

PART IV – FURTHER CALCULATIONS

$$K = \frac{\bar{A} \times \bar{R}}{n}^{\frac{2}{3}}$$

Converging

$$Q = \frac{(2.gl)^{\frac{1}{2}} \times K \times s^{\frac{1}{2}}}{\left(\frac{(K)2}{(2.gl + (A_2) - (A_1))} - \frac{(K)2}{(A_1)} \right)^{\frac{1}{2}}}$$

g = 9.81
l = Length of Reach
s = Slope

Diverging

$$Q = \frac{(4.gl)^{\frac{1}{2}} \times K \times s^{\frac{1}{2}}}{\left(\frac{(K)2}{(4.gl + (A_2) - (A_1))} - \frac{(K)2}{(A_1)} \right)^{\frac{1}{2}}}$$

NATIONAL WATER AND SOIL CONSERVATION AUTHORITY
SLOPE-AREA DISCHARGE MEASUREMENT No.

..... River at
River No. Map Reference:.....
Date:

MEASUREMENT DATA:

Water-levels pegged:
directly, by..... on..... at (time).....
from floodmarks by..... on.....

Cross-sections surveyed by:..... on.....

Slope data obtained by:..... on.....
method:.....

Details of any other discharge meas. made:

COMPUTED DATA:

STAGE READINGS			
Time	Chart	Well	River
	Meas. began		
	Meas. ended		
Derived S.H.			

Discharge:..... ℓ/s.
Stage Ht. change nil/ m
Rate of rise/fall mm/h
Area m²
Width m
Max. Depth m
Max. Surf. Vel. m/s
Mean Vel. m/s
Wet. Perim. m
Hyd. Rad. m
Slope
n
Specific Dis.
Water Level R.L.:
Sediment Conc. mg/ℓ

Remarks:
.....
.....
.....
.....
.....

Computed by: Checked by:

Meas. No.

PART I FIELD DATA

X-Sect No. and Location	Water Surface R.L.			Distances Between X-Sects (on centreline)	Remarks
	Left Bank	Right Bank	Mean or Preferred		

PART II – LOCATION DIAGRAM

(Show X-Sects, BM’S, etc. and all measurements.)

PART III – CALCULATIONS

(Use preferred combinations of two sections, but if suitable include data from a middle section for calculations of $\bar{A}$ and $\bar{R}$.)

$A_1 =$

$A_2 =$

$A_3 =$

$\bar{A} =$

$\frac{A_1}{WP_1} =$

$\frac{A_2}{WP_2} =$

$\frac{A_3}{WP_3} =$

$\bar{R} =$

$\bar{R}^{\frac{2}{3}} =$

Mean R.L. Top Sect =

Mean R.L. Bottom Sect =

Fall =

Slope = $\frac{\text{Fall}}{\text{Distance}}$ = $\therefore s^{\frac{1}{2}} =$

Use $n =$

$$Q = \frac{\bar{A} \times \bar{R}^{\frac{2}{3}} \times S^{\frac{1}{2}}}{n}$$

=

REMARKS

Calculated by:

Checked by: