**Table 1: Water level elevation before freeze-up (HFo), maximum water elevation during freeze-up (HF), and stage increase cause by freeze-up (∆HF) at the Water Survey Canada (WSC) gauge below Fort McMurray.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Year** | **HFo** | **HF** | **∆HF (m)** |
| 1972 | 237.71 | 240.15 | 2.44 |
| 1973 | 238.22 | 239.52 | 1.30 |
| 1974 | 237.83 | 239.16 | 1.33 |
| 1975 | 237.71 | 239.10 | 1.38 |
| 1976 | 237.63 | 238.80 | 1.17 |
| 1977 | 237.82 | 239.09 | 1.26 |
| 1978 | 237.94 **a** | 239.20 **a** | 1.26 **a** |
| 1979 | 237.46 | 238.74 **a** | 1.28 **a** |
| 1980 | 237.58 | 238.47 | 0.89 |
| 1981 | 237.24 **a** | 237.84 **a** | 0.60 **a** |
| 1982 | 237.64 | 238.81 | 1.18 |
| 1983 | 237.62 | 238.56 | 0.94 |
| 1984 | 238.08 | 239.36 | 1.28 |
| 1985 | 237.63 | 238.87 | 1.24 |
| 1986 | 237.67 | 239.25 | 1.58 |
| 1987 | 237.21 | 238.78 | 1.57 |
| 1988 | 237.39 | 239.03 | 1.64 |
| 1989 | 237.65 | 238.92 | 1.27 |
| 1990 | 237.36 | 238.68 | 1.32 |
| 1991 | 237.42 | 238.88 | 1.46 |
| 1992 | 237.33 | 238.84 | 1.51 |
| 1993 | 237.47 | 239.07 | 1.59 |
| 1994 | 237.31 | 238.02 | 0.71 |
| 1995 | 237.51 **a** | 239.53 **a** | 2.02 **a** |
| 1996 | - | - | - |
| 1997 | 237.96 | 238.97 | 1.01 |
| 1998 | 237.39 | 238.42 | 1.02 |
| 1999 | 237.11 | 238.43 | 1.32 |
| 2000 | 237.46 | 238.32 | 0.86 |

**a** WSC gauge below Fort McMurray malfunctioning

**Note:** - The freeze-up water level for 1972 to 1995 were retrieved from the original strip charts of WSC. Electronic files were received from Tim Davis of the WSC office in Calgary for the years of 1996 to 1998. Newleaf was used to download the 1999 and 2000 water levels.

* The pre freeze-up elevation (HFo) was calculated as the average water level measured during the 7 days preceding a drop in the stage usually observed just before the increase in the water level caused by freeze-up. If no significant decrease in stage occurred, the water level before freeze-up was calculated as the average level 7 days before the increase in stage. Exception for this rule is the 1982 freeze-up since only 5 days preceding a drop in the stage was available.
* The maximum freeze-up elevation (HF) represents the highest stage available during freeze-up.
* If the water level record during freeze-up was missing, the pre freeze-up level (HFo) was calculated during the 7 days preceding the missing data if they were available. The maximum freeze-up elevation (HF) in this situation was choosing as the highest value measured during this period if there was any.
* The symbol ∆Hf represents the increase in stage due to freeze-up.