

Water-Data Report 2011

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS

Middle Arkansas Basin
Little Arkansas Subbasin

LOCATION.--Lat 38°01'43", long 97°32'25" referenced to North American Datum of 1927, in SW ¼ SE ¼ SE ¼ sec.21, T.23 S., R.2 W., Harvey County, KS, Hydrologic Unit 11030012, on left bank at downstream side of State Highway 50, 3.4 mi upstream of Black Kettle Creek, 2 mi north and 1.3 mi west of Halstead, and at mile 41.4.

DRAINAGE AREA.--759 mi² of which 74 mi² probably is noncontributing.

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May 1995 to current year.

GAGE.--Water-stage recorder. Datum of gage is 1,370.55 ft above NGVD of 1929.

REMARKS.--Records fair except those for estimated daily discharges, which are poor. Natural flow of stream affected by groundwater withdrawals for irrigation and return flow from irrigated areas. Satellite telemeter at station.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,000 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Nov 14	1200	*497	*9.19

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	15	9.5	12	14	e14	23	19	14	18	1.7	0.00	0.11
2	13	9.8	12	15	e14	22	18	13	17	1.4	0.00	0.21
3	12	9.9	13	15	16	22	18	13	17	1.1	0.00	0.44
4	11	9.8	13	15	16	22	16	13	14	1.0	0.00	0.45
5	10	11	13	15	16	21	16	12	11	0.86	0.00	0.27
6	10	12	13	15	15	20	16	12	11	0.61	0.00	0.01
7	10	13	13	15	15	20	16	11	9.6	0.54	0.00	0.26
8	10	12	14	15	e14	20	16	11	8.5	0.16	0.00	0.54
9	10	13	14	16	e14	18	17	12	8.2	0.12	0.00	0.44
10	12	12	14	16	e15	18	16	12	7.6	e0.25	44	0.10
11	16	13	14	16	18	18	15	12	6.3	e0.12	224	0.38
12	15	20	13	16	17	18	16	11	7.6	0.00	129	0.50
13	18	124	14	15	18	18	16	11	7.2	0.00	63	0.51
14	20	433	15	15	19	18	16	11	6.2	e0.00	18	0.48
15	15	319	15	15	21	18	15	10	5.8	e0.00	6.0	0.48
16	13	151	15	15	25	19	15	10	6.1	0.00	4.1	0.48
17	12	76	15	15	41	19	15	11	6.2	0.00	3.5	0.46
18	12	50	15	16	102	19	16	11	5.4	0.00	3.0	0.73
19	12	42	16	16	107	19	15	12	61	0.00	2.5	0.51
20	12	51	16	16	76	20	15	12	117	0.00	2.5	41
21	12	48	16	16	51	20	16	12	36	0.00	2.0	30
22	11	35	16	16	39	20	15	12	16	0.00	1.5	11
23	13	26	15	16	34	19	15	14	8.1	0.00	1.4	5.9
24	12	21	16	16	31	19	15	29	6.5	0.00	1.2	4.7
25	11	17	16	16	27	19	15	21	5.1	0.00	1.0	4.2
26	9.8	15	16	16	24	19	16	17	4.5	0.00	0.83	3.9
27	9.2	15	15	16	24	19	15	15	4.3	0.00	0.58	3.6
28	9.2	15	16	17	23	19	15	90	4.1	0.00	0.30	3.4
29	10	14	17	16	---	18	17	45	3.0	0.00	0.21	3.0
30	10	12	17	16	---	18	15	26	2.1	0.00	0.16	2.6
31	9.9	---	15	16	---	19	---	22	---	0.00	0.00	---
Mean	12.1	53.6	14.6	15.6	30.2	19.4	15.9	17.3	14.7	0.25	16.4	4.02
Max	20	433	17	17	107	23	19	90	117	1.7	224	41
Min	9.2	9.5	12	14	14	18	15	10	2.1	0.00	0.00	0.01
Ac-ft	744	3,190	901	958	1,680	1,190	944	1,070	874	16	1,010	239

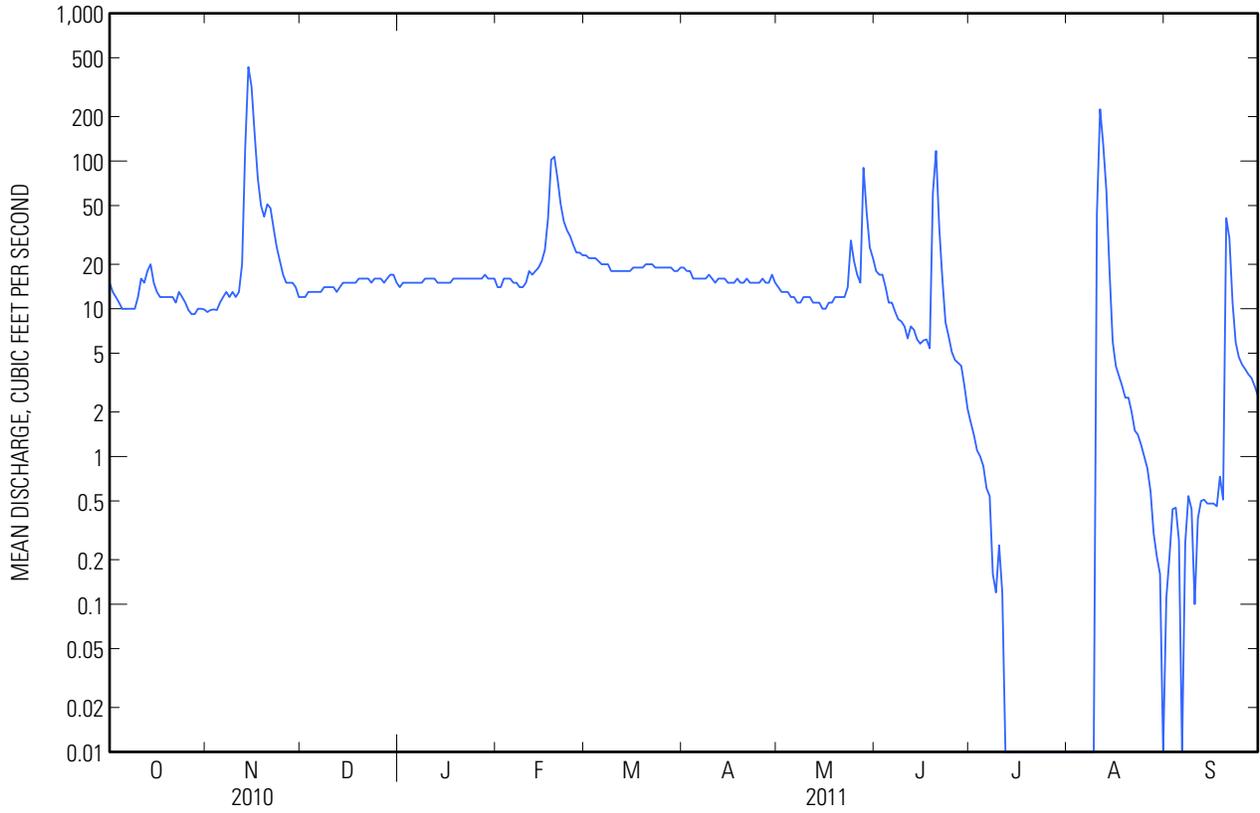
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1996 - 2011, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	167	156	58.0	40.8	131	331	246	399	427	265	128	103
Max	795	1,818	337	122	636	1,551	834	2,430	1,049	1,107	620	360
(WY)	(2004)	(1999)	(2008)	(1999)	(2001)	(2000)	(2009)	(2007)	(2009)	(2010)	(1999)	(1997)
Min	1.53	2.94	4.25	6.57	11.2	11.9	13.5	17.3	14.7	0.25	3.87	2.05
(WY)	(2007)	(2007)	(2007)	(2007)	(2006)	(2006)	(2006)	(2011)	(2011)	(2011)	(2006)	(2006)

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SUMMARY STATISTICS

	Calendar Year 2010		Water Year 2011		Water Years 1996 - 2011	
Annual mean	172		17.7		205	
Highest annual mean					528	1999
Lowest annual mean					15.5	2006
Highest daily mean	7,650	Jul 6	433	Nov 14	10,800	May 25, 2007
Lowest daily mean	9.2	Oct 27	0.00	Jul 12	0.00	Jul 12, 2011
Annual seven-day minimum	9.7	Oct 26	0.00	Jul 12	0.00	Jul 12, 2011
Maximum peak flow			497	Nov 14	11,000	May 25, 2007
Maximum peak stage			9.19	Nov 14	27.22	May 25, 2007
Instantaneous low flow			0.00	Jul 9	0.00	Jul 9, 2011
Annual runoff (ac-ft)	124,600		12,810		148,200	
10 percent exceeds	153		23		310	
50 percent exceeds	26		14		26	
90 percent exceeds	12		0.16		8.7	



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WATER-QUALITY RECORDS

PERIOD OF RECORD.--May 1998 to current year.

PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: May 1998 to current year.

pH: May 1998 to current year.

WATER TEMPERATURE: May 1998 to current year.

DISSOLVED OXYGEN (Lumin): February 2007 to current year.

TURBIDITY (YSI 6136 sensor): July 2004 to September 2004, December 2006 to current year.

INSTRUMENTATION.--Multiparameter water-quality monitor.

REMARKS.--Records good. Interruptions in record are due to ice conditions or malfunction of the recording instrument or sensors. Instruments used to measure turbidity conform to ISO 7027 standards and were made using Yellow Springs Instrument (YSI) 6026 and 6136 sensors.

EXTREMES FOR PERIOD OF DAILY RECORD.--

SPECIFIC CONDUCTANCE: Maximum, 2,400 microsiemens/cm, Sept. 8, 2009; minimum, 57 microsiemens/cm, Oct. 9, 2003.

pH: Maximum, 9.6 standard units, July 27, 2006; minimum, 6.1 standard units, Oct. 1, 2006.

WATER TEMPERATURE: Maximum, 35.2°C, July 24, 2006; minimum, -0.1°C, Dec. 20, 2008.

DISSOLVED OXYGEN (Lumin): Maximum, 19.5 mg/L, Apr. 27, 2010; minimum, 1.7 mg/L, June 28, 2008.

TURBIDITY (YSI 6136 sensor): Maximum, 1,600 FNU, June 9, 2010; minimum, 0.3 FNU, Feb. 13, 2011.

EXTREMES FOR CURRENT YEAR.--

SPECIFIC CONDUCTANCE: Maximum, 1,750 microsiemens/cm, Feb. 18; minimum, 145 microsiemens/cm, Aug. 11.

pH: Maximum, 8.9 standard units, June 7; minimum, 7.0 standard units, Aug. 11.

WATER TEMPERATURE: Maximum, 34.4°C, July 5; minimum, -0.1°C, Dec. 12.

DISSOLVED OXYGEN (Lumin): Maximum, 18.6 mg/L, Jan. 17; minimum, 2.5 mg/L, Aug. 17.

TURBIDITY (YSI 6136 sensor): Maximum, 710 FNU, Sept. 20, 21; minimum, 0.3 FNU, Feb. 13.

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	455	448	452	934	865	898	713	695	704	1,390	1,340	1,380
2	480	455	465	880	848	863	728	713	722	1,380	1,360	1,370
3	518	480	496	849	816	830	735	728	731	1,380	1,350	1,370
4	547	518	526	816	807	810	759	735	747	1,350	1,340	1,350
5	573	547	560	808	796	801	774	759	767	1,360	1,340	1,360
6	---	573	---	796	793	795	787	774	782	1,400	1,360	1,380
7	631	---	---	806	793	800	810	787	796	1,400	1,390	1,400
8	643	631	639	815	806	812	836	810	822	1,390	1,350	1,380
9	656	643	651	821	815	818	851	836	843	1,350	1,330	1,340
10	664	652	659	825	819	823	860	851	857	1,340	1,320	1,320
11	667	656	663	826	819	823	884	859	870	1,390	1,320	1,360
12	675	657	667	820	715	756	937	883	---	1,400	1,380	1,400
13	689	675	683	856	507	738	939	909	924	1,400	1,380	1,400
14	722	689	715	1,040	405	663	971	921	947	1,380	1,360	1,370
15	745	722	735	853	373	525	1,010	971	988	1,430	1,370	1,410
16	746	739	744	424	374	397	1,040	1,010	1,030	1,460	1,430	1,450
17	740	734	738	453	424	439	1,060	1,040	1,050	1,460	1,450	1,460
18	752	736	744	501	453	475	1,120	1,060	1,090	1,470	1,440	1,460
19	791	747	768	536	501	527	1,150	1,120	1,140	1,460	1,460	1,460
20	879	791	844	523	493	504	1,170	1,150	1,160	1,470	1,410	1,450
21	1,000	879	942	506	482	494	1,200	1,170	1,180	1,420	1,400	1,410
22	1,100	1,000	1,070	686	482	568	1,230	1,200	1,220	1,460	1,400	1,430
23	1,140	1,100	1,130	836	686	792	1,250	1,230	1,240	1,550	1,460	1,510
24	1,160	1,140	1,150	807	758	769	1,280	1,230	1,240	1,570	1,530	1,560
25	1,140	1,090	1,120	771	758	767	1,310	1,280	1,300	1,530	1,490	1,520
26	1,090	1,070	1,080	758	700	731	1,300	1,290	1,300	1,490	1,470	1,480
27	1,080	1,040	1,070	700	663	679	1,310	1,300	1,310	1,500	1,470	1,480
28	1,050	1,020	1,040	671	663	667	1,360	1,300	1,330	1,570	1,490	1,530
29	1,020	1,000	1,010	680	671	674	1,360	1,330	1,340	1,580	1,500	1,550
30	1,010	949	982	695	680	688	1,340	1,330	1,340	1,500	1,420	1,460
31	973	934	953	---	---	---	1,360	1,340	1,350	1,430	1,410	1,420
Month	---	---	---	1,040	373	698	1,360	695	---	1,580	1,320	1,430

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SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

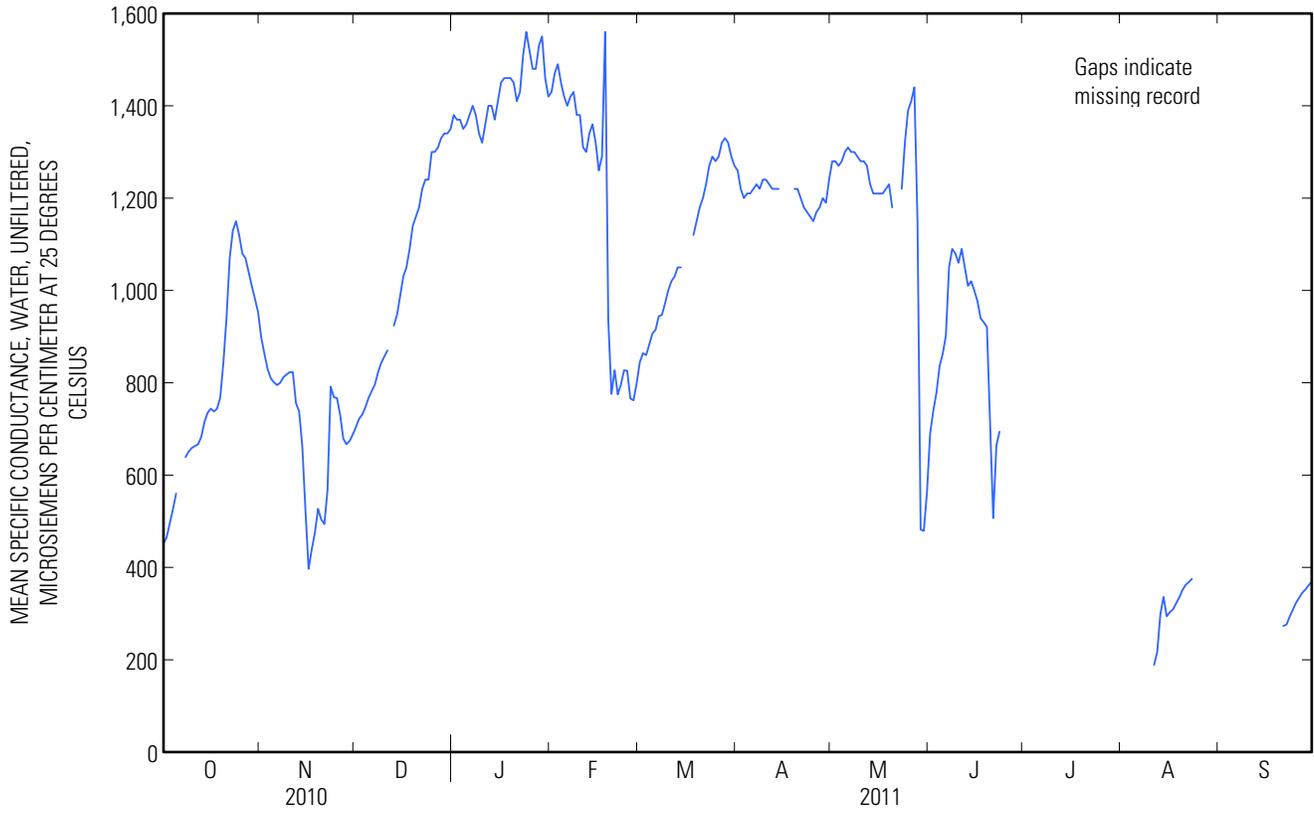
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	1,440	1,420	1,430	865	823	845	1,270	1,240	1,260	1,290	1,250	1,280
2	1,500	1,440	1,470	877	843	864	1,240	1,200	1,220	1,290	1,260	1,280
3	1,500	1,470	1,490	867	850	860	1,220	1,190	1,200	1,290	1,250	1,270
4	1,470	1,430	1,450	894	862	883	1,230	1,200	1,210	1,300	1,260	1,280
5	1,440	1,410	1,420	921	891	907	1,220	1,180	1,210	1,300	1,270	1,300
6	1,420	1,380	1,400	931	889	915	1,240	1,180	1,220	1,310	1,300	1,310
7	1,430	1,410	1,420	960	909	944	1,240	1,210	1,230	1,310	1,300	1,300
8	1,440	1,410	1,430	958	939	947	1,230	1,210	1,220	1,300	1,300	1,300
9	1,410	1,370	1,380	982	952	972	1,240	1,230	1,240	1,300	1,280	1,290
10	1,400	1,350	1,380	1,010	982	1,000	1,240	1,240	1,240	1,280	1,280	1,280
11	1,350	1,300	1,310	1,030	1,010	1,020	1,240	1,220	1,230	1,280	1,270	1,280
12	1,320	1,280	1,300	1,040	1,020	1,030	1,230	1,220	1,220	1,270	1,260	1,270
13	1,370	1,300	1,340	1,060	1,040	1,050	1,230	1,220	1,220	1,260	1,200	1,230
14	1,400	1,330	1,360	1,060	1,040	1,050	1,230	1,220	1,220	1,230	1,190	1,210
15	1,340	1,270	1,320	---	1,040	---	1,230	1,210	---	1,220	1,190	1,210
16	1,290	1,210	1,260	---	---	---	---	---	---	1,220	1,190	1,210
17	1,350	1,210	1,290	1,100	1,090	---	---	---	---	1,220	1,190	1,210
18	1,750	1,340	1,560	1,130	1,090	1,120	1,220	1,210	---	1,220	1,210	1,220
19	1,390	720	935	1,160	1,130	1,150	1,220	1,210	1,220	1,240	1,180	1,230
20	825	720	776	1,190	1,160	1,180	1,230	1,200	1,220	1,200	1,160	1,180
21	840	785	827	1,210	1,170	1,200	1,210	1,190	1,200	---	1,160	---
22	785	769	775	1,240	1,200	1,230	1,190	1,160	1,180	1,240	1,210	---
23	818	775	796	1,280	1,240	1,270	1,180	1,160	1,170	1,240	1,210	1,220
24	841	818	827	1,300	1,270	1,290	1,170	1,150	1,160	1,360	1,230	1,320
25	842	788	826	1,290	1,270	1,280	1,160	1,150	1,150	1,430	1,310	1,390
26	788	752	766	1,310	1,270	1,290	1,180	1,150	1,170	1,420	1,400	1,410
27	770	753	762	1,320	1,310	1,320	1,190	1,160	1,180	1,460	1,410	1,440
28	823	766	799	1,330	1,320	1,330	1,220	1,160	1,200	1,620	596	1,150
29	---	---	---	1,330	1,300	1,320	1,210	1,150	1,190	596	459	482
30	---	---	---	1,310	1,270	1,290	1,250	1,210	1,240	518	452	479
31	---	---	---	1,280	1,250	1,270	---	---	---	642	460	563
Month	1,750	720	1,180	---	---	---	---	---	---	---	452	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

**SPECIFIC CONDUCTANCE, WATER, UNFILTERED, MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011**

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	725	642	690	---	---	---	---	---	---	---	---	---
2	749	725	739	---	---	---	---	---	---	---	---	---
3	804	742	778	---	---	---	---	---	---	---	---	---
4	867	799	836	---	---	---	---	---	---	---	---	---
5	885	817	863	---	---	---	---	---	---	---	---	---
6	947	856	902	---	---	---	---	---	---	---	---	---
7	1,110	905	1,050	---	---	---	---	---	---	---	---	---
8	1,120	939	1,090	---	---	---	---	---	---	---	---	---
9	1,120	994	1,080	---	---	---	---	---	---	---	---	---
10	1,080	1,050	1,060	---	---	---	661	---	---	---	---	---
11	1,090	1,080	1,090	---	---	---	428	145	189	---	---	---
12	1,080	1,010	1,050	---	---	---	271	203	217	---	---	---
13	1,030	1,000	1,010	---	---	---	380	264	299	---	---	---
14	1,030	1,020	1,020	---	---	---	381	296	336	---	---	---
15	1,020	991	1,000	---	---	---	301	290	294	---	---	---
16	991	948	977	---	---	---	308	299	303	---	---	---
17	948	928	940	---	---	---	316	301	309	---	---	---
18	936	922	931	---	---	---	329	316	322	---	---	---
19	1,030	478	921	---	---	---	345	329	335	---	---	---
20	911	478	713	---	---	---	358	343	351	---	---	---
21	578	474	507	---	---	---	366	358	362	324	265	273
22	714	578	664	---	---	---	371	366	368	285	268	276
23	721	655	694	---	---	---	380	370	375	301	285	293
24	663	---	---	---	---	---	---	---	---	316	301	308
25	---	622	---	---	---	---	---	---	---	330	316	323
26	628	---	---	---	---	---	---	---	---	339	330	334
27	617	---	---	---	---	---	---	---	---	349	339	345
28	597	---	---	---	---	---	---	---	---	357	349	352
29	---	---	---	---	---	---	---	---	---	365	357	361
30	---	---	---	---	---	---	---	---	---	374	365	369
31	---	---	---	---	---	---	---	---	---	---	---	---
Month	---	---	---	---	---	---	---	---	---	---	---	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued



07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	October			November			December			January		
1	7.7	7.4	7.7	8.3	7.8	8.1	7.9	7.8	7.9	8.1	8.0	8.0
2	7.8	7.6	7.7	8.3	7.9	8.1	7.9	7.8	7.8	8.1	8.0	8.0
3	7.8	7.7	7.8	---	---	---	7.9	7.8	7.9	8.2	8.1	8.1
4	7.8	7.6	7.8	8.0	---	---	8.0	7.9	7.9	8.2	8.1	8.1
5	7.8	7.6	7.8	8.0	7.9	8.0	7.9	7.9	7.9	8.2	8.1	8.1
6	7.9	---	---	8.0	7.9	8.0	7.9	7.9	7.9	8.2	8.1	8.2
7	7.9	---	---	8.1	7.9	8.0	7.9	7.9	7.9	8.3	8.1	8.2
8	8.1	7.8	7.9	8.0	8.0	8.0	7.9	7.9	7.9	8.3	8.2	8.2
9	8.3	8.0	8.1	8.1	8.0	8.0	---	---	---	8.3	8.2	8.3
10	8.3	8.0	8.2	8.0	8.0	8.0	7.9	7.8	7.8	8.4	8.2	8.3
11	8.3	8.1	8.2	8.0	8.0	8.0	8.0	7.8	7.9	8.4	8.3	8.3
12	8.4	8.2	8.3	8.1	8.0	8.0	8.0	7.9	8.0	8.3	8.2	8.2
13	8.4	7.6	8.2	8.1	7.7	8.0	7.9	7.9	7.9	8.4	8.2	8.3
14	7.9	7.6	7.7	7.8	7.6	7.7	7.9	7.9	7.9	8.4	8.2	8.3
15	8.2	7.7	8.1	7.7	7.5	7.5	8.0	7.9	7.9	8.4	8.3	8.4
16	8.3	7.6	8.2	7.6	7.6	7.6	8.0	7.9	8.0	8.4	8.3	8.3
17	8.2	7.6	8.1	7.6	7.6	7.6	8.0	7.9	7.9	8.4	8.2	8.3
18	8.2	8.0	8.1	7.7	7.6	7.6	8.0	7.9	7.9	8.4	8.2	8.3
19	8.1	7.6	7.8	7.7	7.7	7.7	8.0	7.9	7.9	8.3	8.1	8.1
20	8.0	7.5	7.7	7.7	7.7	7.7	8.0	7.9	7.9	8.2	8.1	8.1
21	8.0	7.5	7.6	7.7	7.7	7.7	8.0	7.9	8.0	8.2	8.1	8.2
22	7.8	7.6	7.7	7.7	7.7	7.7	8.0	8.0	8.0	8.3	8.1	8.2
23	7.9	7.6	7.8	7.8	7.7	7.8	8.0	8.0	8.0	8.3	8.1	8.2
24	8.1	7.8	7.9	7.8	7.7	7.7	8.0	7.9	8.0	8.3	8.2	8.2
25	8.0	7.8	7.9	7.8	7.8	7.8	8.1	8.0	8.0	8.2	8.1	8.2
26	8.2	7.9	8.0	7.8	7.8	7.8	8.1	8.0	8.0	8.2	8.1	8.1
27	8.2	7.9	8.1	7.8	7.7	7.8	8.1	8.0	8.0	8.2	8.1	8.2
28	8.2	8.0	8.1	7.9	7.8	7.8	8.1	8.0	8.0	8.2	8.1	8.1
29	8.2	7.9	8.1	7.9	7.9	7.9	8.1	8.0	8.0	8.2	8.0	8.1
30	8.2	7.9	8.1	7.9	7.9	7.9	8.2	8.0	8.0	8.2	8.1	8.2
31	8.3	8.0	8.1	---	---	---	8.2	8.0	8.1	8.2	8.1	8.2
Max	8.4	---	---	---	---	---	---	---	---	8.4	8.3	8.4
Min	7.7	---	---	---	---	---	---	---	---	8.1	8.0	8.0

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

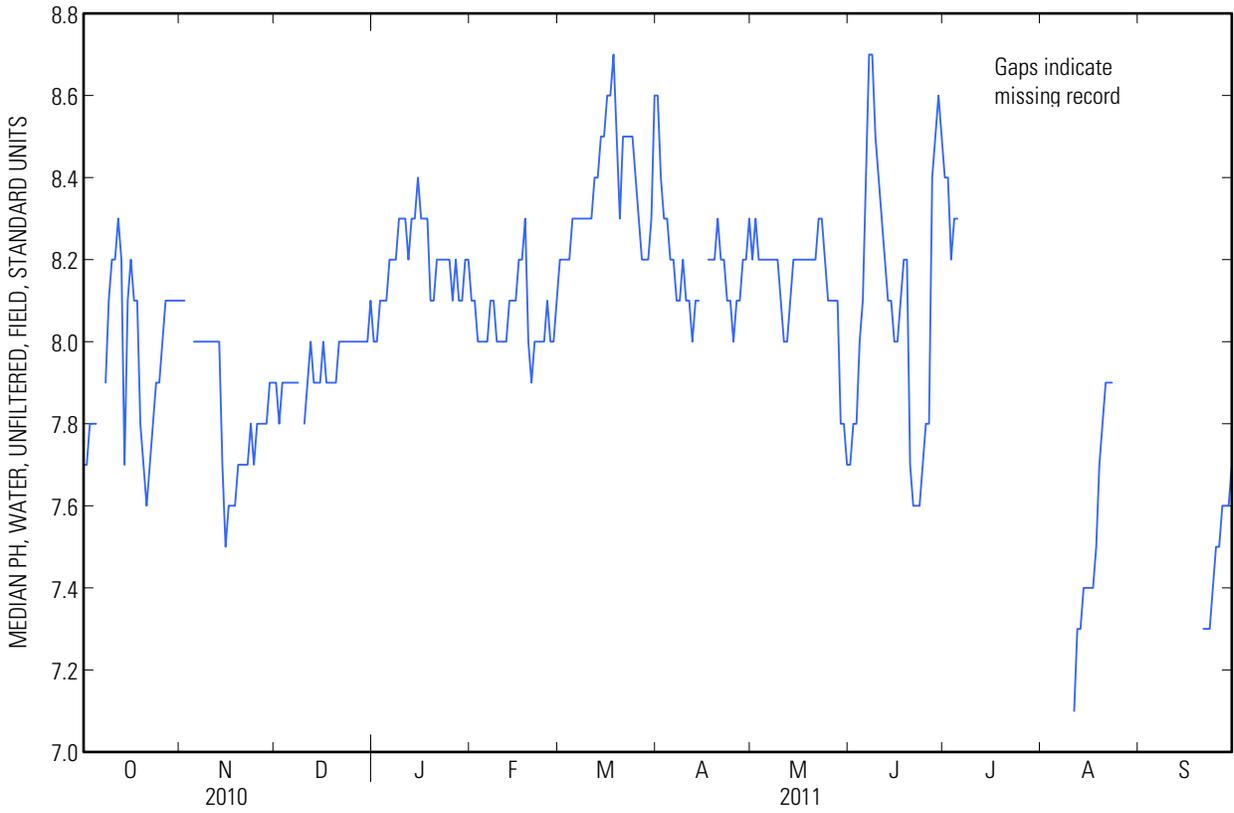
Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	February			March			April			May		
1	8.2	8.1	8.1	8.3	8.0	8.2	8.8	8.4	8.6	8.3	8.1	8.2
2	8.1	8.0	8.1	8.4	8.0	8.2	8.7	8.2	8.4	8.4	8.2	8.3
3	8.0	8.0	8.0	8.4	8.0	8.2	8.4	8.1	8.3	8.3	8.1	8.2
4	8.0	8.0	8.0	8.4	8.0	8.2	8.4	8.1	8.3	8.3	8.1	8.2
5	8.0	7.9	8.0	8.5	8.1	8.3	8.3	8.1	8.2	8.3	8.1	8.2
6	8.1	8.0	8.0	8.5	8.1	8.3	8.3	8.2	8.2	8.3	8.1	8.2
7	8.2	8.1	8.1	8.4	8.1	8.3	8.3	8.0	8.1	8.3	8.1	8.2
8	8.2	8.1	8.1	8.4	8.1	8.3	8.2	8.0	8.1	8.3	8.0	8.2
9	8.1	8.0	8.0	8.4	8.1	8.3	8.2	8.0	8.2	8.3	8.0	8.2
10	8.0	7.9	8.0	8.4	8.1	8.3	8.2	8.0	8.1	8.2	8.0	8.1
11	8.0	7.9	8.0	8.4	8.1	8.3	8.1	8.0	8.1	8.1	7.9	8.0
12	8.1	7.9	8.0	8.5	8.1	8.4	8.1	8.0	8.0	8.1	7.9	8.0
13	8.1	8.0	8.1	8.5	8.2	8.4	8.1	7.9	8.1	8.1	8.0	8.1
14	8.2	8.0	8.1	8.6	8.2	8.5	8.2	7.9	8.1	8.2	8.1	8.2
15	8.2	8.0	8.1	8.6	8.3	8.5	8.2	8.0	---	8.3	8.2	8.2
16	8.3	8.0	8.2	8.6	8.3	8.6	8.2	---	---	8.3	8.2	8.2
17	8.4	8.0	8.2	8.7	8.3	8.6	8.3	8.1	8.2	8.3	8.1	8.2
18	8.3	8.0	8.3	8.8	8.4	8.7	8.3	8.1	8.2	8.3	8.1	8.2
19	8.0	7.9	8.0	8.8	8.3	8.5	8.3	8.1	8.2	8.4	8.1	8.2
20	8.0	7.9	7.9	8.6	8.1	8.3	8.4	8.2	8.3	8.3	8.1	8.2
21	8.2	7.9	8.0	8.6	8.1	8.5	8.3	8.2	8.2	8.6	8.1	8.2
22	8.2	7.9	8.0	8.6	8.1	8.5	8.2	8.1	8.2	8.5	8.1	8.3
23	8.3	7.9	8.0	8.6	8.3	8.5	8.2	8.0	8.1	8.5	8.1	8.3
24	8.1	7.9	8.0	8.6	8.4	8.5	8.2	8.1	8.1	8.3	8.1	8.2
25	8.2	8.0	8.1	8.6	8.3	8.4	8.1	8.0	8.0	8.2	8.0	8.1
26	8.1	7.9	8.0	8.5	8.2	8.3	8.3	8.0	8.1	8.2	8.1	8.1
27	8.1	7.9	8.0	8.3	8.1	8.2	8.3	8.0	8.1	8.2	8.1	8.1
28	8.3	8.0	8.1	8.3	8.1	8.2	8.3	8.2	8.2	8.2	7.9	8.1
29	---	---	---	8.4	8.1	8.2	8.3	8.1	8.2	7.9	7.8	7.8
30	---	---	---	8.6	8.2	8.3	8.4	8.2	8.3	7.8	7.8	7.8
31	---	---	---	8.7	8.5	8.6	---	---	---	7.8	7.7	7.7
Max	8.4	8.1	8.3	8.8	8.5	8.7	8.8	---	---	8.6	8.2	8.3
Min	8.0	7.9	7.9	8.3	8.0	8.2	8.1	---	---	7.8	7.7	7.7

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

PH, WATER, UNFILTERED, FIELD, STANDARD UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Median	Max	Min	Median	Max	Min	Median	Max	Min	Median
	June			July			August			September		
1	7.8	7.7	7.7	8.6	8.2	8.4	---	---	---	---	---	---
2	7.8	7.7	7.8	8.7	8.2	8.4	---	---	---	---	---	---
3	8.0	7.8	7.8	8.5	7.9	8.2	---	---	---	---	---	---
4	8.2	7.8	8.0	8.7	8.1	8.3	---	---	---	---	---	---
5	8.5	8.0	8.1	8.5	8.0	8.3	---	---	---	---	---	---
6	8.8	8.2	8.4	---	---	---	---	---	---	---	---	---
7	8.9	8.5	8.7	---	---	---	---	---	---	---	---	---
8	8.8	8.5	8.7	---	---	---	---	---	---	---	---	---
9	8.6	8.3	8.5	---	---	---	---	---	---	---	---	---
10	8.5	8.2	8.4	---	---	---	---	---	---	---	---	---
11	8.4	8.1	8.3	---	---	---	7.2	7.0	7.1	---	---	---
12	8.3	8.0	8.2	---	---	---	7.4	7.2	7.3	---	---	---
13	8.3	8.0	8.1	---	---	---	7.4	7.2	7.3	---	---	---
14	8.2	8.0	8.1	---	---	---	7.4	7.4	7.4	---	---	---
15	8.2	7.9	8.0	---	---	---	7.4	7.4	7.4	---	---	---
16	8.2	8.0	8.0	---	---	---	7.4	7.4	7.4	---	---	---
17	8.3	8.0	8.1	---	---	---	7.5	7.4	7.4	---	---	---
18	8.4	8.1	8.2	---	---	---	7.8	7.4	7.5	---	---	---
19	8.3	7.7	8.2	---	---	---	8.3	7.5	7.7	---	---	---
20	7.9	7.6	7.7	---	---	---	8.3	7.6	7.8	---	---	---
21	7.7	7.6	7.6	---	---	---	8.5	7.6	7.9	7.3	7.3	7.3
22	7.7	7.6	7.6	---	---	---	8.1	7.8	7.9	7.3	7.3	7.3
23	7.7	7.6	7.6	---	---	---	8.6	7.8	7.9	7.4	7.3	7.3
24	7.9	7.6	7.7	---	---	---	---	---	---	7.5	7.4	7.4
25	8.1	7.7	7.8	---	---	---	---	---	---	7.6	7.5	7.5
26	8.2	7.7	7.8	---	---	---	---	---	---	7.6	7.5	7.5
27	8.9	7.9	8.4	---	---	---	---	---	---	7.8	7.6	7.6
28	8.9	8.2	8.5	---	---	---	---	---	---	7.8	7.6	7.6
29	8.8	8.2	8.6	---	---	---	---	---	---	7.9	7.6	7.6
30	8.8	8.2	8.5	---	---	---	---	---	---	8.1	7.6	7.7
31	---	---	---	---	---	---	---	---	---	---	---	---
Max	8.9	8.5	8.7	---	---	---	---	---	---	---	---	---
Min	7.7	7.6	7.6	---	---	---	---	---	---	---	---	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued



07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	19.0	16.8	18.1	12.7	11.2	11.7	3.6	2.4	3.0	1.2	0.2	0.6
2	18.6	16.9	17.8	11.9	10.1	11.0	5.7	3.6	4.6	1.1	0.2	0.6
3	16.9	14.6	15.9	11.8	9.7	10.8	5.9	4.7	5.3	2.2	0.6	1.4
4	16.5	14.0	15.4	11.2	9.7	10.4	5.7	3.9	4.9	2.9	1.8	2.3
5	16.9	14.3	15.8	9.8	8.1	9.1	3.9	3.0	3.4	3.0	1.7	2.4
6	---	---	---	9.7	7.9	8.9	3.4	2.1	2.8	4.1	2.4	3.3
7	19.5	---	---	10.9	8.8	9.9	3.9	2.6	3.3	5.0	3.6	4.2
8	19.9	17.4	18.8	11.9	9.8	10.9	4.4	3.1	3.8	3.8	2.1	2.6
9	19.7	17.4	18.6	13.4	11.3	12.4	5.5	4.2	4.8	2.1	1.4	1.8
10	18.3	15.7	16.7	13.4	11.6	12.7	5.2	4.1	4.8	1.7	0.7	1.3
11	16.3	15.0	15.8	11.6	10.0	10.4	5.2	1.9	4.4	1.0	0.0	0.4
12	18.1	15.5	16.8	10.5	8.4	9.7	1.9	-0.1	0.6	0.8	0.0	0.3
13	17.4	15.8	16.7	9.4	6.6	8.0	1.2	0.3	0.7	0.8	0.1	0.4
14	16.2	13.9	15.4	6.6	5.8	6.3	2.2	0.5	1.4	0.9	0.2	0.5
15	16.6	14.7	15.8	6.9	6.1	6.5	3.2	2.1	2.6	1.2	0.4	0.8
16	17.8	15.2	16.5	7.6	6.3	6.9	3.9	2.7	3.2	1.8	0.9	1.3
17	18.0	15.7	17.0	6.8	5.8	6.6	3.4	2.8	3.0	3.2	1.4	2.2
18	17.7	16.1	16.9	6.8	5.1	5.9	2.8	2.4	2.6	3.2	2.3	2.6
19	16.7	15.0	15.8	6.9	4.6	5.7	4.0	2.4	3.3	2.3	0.5	1.7
20	15.9	13.7	14.9	7.2	5.3	6.2	5.3	3.6	4.5	1.2	-0.1	0.5
21	16.5	14.3	15.5	8.8	6.1	7.5	5.2	4.0	4.6	2.1	0.3	1.1
22	17.3	16.3	16.7	7.6	7.0	7.3	4.0	2.2	2.9	2.7	1.8	2.2
23	18.4	16.9	17.5	7.1	5.8	6.6	2.3	1.6	1.9	2.7	0.7	1.5
24	18.1	16.4	17.3	8.1	6.5	7.2	3.8	2.3	3.2	1.8	0.3	1.0
25	17.2	15.9	16.5	6.5	3.8	4.5	3.4	2.1	2.5	2.8	1.3	2.1
26	15.9	13.8	14.7	4.8	3.0	4.0	2.5	1.7	2.0	2.9	2.1	2.5
27	13.8	12.1	12.9	5.5	4.1	4.9	2.0	0.8	1.5	4.0	1.7	2.8
28	12.7	10.8	11.8	5.9	4.5	5.3	3.1	1.5	2.3	4.9	3.4	4.2
29	12.3	10.4	11.4	6.3	5.0	6.0	5.7	3.1	4.3	5.2	3.8	4.5
30	13.0	10.9	11.9	5.0	3.2	3.9	7.6	5.7	6.6	4.8	3.2	3.9
31	13.7	11.8	12.7	---	---	---	6.2	0.9	3.4	3.2	0.3	2.0
Month	---	---	---	13.4	3.0	7.9	7.6	-0.1	3.3	5.2	-0.1	1.9

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

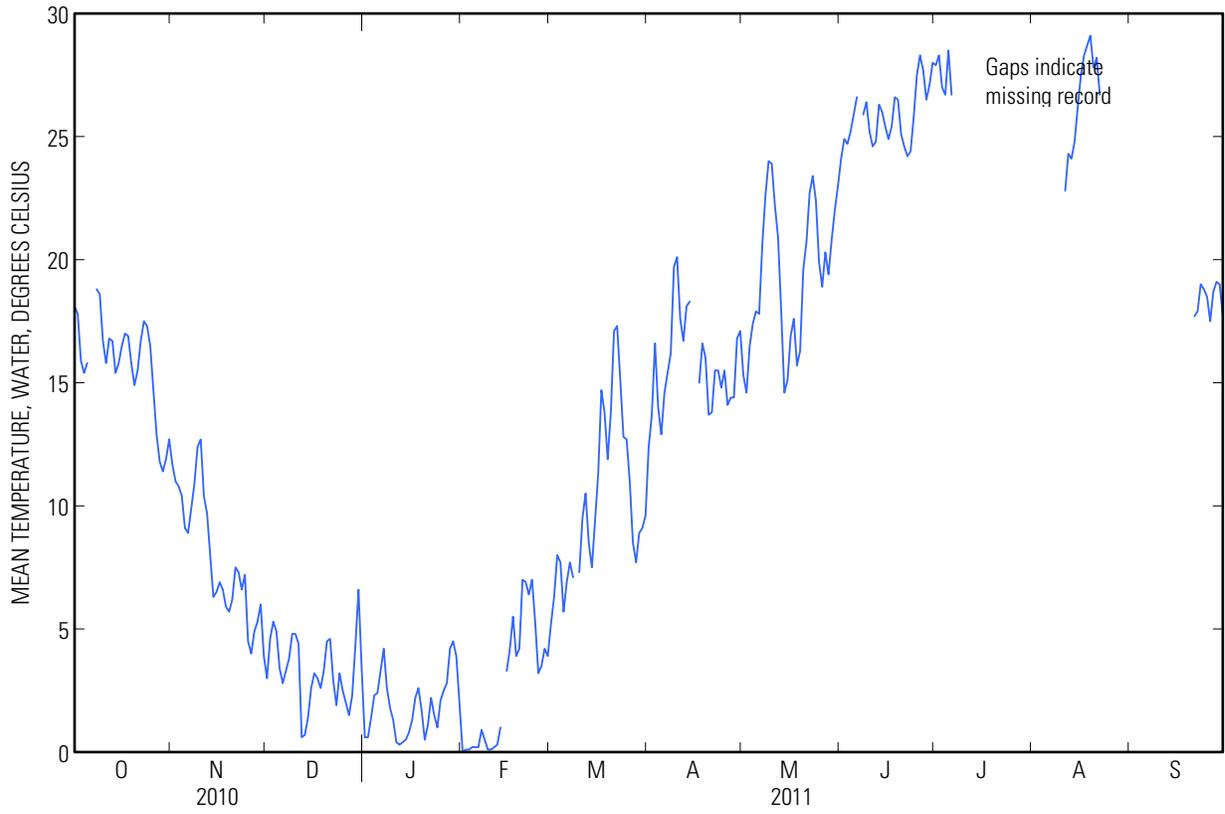
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	0.3	-0.1	0.0	7.0	3.2	5.2	14.0	11.1	12.4	17.0	13.6	15.3
2	0.4	0.0	0.1	7.2	4.8	6.3	15.6	11.6	13.7	16.7	12.6	14.6
3	0.4	0.0	0.1	9.8	6.2	8.0	18.6	15.2	16.6	18.6	14.5	16.5
4	0.5	0.0	0.2	9.5	6.6	7.7	17.1	12.4	14.0	19.2	15.7	17.4
5	0.5	0.1	0.2	6.8	3.9	5.7	14.6	10.9	12.9	19.5	16.6	17.9
6	0.5	0.1	0.2	8.2	5.5	6.9	15.9	13.2	14.6	19.5	15.8	17.8
7	1.5	0.3	0.9	8.1	7.2	7.7	16.2	14.7	15.4	23.4	18.5	20.6
8	1.4	0.0	0.5	7.8	6.4	7.1	18.2	14.5	16.2	24.7	20.7	22.6
9	0.3	-0.1	0.1	7.5	5.7	---	21.9	17.8	19.7	25.7	22.5	24.0
10	0.4	-0.1	0.1	9.2	5.5	7.3	21.1	19.0	20.1	25.0	22.8	23.9
11	0.5	0.0	0.2	11.0	8.1	9.5	19.0	16.2	17.6	23.5	20.6	22.2
12	0.7	0.0	0.3	11.2	9.4	10.5	18.3	14.6	16.7	22.8	19.3	20.9
13	2.3	0.2	1.0	10.7	6.8	8.5	19.3	16.7	18.1	20.8	15.2	17.9
14	3.9	2.3	---	9.5	5.9	7.5	19.1	16.9	18.3	15.5	13.9	14.6
15	3.9	2.4	3.3	11.2	7.7	9.4	16.9	---	---	17.0	13.5	15.1
16	6.5	2.2	4.2	13.6	9.4	11.3	14.3	---	---	19.5	14.5	16.9
17	6.7	3.1	5.5	16.3	13.4	14.7	16.4	13.6	15.0	18.8	16.7	17.6
18	5.7	2.7	3.9	15.7	12.4	13.8	18.0	15.0	16.6	17.2	14.8	15.7
19	5.2	3.0	4.2	13.8	11.1	11.9	17.4	14.2	16.0	18.8	14.6	16.3
20	9.0	4.4	7.0	17.4	11.2	13.8	14.9	12.5	13.7	20.6	18.8	19.6
21	8.1	5.5	6.9	18.5	15.2	17.1	14.2	13.2	13.8	23.1	18.8	20.7
22	7.7	5.0	6.4	18.3	16.0	17.3	17.9	13.8	15.5	25.0	20.9	22.7
23	8.8	5.0	7.0	17.2	13.4	15.1	16.9	14.0	15.5	24.9	22.2	23.4
24	7.9	3.9	5.3	14.5	11.2	12.8	16.4	12.8	14.8	24.5	21.0	22.4
25	3.9	2.7	3.2	13.8	11.3	12.7	16.3	14.3	15.5	22.0	18.8	19.9
26	4.1	3.0	3.5	13.3	9.4	11.0	15.3	12.5	14.1	21.3	16.5	18.9
27	4.7	3.7	4.2	9.4	7.9	8.5	15.3	13.4	14.4	21.2	19.5	20.3
28	5.3	2.2	3.9	8.1	7.3	7.7	16.8	11.9	14.4	20.9	18.4	19.4
29	---	---	---	9.8	8.0	8.9	18.4	15.2	16.8	24.4	18.1	20.8
30	---	---	---	9.8	8.4	9.1	18.6	15.4	17.1	23.6	20.4	22.0
31	---	---	---	11.7	7.8	9.6	---	---	---	25.5	20.3	23.0
Month	9.0	-0.1	---	18.5	3.2	---	21.9	---	---	25.7	12.6	19.4

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	26.0	21.8	24.1	31.4	24.9	27.9	---	---	---	---	---	---
2	25.9	23.6	24.9	32.4	25.4	28.3	---	---	---	---	---	---
3	26.0	23.2	24.7	30.4	24.9	27.0	---	---	---	---	---	---
4	26.4	23.8	25.2	32.5	22.3	26.7	---	---	---	---	---	---
5	27.6	23.9	25.9	34.4	23.5	28.5	---	---	---	---	---	---
6	28.2	24.9	26.6	32.2	22.0	26.7	---	---	---	---	---	---
7	---	24.8	---	---	20.8	---	---	---	---	---	---	---
8	27.7	23.9	25.9	---	---	---	---	---	---	---	---	---
9	28.1	25.1	26.4	---	---	---	---	---	---	---	---	---
10	26.3	23.7	25.2	---	---	---	---	---	---	---	---	---
11	27.0	22.7	24.6	---	---	---	25.4	20.9	22.8	---	---	---
12	26.9	23.1	24.8	---	---	---	25.8	23.5	24.3	---	---	---
13	28.5	24.4	26.3	---	---	---	26.1	22.3	24.1	---	---	---
14	27.1	24.9	26.0	---	---	---	27.0	22.5	24.8	---	---	---
15	28.3	22.9	25.4	---	---	---	27.4	24.4	26.2	---	---	---
16	26.4	23.8	24.9	---	---	---	29.5	26.3	27.5	---	---	---
17	28.6	22.9	25.4	---	---	---	30.9	26.4	28.3	---	---	---
18	29.5	24.4	26.6	---	---	---	31.6	26.6	28.7	---	---	---
19	28.5	25.2	26.5	---	---	---	32.7	26.6	29.1	---	---	---
20	26.0	24.0	25.1	---	---	---	29.6	26.6	27.8	20.1	---	---
21	26.8	22.7	24.6	---	---	---	32.4	25.2	28.2	18.5	17.1	17.7
22	26.2	21.6	24.2	---	---	---	28.4	25.4	26.7	19.4	16.5	17.9
23	25.7	22.9	24.4	---	---	---	31.0	---	---	21.5	17.3	19.0
24	28.4	23.4	25.8	---	---	---	---	---	---	21.2	17.0	18.8
25	30.4	25.4	27.5	---	---	---	---	---	---	21.8	16.4	18.5
26	30.7	26.3	28.3	---	---	---	---	---	---	20.3	15.5	17.5
27	29.6	26.0	27.7	---	---	---	---	---	---	22.7	15.8	18.7
28	30.1	23.8	26.5	---	---	---	---	---	---	22.9	16.1	19.1
29	31.1	24.4	27.1	---	---	---	---	---	---	22.8	17.1	19.0
30	31.8	25.3	28.0	---	---	---	---	---	---	22.3	14.8	17.7
31	---	---	---	---	---	---	---	---	---	---	---	---
Month	---	21.6	---	---	---	---	---	---	---	---	---	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued



07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	7.2	6.7	6.9	8.9	7.3	8.1	10.2	9.8	10	14.5	12.7	13.6
2	7.3	6.5	6.9	9.0	8.0	8.6	10.0	9.3	9.7	14.4	12.6	13.6
3	8.0	7.0	7.4	9.4	7.8	8.6	9.8	9.1	9.5	14.8	11.9	13.4
4	7.8	7.2	7.5	9.0	7.7	8.4	10.3	9.3	9.8	14.7	12.0	13.5
5	8.0	7.2	7.6	9.2	8.0	8.6	10.5	9.8	10.1	15.0	11.9	13.7
6	---	---	---	9.8	8.2	9.0	10.5	9.9	10.3	15.5	12.4	14.2
7	8.4	---	---	9.9	8.3	9.1	10.4	9.8	10.1	15.6	12.1	14.2
8	9.5	6.9	8.2	9.2	8.0	8.7	10.4	9.8	10.1	16.5	12.2	14.6
9	11.3	7.4	9.3	9.5	7.6	8.6	10.3	9.7	10.1	16.4	13.2	15.1
10	10.0	7.8	8.7	8.9	7.2	8.1	10.6	9.5	10.1	17.2	12.5	15.1
11	10.9	7.3	9.1	9.2	7.8	8.6	11.2	9.6	10.4	17.3	14.5	16.1
12	12.1	8.3	10.4	9.5	8.7	8.9	11.8	11.2	11.5	17.7	14.7	16.4
13	12.1	8.0	9.9	9.2	8.7	9.0	11.4	10.9	11.1	18.1	15.0	16.8
14	11.0	7.5	9.2	9.2	8.7	9.0	11.3	10.7	11.0	18.0	14.1	16.3
15	10.2	7.3	8.9	9.3	8.8	9.0	11.5	10.4	11.0	18.2	14.2	16.4
16	11.3	7.8	9.4	9.4	9.3	9.3	11.6	10.5	11.1	18.0	14.0	16.2
17	10.0	7.6	8.9	9.4	9.2	9.3	12.3	10.6	11.4	18.6	13.5	16.2
18	9.2	7.4	8.4	9.7	9.4	9.6	12.1	11.0	11.6	18.0	13.1	16.1
19	8.6	7.0	7.9	9.9	9.6	9.7	12.3	10.9	11.7	16.7	13.1	14.0
20	8.7	7.4	8.2	10.0	9.7	9.8	12.8	10.6	11.8	16.1	12.3	14.1
21	8.9	7.2	8.2	9.8	9.3	9.7	13.3	10.6	12.0	16.4	12.5	14.6
22	9.1	7.6	8.5	9.4	9.2	9.3	13.5	11.3	12.5	16.7	12.4	14.7
23	8.8	7.0	8.0	9.4	9.0	9.2	13.4	11.7	12.4	16.6	12.2	14.7
24	9.3	6.8	8.0	9.0	8.9	9.0	13.3	10.9	12.1	16.6	13.2	15.1
25	8.8	7.0	8.1	9.8	9.0	9.5	13.7	11.0	12.4	15.7	12.7	14.3
26	8.3	7.2	7.8	9.9	9.4	9.6	14.2	11.8	13.1	15.5	11.9	13.9
27	8.8	7.4	8.1	9.8	9.2	9.5	14.4	12.2	13.4	15.6	12.3	14.1
28	8.9	7.8	8.4	10.2	9.2	9.7	15.0	11.9	13.5	15.2	11.5	13.7
29	9.2	7.8	8.6	9.8	9.3	9.5	14.8	11.5	12.6	15.3	11.3	13.6
30	8.6	7.6	8.2	10.3	9.5	9.9	13.3	10.2	11.9	15.4	11.3	13.7
31	8.8	7.2	8.0	---	---	---	14.0	10.9	12.5	14.9	11.8	13.3
Month	---	---	---	10.3	7.2	9.1	15.0	9.1	11.3	18.6	11.3	14.7

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

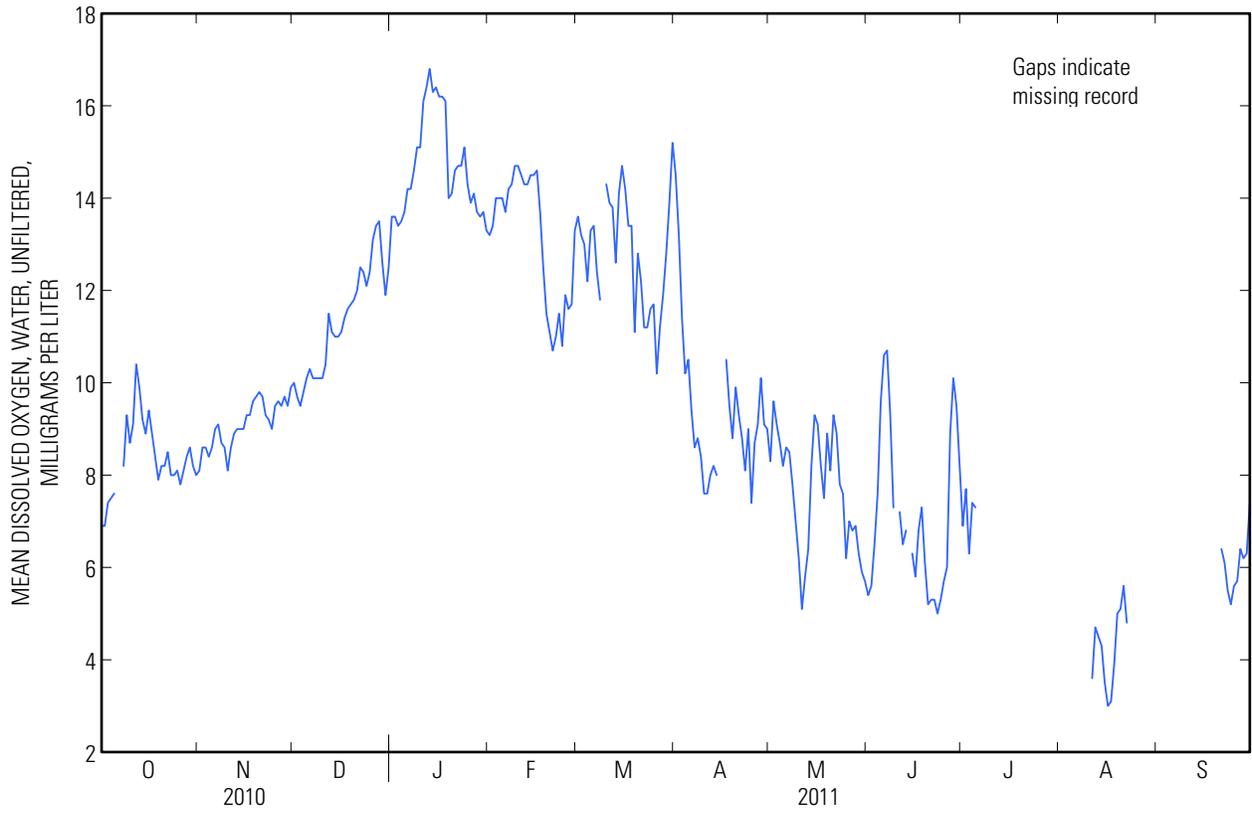
Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	14.2	12.3	13.2	16.4	11.3	13.6	18.4	10.7	14.5	9.9	6.5	8.3
2	14.2	12.4	13.4	16.0	10.6	13.2	15.8	10.1	13.2	11.8	7.6	9.6
3	14.5	12.9	14.0	15.8	10.3	13.0	14.3	8.5	11.4	11.1	6.8	9.1
4	14.6	12.7	14.0	14.8	9.6	12.2	13.2	7.4	10.2	10.5	6.5	8.7
5	15.1	12.3	14.0	16.3	10.6	13.3	12.6	8.2	10.5	10.2	6.0	8.2
6	15.1	11.7	13.7	16.1	10.3	13.4	11.0	7.5	9.4	10.6	6.5	8.6
7	15.8	12.1	14.2	14.5	9.8	12.4	10.5	6.7	8.6	11.1	5.9	8.5
8	15.6	12.5	14.3	13.7	10.2	11.8	10.5	6.8	8.8	9.6	5.4	7.8
9	16.0	13.1	14.7	16.8	10.5	---	10.0	6.4	8.4	9.5	4.4	7.0
10	16.2	12.9	14.7	17.2	11.0	14.3	9.7	5.5	7.6	7.8	4.2	6.2
11	15.9	12.7	14.5	16.9	10.2	13.9	9.5	5.6	7.6	6.1	3.8	5.1
12	16.4	11.8	14.3	17.1	9.7	13.8	10.1	5.9	8.0	8.0	4.1	5.8
13	16.4	11.6	14.3	14.9	10.0	12.6	10.4	5.7	8.2	7.5	5.3	6.4
14	17.7	11.2	14.5	18.2	10.8	14.1	9.9	5.4	8.0	9.6	6.8	8.2
15	17.2	11.5	14.5	18.1	10.6	14.7	---	5.9	---	10.7	7.8	9.3
16	17.6	11.8	14.6	17.1	10.2	14.2	13.5	---	---	10.5	7.4	9.1
17	17.1	11.3	13.7	17.7	9.0	13.4	12.8	8.0	10.5	9.6	6.2	8.2
18	13.4	11.6	12.5	17.4	9.1	13.4	11.5	7.1	9.5	9.4	6.6	7.5
19	11.7	11.3	11.5	15.3	9.2	11.1	10.7	6.6	8.8	12.2	6.9	8.9
20	11.5	10.2	11.1	18.4	8.5	12.8	12.0	7.8	9.9	9.9	6.0	8.1
21	12.0	9.9	10.7	15.8	7.8	12.2	10.9	8.0	9.3	13.5	6.1	9.3
22	12.9	9.5	11.0	15.5	7.2	11.2	10.6	7.0	8.8	13.0	5.5	8.9
23	13.7	10.0	11.5	14.5	7.7	11.2	9.9	6.2	8.1	10.9	4.8	7.8
24	11.4	10.2	10.8	14.8	8.6	11.6	10.6	7.3	9.0	10.9	5.8	7.6
25	13.6	10.5	11.9	14.2	8.8	11.7	9.3	6.2	7.4	7.5	4.9	6.2
26	12.9	10.4	11.6	12.8	8.5	10.2	11.2	6.4	8.7	8.5	5.7	7.0
27	13.2	10.3	11.7	13.6	9.0	11.2	11.6	6.7	9.1	8.5	5.1	6.8
28	16.1	11.1	13.3	13.5	9.9	11.9	12.5	8.0	10.1	8.3	6.6	6.9
29	---	---	---	15.4	10.0	12.8	11.0	6.7	9.1	6.6	5.7	6.3
30	---	---	---	17.9	10.4	13.9	12.2	6.2	9.0	6.1	5.5	5.9
31	---	---	---	18.1	12.2	15.2	---	---	---	6.4	5.1	5.7
Month	17.7	9.5	13.2	18.4	7.2	---	---	---	---	13.5	3.8	7.6

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

DISSOLVED OXYGEN, WATER, UNFILTERED, MILLIGRAMS PER LITER
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	6.4	4.7	5.4	9.2	5.3	6.9	---	---	---	---	---	---
2	6.7	4.5	5.6	11.5	5.2	7.7	---	---	---	---	---	---
3	8.2	5.1	6.5	10.5	4.0	6.3	---	---	---	---	---	---
4	10.8	4.9	7.6	11.2	5.3	7.4	---	---	---	---	---	---
5	14.7	5.7	9.6	10.3	5.2	7.3	---	---	---	---	---	---
6	16.0	5.7	10.6	---	5.7	---	---	---	---	---	---	---
7	14.6	6.4	10.7	---	---	---	---	---	---	---	---	---
8	12.3	6.2	9.3	---	---	---	---	---	---	---	---	---
9	9.5	4.7	7.3	---	---	---	---	---	---	---	---	---
10	9.7	3.8	---	---	---	---	---	---	---	---	---	---
11	9.6	5.1	7.2	---	---	---	4.6	2.8	3.6	---	---	---
12	8.2	4.6	6.5	---	---	---	5.2	4.2	4.7	---	---	---
13	9.3	4.7	6.8	---	---	---	4.7	4.3	4.5	---	---	---
14	8.5	4.3	---	---	---	---	4.6	3.5	4.3	---	---	---
15	8.8	4.3	6.3	---	---	---	3.9	3.2	3.5	---	---	---
16	7.9	4.5	5.8	---	---	---	3.3	2.8	3.0	---	---	---
17	9.1	5.0	6.8	---	---	---	3.7	2.5	3.1	---	---	---
18	9.9	5.3	7.3	---	---	---	5.5	2.8	3.9	---	---	---
19	7.2	4.2	6.1	---	---	---	8.2	2.8	5.0	---	---	---
20	5.3	4.7	5.2	---	---	---	8.0	3.2	5.1	7.7	6.2	---
21	5.4	5.0	5.3	---	---	---	9.1	3.1	5.6	6.5	6.1	6.4
22	5.8	4.9	5.3	---	---	---	6.0	3.6	4.8	6.2	5.9	6.1
23	5.5	4.6	5.0	---	---	---	9.1	4.0	---	5.9	5.2	5.5
24	6.6	4.5	5.3	---	---	---	---	---	---	5.5	5.1	5.2
25	7.6	4.3	5.7	---	---	---	---	---	---	6.5	5.1	5.6
26	7.7	4.5	6.0	---	---	---	---	---	---	6.4	5.3	5.7
27	14.4	5.3	8.9	---	---	---	---	---	---	7.6	5.8	6.4
28	15.0	7.2	10.1	---	---	---	---	---	---	7.1	5.5	6.2
29	13.8	6.6	9.5	---	---	---	---	---	---	7.7	5.6	6.3
30	11.7	6.1	8.2	---	---	---	---	---	---	9.4	6.3	7.4
31	---	---	---	---	---	---	---	---	---	---	---	---
Month	16.0	3.8	---	---	---	---	---	---	---	---	---	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued



07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	150	130	140	18	8.5	12	24	20	22	4.9	4.0	4.4
2	130	100	120	9.2	6.2	7.4	41	19	23	6.3	4.5	5.1
3	100	67	86	12	6.9	8.3	32	21	23	6.4	5.3	5.8
4	75	64	70	13	10	11	22	15	20	6.3	5.3	5.7
5	67	50	56	12	6.4	8.8	17	12	14	6.4	5.1	5.4
6	51	---	---	11	7.7	8.7	13	11	12	7.5	5.1	6.0
7	---	31	---	14	9.9	11	12	10	11	9.5	7.2	8.2
8	39	27	34	16	13	14	11	9.3	9.8	9.9	5.3	6.8
9	35	22	29	18	15	17	15	9.7	12	6.0	4.6	4.9
10	30	20	25	17	12	14	14	11	13	7.5	4.9	5.4
11	25	17	20	12	8.6	9.9	16	10	14	8.6	5.3	6.1
12	23	18	20	39	---	---	12	8.6	9.5	---	---	---
13	26	17	19	200	34	76	9.0	6.8	7.6	7.4	5.5	---
14	29	22	25	470	200	300	7.8	6.8	7.1	12	5.5	7.1
15	26	13	19	200	140	160	7.5	6.3	6.6	6.5	5.5	---
16	18	13	15	140	110	120	6.9	6.0	6.4	---	---	---
17	20	14	17	120	100	110	6.5	5.8	6.1	---	---	---
18	20	15	18	100	84	93	5.9	5.1	5.6	---	---	---
19	19	12	15	85	74	79	6.4	4.9	5.6	7.1	4.5	5.7
20	14	9.4	12	85	76	80	8.9	6.0	6.9	7.8	4.5	---
21	18	13	15	100	83	92	9.7	6.1	8.0	9.3	4.2	6.1
22	18	14	16	99	69	83	6.5	4.8	5.4	12	4.5	7.7
23	24	17	20	69	52	57	5.6	4.7	5.1	13	6.0	8.1
24	21	12	15	59	52	55	7.0	5.4	6.2	13	5.1	7.6
25	19	14	16	55	43	47	7.2	5.1	6.0	10	4.1	6.1
26	19	14	16	44	41	42	5.7	4.4	4.8	10	3.9	5.0
27	16	11	13	44	40	42	5.1	4.3	4.6	6.7	3.3	4.6
28	14	9.2	11	43	36	40	6.2	4.4	4.9	11	4.3	7.0
29	15	11	12	37	32	36	9.6	4.6	6.3	12	4.2	7.9
30	19	12	14	32	24	27	13	9.6	11	9.4	4.2	6.2
31	19	14	16	---	---	---	12	4.1	6.6	9.7	2.8	5.9
Month	---	---	---	470	---	---	41	4.1	9.8	---	---	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	10	3.0	4.7	15	8.6	12	18	---	---	32	26	29
2	6.2	2.4	3.6	19	11	14	22	12	15	32	24	28
3	6.4	2.0	3.0	19	14	16	21	15	17	37	30	33
4	7.3	1.6	3.3	18	15	17	21	13	17	40	36	38
5	8.3	1.7	4.1	17	10	13	21	13	16	43	33	39
6	6.6	1.7	3.6	16	14	15	23	18	20	46	36	39
7	6.1	1.8	3.2	17	14	16	27	20	23	46	30	---
8	5.6	2.0	3.1	17	11	14	28	19	22	43	34	39
9	10	1.6	4.0	11	6.0	8.0	27	22	24	48	34	40
10	6.2	1.1	3.1	9.4	5.6	7.3	28	22	25	48	40	44
11	10	1.3	3.5	12	9.0	9.9	28	23	25	48	36	42
12	8.6	1.2	3.2	16	12	14	26	19	22	48	34	40
13	8.3	0.3	3.9	18	7.5	14	26	20	23	---	35	---
14	7.8	0.8	3.3	11	5.9	7.2	26	21	24	35	22	28
15	5.3	1.1	2.5	18	10	12	23	12	---	---	---	---
16	8.0	2.3	4.0	17	12	15	14	4.7	8.1	33	25	---
17	9.0	4.9	6.6	23	17	21	23	14	18	36	31	33
18	57	6.4	18	25	---	---	25	---	---	36	31	34
19	83	49	69	---	12	---	22	17	20	39	28	31
20	75	44	52	25	15	19	22	15	17	42	34	37
21	49	38	42	28	21	24	21	17	18	42	34	38
22	42	36	39	28	21	26	31	18	20	---	---	---
23	38	32	35	26	17	22	31	19	23	---	---	---
24	33	23	29	24	14	19	26	17	21	96	38	47
25	24	20	22	23	15	18	28	22	25	57	39	---
26	25	22	23	22	11	---	26	18	21	51	38	43
27	24	20	22	11	5.1	8.0	34	18	22	50	38	44
28	38	11	17	7.5	3.8	5.2	25	18	21	180	45	92
29	---	---	---	13	6.7	8.8	33	25	28	260	180	240
30	---	---	---	13	9.6	12	32	24	28	250	170	220
31	---	---	---	---	5.5	---	---	---	---	420	96	160
Month	83	0.3	15	---	---	---	34	---	---	---	---	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

TURBIDITY, WATER, UNFILT, NEAR IR LED LIGHT, 780-900 NM, DETECT ANG. 90 DEG, FORMAZIN NEPHELOMETRIC UNITS
WATER YEAR OCTOBER 2010 TO SEPTEMBER 2011

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	100	82	93	78	46	58	---	---	---	---	---	---
2	84	64	76	59	39	48	---	---	---	---	---	---
3	76	59	68	59	41	50	---	---	---	---	---	---
4	77	51	61	56	30	44	---	---	---	---	---	---
5	67	44	57	46	31	37	---	---	---	---	---	---
6	62	42	52	---	---	---	---	---	---	---	---	---
7	70	34	48	---	---	---	---	---	---	---	---	---
8	49	37	44	---	---	---	---	---	---	---	---	---
9	97	35	49	---	---	---	---	---	---	---	---	---
10	57	37	46	---	---	---	---	---	---	---	---	---
11	49	35	43	---	---	---	430	280	350	---	---	---
12	55	34	43	---	---	---	580	360	410	---	---	---
13	49	31	39	---	---	---	620	270	490	---	---	---
14	52	32	41	---	---	---	310	250	280	---	---	---
15	48	33	42	---	---	---	330	270	300	---	---	---
16	55	34	42	---	---	---	270	200	240	---	---	---
17	55	25	40	---	---	---	200	160	180	---	---	---
18	52	23	36	---	---	---	180	120	150	---	---	---
19	610	36	110	---	---	---	150	85	120	---	20	---
20	460	260	360	---	---	---	160	79	110	710	14	220
21	320	220	290	---	---	---	120	72	93	710	450	570
22	220	130	170	---	---	---	100	71	89	490	390	430
23	140	110	130	---	---	---	120	66	94	410	350	380
24	120	95	100	---	---	---	120	73	96	390	310	340
25	110	78	95	---	---	---	130	71	99	330	250	290
26	100	73	89	---	---	---	---	---	---	260	210	240
27	89	60	73	---	---	---	---	---	---	220	170	200
28	76	51	63	---	---	---	---	---	---	200	140	180
29	63	42	53	---	---	---	---	---	---	180	150	170
30	60	41	50	---	---	---	---	---	---	170	110	140
31	---	---	---	---	---	---	---	---	---	---	---	---
Month	610	23	83	---	---	---	---	---	---	---	---	---

07143672 LITTLE ARKANSAS RIVER AT HIGHWAY 50 NEAR HALSTEAD, KS—Continued

