BF 70377 Local Road Over Kneehills Ck
Hydrotechnical Summary

Channel Capacity :

S = 0.0009
B = 13 m, h = 4.5 m, T_h = 24 m
Use AT equation

At Bank Height : Y = 4.5 m, V = 1.9 m/s, Q = 165 cms
At Channel Capacity : Y = 5.5 m, V = 2.3 m/s, Q = 250 cms

Historical Highwater Data :

HW was noted at this site in April 1948 to 0.6m above the deck (Y = 4.9 – 5.2m), April 1965 (Y = 4.6m), and April 1971 (Y = 4.3 – 4.6m). There are references to another HW event in the early 1950's (possibly 1952 based on d/s bridges).

WSC Gauge 05CE002 (DA = 2430km^2, 1921-1930, 1957 – Now) is located d/s and reports Q = 150cms in April 1997. Gauging records show that the stream was gauged at Q = 170cms in April 1969 (stage rise = 3.2m). The largest storms for this area in the storm database are about 100mm of rainfall in June 1928 and 1970.

Basin Runoff Potential :

d = 35 mm, T_p = 40 hrs, q = 0.25 cms/km^2.
Gross DA = 1608 km^2.
Q_p = 400 cms.

Conclusion :

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

Recommended parameters : Y = 5.5 m, V = 2.3 m/s, Q = 250 cms.