BF 09137 Local Road Over Etzikom Coulee
Hydrotechnical Summary

Channel Capacity :

S = 0.0006
B = 9 m, h = 1.8 m, T_h = 15 m.
Use n = 0.04

At Bank Height : Y = 1.8 m, V = 0.7 m/s, Q = 16 cms
At Channel Capacity : Y = 2.7 m, V = 1.1 m/s, Q = 40 cms

Historical Highwater Data :

HW was noted to the deck in 1947 (Y = 2.4m) and damage occurred in June 1953 (Y = 2.4m). A 1988 AE memo notes a design Q = 30cms. A 1997 BIM report notes a HWM with Y = 2.0m.

WSC gauge 05AF004 (DA ~ 950km^2, 1915 – 1917) reports Q = 8cms in April 1917. WSC gauge 05AF905 (DA = 3040km^2, 1982 – Now) reports Q = 38cms in June 2002 and Q = 21cms in March 1996. The largest storm in the database for this area is the June 2002 storm with about 170mm of rainfall.

Basin Runoff Potential :

d = 35mm, T_p = 40hrs, q = 0.25 cms/km^2.
Gross DA = 1070 km^2.
Q_p = 265 cms.

Conclusion :

The channel capacity estimate is consistent with historic observations and is within the basin runoff potential.

Recommended parameters : Y = 2.7 m, V = 1.1 m/s, Q = 40 cms.