

CALCULATION FORM
Job:
Subject Flood Frequency Analysis
Date: 2/15/2023

Job No:
Drg no:
Page
Calc. By:
Chkd. By:
Recommended By:
Approved By:
River:

Andhi Khola

Reference: Applied Hydrology by VT Chow

Station No.
Location:

Andhi Khola Intake

Total Catchment Area 444.0 Km²
Area below 5000 m 0.0 Km²

| Year | Maximum flow | | | |
|-------|--------------|---------------|--|-----------|
| | $X = Q_i$ | $y = \log(x)$ | $(\log(x) - \text{avg.}(\log(x) - \text{avg.}(\log(x)))^3$ | |
| 61/62 | 677 | 2.830589 | 0.099304 | 0.031293 |
| 62/63 | 384 | 2.584331 | 0.004743 | 0.000327 |
| 63/64 | 272 | 2.434505 | 0.006554 | -0.000531 |
| 64/65 | 353 | 2.547418 | 0.001021 | 3.26E-05 |
| 65/66 | 608 | 2.784068 | 0.072148 | 0.019379 |
| 66/67 | 605 | 2.782 | 0.071042 | 0.018935 |
| 67/68 | 457 | 2.660252 | 0.020964 | 0.003035 |
| 68/69 | 304 | 2.483061 | 0.00105 | -3.4E-05 |
| 69/70 | 355 | 2.550474 | 0.001226 | 4.29E-05 |
| 71/72 | 343 | 2.535262 | 0.000392 | 7.76E-06 |
| 72/73 | 444 | 2.647821 | 0.017518 | 0.002319 |
| 73/74 | 833 | 2.920834 | 0.164325 | 0.066613 |
| 74/75 | 147 | 2.166287 | 0.121924 | -0.042573 |
| 75/76 | 147 | 2.167511 | 0.121071 | -0.042127 |
| 76/77 | 185 | 2.267207 | 0.061631 | -0.0153 |
| 77/78 | 185 | 2.267207 | 0.061631 | -0.0153 |
| 78/79 | 136 | 2.134054 | 0.145473 | -0.055485 |
| | | | 0.972018 | -0.029366 |

Statistical Parameter

| | | | |
|-----------|---------|--------|------------------------|
| Mean | 378.625 | 2.515 | γ_{mean} |
| Std. Devi | 204.802 | 0.246 | s |
| Coef Ske | 0.740 | -0.139 | C_s |

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Statistical Analysis

| | | Andhi Khola | | | | | | | | |
|----------|------------|-------------|------------|-------|---------------|-----------------|-------|---------------|--------|---------------|
| turn Per | Parameters | | Log normal | | | Log Pearson III | | | Gumbel | |
| | p | w | z | X_T | X | K_T | X_T | X | y_T | x_T |
| 1 | 1.000 | 0.000 | -2.516 | 1.895 | 78.6 | -2.639 | 1.865 | 73.3 | | |
| 2 | 0.500 | 1.177 | 0.000 | 2.515 | 327.7 | 0.023 | 2.521 | 332.0 | 0.37 | 345.0 |
| 2.33 | 0.429 | 1.301 | 0.178 | 2.559 | 362.5 | 0.200 | 2.565 | 367.1 | 0.58 | 378.9 |
| 5 | 0.200 | 1.794 | 0.841 | 2.723 | 528.3 | 0.847 | 2.724 | 530.1 | 1.50 | 526.0 |
| 10 | 0.100 | 2.146 | 1.282 | 2.831 | 678.2 | 1.266 | 2.827 | 672.1 | 2.25 | 645.8 |
| 20 | 0.050 | 2.448 | 1.645 | 2.921 | 833.6 | 1.605 | 2.911 | 814.7 | 2.97 | 760.8 |
| 50 | 0.020 | 2.797 | 2.054 | 3.022 | 1051.4 | 1.979 | 3.003 | 1007.5 | 3.90 | 909.6 |
| 100 | 0.010 | 3.035 | 2.327 | 3.089 | 1227.3 | 2.224 | 3.064 | 1158.0 | 4.60 | 1021.1 |
| 200 | 0.005 | 3.255 | 2.576 | 3.150 | 1414.0 | 2.446 | 3.118 | 1313.3 | 5.30 | 1132.1 |
| 500 | 0.002 | 3.526 | 2.879 | 3.225 | 1678.6 | 2.711 | 3.184 | 1526.4 | 6.21 | 1278.7 |
| 1000 | 0.001 | 3.717 | 3.091 | 3.277 | 1893.2 | 2.895 | 3.229 | 1694.0 | 6.91 | 1389.5 |