutes. Every hour, these instantaneous values are transmitted via satellite to USGS offices, where they are used to compute preliminary values of instantaneous and daily discharge that are immediately posted to the USGS National Water Information System (NWIS) website (addresses shown below). Before the data are finalized, updates and revisions are made as needed, based on a series of quality checks and reviews. Finalized values of daily discharge and daily gage height, along with associated summary statistics are published annually on a site-by-site basis on the NWIS web page (address shown below).

During water year (WY) 2024 (October 1, 2023, to September 30, 2024), periodic visits were made to the stations to maintain and calibrate the sensing and recording equipment, make discharge measurements, and download the data directly from the DCPs, as a backup to the satellite-telemetered data. The discharge measurements were used to determine shifts from the stage-discharge relations (rating curves) that were then used to convert stage values to corresponding values of discharge.

For each of the State delegations and the Compact chairman, copies of the WY 2024 published data (manuscript, discharge daily values, statistics tables, and daily discharge hydrograph) from the NWIS web page are attached for each station. These water-year summaries (PDF files) are available online within the NWIS site page for each of the streamgages, along with data for other streamgages for the Nation. Also attached are plots of the annual mean discharges for the periods of record, and plots of the daily discharges for WY 2024 compared to those for the median daily statistic for each day of the year.

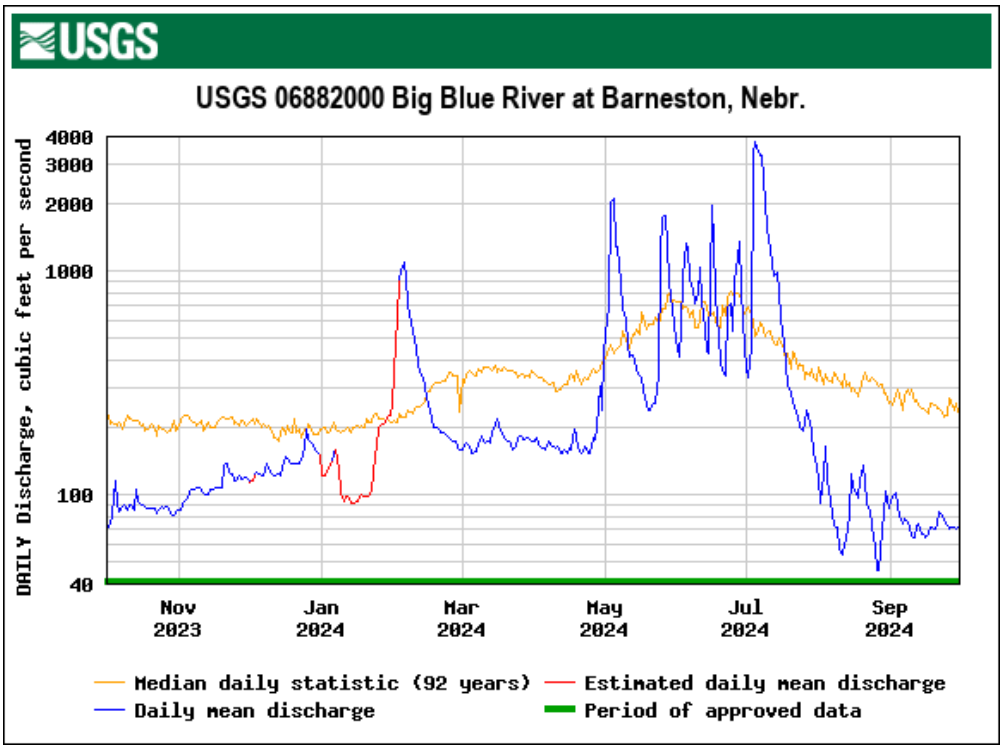
Current (real-time) and historical data on surface water, groundwater, and water quality for the Nation can be accessed and downloaded via the USGS National Water Dashboard website (https://dashboard.waterdata.usgs.gov/app/nwd/en/?aoi=default) or from the Nebraska Water Science Center website (https://www.usgs.gov/centers/ne-water). All unit values and daily values of discharge can be accessed using the NWIS web, as well as all unit values and daily values of gage height since October 2007.

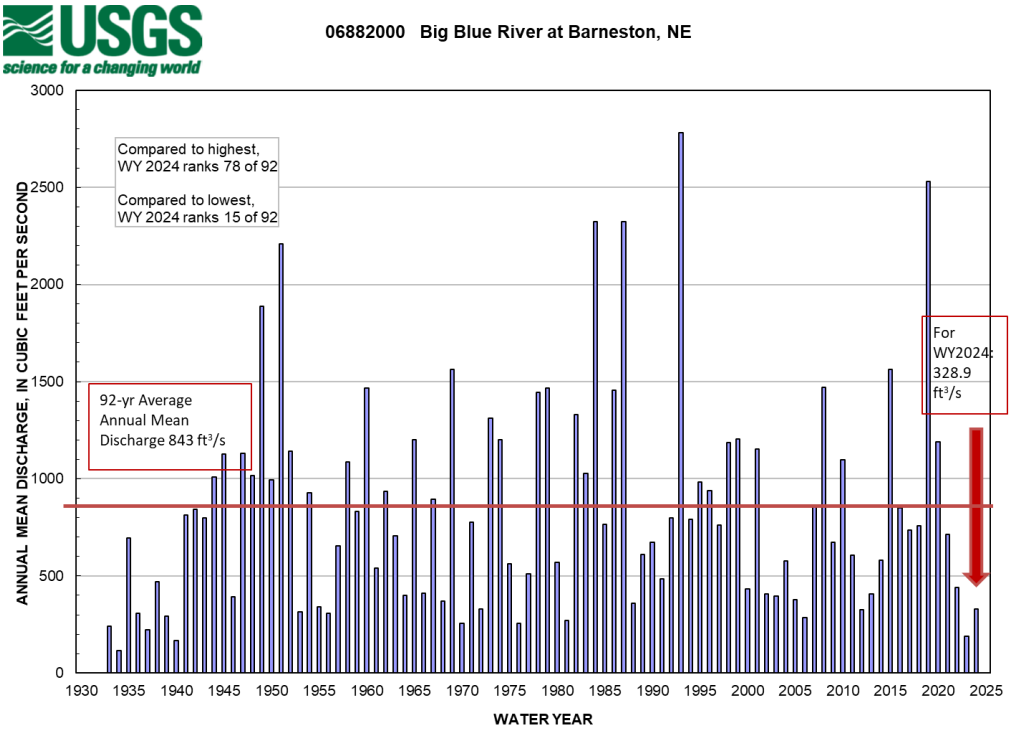
Jason Lambrecht
Deputy Director for Hydrologic Data

U.S. Geological Survey, Central Plains Water Science Center
Serving Nebraska and Kansas
5231 S. 19th St., Lincoln, NE 68512-1271
(jmlambre@usgs.gov)
402-328-4124 (office), 402-416-2363 (mobile)

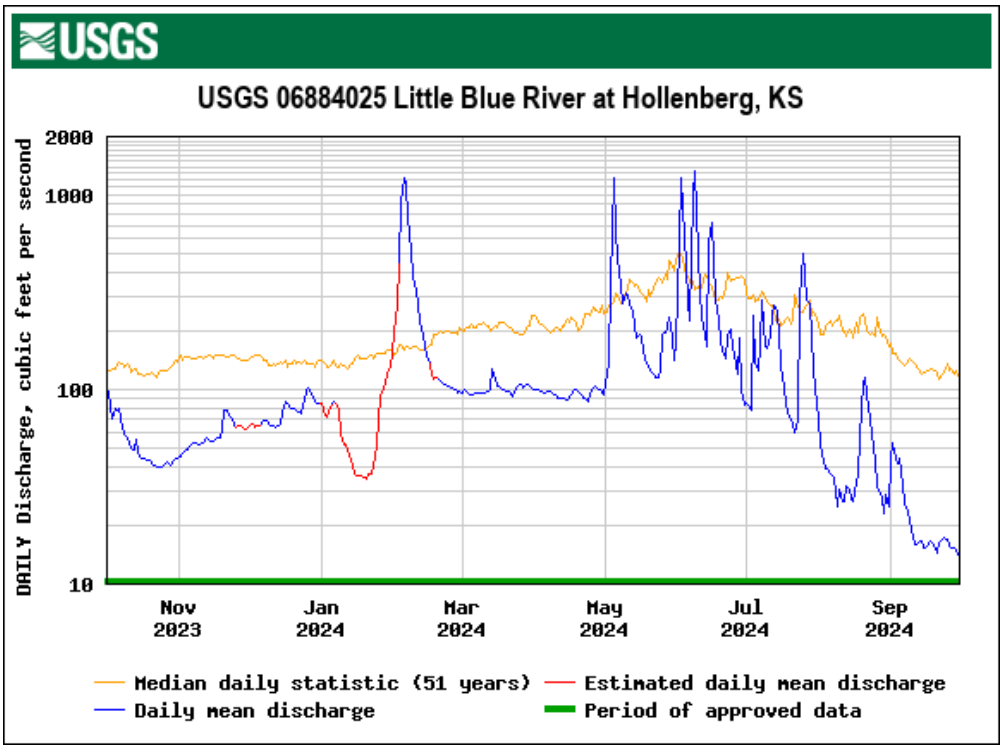
May 7, 2025

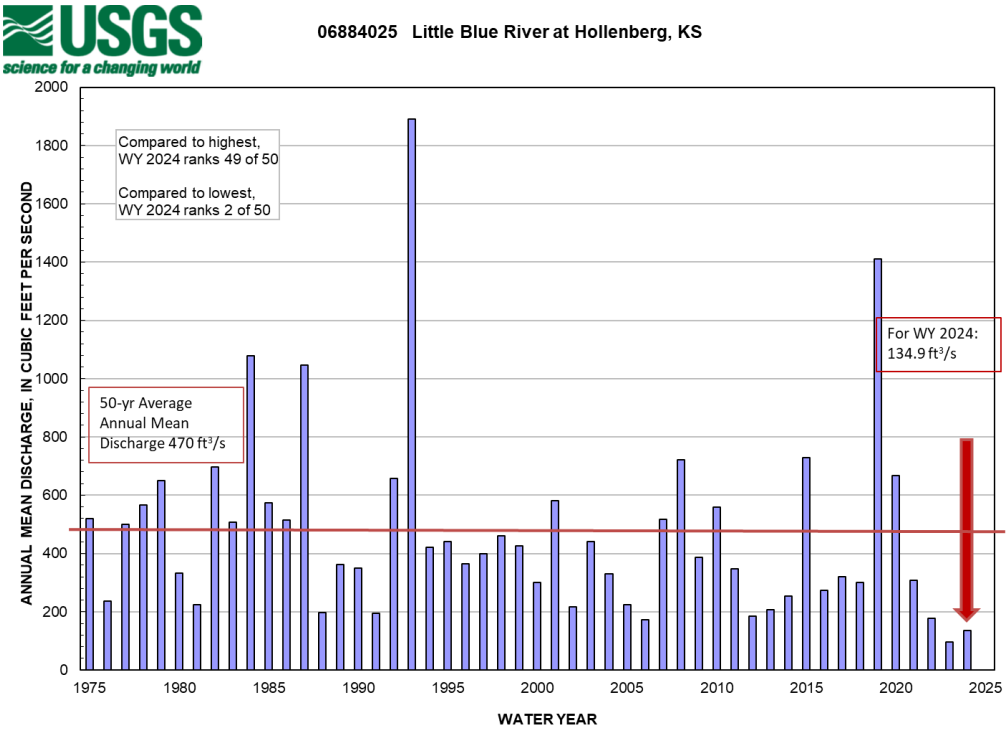
For station **06882000 Big Blue River at Barneston**, 11 discharge (and stage) measurements, ranging from 62.9 ft^3/s (3.04 ft stage) to 1390 ft^3/s (5.86 ft stage), were made during WY 2024. The annual mean discharge of 328.9 ft^3/s was 1.7 times higher than that of the WY 2023 mean of 189.4 ft^3/s; and 2.5 times lower than the new historical mean of 842 ft^3/s for WYs 1933–2024 (92 years of record). The maximum and minimum daily discharges were 3,810 ft^3/s on July 5, 2024 (peak of record daily mean was 50,000 ft^3/s on June 9, 1941); and 45.7 ft^3/s on August 26, 2024.





For station **06884025 Little Blue River at Hollenberg**, 13 discharge (and stage) measurements, ranging from 15.4 ft^3/s (1.05 ft stage) to 421 ft^3/s (3.07 ft stage), were made during WY 2024. The annual mean discharge of 134.9 ft^3/s was 1.4 times higher than that of the WY 2023 mean of 96.8 ft^3/s; and 3.5 times lower than the new historical mean of 470 ft^3/s for WYs 1975–2024 (50 years of record). The maximum and minimum daily discharges were 1,320 ft^3/s on June 9, 2024 (peak of record daily mean was 39,300 ft^3/s on July 26, 1992); and 14.2 ft^3/s on September 30, 2024 (record low daily mean was 13.2 ft^3/s on August 19, 2023).





USGS Water-Year Summary 2024

06882000 Big Blue River at Barneston, Nebr.

LOCATION - Lat 40°02'41", long 96°35'14" referenced to North American Datum of 1983, in NE 1/4 NW 1/4 sec.24, T.1 N., R.7 E., Gage County, NE, Hydrologic Unit 10270202, on right bank just downstream of bridge on State Highway 8, 0.6 mi southwest of Barneston, 1.3 mi upstream from Plum Creek, and 4.3 mi upstream from Nebraska-Kansas State line.

DRAINAGE AREA - 4,447 mi² of which 77 mi² probably is noncontributing.

REVISIONS HISTORY - WSP 896: 1932, 1935. WSP 1919: Drainage area.

SURFACE-WATER RECORDS

PERIOD OF RECORD - May 1932 to current year.

GAGE - Water-stage recorder with satellite telemetry. Datum of gage is 1,162.20 ft above sea level. Prior to June 9, 1941, water-stage recorder at site 0.3 mi downstream at datum 1.56 ft higher. June 9 to Nov. 17, 1941, non-recording gage, and Nov. 18, 1941 to Sept. 30, 1979, water-stage recorder at site 0.7 mi upstream at datum 2.0 ft higher.

REMARKS - Accuracy of records for water years prior to 2014 are noted in the individual Annual Data Reports for those water years. For water years 2014 onward, records fair to good except for estimated daily discharges, which are poor, unless otherwise noted.

EXTREMES FOR PERIOD OF RECORD - Maximum peak flow, 57,700 ft³/s, June 9, 1941, gage height, 34.30 ft, at site datum then in use.

U.S. Department of the Interior
U.S. Geological Survey

Suggested citation: U.S. Geological Survey, 2025, National Water Information System data available on the World Wide Web (USGS Water Data for the Nation), accessed [May 5, 2025], https://nwis.waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=&93783&adr_begin_date=2023-10-01&adr_end_date=2024-09-30&site_no=06882000&agency_cd=USGS

DISCHARGE, CUBIC FEET PER SECOND
YEAR 2023-10-01 to 2024-09-30
DAILY MEAN VALUES
[e, Value has been estimated.]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	2023	2023	2023	2024	2024	2024	2024	2024	2024	2024	2024	2024
1	72.2	86.1	114	e122	e355	158	174	433	494	366	117	92.8
2	73.6	91.0	e116	e122	e626	164	180	627	411	334	91.3	98.5
3	80.6	93.9	123	e127	912	171	168	681	546	460	122	103
4	115	96.1	127	e132	999	164	161	2,030	952	3,320	166	89.2
5	91.9	103	124	141	1,090	154	161	2,110	1,330	3,810	117	80.1
6	83.4	106	123	153	930	154	160	1,290	1,270	3,420	92.9	73.7
7	88.4	105	123	158	708	155	174	1,290	920	3,320	80.7	78.6
8	90.8	107	137	e131	593	167	169	896	824	3,270	73.2	74.9
9	86.1	108	130	e102	541	184	166	682	715	2,040	71.1	70.2
10	90.0	104	125	e93.7	451	173	163	608	794	1,550	57.1	65.9
11	90.7	102	123	e99.3	387	171	164	470	1,050	1,260	54.3	64.6
12	85.9	101	123	e99.1	356	175	153	413	748	1,060	60.3	71.5
13	105	101	124	e92.6	331	171	154	423	552	947	62.8	73.6
14	93.4	105	123	e91.8	307	195	160	398	440	982	80.9	66.6
15	90.7	106	133	e92.2	271	203	153	360	427	809	124	67.0
16	90.6	108	149	e93.4	238	219	162	342	1,970	610	110	64.9
17	88.5	107	145	e98.1	214	205	158	333	1,360	479	99.5	66.2
18	87.8	107	141	e101	202	188	196	295	785	388	97.4	71.2
19	87.3	108	138	e98.4	199	179	182	254	504	308	115	71.6
20	87.0	136	139	e98.4	197	176	161	241	392	284	135	70.3
21	86.5	138	139	e99.3	190	173	154	238	357	259	115	72.5
22	83.2	127	139	e104	191	167	157	258	344	246	89.9	83.7
23	85.6	124	143	e126	186	159	166	256	690	222	83.9	81.4
24	88.1	116	163	e168	180	165	153	347	721	202	72.5	77.1
25	86.9	116	197	e198	178	180	154	1,210	536	192	57.4	72.7
26	88.9	121	178	e204	174	182	181	1,750	902	210	45.7	70.9
27	87.8	118	172	e209	173	178	176	1,780	1,150	239	46.0	71.8
28	82.3	117	167	e213	161	178	200	1,310	1,350	211	69.5	71.9
29	81.0	120	160	e223	158	179	307	902	827	189	83.0	70.5
30	82.9	117	154	e226		177	240	673	451	153	104	71.2
31	85.0		152	e251		174		577		133	87.6	
Total	2,717	3,295	4,344	4,267	11,500	5,437	5,207	23,480	23,810	31,269	2,782	2,258
Mean	87.6	110	140	138	396	175	174	757	794	1,009	89.7	75.3
Max	115	138	197	251	1090	219	307	2110	1970	3810	166	103
Min	72.2	86.1	114	91.8	158	154	153	238	344	133	45.7	64.6
Ac-ft	5,389	6,536	8,616	8,464	22,810	10,790	10,330	46,570	47,230	62,029	5,518	4,479

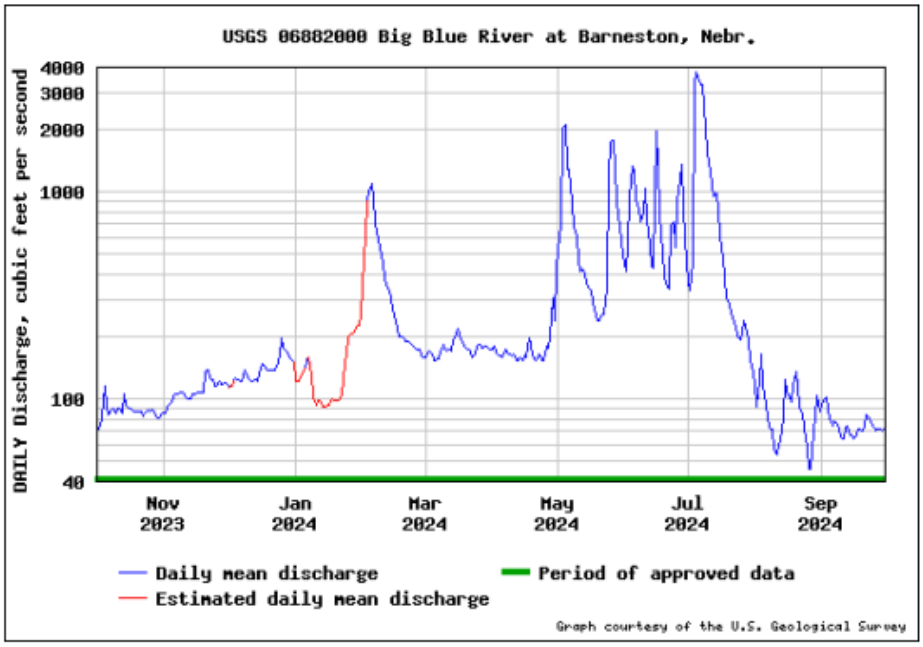
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1933 - 2024, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	575	305	285	299	586	1,256	792	1,390	2,039	1,207	682	685
Max	7,451	1,526	2,731	1,596	2,876	10,560	5,280	5,207	10,460	12,270	5,227	3,420
(WY)	(1974)	(1999)	(2019)	(1973)	(1984)	(1979)	(1984)	(1995)	(1951)	(1993)	(1954)	(1989)
Min	61.5	77.5	87.4	67.6	116	137	132	96.0	69.3	30.7	21.1	50.6
(WY)	(1941)	(1937)	(1977)	(1937)	(1940)	(1968)	(1934)	(1934)	(1934)	(1934)	(1934)	(1939)

SUMMARY STATISTICS

	Water Year 2024		Water Years 1933 - 2024	
Annual total	120,400			
Annual mean	328.9		842.6	
Highest annual mean			2,781	1993
Lowest annual mean			115.0	1934
Highest daily mean	3,810	Jul 05	50,000	Jun 09, 1941
Lowest daily mean	45.7	Aug 26	1.00	Nov 30, 1945
Annual 7-day minimum	65.4	Aug 23	15.1	Aug 03, 1934
Maximum peak flow	3,850	Jul 05	57,700	Jun 09, 1941
Maximum peak stage	9.45	Jul 05	34.30[a]	Jun 09, 1941
Annual runoff (cfsm)	0.074		0.189	
Annual runoff (inches)	1.01		2.57	
10 percent exceeds	824.9		1,710	
50 percent exceeds	158.0		283.0	
90 percent exceeds	79.7		108.0	

[a] Gage height at different site and(or) datum



USGS Water-Year Summary 2024

06884025 Little Blue River at Hollenberg, KS

LOCATION - Lat 39°58'49", long 97°00'17" referenced to North American Datum of 1983, in NE 1/4 SW 1/4 sec.8, T.1 S., R.4 E., Washington County, KS, Hydrologic Unit 10270207, on right bank just downstream from bridge on county road, 0.6 mi west of Hollenberg, 1.8 mi downstream from Nebraska-Kansas State line, and at mile 43.1.
DRAINAGE AREA - 2,752 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD - March 1973 to February 1974 (discharge measurements only), March 1974 to current year.

GAGE - Water-stage recorder with satellite telemetry. Datum of gage is 1,216.10 ft above sea level.

REMARKS - Accuracy of records for water years prior to 2014 are noted in the individual Annual Data Reports for those water years. For water years 2014 onward, records good except for estimated daily discharges, which are poor, unless otherwise noted. Discharge measurements made prior to 1974 water year are published in table of miscellaneous sites in WDR NE-73.

EXTREMES OUTSIDE PERIOD OF RECORD - A gage height of 23.07 ft, present datum, from floodmark, discharge not determined, occurred October 12, 1973.

EXTREMES FOR PERIOD OF RECORD -

Maximum peak flow, 59,200 ft³/s, May 7, 2015, gage height, 22.97 ft, site and datum then in use.

U.S. Department of the Interior
U.S. Geological Survey

Suggested citation: U.S. Geological Survey, 2025, National Water Information System data available on the World Wide Web (USGS Water Data for the Nation), accessed [May 5, 2025], https://nwis.waterdata.usgs.gov/nwis/wys_rpt?dv_ts_ids=&93795&adr_begin_date=2023-10-01&adr_end_date=2024-09-30&site_no=06884025&agency_cd=USGS

DISCHARGE, CUBIC FEET PER SECOND
YEAR 2023-10-01 to 2024-09-30
DAILY MEAN VALUES
[e, Value has been estimated.]

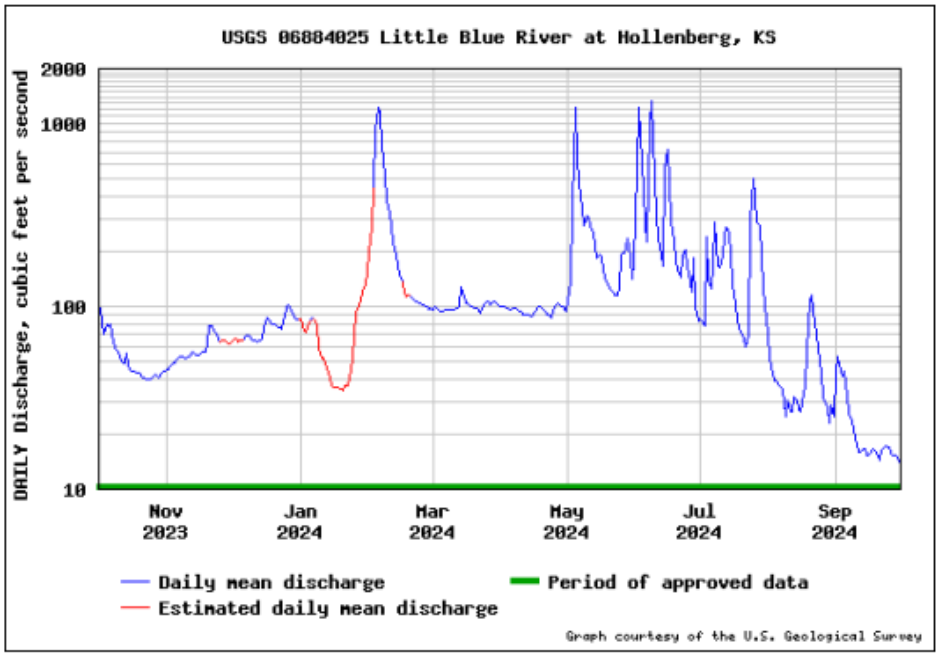
Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
	2023	2023	2023	2024	2024	2024	2024	2024	2024	2024	2024	2024
1	97.5	44.8	64.8	e85.0	e199	95.7	101	93.8	175	85.8	68.7	43.7
2	80.0	46.6	e66.4	e73.9	e270	101	101	123	561	82.9	51.9	52.8
3	71.1	47.8	e64.1	e72.5	440	98.9	99.4	133	1,240	78.7	42.6	44.4
4	80.7	49.0	e65.1	e76.8	932	94.8	98.4	354	867	242	38.9	41.6
5	77.9	51.3	64.8	83.5	1,230	93.2	95.3	1,240	438	135	39.5	43.8
6	80.3	52.1	65.9	87.0	1,130	94.6	95.6	657	276	126	37.1	31.9
7	64.2	53.4	69.2	85.1	765	95.8	97.1	482	226	170	36.0	26.1
8	59.4	53.6	69.1	e79.6	509	96.4	97.1	337	1,000	287	34.9	23.4
9	56.9	52.4	66.9	e59.0	386	96.7	93.6	277	1,320	165	25.2	21.3
10	52.5	53.6	65.0	e52.4	322	95.3	93.1	314	502	162	30.8	19.3
11	49.6	53.6	64.8	e52.5	269	96.7	90.1	308	314	188	26.3	15.9
12	48.9	56.9	64.3	e49.0	222	97.3	89.5	271	237	245	26.7	16.0
13	54.8	55.4	65.6	e43.5	191	99.9	89.6	253	194	274	31.8	16.4
14	46.8	53.8	66.6	e39.8	167	128	90.2	214	168	251	30.5	16.5
15	44.5	54.2	77.4	e36.9	149	113	88.6	186	569	191	27.2	15.4
16	44.4	55.5	87.5	e35.9	137	105	90.1	193	729	134	26.7	15.4
17	43.9	56.6	84.5	e35.9	e117	105	94.6	190	474	102	33.0	15.8
18	43.5	56.6	80.9	e36.0	e113	100	100	156	289	85.2	35.8	16.6
19	43.2	61.1	79.9	e35.1	115	100	100	136	229	75.3	56.5	16.3
20	41.8	78.0	79.5	e34.8	113	97.8	97.6	130	178	70.9	108	15.2
21	40.7	77.5	78.2	e36.6	111	98.5	93.3	125	156	66.0	115	14.3
22	39.6	74.2	76.7	e37.0	107	94.2	91.0	119	143	60.0	94.4	16.3
23	39.9	70.6	74.8	e40.3	106	91.8	90.2	115	188	68.6	71.0	16.9
24	39.9	64.7	88.3	e52.4	104	99.9	87.2	115	206	294	59.0	17.3
25	40.7	63.6	98.6	e69.7	103	105	93.3	126	162	503	42.2	16.9
26	42.8	e65.7	103	e91.8	102	107	102	194	151	394	32.0	15.6
27	41.2	e64.6	96.4	e100	99.9	103	105	198	120	290	30.1	15.3
28	41.0	e64.0	90.1	e108	95.1	104	102	208	186	275	27.4	15.3
29	43.3	e62.6	85.9	e119	97.2	106	100	236	100	187	22.8	14.6
30	44.1	63.8	84.1	e133		105	96.6	185	83.4	126	28.7	14.2
31	44.0		84.3	e149		102		142		84.5	25.0	
Total	1,639	1,758	2,373	2,091	8,701	3,122	2,862	7,811	11,480	5,499	1,356	664
Mean	52.9	58.6	76.5	67.5	300	101	95.4	252	383	177	43.7	22.1
Max	97.5	78.0	103	149	1230	128	105	1240	1320	503	115	52.8
Min	39.6	44.8	64.1	34.8	95.1	91.8	87.2	93.8	83.4	60.0	22.8	14.2
Ac-ft	3,251	3,486	4,706	4,147	17,260	6,191	5,678	15,490	22,770	10,910	2,688	1,318

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1974 - 2024, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	329	203	197	179	282	628	425	815	921	783	461	347
Max	2,163	1,113	1,646	577	1,059	3,816	2,379	2,638	4,654	9,014	2,572	1,696
(WY)	(1987)	(1997)	(2019)	(1984)	(1993)	(1993)	(1987)	(2015)	(2015)	(1993)	(1985)	(2018)
Min	34.8	58.6	70.8	67.5	89.1	101	95.4	102	40.6	68.1	38.8	22.2
(WY)	(2023)	(2024)	(2023)	(2024)	(2018)	(2024)	(2024)	(2023)	(2023)	(2013)	(2022)	(2024)

SUMMARY STATISTICS

	Water Year 2024		Water Years 1974 - 2024	
Annual total	49,360			
Annual mean	134.9		469.5	
Highest annual mean			1,891	1993
Lowest annual mean			96.8	2023
Highest daily mean	1,320	Jun 09	39,300	Jul 26, 1992
Lowest daily mean	14.2	Sep 30	12.2	Aug 25, 2023
Annual 7-day minimum	15.6	Sep 15	13.2	Aug 19, 2023
Maximum peak flow	2,490	Jun 15	59,200	May 07, 2015
Maximum peak stage	5.82	Jun 15	23.07	Oct 12, 1973
Annual runoff (cfsm)	0.049		0.170	
Annual runoff (inches)	0.667		2.31	
10 percent exceeds	271.9		773.0	
50 percent exceeds	89.1		182.0	
90 percent exceeds	31.5		90.0	



Water Year 2024 Discharge Measurements

Site #	Meas. #	Meas. Date & Time	Meas. Used	Meas. Party	Meas. Agency	Discharge	Gage Height	Meas. Rating	Control Condition
06882000	1536	10/28/2024 10:17	Yes	bhi	USGS.	83.5	3.18	Fair	Clear
06882000	1535	9/6/2024 13:19	Yes	bhi	USGS.	72	3.11	Fair	Clear
06882000	1534	8/13/2024 12:20	Yes	bhi	USGS.	62.9	3.04	Fair	Clear
06882000	1533	8/1/2024 14:04	Yes	bhi	USGS.	116	3.36	Fair	Clear
06882000	1532	7/23/2024 12:31	Yes	bhi	USGS.	231	3.71	Fair	Clear
06882000	1531	6/5/2024 12:44	Yes	bhi	USGS.	1390	5.86	Fair	Clear
06882000	1530	4/17/2024 13:40	Yes	bhi	USGS.	155	3.55	Fair	Clear
06882000	1529	3/1/2024 9:43	Yes	bhi	USGS.	160	3.52	Fair	Clear
06882000	1528	1/24/2024 10:56	Yes	bhi/jrk	USGS.	172	3.88	Poor	IceCover
06882000	1527	11/30/2023 9:17	Yes	bhi	USGS	114	3.36	Fair	Clear
06882000	1526	10/18/2023 10:08	Yes	bhi	USGS	85.2	3.20	Fair	Clear
06884025	662	10/28/2024 11:56	Yes	bhi	USGS.	29.4	1.26	Fair	Clear
06884025	661	9/27/2024 12:05	Yes	bhi	USGS.	15.4	1.05	Fair	Clear
06884025	660	9/6/2024 11:28	Yes	bhi	USGS.	33.9	1.29	Fair	Clear
06884025	659	8/13/2024 13:57	Yes	bhi	USGS.	32.1	1.30	Fair	Clear
06884025	658	8/1/2024 10:23	Yes	bhi	USGS.	69.6	1.64	Fair	Clear
06884025	657	7/23/2024 10:52	Yes	bhi	USGS.	70.8	1.62	Fair	Clear
06884025	656	7/3/2024 11:40	Yes	bhi	USGS.	75.7	1.66	Fair	Clear
06884025	655	6/5/2024 11:07	Yes	bhi	USGS.	421	3.07	Fair	Clear
06884025	654	4/12/2024 14:18	Yes	bhi	USGS.	88.8	1.75	Fair	Clear
06884025	653	3/1/2024 11:50	Yes	bhi	USGS.	95.8	1.79	Fair	Clear
06884025	652	1/24/2024 12:42	Yes	bhi/jrk	USGS.	52.7	2.33	Poor	IceCover
06884025	651	11/30/2023 10:53	Yes	bhi	USGS	62.5	1.56	Fair	Clear
06884025	650	10/18/2023 11:50	Yes	bhi	USGS	42.6	1.45	Fair	Clear