



Water-Data Report 2008

14141500 LITTLE SANDY RIVER NEAR BULL RUN, OR

Lower Columbia Basin
Lower Columbia-Sandy Subbasin

LOCATION.--Lat 45°24'56", long 122°10'13" referenced to North American Datum of 1927, in NE ¼ NE ¼ sec.10, T.2 S., R.5 E., Clackamas County, OR, Hydrologic Unit 17080001, Mount Hood National Forest, on left bank, 0.25 mi upstream from Portland General Electric Co. dam and tunnel from Sandy River, 3.0 mi east of Bull Run and at mile 1.95.

DRAINAGE AREA.--22.30 mi².

SURFACE-WATER RECORDS

PERIOD OF RECORD.--May to July 1911, October 1911 to March 1912, June 1912 to April 1913, July 1919 to current year. Monthly discharge only for some periods in water years 1911-13, published in WSP 1318.

GAGE.--Water-stage recorder. Elevation of gage is 720 ft above NGVD of 1929, from topographic map. May 23, 1911 to Apr. 29, 1913, nonrecording gage at site 0.85 mi downstream at different datum. July 1, 1919 to Sept. 30, 1931, water-stage recorder at site 0.1 mi downstream at different datum. Oct 1, 1931 to Nov. 3, 1967, at site 0.1 mi downstream at datum 712 ft above NGVD of 1929. Nov. 4, 1967 to Aug. 8, 1971, water-stage recorder at site 0.1 mi downstream at datum 697.44 ft above NGVD of 1929 (Portland General Electric Co. bench mark).

REMARKS.--Records good except for estimated daily discharges, which are fair. No regulation or diversion upstream from station.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--89 years (water years 1920-2008), 143 ft³/s, 87.18 in/yr, 103,700 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 5,320 ft³/s Nov. 20, 1921, gage height, 9.18 ft, site and datum then in use, from rating curve extended above 2,200 ft³/s; minimum discharge, 8.0 ft³/s Aug. 20, Sept. 16, 17, 1940.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 1,400 ft³/s and (or) maximum (*):

Date	Time	Discharge (ft ³ /s)	Gage height (ft)
Dec 23	2145	*1,530	*5.13
No other peak greater than base discharge			

Minimum discharge, 17 ft³/s, Sept. 17-20, gage height, 1.79 ft.

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DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	101	34	104	156	127	306	87	245	293	161	33	30
2	79	32	200	141	133	260	81	217	253	140	48	27
3	144	30	1,130	164	135	213	76	219	426	127	33	25
4	211	29	877	185	110	178	78	224	482	114	30	24
5	107	28	512	186	108	147	86	240	336	99	28	23
6	71	27	429	163	114	129	108	265	432	100	26	22
7	70	26	319	144	185	115	140	223	541	87	26	22
8	104	25	222	186	206	123	152	e200	364	81	25	21
9	70	27	168	272	298	134	152	e190	312	78	26	20
10	58	78	134	527	359	135	184	e180	559	73	25	20
11	60	51	110	728	341	276	189	e260	625	63	23	19
12	48	93	95	691	278	e240	195	e220	373	59	22	19
13	40	179	83	584	282	e370	260	e200	312	56	21	19
14	35	92	75	399	239	e380	273	504	288	53	21	18
15	32	80	76	346	e200	e310	213	465	258	50	20	18
16	33	190	69	261	e160	e260	182	511	245	46	20	18
17	45	648	69	209	e140	e230	168	575	235	42	20	18
18	112	481	90	173	e130	563	153	535	208	40	20	17
19	302	346	144	152	e130	505	135	444	196	39	23	17
20	430	252	235	140	131	330	117	506	209	38	95	17
21	506	189	172	111	134	243	107	686	229	36	210	23
22	255	140	180	98	138	193	106	546	210	34	86	35
23	157	110	607	91	135	194	111	424	176	34	51	25
24	108	92	802	84	133	263	124	368	158	33	40	23
25	92	79	417	77	181	206	137	360	160	32	40	58
26	71	71	296	86	205	179	134	355	159	31	36	35
27	58	83	226	99	182	152	145	333	153	30	34	27
28	49	75	209	84	172	133	230	323	191	30	34	23
29	43	111	235	82	180	118	395	392	200	28	30	21
30	39	115	235	79	---	106	312	326	183	36	28	20
31	36	---	190	120	---	95	---	305	---	31	28	---
Total	3,566	3,813	8,710	6,818	5,266	7,086	4,830	10,841	8,766	1,901	1,202	704
Mean	115	127	281	220	182	229	161	350	292	61.3	38.8	23.5
Max	506	648	1,130	728	359	563	395	686	625	161	210	58
Min	32	25	69	77	108	95	76	180	153	28	20	17
Ac-ft	7,070	7,560	17,280	13,520	10,450	14,060	9,580	21,500	17,390	3,770	2,380	1,400
Cfsm	5.16	5.70	12.6	9.86	8.14	10.3	7.22	15.7	13.1	2.75	1.74	1.05
In.	5.95	6.36	14.53	11.37	8.78	11.82	8.06	18.08	14.62	3.17	2.01	1.17

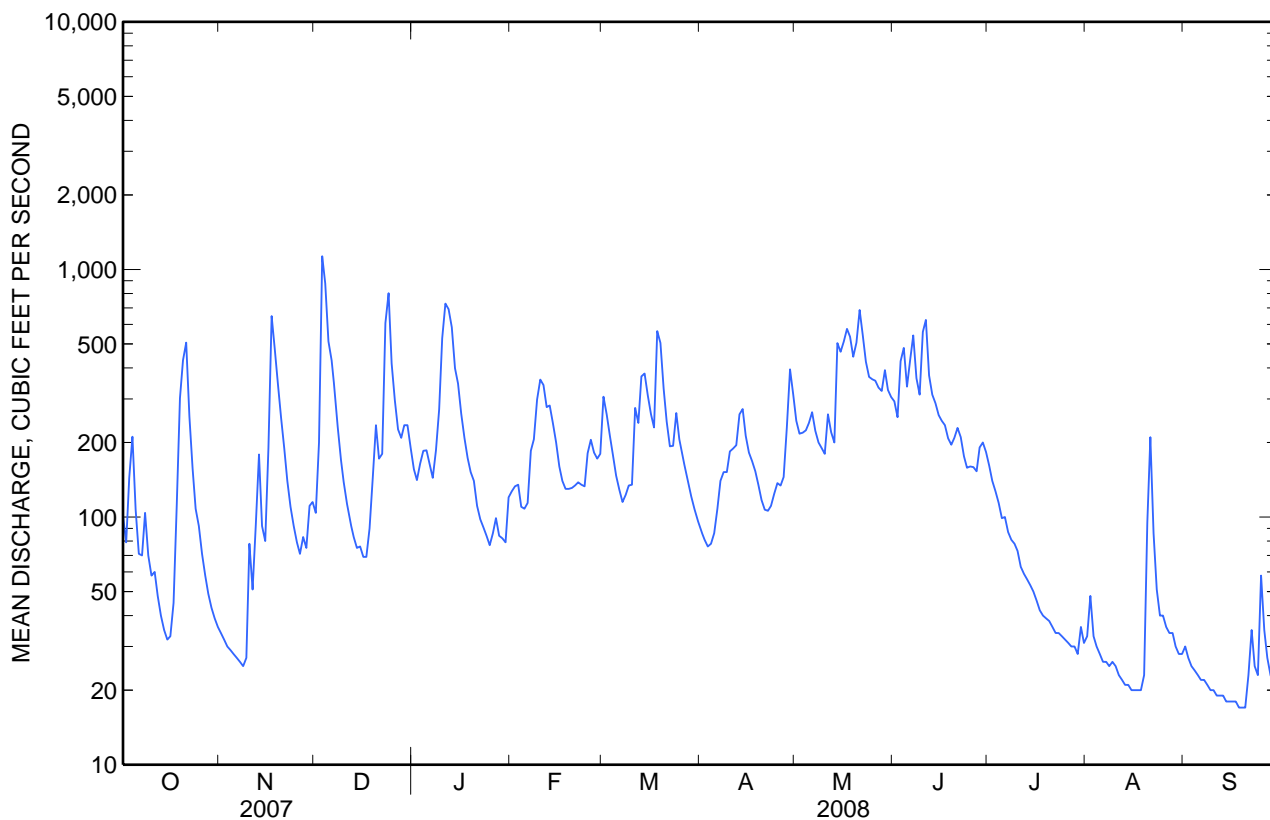
STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1920 - 2008, BY WATER YEAR (WY)

	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Mean	84.7	207	245	238	208	186	191	161	103	38.9	23.1	36.9
Max	271	588	585	589	452	407	325	350	292	121	96.1	184
(WY)	(1960)	(1956)	(1965)	(1953)	(1961)	(1932)	(1920)	(2008)	(2008)	(1983)	(1968)	(1927)
Min	10.6	14.3	57.5	45.9	59.2	49.9	54.0	55.8	19.2	13.8	10.1	12.4
(WY)	(1988)	(1930)	(1977)	(1937)	(1977)	(1941)	(1941)	(1947)	(1992)	(1940)	(1940)	(1938)

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SUMMARY STATISTICS

	Calendar Year 2007		Water Year 2008		Water Years 1920 - 2008	
Annual total	46,542		63,503			
Annual mean	128		174		143	
Highest annual mean					223	1974
Lowest annual mean					87.6	1944
Highest daily mean	1,280	Jan 3	1,130	Dec 3	3,500	Mar 31, 1931
Lowest daily mean	13	Sep 2	17	Sep 18	8.0	Sep 16, 1940
Annual seven-day minimum	13	Sep 9	18	Sep 14	9.0	Aug 16, 1940
Annual runoff (ac-ft)	92,320		126,000		103,700	
Annual runoff (cfsm)	5.72		7.78		6.42	
Annual runoff (inches)	77.64		105.93		87.18	
10 percent exceeds	285		384		302	
50 percent exceeds	76		134		96	
90 percent exceeds	15		26		18	



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WATER-QUALITY RECORDS

PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: May 2006 to current year.

INSTRUMENTATION.--Temperature probe and data logger.

REMARKS.--

WATER TEMPERATURE: Records excellent.

EXTREMES FOR PERIOD OF DAILY RECORD.--

WATER TEMPERATURE: Maximum, 22.1°C July 24, 2006; minimum, 0.9°C Jan. 22, 2008.

EXTREMES FOR CURRENT YEAR.--

WATER TEMPERATURE: Maximum, 19.3°C Aug. 16; minimum, 0.9°C Jan. 22.

TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	October			November			December			January		
1	9.7	9.1	9.4	6.7	5.7	6.2	4.1	3.7	3.9	4.3	3.9	4.1
2	9.7	9.3	9.5	5.7	4.3	4.9	4.6	4.0	4.3	4.9	4.2	4.6
3	9.7	8.5	9.2	5.3	4.3	4.8	5.5	3.7	4.7	5.0	4.5	4.7
4	8.6	8.1	8.3	6.2	5.0	5.6	6.5	5.5	6.1	5.2	4.5	4.9
5	8.2	7.4	7.9	6.4	5.2	5.8	6.6	6.2	6.4	4.9	4.2	4.6
6	8.2	7.2	7.7	6.2	5.4	5.8	6.4	5.8	6.2	4.4	3.6	4.2
7	9.4	8.2	8.8	6.3	5.2	5.8	5.8	5.4	5.6	3.8	3.4	3.6
8	9.8	8.8	9.3	6.8	5.6	6.1	5.4	4.3	4.9	4.0	3.3	3.6
9	10.0	9.5	9.8	7.5	6.2	6.9	4.3	3.9	4.1	4.8	3.8	4.3
10	10.0	9.3	9.7	7.8	6.4	7.4	4.4	3.7	4.2	4.9	3.3	4.1
11	9.3	8.4	9.0	7.0	6.1	6.5	4.1	3.4	3.8	4.6	3.9	4.2
12	9.4	8.8	9.1	7.2	5.9	6.6	4.8	4.0	4.3	5.0	4.1	4.7
13	9.1	8.3	8.7	7.1	5.4	6.5	4.7	4.1	4.4	4.9	4.3	4.6
14	9.3	8.1	8.7	6.4	5.1	5.7	5.0	4.1	4.5	5.2	3.6	4.5
15	9.8	8.8	9.3	7.8	6.4	7.2	5.3	4.6	5.0	4.0	3.6	3.9
16	9.5	8.1	8.7	8.0	7.7	7.9	4.9	4.1	4.5	4.0	3.4	3.6
17	8.2	7.6	7.9	8.7	8.0	8.3	5.0	4.6	4.8	4.0	3.3	3.6
18	8.6	7.3	7.8	8.1	5.7	7.2	5.3	4.6	5.0	4.0	3.8	3.9
19	9.2	8.0	8.7	6.1	5.6	5.8	5.2	4.8	5.0	3.9	3.5	3.7
20	8.0	7.2	7.4	5.9	5.4	5.7	4.8	3.0	3.5	4.1	3.0	3.6
21	8.3	7.4	7.8	5.6	4.8	5.3	4.5	3.8	4.1	3.0	1.3	1.9
22	8.4	7.6	8.0	4.8	4.0	4.3	4.7	3.9	4.3	1.8	0.9	1.4
23	9.1	8.3	8.7	4.2	3.7	4.0	4.8	3.5	4.3	2.0	1.3	1.7
24	9.1	8.6	8.8	4.8	3.6	4.2	4.8	3.4	4.4	1.8	1.4	1.6
25	8.6	6.6	7.6	4.6	3.5	3.9	4.9	4.5	4.8	1.9	1.1	1.5
26	6.6	5.5	6.0	4.5	3.3	3.8	4.5	3.3	3.7	3.2	1.8	2.6
27	6.7	5.8	6.2	4.9	3.9	4.5	3.8	3.4	3.6	2.9	1.1	1.9
28	6.8	5.8	6.4	4.4	3.8	4.0	4.4	3.7	4.1	2.6	2.0	2.4
29	7.7	6.3	7.0	4.5	3.7	4.2	5.0	4.3	4.6	2.8	1.4	2.4
30	7.5	6.3	7.1	4.3	3.3	3.9	4.7	4.0	4.3	2.9	1.9	2.5
31	6.3	5.3	5.9	---	---	---	4.2	4.0	4.1	3.2	2.8	3.0
Month	10.0	5.3	8.2	8.7	3.3	5.6	6.6	3.0	4.6	5.2	0.9	3.4

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TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	February			March			April			May		
1	3.8	3.2	3.5	5.2	3.4	4.0	5.2	3.0	3.9	6.5	4.0	5.1
2	3.3	2.7	3.0	4.6	3.5	4.0	5.6	3.0	4.2	7.2	5.0	6.0
3	3.8	3.2	3.5	4.4	3.8	4.1	6.0	3.4	4.6	6.3	5.3	5.6
4	4.0	3.6	3.8	4.6	4.0	4.3	5.2	4.3	4.6	7.8	4.1	5.8
5	4.0	3.6	3.8	4.6	3.3	3.9	5.2	4.2	4.7	8.0	4.8	6.3
6	4.3	3.4	3.9	5.3	3.6	4.4	5.5	4.4	4.8	6.3	4.6	5.2
7	4.1	3.4	3.9	5.2	3.8	4.6	5.0	4.3	4.5	5.3	4.8	5.0
8	4.6	4.0	4.4	5.7	4.3	5.1	5.1	3.8	4.5	5.5	4.5	5.0
9	4.5	3.1	4.0	5.4	3.9	4.6	5.5	4.3	4.8	7.5	4.6	5.8
10	4.1	3.2	3.7	6.2	4.7	5.4	5.6	4.8	5.1	6.5	5.2	5.9
11	4.3	3.6	3.8	5.8	4.2	4.7	6.7	3.9	5.2	6.1	4.5	5.1
12	4.7	3.6	4.2	5.2	3.8	4.5	8.0	5.0	6.3	5.9	4.2	4.9
13	4.3	3.6	3.9	5.0	3.8	4.5	6.6	4.5	5.6	5.5	4.7	5.2
14	4.3	3.6	3.9	4.9	3.8	4.3	5.4	3.7	4.4	5.2	4.2	4.6
15	4.3	3.6	3.9	4.5	3.8	4.1	4.0	3.5	3.8	7.7	4.0	5.5
16	4.3	3.9	4.1	5.1	4.2	4.6	5.1	3.6	4.3	7.7	4.2	5.6
17	4.2	3.7	3.9	5.1	4.5	4.8	5.7	4.6	5.1	7.5	4.3	5.5
18	4.3	3.9	4.1	5.0	3.4	4.2	5.3	4.2	4.8	7.4	4.1	5.5
19	4.9	3.8	4.3	4.8	3.6	4.2	4.4	3.3	3.8	7.3	4.4	5.6
20	5.3	4.4	4.8	4.9	4.1	4.6	4.8	2.9	3.7	5.5	4.3	4.9
21	5.2	4.0	4.6	4.8	3.8	4.2	4.6	3.0	3.8	4.4	4.1	4.3
22	5.3	4.4	4.9	5.6	3.7	4.5	4.9	3.8	4.4	4.7	4.0	4.3
23	4.9	3.8	4.4	5.4	4.8	5.1	5.6	4.3	4.9	5.1	4.6	4.8
24	5.7	4.7	5.1	4.8	3.5	4.3	5.2	4.5	4.8	7.3	4.4	5.7
25	5.2	3.8	4.9	4.9	3.5	4.2	6.5	4.2	5.2	6.1	5.2	5.5
26	4.9	3.6	4.2	4.6	3.2	4.2	7.8	4.4	6.0	5.8	5.2	5.4
27	5.4	4.3	4.7	4.2	3.0	3.5	7.6	5.4	6.5	6.2	5.1	5.6
28	5.0	4.0	4.5	4.1	3.2	3.6	6.7	4.8	5.7	5.9	5.3	5.5
29	5.6	4.4	5.0	4.1	3.1	3.4	4.8	3.6	4.1	5.9	5.0	5.4
30	---	---	---	4.1	3.1	3.5	4.6	3.4	4.0	7.8	5.1	6.3
31	---	---	---	4.6	3.3	3.8	---	---	---	7.9	5.3	6.5
Month	5.7	2.7	4.2	6.2	3.0	4.3	8.0	2.9	4.7	8.0	4.0	5.4

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TEMPERATURE, WATER, DEGREES CELSIUS
WATER YEAR OCTOBER 2007 TO SEPTEMBER 2008

Day	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean	Max	Min	Mean
	June			July			August			September		
1	7.0	5.6	5.9	11.6	9.0	10.5	13.9	12.7	13.2	11.7	10.4	10.9
2	7.7	5.3	6.4	11.7	9.4	10.6	12.9	11.5	12.2	11.8	9.2	10.5
3	6.9	4.9	5.9	12.5	9.9	11.1	13.6	10.3	11.7	11.9	9.2	10.5
4	5.5	4.6	5.1	11.6	10.1	10.6	15.7	10.8	13.1	12.3	9.8	11.0
5	5.8	4.8	5.3	10.4	9.8	10.1	16.8	12.5	14.5	12.7	10.2	11.4
6	5.7	4.7	5.1	11.1	9.7	10.3	15.9	13.8	14.7	13.4	11.3	12.2
7	5.1	4.5	4.8	13.3	9.9	11.3	17.2	13.6	15.2	13.8	11.1	12.3
8	8.0	4.8	6.2	14.2	10.6	12.3	15.7	14.1	14.8	13.6	11.0	12.3
9	6.9	5.7	6.2	14.9	11.5	13.1	14.6	13.5	13.9	13.5	11.3	12.4
10	6.1	3.9	4.7	14.3	11.6	12.8	15.1	12.7	13.8	12.7	10.3	11.6
11	5.2	4.0	4.6	14.5	10.4	12.3	16.8	12.9	14.6	13.0	10.3	11.6
12	7.7	4.8	6.0	15.4	10.9	13.0	17.1	13.3	15.1	13.1	10.8	11.9
13	8.9	5.4	7.0	16.1	12.1	13.9	17.3	13.6	15.3	12.8	10.5	11.6
14	8.6	5.4	7.0	16.3	12.5	14.3	18.4	14.0	16.1	13.2	10.5	11.8
15	8.9	5.6	7.1	16.8	13.0	14.7	19.0	15.2	17.0	13.7	11.2	12.4
16	9.5	5.9	7.7	16.5	12.8	14.5	19.3	15.9	17.5	13.9	11.8	12.9
17	8.3	6.3	7.2	16.1	12.1	13.9	17.9	17.0	17.4	14.1	12.3	13.2
18	8.5	6.3	7.4	15.4	12.1	13.4	17.2	15.1	16.0	13.2	11.9	12.6
19	9.8	6.2	8.0	15.1	11.8	13.1	16.1	14.4	15.1	12.1	10.7	11.5
20	9.6	6.9	8.3	16.0	11.4	13.5	14.9	13.4	14.0	11.5	11.1	11.3
21	8.9	7.2	8.0	16.2	12.2	14.1	13.4	12.1	12.6	11.7	10.8	11.1
22	8.2	7.0	7.5	14.4	12.1	12.9	13.7	11.2	12.4	11.0	9.6	10.6
23	8.6	6.4	7.5	13.7	11.2	12.1	14.6	12.1	13.2	10.0	8.2	9.2
24	10.3	6.4	8.2	15.1	10.0	12.4	14.8	12.8	13.9	10.9	9.0	9.9
25	10.8	7.2	9.0	15.9	11.9	13.7	14.2	12.9	13.6	11.0	10.5	10.7
26	9.7	7.6	8.7	16.0	12.0	13.9	14.1	12.1	12.9	10.9	9.3	10.2
27	11.6	7.4	9.5	14.7	13.1	13.9	12.9	11.9	12.4	10.6	9.2	9.9
28	12.5	8.5	10.5	16.1	11.5	13.6	14.2	11.4	12.7	11.2	9.0	10.1
29	11.3	8.7	10.2	14.1	12.2	13.0	14.8	12.1	13.5	12.2	10.4	11.2
30	12.1	8.7	10.4	14.2	12.0	12.8	14.1	11.8	12.8	12.5	10.8	11.7
31	---	---	---	15.4	10.7	12.9	12.1	10.9	11.5	---	---	---
Month	12.5	3.9	7.2	16.8	9.0	12.7	19.3	10.3	14.1	14.1	8.2	11.3

	Max	Min	Mean
Year	19.3	0.9	7.2