

Water-Data Report 2013

15293200 KASHWITNA RIVER NEAR WILLOW, AK

Susitna River Basin
Lower Susitna River Subbasin

LOCATION.--Lat 61°55'35", long 150°04'15" referenced to North American Datum of 1927, in SE ¼ SW ¼ NE ¼ sec.7, T.21 N., R.4 W., Matanuska-Susitna Borough, AK, Hydrologic Unit 19020505, (Tyonek D-1 quad), mid-channel of left bank, upstream edge of footbridge, and about 13 mi north of Willow.

DRAINAGE AREA.--354 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--October 2011 to current year.

GAGE.--Water stage recorder. Elevation of gage is 195 ft above sea level from topographic map.

REMARKS.--Records are fair except for estimated discharges, which are poor. GOES satellite telemetry at station.

15293200 KASHWITNA RIVER NEAR WILLOW, AK—Continued

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2,450	e480	e300	e210	e160	e150	e130	e150	3,590	2,100	1,640	1,780
2	2,300	e470	e300	e210	e160	e150	e130	e150	3,320	1,860	1,620	2,050
3	2,180	e460	e300	e210	e160	e150	e130	e150	2,640	1,580	1,500	3,350
4	2,180	e450	e290	e210	e160	e150	e130	e150	2,270	1,420	1,410	3,220
5	2,170	e440	e290	e200	e160	e150	e130	e150	2,170	1,330	1,290	3,200
6	3,060	e430	e290	e200	e160	e150	e130	e160	1,800	1,220	1,220	2,700
7	3,090	e420	e290	e200	e160	e150	e130	e160	1,820	1,190	1,190	2,620
8	3,610	e410	e290	e200	e160	e150	e130	e170	2,290	1,220	1,130	2,430
9	3,480	e400	e280	e200	e160	e150	e130	e170	2,850	1,250	1,140	2,480
10	e3,000	e390	e280	e190	e160	e150	e130	e185	3,090	1,200	1,380	2,230
11	e2,600	e380	e280	e190	e160	e150	e130	e230	2,960	1,260	1,940	2,750
12	e2,300	e370	e280	e190	e160	e140	e130	e350	2,800	1,320	1,670	3,360
13	e1,850	e360	e270	e190	e160	e140	e130	e490	2,650	1,410	1,630	2,580
14	e1,600	e350	e270	e190	e160	e140	e130	e440	2,610	1,580	1,560	2,230
15	e1,450	e350	e270	e190	e160	e140	e130	e400	2,780	1,580	1,400	1,960
16	e1,300	e350	e270	e180	e150	e140	e130	e420	3,090	1,580	1,320	1,770
17	e1,050	e340	e270	e180	e150	e140	e130	e475	3,610	1,540	1,270	1,620
18	e900	e340	e260	e180	e150	e140	e130	e440	4,280	1,460	1,390	1,520
19	e800	e340	e260	e180	e150	e140	e130	e460	3,590	1,700	1,620	1,470
20	e750	e340	e260	e180	e150	e140	e130	e510	2,850	1,860	1,890	1,380
21	e720	e330	e250	e170	e150	e140	e130	e550	2,560	1,620	3,200	1,270
22	e660	e330	e250	e170	e150	e140	e130	596	2,330	1,450	3,400	1,200
23	e630	e330	e240	e170	e150	e140	e130	663	2,040	1,480	3,490	1,130
24	e610	e320	e240	e170	e150	e140	e130	809	1,950	1,480	3,520	1,070
25	e590	e320	e230	e170	e150	e140	e140	1,090	2,090	1,510	2,530	1,240
26	e580	e320	e230	e170	e150	e130	e140	1,330	2,410	2,000	2,080	1,610
27	e560	e320	e230	e170	e150	e130	e140	1,420	2,720	1,810	1,810	1,460
28	e540	e310	e230	e170	e150	e130	e140	1,900	2,500	1,730	1,940	1,290
29	e510	e310	e220	e170	---	e130	e140	2,710	2,270	1,760	2,230	1,180
30	e500	e310	e220	e170	---	e130	e150	3,420	2,170	1,770	1,910	1,110
31	e490	---	e220	e170	---	e130	---	3,870	---	1,700	1,750	---
Total	48,510	11,070	8,160	5,750	4,350	4,390	3,970	24,168	80,100	47,970	57,070	59,260
Mean	1,565	369	263	185	155	142	132	780	2,670	1,547	1,841	1,975
Max	3,610	480	300	210	160	150	150	3,870	4,280	2,100	3,520	3,360
Min	490	310	220	170	150	130	130	150	1,800	1,190	1,130	1,070
Med	1,300	350	270	180	160	140	130	440	2,630	1,540	1,630	1,780
Ac-ft	96,220	21,960	16,190	11,410	8,630	8,710	7,870	47,940	158,900	95,150	113,200	117,500
Cfsm	4.42	1.04	0.74	0.52	0.44	0.40	0.37	2.20	7.54	4.37	5.20	5.58
In.	5.10	1.16	0.86	0.60	0.46	0.46	0.42	2.54	8.42	5.04	6.00	6.23

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 2012 - 2013, BY WATER YEAR (WY)#

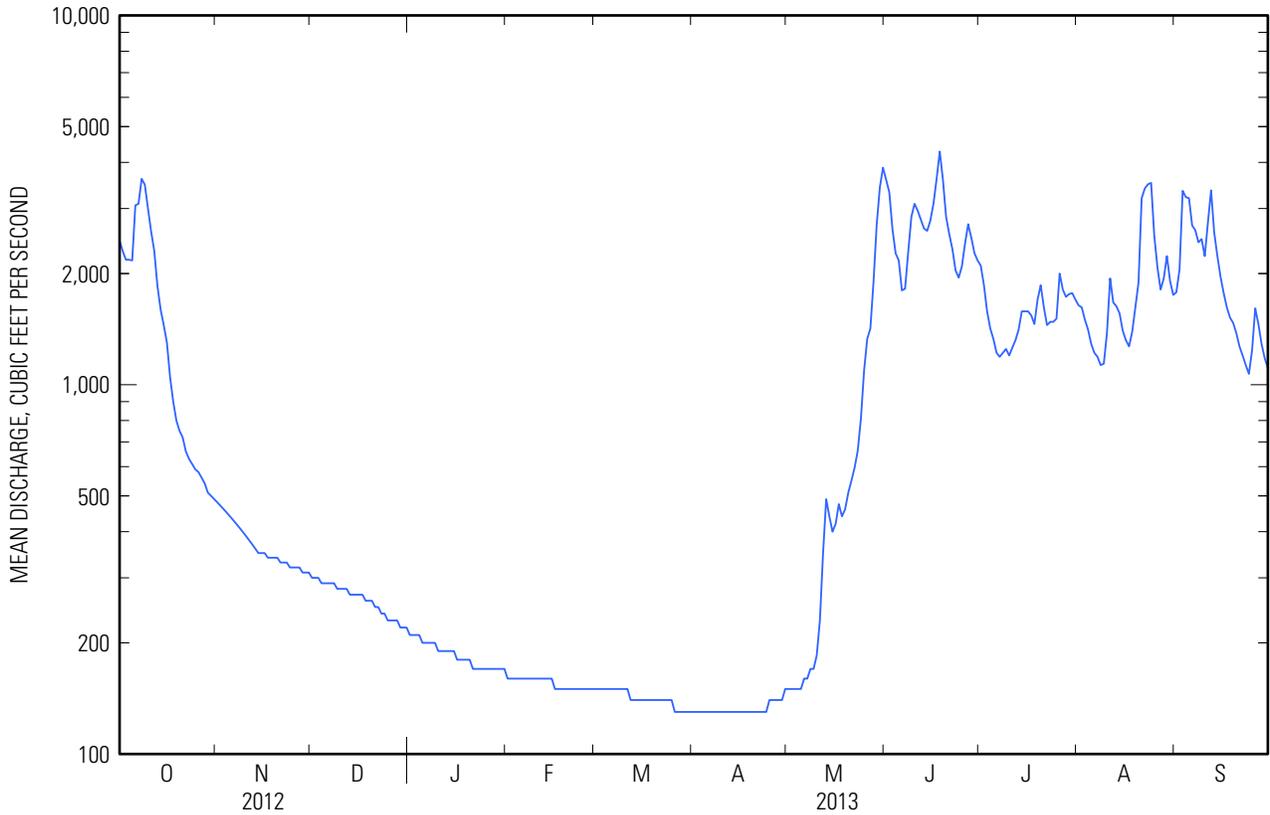
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	975	264	196	153	137	129	166	770	2,520	1,743	1,781	2,745
Max	1,565	369	263	185	155	142	200	780	2,670	1,938	1,841	3,514
(WY)	(2013)	(2013)	(2013)	(2013)	(2013)	(2013)	(2012)	(2013)	(2013)	(2012)	(2013)	(2012)
Min	386	159	128	120	120	116	132	759	2,371	1,547	1,721	1,975
(WY)	(2012)	(2012)	(2012)	(2012)	(2012)	(2012)	(2013)	(2012)	(2012)	(2013)	(2012)	(2013)

15293200 KASHWITNA RIVER NEAR WILLOW, AK—Continued

SUMMARY STATISTICS

	Calendar Year 2012		Water Year 2013		Water Years 2012 - 2013 [#]	
Annual total	398,068		354,768			
Annual mean	1,088		972		966	
Highest annual mean					972 2013	
Lowest annual mean					959 2012	
Highest daily mean	14,500	Sep 21	4,280	Jun 18	14,500	Sep 21, 2012
Lowest daily mean	115	Mar 6	130	Mar 26	115	Mar 6, 2012
Annual seven-day minimum	115	Mar 6	130	Mar 26	115	Mar 6, 2012
Maximum peak flow			4,940	Jun 18	18,900	Sep 21, 2012
Maximum peak stage			175.29	Jun 18	179.70	Sep 21, 2012
Annual runoff (ac-ft)	789,600		703,700		699,500	
Annual runoff (cfsm)	3.07		2.75		2.73	
Annual runoff (inches)	41.83		37.28		37.06	
10 percent exceeds	2,430		2,590		2,420	
50 percent exceeds	466		380		350	
90 percent exceeds	118		140		120	

[#] See Period of Record; partial year was used in monthly statistics



15293200 KASHWITNA RIVER NEAR WILLOW, AK—Continued**WATER-QUALITY RECORDS**

PERIOD OF RECORD.--WATER TEMPERATURE-- October 2011 to current year.

PERIOD OF DAILY RECORD.--WATER TEMPERATURE-- October 2011 to current year.

INSTRUMENTATION.--Electronic water-temperature recorder set for 15 minute recording interval.

REMARKS.--Temperature at the sensor was compared with the average for the stream by cross section on May 23. A variation of 1.8°C was found on the extreme right sample point where the stream is shallow with slow velocity.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 14.0°C, July 13-14, but could have been higher during periods of missing or erroneous data, Minimum 0.0°C, several days during winter.

WATER-QUALITY DATA
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

[ft, feet; ft³/s, cubic feet per second; °C, degrees Celsius]

Date	Sample start time	Stream width, ft (00004)	Location in	Discharge, instantaneous, ft ³ /s (00061)	Sampling method (82398)	Temperature, water, °C (00010)
			cross section, distance from left bank looking downstream, ft (00009)			
May 23, 2013	1450	120	11.0	620	EWI	6.5
May 23, 2013	1451	120	22.0	620	EWI	6.5
May 23, 2013	1452	120	33.0	620	EWI	6.5
May 23, 2013	1453	120	42.0	620	EWI	6.5
May 23, 2013	1454	120	53.0	620	EWI	6.5
May 23, 2013	1455	120	64.0	620	EWI	6.5
May 23, 2013	1456	120	75.0	620	EWI	6.5
May 23, 2013	1457	120	86.0	620	EWI	6.5
May 23, 2013	1458	120	97.0	620	EWI	6.6
May 23, 2013	1459	120	108	620	EWI	6.5
May 23, 2013	1500	120	119	620	EWI	4.7

15293200 KASHWITNA RIVER NEAR WILLOW, AK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	2.5	1.5	2.0	---	---	---	---	---	---	---	---	---
2	3.5	2.5	3.0	---	---	---	---	---	---	---	---	---
3	4.0	3.0	4.0	---	---	---	---	---	---	---	---	---
4	5.0	4.0	4.5	---	---	---	---	---	---	---	---	---
5	5.5	5.0	5.0	---	---	---	---	---	---	---	---	---
6	5.5	5.0	5.5	---	---	---	---	---	---	---	---	---
7	5.0	5.0	5.0	---	---	---	---	---	---	---	---	---
8	6.0	5.0	5.5	---	---	---	---	---	---	---	---	---
9	6.5	5.5	6.0	---	---	---	---	---	---	---	---	---
10	5.5	3.5	5.0	---	---	---	---	---	---	---	---	---
11	3.5	1.5	3.0	---	---	---	---	---	---	---	---	---
12	1.5	0.5	1.5	---	---	---	---	---	---	---	---	---
13	0.5	0.0	0.5	---	---	---	---	---	---	---	---	---
14	1.5	0.5	1.5	---	---	---	---	---	---	---	---	---
15	2.0	1.5	2.0	---	---	---	---	---	---	---	---	---
16	2.0	1.5	2.0	---	---	---	---	---	---	---	---	---
17	1.5	0.0	1.0	---	---	---	---	---	---	---	---	---
18	0.0	0.0	0.0	---	---	---	---	---	---	---	---	---
19	0.0	0.0	0.0	---	---	---	---	---	---	---	---	---
20	0.0	0.0	0.0	---	---	---	---	---	---	---	---	---
21	0.0	0.0	0.0	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	---	---	---
24	---	---	---	---	---	---	---	---	---	---	---	---
25	---	---	---	---	---	---	---	---	---	---	---	---
26	---	---	---	---	---	---	---	---	---	---	---	---
27	---	---	---	---	---	---	---	---	---	---	---	---
28	---	---	---	---	---	---	---	---	---	---	---	---
29	---	---	---	---	---	---	---	---	---	---	---	---
30	---	---	---	---	---	---	---	---	---	---	---	---
31	---	---	---	---	---	---	---	---	---	---	---	---
Month	---	---	---	---	---	---	---	---	---	---	---	---

15293200 KASHWITNA RIVER NEAR WILLOW, AK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	---	---	---	---	---	---	---	---	---	---	---	---
2	---	---	---	---	---	---	---	---	---	---	---	---
3	---	---	---	---	---	---	---	---	---	---	---	---
4	---	---	---	---	---	---	---	---	---	---	---	---
5	---	---	---	---	---	---	---	---	---	---	---	---
6	---	---	---	---	---	---	---	---	---	---	---	---
7	---	---	---	---	---	---	---	---	---	---	---	---
8	---	---	---	---	---	---	---	---	---	---	---	---
9	---	---	---	---	---	---	---	---	---	---	---	---
10	---	---	---	---	---	---	---	---	---	---	---	---
11	---	---	---	---	---	---	---	---	---	---	---	---
12	---	---	---	---	---	---	---	---	---	---	---	---
13	---	---	---	---	---	---	---	---	---	---	---	---
14	---	---	---	---	---	---	---	---	---	---	---	---
15	---	---	---	---	---	---	---	---	---	---	---	---
16	---	---	---	---	---	---	---	---	---	---	---	---
17	---	---	---	---	---	---	---	---	---	---	---	---
18	---	---	---	---	---	---	---	---	---	---	---	---
19	---	---	---	---	---	---	---	---	---	---	---	---
20	---	---	---	---	---	---	---	---	---	---	---	---
21	---	---	---	---	---	---	---	---	---	---	---	---
22	---	---	---	---	---	---	---	---	---	---	---	---
23	---	---	---	---	---	---	---	---	---	6.5	---	---
24	---	---	---	---	---	---	---	---	---	7.5	3.5	5.5
25	---	---	---	---	---	---	---	---	---	5.5	4.0	5.0
26	---	---	---	---	---	---	---	---	---	5.0	4.0	4.5
27	---	---	---	---	---	---	---	---	---	5.0	4.5	4.5
28	---	---	---	---	---	---	---	---	---	5.0	4.5	5.0
29	---	---	---	---	---	---	---	---	---	5.0	4.5	5.0
30	---	---	---	---	---	---	---	---	---	5.0	5.0	5.0
31	---	---	---	---	---	---	---	---	---	6.0	5.0	5.0
Month	---	---	---	---	---	---	---	---	---	---	---	---

15293200 KASHWITNA RIVER NEAR WILLOW, AK—Continued

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2012 TO SEPTEMBER 2013

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	6.0	5.5	5.5	9.5	8.5	9.0	13.0	12.5	12.5	7.5	7.0	7.5
2	6.0	5.0	5.5	9.5	8.5	9.0	13.0	12.5	12.5	8.0	7.0	7.5
3	6.5	4.5	5.5	10.0	8.5	9.5	13.0	12.0	12.5	8.0	7.5	7.5
4	7.5	5.5	6.5	10.0	8.5	9.0	12.0	11.5	11.5	8.0	7.5	8.0
5	8.5	5.5	7.0	9.5	8.0	8.5	11.5	11.0	11.0	7.5	6.5	7.0
6	9.5	5.5	7.5	9.5	9.0	9.5	11.5	11.0	11.0	6.5	6.0	6.5
7	10.5	7.0	8.5	10.0	9.0	9.5	11.5	11.0	11.5	7.5	6.0	6.5
8	10.0	7.5	9.0	11.0	9.5	10.0	11.5	10.5	11.0	8.0	7.0	7.5
9	9.5	7.5	8.5	11.0	10.0	10.5	11.0	11.0	11.0	7.5	6.5	7.0
10	9.0	8.5	9.0	11.5	10.0	10.5	11.0	10.5	10.5	7.5	7.0	7.0
11	9.5	8.0	9.0	12.5	11.0	11.5	10.5	9.5	10.0	7.5	7.0	7.5
12	10.0	9.0	9.5	13.5	11.5	12.5	10.0	9.5	9.5	7.5	7.0	7.0
13	10.0	9.0	9.5	14.0	12.5	13.5	10.5	10.0	10.5	7.5	6.5	7.0
14	10.5	9.0	9.5	14.0	12.0	13.0	11.0	10.5	10.5	7.5	6.5	7.0
15	11.0	9.5	10.0	13.0	12.0	12.5	11.0	10.5	11.0	7.5	6.0	7.0
16	11.0	9.5	10.5	12.5	11.5	12.0	10.5	10.5	10.5	7.0	5.5	6.0
17	11.5	10.0	11.0	12.5	11.5	12.0	10.5	10.0	10.5	7.0	5.5	6.0
18	11.0	10.0	10.5	12.0	11.0	11.5	10.5	10.5	10.5	6.5	5.5	6.0
19	11.0	9.5	10.5	12.5	11.5	12.0	10.5	10.0	10.0	6.0	5.0	5.5
20	11.0	9.0	10.0	12.0	11.0	11.5	10.0	9.5	9.5	5.5	3.5	4.5
21	11.0	9.5	10.5	12.0	10.5	11.0	9.5	9.0	9.0	4.0	2.5	3.0
22	12.0	9.0	10.5	12.5	11.0	11.5	9.0	8.0	8.5	4.0	3.0	3.5
23	12.0	9.5	11.0	12.5	11.5	12.0	9.0	8.0	8.0	4.5	3.5	4.0
24	13.0	10.0	11.5	13.5	12.0	12.5	9.0	8.0	8.5	4.0	3.0	3.0
25	13.0	10.5	11.5	13.0	12.5	13.0	9.0	7.5	8.0	4.0	3.5	4.0
26	12.5	11.0	11.5	13.0	12.0	12.5	9.0	7.0	8.0	5.0	4.0	4.5
27	12.0	11.5	12.0	12.5	11.5	12.0	9.5	7.5	8.5	5.5	5.0	5.0
28	12.0	10.5	11.5	12.5	12.0	12.0	9.5	8.0	8.5	5.0	4.5	4.5
29	10.5	9.5	10.0	13.0	12.0	12.5	8.5	7.5	8.0	5.0	4.5	4.5
30	11.0	9.5	10.0	13.0	12.5	13.0	8.5	7.0	8.0	5.0	4.0	4.5
31	---	---	---	13.0	12.5	13.0	8.0	7.5	7.5	---	---	---
Month	13.0	4.5	9.4	14.0	8.0	11.4	13.0	7.0	9.9	8.0	2.5	5.9