# BF 08521 Local Road Over Battle River
# Hydrotechnical Summary

**Channel Capacity** :

S = 0.00025
B = 15 m, h = 4.0 m, $T_h$ = 25 m
Use AT equation

At Bank Height : Y = 4.0 m, V = 1.1 m/s, Q = 90 cms
At Channel Capacity : Y = 5.0 m, V = 1.3 m/s, Q = 140 cms

**Historical Highwater Data :**

HW has been reported in the 0.3 to 0.6m over bank range in 1974 and 1982, with additional references to HWM in this range in 1916 and 1963 bridge reports. The structure was washed out in 1948. 1959 is also known to be a large runoff year at BF01493 u/s. 1902, 1956 and 1965 were also years with large runoff events at BF00875 d/s.

There are no WSC gauges between Samson Lake and Driedmeat Lake with records of large runoff events. WSC Gauge 05FA001 located u/s of Samson Lake recorded a large event in 1990, but it does not appear to have been as significant d/s of the lake. Gauge 05FC001 d/s of Driedmeat Lake reports 1974 as the largest, but the 1982 event is much smaller at this gauge. Gauges 05FA012 and 05FA022 are on Pipestone Creek, which is the major tributary between the Samson Lake and BF8521. The largest recorded event is 1974 with Q = 100cms, followed by 1982 with about 45cms.

**Basin Runoff Potential :**

Gross DA = 4114 $km^2$, (exceeds range of application of runoff depth method).

**Conclusion :**

The channel capacity estimate is consistent with historic observations.

Recommended parameters : Y = 5.0 m, V = 1.3 m/s, Q = 140 cms.