Water-Data Report 2007

05592500 KASKASKIA RIVER AT VANDALIA, IL

Kaskaskia Basin
Middle Kaskaskia Subbasin

LOCATION.--Lat 38°57′38″, long 89°05′20″ referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.16, T.6 N., R.1 E., Fayette County, IL, Hydrologic Unit 07140202, on right bank at upstream side of Gallatin Street Bridge in Vandalia, 3.5 mi upstream from Hickory Creek and at mile 135.7.

DRAINAGE AREA.--1,940 mi^2.

SURFACE-WATER RECORDS

PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE
DISCHARGE: February 1908 to December 1912, August 1914 to current year. Monthly discharge only for some periods, published in WSP 1308.
STAGE: Water years 1994 to current year.
SURFACE-WATER QUALITY
CHEMICAL: Water years 1978-91.

REVISED RECORDS.-- WSP 1208: 1919. WSP 1508: 1912, 1915(M), 1917-18(M), 1923(M), 1925(M), 1928-31(M). WDR IL-75-1: Drainage area.

GAGE.-- Water-stage recorder, U.S. Army Corps of Engineers satellite telemeter, and crest-stage gage. Datum of gage is 453.30 ft above NGVD of 1929 (452.89 ft NAVD 1988). Prior to Oct. 1, 1932, nonrecording gage at present site at datum 2.00 ft higher. Oct. 1, 1932, to Sept. 23, 1968, nonrecording gage at present site and datum.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. City of Vandalia pumps water from the river 7 blocks upstream for municipal supply at water works. Pumpage amounts to about 0.8 ft^3/s. Flow partially regulated since June 24, 1969 by dam at Lake Shelbyville, 62.2 mi upstream from gage.

EXTREMES FOR PERIOD OF RECORD.—
SURFACE-WATER DISCHARGE AND STAGE: Maximum discharge, 62,700 ft^3/s, June 29, 1957; maximum gage height, 28.27 ft, May 7, 2002; minimum discharge observed, 3.5 ft^3/s, Aug. 22, 1911.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES
[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	43	124	1,310	4,330	2,900	3,290	1,500	850	158	584	75	47
2	44	99	2,360	3,850	2,860	3,570	1,080	e800	154	349	73	46
3	43	88	1,210	2,780	2,790	3,690	885	759	137	253	71	44
4	40	73	629	2,460	2,790	3,410	1,180	800	130	211	70	44
5	38	67	414	3,420	2,970	3,220	1,100	1,060	129	249	73	46
6	37	64	514	3,990	2,940	3,130	984	935	118	782	94	47
7	36	67	579	3,380	2,620	3,080	1,040	725	112	423	111	51
8	37	66	638	2,940	2,490	3,060	1,010	589	105	239	83	63
9	37	65	824	2,820	2,210	3,030	988	565	99	178	69	66
10	37	64	722	2,640	1,940	3,000	967	541	95	162	64	58
11	40	69	733	2,520	1,830	3,000	1,010	438	94	221	62	59
12	33	56	782	2,450	1,800	2,980	1,210	451	89	164	59	52
13	34	48	886	5,660	e1,700	2,950	1,110	306	87	131	57	44
14	34	53	925	7,380	e1,750	2,930	1,030	260	83	118	57	43
15	28	61	1,170	9,670	e1,800	4,710	2,260	239	81	110	56	42
16	40	100	1,460	11,600	e1,900	5,430	1,950	234	79	104	58	41
17	57	162	1,780	10,600	e2,000	4,620	1,320	231	76	99	57	42
18	58	227	1,850	8,000	e1,800	3,650	1,060	207	73	136	56	41
19	76	204	1,860	5,090	e1,650	3,260	934	196	70	511	58	42
20	73	150	1,870	4,000	e1,450	3,190	856	185	68	357	58	41
21	57	125	2,260	3,610	e1,350	3,060	805	179	66	190	56	41
22	48	109	3,810	3,470	e1,450	2,930	774	173	67	140	57	40
23	42	108	3,880	3,370	e1,550	2,930	745	162	e100	118	58	39
24	39	122	2,790	3,310	e1,700	3,400	722	156	454	106	55	39
25	33	102	2,160	3,260	e1,900	3,250	745	156	701	98	57	39
26	55	80	1,960	3,160	e2,200	2,810	832	154	483	89	61	40
27	76	71	1,900	3,170	e2,500	2,580	878	161	2,460	88	81	36
28	615	66	2,050	3,360	e3,000	2,350	893	211	2,460	87	75	38
29	577	63	2,110	3,160	---	2,200	902	194	1,150	84	59	38
30	331	85	2,080	3,020	---	2,060	883	168	1,110	82	52	39
31	192	---	2,690	2,900	---	1,850	---	167	---	78	49	---
Total	2,930	2,838	50,206	135,370	59,840	98,620	31,653	12,252	11,088	6,541	2,021	1,348
Mean	94.5	94.6	1,620	4,367	2,137	3,181	1,055	395	370	211	65.2	44.9
Max	615	227	3,880	11,600	3,000	5,430	2,260	1,060	2,460	782	111	66
Min	28	48	414	2,450	1,350	1,850	722	154	66	78	49	36

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1970 - 2007, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	574	976	1,987	2,547	2,703	2,956	2,395	1,998	1,654	1,214	811	513
Max	3,349	5,459	5,783	7,932	6,884	7,565	6,462	10,460	5,486	3,122	2,599	3,366
(WY)	(1970)	(1994)	(1986)	(2005)	(1982)	(1979)	(1979)	(2002)	(1974)	(1974)	(1974)	(1993)
Min	34.3	39.1	20.6	19.0	233	330	136	165	61.9	48.7	50.5	30.2
(WY)	(1988)	(1977)	(1977)	(1977)	(2000)	(2003)	(2003)	(1987)	(1988)	(1988)	(1976)	(1976)

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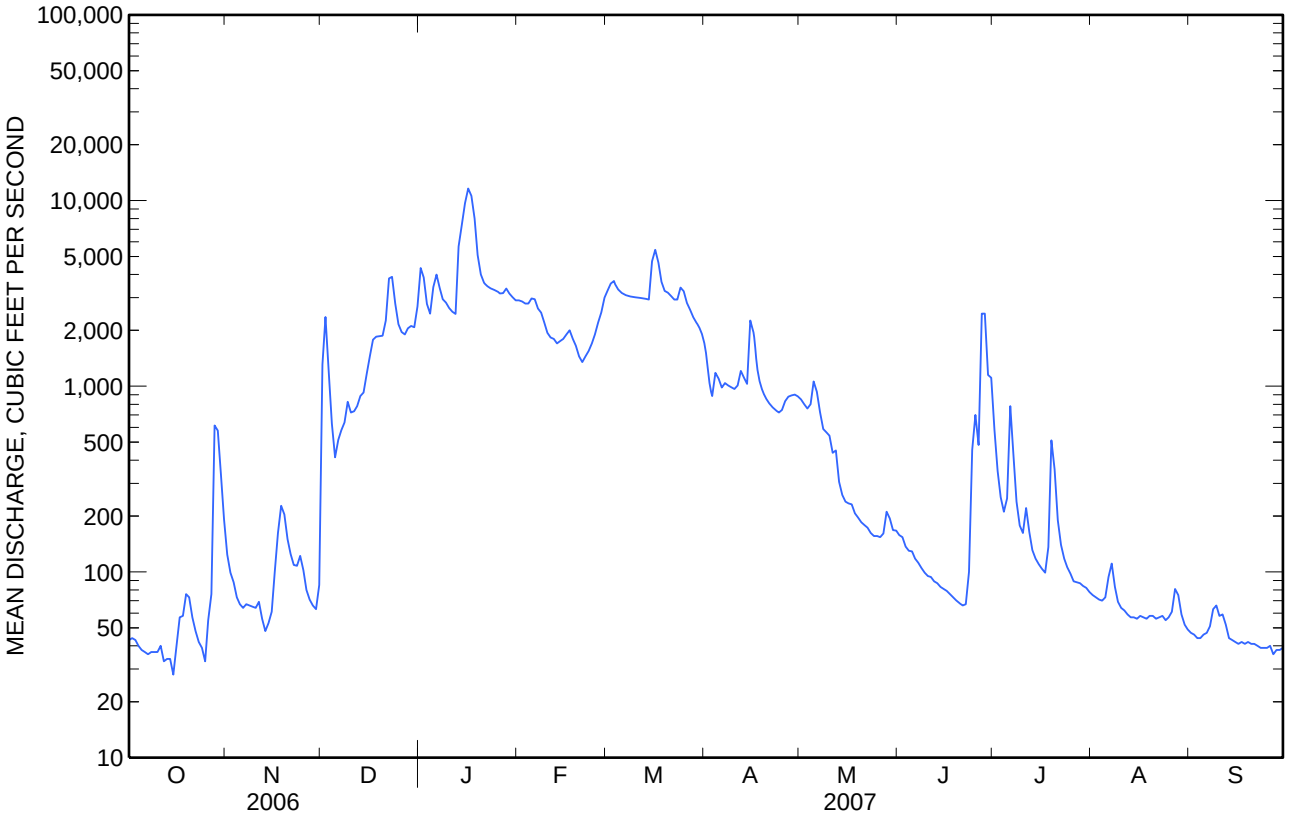
SUMMARY STATISTICS

	Calendar Year 2006		Water Year 2007		Water Years 1970 - 2007	
Annual total	385,599		414,707			
Annual mean	1,056		1,136		1,690	
Highest annual mean					3,415	1974
Lowest annual mean					494	2003
Highest daily mean	6,310	Apr 9	11,600	Jan 16	[A]36,000	May 13, 2002
Lowest daily mean	28	Oct 15	28	Oct 15	17	[B]
Annual seven-day minimum	35	Oct 9	35	Oct 9	17	Dec 23, 1976
Maximum peak flow			12,200	Jan 16	[C]41,000	May 13, 2002
Maximum peak stage			22.51	Jan 16	[D]28.27	May 7, 2002
Instantaneous low flow			24	Oct 15		
10 percent exceeds	3,180		3,160		4,330	
50 percent exceeds	604		249		974	
90 percent exceeds	55		44		74	

[A] Estimated, result of levee break.
[B] Dec. 23-29, 1976; Feb. 5-9, 1977.
[C] Observed, gage height, 26.52 ft, result of levee break.
[D] Discharge, 28,500 ft³/s, estimated, result of levee break.



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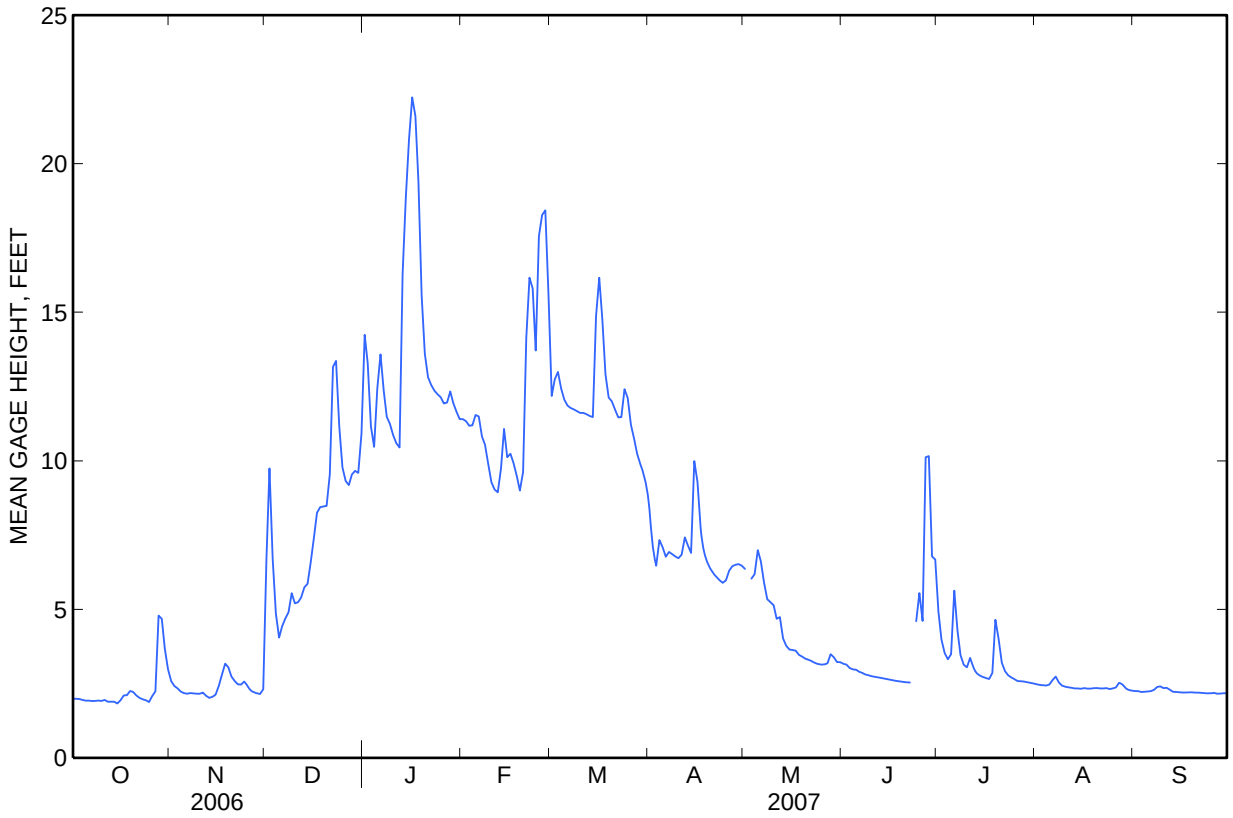
GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	1.98	2.58	6.69	14.24	11.40	12.18	8.19	6.36	3.17	4.92	2.48	2.25
2	1.99	2.42	9.74	13.28	11.33	12.74	7.06	---	3.14	3.98	2.46	2.25
3	1.98	2.34	6.70	11.16	11.18	12.99	6.47	6.03	3.03	3.53	2.45	2.22
4	1.95	2.23	4.86	10.47	11.19	12.43	7.33	6.18	2.98	3.32	2.44	2.23
5	1.93	2.18	4.05	12.44	11.54	12.05	7.09	6.99	2.97	3.49	2.47	2.24
6	1.93	2.16	4.43	13.58	11.49	11.86	6.77	6.62	2.90	5.63	2.62	2.25
7	1.91	2.18	4.69	12.36	10.82	11.78	6.93	5.90	2.86	4.29	2.74	2.29
8	1.92	2.17	4.90	11.48	10.54	11.73	6.86	5.34	2.81	3.46	2.54	2.39
9	1.93	2.16	5.54	11.24	9.90	11.67	6.78	5.24	2.78	3.14	2.44	2.41
10	1.92	2.16	5.20	10.86	9.28	11.61	6.72	5.14	2.75	3.05	2.40	2.35
11	1.95	2.20	5.24	10.59	9.03	11.61	6.84	4.68	2.74	3.37	2.38	2.36
12	1.89	2.09	5.40	10.45	8.94	11.57	7.42	4.74	2.70	3.06	2.36	2.30
13	1.89	2.02	5.74	16.28	9.74	11.51	7.15	4.02	2.69	2.87	2.34	2.23
14	1.89	2.06	5.86	18.84	11.07	11.47	6.90	3.77	2.66	2.78	2.34	2.22
15	1.83	2.13	6.59	20.81	10.12	14.87	9.99	3.65	2.65	2.73	2.33	2.21
16	1.94	2.42	7.42	22.23	10.24	16.16	9.29	3.63	2.63	2.69	2.35	2.20
17	2.10	2.80	8.25	21.60	9.91	14.79	7.71	3.61	2.61	2.66	2.34	2.21
18	2.11	3.17	8.44	19.39	9.48	12.91	6.99	3.47	2.59	2.86	2.33	2.20
19	2.25	3.05	8.46	15.57	9.00	12.13	6.62	3.41	2.57	4.65	2.35	2.21
20	2.22	2.74	8.48	13.60	9.62	12.00	6.38	3.34	2.55	4.01	2.35	2.20
21	2.10	2.59	9.54	12.81	14.13	11.72	6.21	3.30	2.54	3.21	2.34	2.20
22	2.02	2.48	13.16	12.55	16.16	11.46	6.09	3.26	2.54	2.92	2.34	2.19
23	1.97	2.47	13.36	12.36	15.80	11.47	5.98	3.20	---	2.78	2.35	2.18
24	1.94	2.57	11.17	12.24	13.71	12.41	5.89	3.16	4.60	2.71	2.32	2.18
25	1.88	2.43	9.78	12.14	17.56	12.11	5.98	3.15	5.55	2.65	2.34	2.18
26	2.08	2.28	9.32	11.93	18.27	11.21	6.30	3.14	4.61	2.59	2.37	2.19
27	2.24	2.22	9.18	11.96	18.43	10.74	6.45	3.19	10.12	2.58	2.53	2.16
28	4.79	2.17	9.54	12.33	15.56	10.23	6.50	3.49	10.16	2.57	2.48	2.17
29	4.68	2.15	9.66	11.94	---	9.88	6.52	3.39	6.78	2.55	2.35	2.18
30	3.67	2.31	9.59	11.65	---	9.56	6.47	3.23	6.68	2.53	2.30	2.18
31	2.98	---	10.91	11.40	---	9.06	---	3.22	---	2.51	2.27	---
Mean	2.25	2.36	7.80	13.67	11.98	11.93	6.93	---	---	3.23	2.40	2.23
Max	4.79	3.17	13.36	22.23	18.43	16.16	9.99	---	---	5.63	2.74	2.41
Min	1.83	2.02	4.05	10.45	8.94	9.06	5.89	---	---	2.51	2.27	2.16

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