

**12086500 NISQUALLY RIVER AT LA GRANDE, WA**

Puget Sound Basin  
Nisqually Subbasin

LOCATION.--Lat 46°50'22", long 122°19'41" referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.29, T.16 N., R.4 E., Pierce County, WA, Hydrologic Unit 17110015, on right bank 0.4 mi downstream from Tacoma Public Utilities powerplant, 0.6 mi northwest of La Grande, 0.8 mi upstream from Mashel River, and at mile 40.4.

DRAINAGE AREA.--292 mi<sup>2</sup>.

**SURFACE-WATER RECORDS**

PERIOD OF RECORD.--September 1906 to October 1911, November to December 1911 (gage heights only), October 1919 to September 1931, October 1943 to current year. Monthly discharge only for some periods, published in WSP 1316. Published as "below Little Nisqually River, near La Grande" September 1906 to October 1911, and as "near La Grande" November to December 1911 and October 1919 to September 1931.

REVISED RECORDS.--WSP 1216: Drainage area. WSP 1316: 1927-28(M), 1949-50. WRD WA-74: 1956(M), 1959-61(M), 1965.

GAGE.--Water-stage recorder and crest-stage gage. Elevation of gage is 490 ft above NGVD of 1929, from river-profile map. See WSP 1932 for history of changes prior to Feb. 8, 1945.

REMARKS.--Records good except for estimated daily discharges, which are fair. Flow regulated by Tacoma Public Utilities powerplant at La Grande since December 1943, by Alder Reservoir (station 12085000) since November 1944, and by La Grande Reservoir (station 12085500) since February 1945. All diversions returned to river upstream from gage. U.S. Geological Survey satellite telemeter at station. Chemical analyses October 1972 to September 1985. Water temperatures October 1965 to September 1982.

AVERAGE DISCHARGE FOR PERIOD OF RECORD.--87 years (water years 1907-11, 1920-31, 1944-2013), 1,441 ft<sup>3</sup>/s, 67.02 in/yr, 1,044,000 acre-ft/yr, adjusted for storage.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 39,500 ft<sup>3</sup>/s, Feb. 8, 1996, gage height, 15.30 ft, from rating curve extended above 5,300 ft<sup>3</sup>/s, and computed flow over dam as provided by Tacoma Public Utilities; practically no flow on many days at site "near La Grande" (which excluded diversion between 1920 and 1930) as a result of regulation.

EXTREMES FOR CURRENT YEAR.--Maximum discharge, 2,650 ft<sup>3</sup>/s, Sept. 30, gage height, 5.52 ft; minimum discharge, 581 ft<sup>3</sup>/s, Aug. 10, gage height, 3.09 ft, the result of momentary regulation, minimum daily discharge 902 ft<sup>3</sup>/s, Aug. 31.

## 12086500 NISQUALLY RIVER AT LA GRANDE, WA—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	1,180	1,150	2,350	2,340	1,190	1,200	1,180	2,390	1,150	1,440	1,060	917
2	1,210	1,150	2,350	2,340	1,190	1,190	1,170	2,390	1,150	1,950	1,060	919
3	1,210	1,150	2,360	2,340	1,190	1,190	1,170	2,380	1,150	1,440	981	926
4	1,210	1,150	2,350	2,350	1,190	1,180	1,180	2,360	1,150	1,060	975	954
5	1,210	1,150	2,350	2,340	1,190	1,180	1,390	2,370	1,120	1,060	950	934
6	1,210	1,150	2,350	2,340	1,190	1,180	1,920	2,360	1,120	1,050	920	989
7	1,210	1,150	2,350	2,340	1,190	1,170	2,170	2,370	1,120	1,050	921	945
8	1,210	1,150	2,340	2,350	1,190	1,180	2,160	2,360	1,120	1,050	924	940
9	1,190	1,150	2,330	2,350	1,190	1,170	2,160	2,380	1,120	1,050	930	935
10	1,170	1,150	2,330	2,330	1,190	1,170	2,390	1,950	1,120	1,050	958	928
11	1,170	1,150	2,340	2,330	1,180	1,170	2,430	1,950	1,120	1,060	937	931
12	1,170	1,150	2,330	2,330	1,170	1,170	2,410	1,950	1,120	1,090	940	991
13	1,170	1,150	2,330	2,330	1,160	1,170	2,410	2,230	1,120	1,050	941	1,120
14	1,170	1,140	2,340	2,320	1,160	1,180	2,420	2,430	1,120	1,050	931	1,010
15	1,180	1,150	2,340	2,330	1,160	1,180	2,420	2,460	1,120	1,050	927	960
16	1,180	1,410	2,350	2,330	1,170	1,180	2,430	2,440	1,120	1,050	931	959
17	1,180	1,840	2,360	e2,340	1,170	1,180	2,420	1,870	1,110	1,050	921	952
18	1,180	1,850	2,350	e1,570	1,170	1,180	2,400	1,840	1,120	1,050	939	953
19	1,180	2,190	2,360	e1,200	1,170	1,170	2,420	1,640	1,120	1,050	935	952
20	1,180	2,360	2,390	e1,200	1,170	1,180	2,430	1,620	1,120	1,040	925	956
21	1,180	2,350	2,380	1,180	1,170	1,180	2,450	1,610	1,110	1,050	925	951
22	1,180	2,350	2,360	1,180	1,170	1,180	2,390	1,630	1,110	1,050	925	952
23	1,160	2,350	2,350	1,180	1,170	1,180	2,380	1,610	1,110	1,040	925	955
24	1,140	2,350	2,350	1,180	1,170	1,180	2,380	1,610	1,120	1,050	924	959
25	1,140	2,350	2,350	1,180	1,170	1,180	2,420	1,610	1,120	1,050	925	959
26	1,150	2,350	2,350	1,180	1,170	1,180	2,400	1,620	1,120	1,060	924	954
27	1,150	2,340	2,350	1,180	1,170	1,170	2,380	1,620	1,120	1,070	925	991
28	1,150	2,340	2,350	1,190	1,180	1,170	2,370	1,610	1,120	1,090	927	1,710
29	1,150	2,340	2,340	1,200	---	1,180	2,360	1,620	1,120	1,090	930	1,750
30	1,150	2,340	2,350	1,210	---	1,200	2,380	1,620	1,110	1,090	930	2,150
31	1,150	---	2,350	1,200	---	1,190	---	1,200	---	1,080	902	---
<b>Total</b>	36,470	50,350	72,830	56,760	32,950	36,560	64,990	61,100	33,670	34,460	29,168	31,502
<b>Mean</b>	1,176	1,678	2,349	1,831	1,177	1,179	2,166	1,971	1,122	1,112	941	1,050
<b>Max</b>	1,210	2,360	2,390	2,350	1,190	1,200	2,450	2,460	1,150	1,950	1,060	2,150
<b>Min</b>	1,140	1,140	2,330	1,180	1,160	1,170	1,170	1,200	1,110	1,040	902	917
<b>Ac-ft</b>	72,340	99,870	144,500	112,600	65,360	72,520	128,900	121,200	66,780	68,350	57,850	62,480
<b>Mean adjusted for change in contents in Alder and La Grande Reservoirs</b>	964	2,105	2,273	1,357	1,309	1,596	2,644	1,963	1,407	958	596	1,197
<b>CFSM adjusted for change in contents in Alder and La Grande Reservoirs</b>	3.30	7.21	7.78	4.65	4.48	5.47	9.05	6.72	4.82	3.28	2.04	4.10
<b>In. adjusted for change in contents Alder and La Grande Reservoirs</b>	3.80	8.04	8.98	5.36	4.67	6.30	10.10	7.75	5.37	3.78	2.35	4.57
<b>Ac-ft adjusted for change in contents Alder and La Grande Reservoirs</b>	59,270	125,200	139,800	83,470	72,700	98,160	157,300	120,700	83,680	58,890	36,670	71,220

12086500 NISQUALLY RIVER AT LA GRANDE, WA—Continued

	Calendar Year 2012	Water Year 2013
<b>Total</b>	645,821	540,810
<b>Mean</b>	1,765	1,482
<b>Max</b>	3,890	2,460
<b>Min</b>	915	902
<b>Ac-ft</b>	1,281,000	1,073,000
<b>Mean adjusted for change in contents in Alder and La Grande Reservoirs</b>	1,773	1,529
<b>CFSM adjusted for change in contents in Alder and La Grande Reservoirs</b>	6.07	5.24
<b>In. adjusted for change in contents Alder and La Grande Reservoirs</b>	82.64	71.08
<b>Ac-ft adjusted for change in contents Alder and La Grande Reservoirs</b>	1,287,00	1,107,000

