BF 74229 Hwy 658 Over Athabasca River
Hydrotechnical Summary

Channel Capacity :

S = 0.0011
B = 150 m, h = 6.0 m, T_h = 230 m
Use AT equation

At Bank Height : Y = 6.0 m, V = 2.7 m/s, Q = 3000 cms
At Channel Capacity : Y = 7.0 m, V = 3.0 m/s, Q = 4200 cms

Historical Highwater Data :

HW was noted in 1940 (Ice Jam, adjacent flooding), 1954 (Y ~ 7.3m), and 1986 (Y ~ 6.0m). The 1975 design was based on Y ~ 8.0m.

WSC gauge 07AE001 (DA = 19600km^2, 1960 - Now) reports Q ~ 2250cms in June 1960 and July 1965, and Q ~ 1800 – 2000cms many times. Gauge 07AG004 (McLeod R u/s, DA = 9100km^2, 1968 – Now) reports Q ~ 2000cms in 1980 and 1986. WSC gauge 07BE001 (DA ~ 74600km^2, 1913-1931, 1938 – Now) reports Q ~ 5700cms in 1954, Q ~ 5000cms in 1944, Q ~ 4500cms in 1971, 1980, and 1986.

Basin Runoff Potential :

Gross DA = 31300km^2, exceeds range of application of runoff depth method.

Conclusion :

Historic observations govern. Recommended parameters :

Y = 7.5 m, V = 3.2 m/s, Q = 4800 cms.
HW EL 664.5m (6962-C)