

NORTHWEST ALASKA

15747000 WULIK RIVER BELOW TUTAK CREEK NEAR KIVALINA

LOCATION.--Lat 67°52'34", long 163°40'28", in NW¹/₄ sec. 34, T. 29 N., R. 22 W. (Noatak D-4 quad), Northwest Arctic Borough, Hydrologic Unit 19050404, on left bank 0.1 mi downstream from Tutak Creek and 25 mi northeast of Kivalina.

DRAINAGE AREA.--705 mi².

PERIOD OF RECORD.--September 1984 to current year.

GAGE.--Water-stage recorder. Elevation of gage is 175 ft above sea level, from topographic map.

REMARKS.--Records fair except for estimated daily discharges, which are poor. GOES satellite telemetry at station. Flow from 2.8 square miles of the drainage basin is regulated by a tailings dam at the Red Dog Mine site. Up to 25 ft³/s of the flow at the gage may be discharge from Red Dog Mine during the summer period.

DISCHARGE, CUBIC FEET PER SECOND, WATER YEAR OCTOBER 2003 TO SEPTEMBER 2004 DAILY MEAN VALUES

| DAY | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP |
|-------|-------|-------|------|------|------|------|------|--------|--------|-------|--------|-------|
| 1 | 777 | e210 | e110 | e64 | e38 | e27 | e23 | e290 | 5670 | 1010 | 1570 | 1140 |
| 2 | 3850 | e210 | e110 | e62 | e38 | e27 | e23 | e360 | 6200 | 893 | 1320 | 1400 |
| 3 | 3220 | e220 | e110 | e62 | e37 | e27 | e22 | e540 | 4260 | 809 | 1130 | 1320 |
| 4 | 2330 | e220 | e110 | e60 | e36 | e27 | e22 | e700 | 3280 | 753 | 1060 | 1230 |
| 5 | 1830 | e220 | e100 | e59 | e36 | e26 | e22 | e900 | 3490 | 803 | 995 | 1150 |
| 6 | 1490 | e220 | e100 | e58 | e35 | e26 | e22 | e650 | 3570 | 1590 | 917 | 1060 |
| 7 | 1250 | e210 | e100 | e57 | e35 | e26 | e22 | e550 | 3050 | 1580 | 879 | 993 |
| 8 | 1170 | e210 | e98 | e56 | e34 | e26 | e22 | e650 | 2910 | 1450 | 1640 | 916 |
| 9 | 1100 | e210 | e96 | e55 | e34 | e26 | e22 | e800 | 2530 | 1250 | 13600 | 862 |
| 10 | 1100 | e200 | e94 | e54 | e33 | e26 | e22 | e900 | 2430 | 1050 | 11100 | 818 |
| 11 | 1200 | e200 | e92 | e53 | e33 | e25 | e22 | e1300 | 1990 | 908 | 6330 | 769 |
| 12 | 1290 | e190 | e90 | e52 | e32 | e25 | e22 | e1900 | 1850 | 794 | 4310 | 733 |
| 13 | 1070 | e180 | e88 | e51 | e32 | e25 | e22 | e2700 | 1720 | 718 | 8450 | 705 |
| 14 | 736 | e180 | e86 | e50 | e32 | e25 | e22 | e3600 | 1690 | 671 | 6650 | 665 |
| 15 | e560 | e170 | e86 | e50 | e31 | e25 | e22 | e5000 | 1500 | 626 | 4880 | 628 |
| 16 | e500 | e170 | e84 | e49 | e31 | e25 | e22 | e6500 | 1630 | 579 | 3950 | 589 |
| 17 | e420 | e160 | e82 | e48 | e31 | e24 | e22 | e9500 | 2030 | 650 | 3250 | 567 |
| 18 | e360 | e160 | e80 | e47 | e30 | e24 | e22 | 6790 | 3100 | 936 | 2730 | 550 |
| 19 | e320 | e150 | e80 | e46 | e30 | e24 | e22 | 4370 | 2480 | 995 | 2300 | 535 |
| 20 | e290 | e150 | e78 | e46 | e30 | e24 | e22 | 3390 | 4370 | 871 | 1970 | 514 |
| 21 | e260 | e140 | e76 | e45 | e29 | e24 | e22 | 2690 | 2480 | 752 | 1740 | 492 |
| 22 | e240 | e140 | e76 | e44 | e29 | e24 | e22 | 3410 | 1870 | 671 | 1570 | 457 |
| 23 | e230 | e140 | e74 | e44 | e29 | e24 | e22 | 7560 | 1900 | 612 | 1430 | 435 |
| 24 | e215 | e130 | e74 | e43 | e29 | e24 | e22 | 12300 | 3250 | 565 | 1290 | e400 |
| 25 | e200 | e130 | e72 | e42 | e28 | e23 | e22 | 12500 | 2860 | 533 | 1170 | e370 |
| 26 | e190 | e130 | e72 | e42 | e28 | e23 | e32 | 7930 | 2660 | 511 | 1070 | e350 |
| 27 | e180 | e120 | e70 | e41 | e28 | e23 | e50 | 4940 | 2150 | 528 | 1010 | e330 |
| 28 | e180 | e120 | e68 | e41 | e28 | e23 | e70 | 2750 | 1690 | 536 | 951 | e300 |
| 29 | e180 | e120 | e68 | e40 | e27 | e23 | e100 | 3960 | 1360 | 530 | 910 | e280 |
| 30 | e190 | e120 | e66 | e39 | --- | e23 | e190 | 5640 | 1160 | 522 | 865 | e260 |
| 31 | e200 | --- | e64 | e39 | --- | e23 | --- | 5690 | --- | 891 | 897 | --- |
| TOTAL | 27128 | 5130 | 2654 | 1539 | 923 | 767 | 994 | 120760 | 81130 | 25587 | 91934 | 20818 |
| MEAN | 875 | 171 | 85.6 | 49.6 | 31.8 | 24.7 | 33.1 | 3895 | 2704 | 825 | 2966 | 694 |
| MAX | 3850 | 220 | 110 | 64 | 38 | 27 | 190 | 12500 | 6200 | 1590 | 13600 | 1400 |
| MIN | 180 | 120 | 64 | 39 | 27 | 23 | 22 | 290 | 1160 | 511 | 865 | 260 |
| AC-FT | 53810 | 10180 | 5260 | 3050 | 1830 | 1520 | 1970 | 239500 | 160900 | 50750 | 182400 | 41290 |
| CFSM | 1.24 | 0.24 | 0.12 | 0.07 | 0.05 | 0.04 | 0.05 | 5.53 | 3.84 | 1.17 | 4.21 | 0.98 |
| IN. | 1.43 | 0.27 | 0.14 | 0.08 | 0.05 | 0.04 | 0.05 | 6.37 | 4.28 | 1.35 | 4.85 | 1.10 |

STATISTICS OF MONTHLY MEAN DATA FOR WATER YEARS 1985 - 2004, BY WATER YEAR (WY)#

| | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| MEAN | 552 | 138 | 65.7 | 37.7 | 25.3 | 19.5 | 17.5 | 1888 | 3225 | 1644 | 2793 | 1648 | | | | | | | | |
| MAX | 1542 | 290 | 111 | 70.0 | 49.3 | 39.5 | 38.8 | 4856 | 6669 | 6144 | 8458 | 3076 | | | | | | | | |
| (WY) | 1994 | 1994 | 1986 | 1986 | 1986 | 1991 | 1991 | 1993 | 1989 | 1989 | 1994 | 2002 | | | | | | | | |
| MIN | 207 | 63.1 | 34.2 | 21.5 | 12.0 | 9.10 | 9.00 | 20.6 | 1372 | 424 | 496 | 386 | | | | | | | | |
| (WY) | 1997 | 2002 | 1988 | 1992 | 1992 | 1992 | 1992 | 1989 | 1988 | 1999 | 1991 | 1991 | | | | | | | | |

SUMMARY STATISTICS FOR 2003 CALENDAR YEAR FOR 2004 WATER YEAR WATER YEARS 1985 - 2004#

| | | | | | | | | | | | | | | | | | | | | |
|--------------------------|--------|--------|--|--|--|-------|-------|--|--|--------|--------|------|--|--|--|--|--|--|--|--|
| ANNUAL TOTAL | 320195 | 379364 | | | | | | | | | | | | | | | | | | |
| ANNUAL MEAN | 877 | 1037 | | | | | | | | 1009 | | | | | | | | | | |
| HIGHEST ANNUAL MEAN | | | | | | | | | | 1843 | | 1994 | | | | | | | | |
| LOWEST ANNUAL MEAN | | | | | | | | | | 530 | | 1987 | | | | | | | | |
| HIGHEST DAILY MEAN | 12600 | Jun 6 | | | | 13600 | Aug 9 | | | 29400 | Aug 17 | 1994 | | | | | | | | |
| LOWEST DAILY MEAN | a24 | Apr 17 | | | | b22 | Apr 3 | | | c9.0 | Apr 30 | 1985 | | | | | | | | |
| ANNUAL SEVEN-DAY MINIMUM | 24 | Apr 17 | | | | 22 | Apr 3 | | | 9.0 | Apr 30 | 1985 | | | | | | | | |
| MAXIMUM PEAK FLOW | | | | | | 18100 | Aug 9 | | | 38500 | Aug 17 | 1994 | | | | | | | | |
| MAXIMUM PEAK STAGE | | | | | | 9.80 | Aug 9 | | | 12.21 | Aug 17 | 1994 | | | | | | | | |
| ANNUAL PEAK STAGE | | | | | | | | | | d13.5 | May 16 | 1999 | | | | | | | | |
| ANNUAL RUNOFF (AC-FT) | 635100 | 752500 | | | | | | | | 731100 | | | | | | | | | | |
| ANNUAL RUNOFF (CFSM) | 1.24 | 1.47 | | | | | | | | 1.43 | | | | | | | | | | |
| ANNUAL RUNOFF (INCHES) | 16.90 | 20.02 | | | | | | | | 19.45 | | | | | | | | | | |
| 10 PERCENT EXCEEDS | 2140 | 3060 | | | | | | | | 2830 | | | | | | | | | | |
| 50 PERCENT EXCEEDS | 140 | 210 | | | | | | | | 130 | | | | | | | | | | |
| 90 PERCENT EXCEEDS | 26 | 24 | | | | | | | | 15 | | | | | | | | | | |

See Period of Record
a From Apr. 17-29
b From Apr. 3-25
c From Apr. 30 to May 10, 1985, and Mar. 4 to May 17, 1992
d From floodmarks, backwater from snow and ice
e Estimated