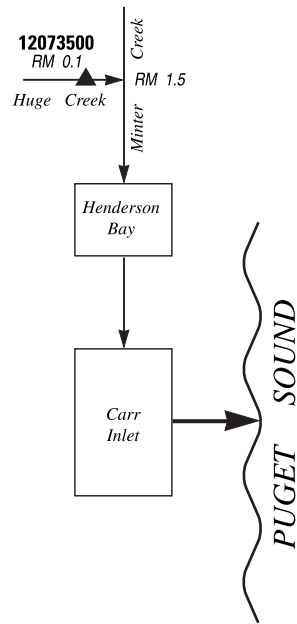


Figure 20. Location of the surface-water station in the Minter Creek Basin.



EXPLANATION

- ▲ 12091200 Stream-gaging station
- RM 2.0 River mile
- Stream—Arrow shows direction of flow

Figure 21. Schematic diagram showing the surface-water station in the Minter Creek Basin.

MINTER CREEK BASIN
12073500 HUGE CREEK NEAR WAUNA, WA

LOCATION.--Lat 47°23'22", long 122°41'52", at north line sec.20, T.22 N., R.1 E., Pierce County, Hydrologic Unit 17110019, on right bank 25 ft upstream from bridge, 0.1 mi upstream from mouth, and 2.5 mi west of Wauna.

DRAINAGE AREA.--6.47 mi².

PERIOD OF RECORD.--July 1947 to September 1969, October 1977 to current year.

REVISED RECORDS.--WSP 1636: 1953-54, 1956, 1957(M). WSP 1932: Drainage area.

GAGE.--Water-stage recorder. Elevation of gage is 100 ft above NGVD of 1929, from topographic map. Prior to Sept. 27, 1978, at site 50 ft downstream and prior to June 26, 1951, at datum 0.86 ft higher.

REMARKS.--Records good. No regulation or diversion upstream from station.

AVERAGE DISCHARGE.--48 years (water years 1948-69, 1978-2003), 11.2 ft³/s, 23.48 in/yr, 8,100 acre-ft/yr.

EXTREMES FOR PERIOD OF RECORD.--Maximum discharge, 526 ft³/s, Mar. 19, 1997, gage height, 5.76 ft; minimum discharge, 2.4 ft³/s, Sept. 30, 1994, Oct. 1, 1994.

EXTREMES FOR CURRENT YEAR.--Peak discharges greater than base discharge of 70 ft³/s and maximum (*):

| Date | Time | Discharge (ft ³ /s) | Gage height (ft) | Date | Time | Discharge (ft ³ /s) | Gage height (ft) |
|--------|------|--------------------------------|------------------|--------|------|--------------------------------|------------------|
| Jan 26 | 1100 | 97 | 2.86 | Mar 22 | 0745 | *102 | *2.91 |

Minimum discharge, 3.1 ft³/s, Sept. 3, gage height, 1.00 ft.

DISCHARGE, CUBIC FEET PER SECOND
WATER YEAR OCTOBER 2002 TO SEPTEMBER 2003
DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | 4.1 | 4.0 | 3.7 | 11 | 32 | 7.9 | 12 | 7.7 | 5.7 | 4.7 | 3.8 | 3.6 |
| 2 | 4.1 | 4.1 | 3.8 | 32 | 23 | 7.6 | 13 | 7.7 | 5.6 | 4.6 | 3.8 | 3.5 |
| 3 | 4.7 | 4.1 | 3.7 | 41 | 19 | 7.5 | 13 | 7.6 | 5.5 | 4.6 | 3.9 | 3.5 |
| 4 | 4.5 | 4.1 | 4.3 | 37 | 16 | 7.4 | 12 | 8.1 | 5.4 | 4.5 | 3.8 | 3.4 |
| 5 | 4.3 | 4.1 | 4.2 | 27 | 14 | 7.4 | 11 | 7.8 | 5.3 | 4.6 | 3.9 | 3.5 |
| 6 | 4.2 | 6.1 | 3.9 | 16 | 12 | 7.3 | 12 | 7.5 | 5.2 | 4.5 | 4.1 | 3.5 |
| 7 | 4.2 | 5.5 | 3.7 | 12 | 12 | 7.2 | 12 | 7.2 | 5.2 | 4.5 | 3.9 | 3.8 |
| 8 | 4.3 | 5.4 | 3.7 | 9.9 | 11 | 7.4 | 13 | 7.1 | 5.2 | 4.5 | 3.8 | 3.9 |
| 9 | 4.4 | 5.0 | 3.8 | 8.6 | 10 | 11 | 14 | 6.9 | 5.3 | 4.5 | 4.0 | 3.7 |
| 10 | 4.3 | 5.0 | 5.6 | 7.7 | e9.8 | 9.9 | 12 | 6.9 | 5.4 | 4.2 | 4.0 | 3.8 |
| 11 | 4.2 | 4.5 | 11 | 7.7 | e9.4 | 12 | 11 | 6.8 | 5.4 | 4.2 | 3.9 | 4.1 |
| 12 | 4.1 | 7.0 | 8.5 | 16 | 9.1 | 21 | 10 | 6.8 | 5.3 | 4.2 | 3.9 | 4.0 |
| 13 | 4.1 | 7.0 | 7.2 | 14 | 8.9 | 41 | 15 | 6.6 | 5.4 | 4.2 | 3.8 | 3.7 |
| 14 | 4.1 | 6.0 | 12 | 14 | 8.7 | 43 | 14 | 6.6 | 5.2 | 4.2 | 3.8 | 3.7 |
| 15 | 4.1 | 4.9 | 12 | 11 | 9.0 | 32 | 12 | 6.6 | 5.0 | 4.2 | 3.8 | 3.7 |
| 16 | 4.1 | 6.6 | 12 | 9.3 | 12 | 23 | 10 | 6.6 | 4.9 | 4.2 | 3.8 | 3.9 |
| 17 | 4.1 | 5.9 | 7.8 | 8.1 | 13 | 18 | 9.7 | 6.7 | 4.8 | 4.1 | 3.8 | 4.0 |
| 18 | 4.1 | 5.1 | 7.0 | 7.4 | 10 | 16 | 9.2 | 6.6 | 5.1 | 4.0 | 3.8 | 3.8 |
| 19 | 4.3 | 8.0 | 6.8 | 7.0 | 9.8 | 16 | 8.8 | 6.4 | 5.0 | 4.0 | 3.7 | 4.0 |
| 20 | 4.4 | 5.1 | 5.8 | 6.6 | 10 | 20 | 8.6 | 6.4 | 5.0 | 4.0 | 3.7 | 3.8 |
| 21 | 4.3 | 4.3 | 5.2 | 8.3 | 9.6 | 32 | 10 | 6.4 | 5.2 | 4.0 | 3.7 | 3.7 |
| 22 | 4.2 | 4.2 | 4.9 | 18 | 8.9 | 85 | 9.3 | 6.2 | 5.2 | 3.9 | 3.7 | 3.6 |
| 23 | 4.2 | 4.1 | 4.7 | 25 | 8.5 | 50 | 10 | 6.2 | 5.0 | 3.9 | 3.7 | 3.6 |
| 24 | 4.2 | 4.0 | 5.1 | 27 | 8.1 | 29 | 12 | 6.3 | 4.8 | 4.0 | 3.7 | 3.6 |
| 25 | 4.2 | 3.9 | 5.8 | 25 | 8.0 | 22 | 9.8 | 6.4 | 4.6 | 3.9 | 3.7 | 3.6 |
| 26 | 4.2 | 3.9 | 6.6 | 77 | 7.9 | 20 | 9.1 | 6.0 | 4.7 | 3.9 | 3.7 | 3.5 |
| 27 | 4.1 | 3.9 | 7.6 | 56 | 7.8 | 17 | 8.6 | 6.0 | 4.6 | 3.8 | 3.7 | 3.5 |
| 28 | 4.1 | 3.8 | 6.2 | 35 | 7.8 | 15 | 8.1 | 5.9 | 4.5 | 3.8 | 3.6 | 3.4 |
| 29 | 4.1 | 3.8 | 5.9 | 30 | --- | 13 | 7.9 | 5.8 | 4.5 | 3.8 | 3.6 | 3.5 |
| 30 | 4.0 | 3.7 | 8.2 | 33 | --- | 12 | 7.8 | 5.6 | 4.8 | 3.7 | 3.6 | 3.5 |
| 31 | 4.0 | --- | 6.8 | 49 | --- | 12 | --- | 5.7 | --- | 3.8 | 3.6 | --- |
| TOTAL | 130.3 | 147.1 | 197.5 | 686.6 | 325.3 | 629.6 | 324.9 | 207.1 | 152.8 | 129.0 | 117.3 | 110.4 |
| MEAN | 4.20 | 4.90 | 6.37 | 22.1 | 11.6 | 20.3 | 10.8 | 6.68 | 5.09 | 4.16 | 3.78 | 3.68 |
| MAX | 4.7 | 8.0 | 12 | 77 | 32 | 85 | 15 | 8.1 | 5.7 | 4.7 | 4.1 | 4.1 |
| MIN | 4.0 | 3.7 | 3.7 | 6.6 | 7.8 | 7.2 | 7.8 | 5.6 | 4.5 | 3.7 | 3.6 | 3.4 |
| AC-FT | 258 | 292 | 392 | 1,360 | 645 | 1,250 | 644 | 411 | 303 | 256 | 233 | 219 |
| CFSM | 0.65 | 0.76 | 0.98 | 3.42 | 1.80 | 3.14 | 1.67 | 1.03 | 0.79 | 0.64 | 0.58 | 0.57 |
| IN. | 0.75 | 0.85 | 1.14 | 3.95 | 1.87 | 3.62 | 1.87 | 1.19 | 0.88 | 0.74 | 0.67 | 0.63 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1947 - 2003, BY WATER YEAR (WY)

| | MEAN | MAX | MIN | AC-FT | CFSM | IN. |
|--------|------|------|------|-------|------|------|
| (WY) | 5.47 | 9.76 | 3.45 | 258 | 0.65 | 0.75 |
| (1998) | 10.4 | 29.2 | 3.55 | 292 | 0.76 | 0.85 |
| (1991) | 18.3 | 41.4 | 4.97 | 392 | 0.98 | 1.14 |
| (2002) | 23.5 | 47.1 | 5.37 | 1,360 | 3.42 | 3.95 |
| (1966) | 22.2 | 58.1 | 5.73 | 645 | 1.80 | 1.87 |
| (1999) | 16.4 | 42.7 | 7.16 | 1,250 | 3.14 | 3.62 |
| (1997) | 10.6 | 24.6 | 6.07 | 644 | 1.67 | 1.87 |
| (1991) | 7.50 | 12.4 | 4.52 | 411 | 1.03 | 1.19 |
| (1959) | 6.06 | 8.60 | 4.24 | 303 | 0.79 | 0.88 |
| (1984) | 5.05 | 7.31 | 3.50 | 256 | 0.64 | 0.74 |
| (1961) | 4.58 | 6.18 | 3.15 | 233 | 0.58 | 0.67 |
| (1968) | 4.64 | 6.68 | 3.23 | 219 | 0.57 | 0.63 |
| (1978) | | | | | | |
| (1989) | | | | | | |

SUMMARY STATISTICS

| | FOR 2002 CALENDAR YEAR | FOR 2003 WATER YEAR | WATER YEARS 1947 - 2003 |
|--------------------------|------------------------|---------------------|-------------------------|
| ANNUAL TOTAL | 3,870.3 | 3,157.9 | |
| ANNUAL MEAN | 10.6 | 8.65 | 11.2 |
| HIGHEST ANNUAL MEAN | | | 19.8 |
| LOWEST ANNUAL MEAN | | | 5.57 |
| HIGHEST DAILY MEAN | 240 | 85 | 400 |
| LOWEST DAILY MEAN | 3.7 | 3.4 | 2.7 |
| ANNUAL SEVEN-DAY MINIMUM | 3.8 | 3.5 | 2.8 |
| ANNUAL RUNOFF (AC-FT) | 7,680 | 6,260 | 8,100 |
| ANNUAL RUNOFF (CFSM) | 1.64 | 1.34 | 1.73 |
| ANNUAL RUNOFF (INCHES) | 22.25 | 18.16 | 23.48 |
| 10 PERCENT EXCEEDS | 18 | 15 | 21 |
| 50 PERCENT EXCEEDS | 6.0 | 5.4 | 6.8 |
| 90 PERCENT EXCEEDS | 4.1 | 3.7 | 4.2 |

e Estimated

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