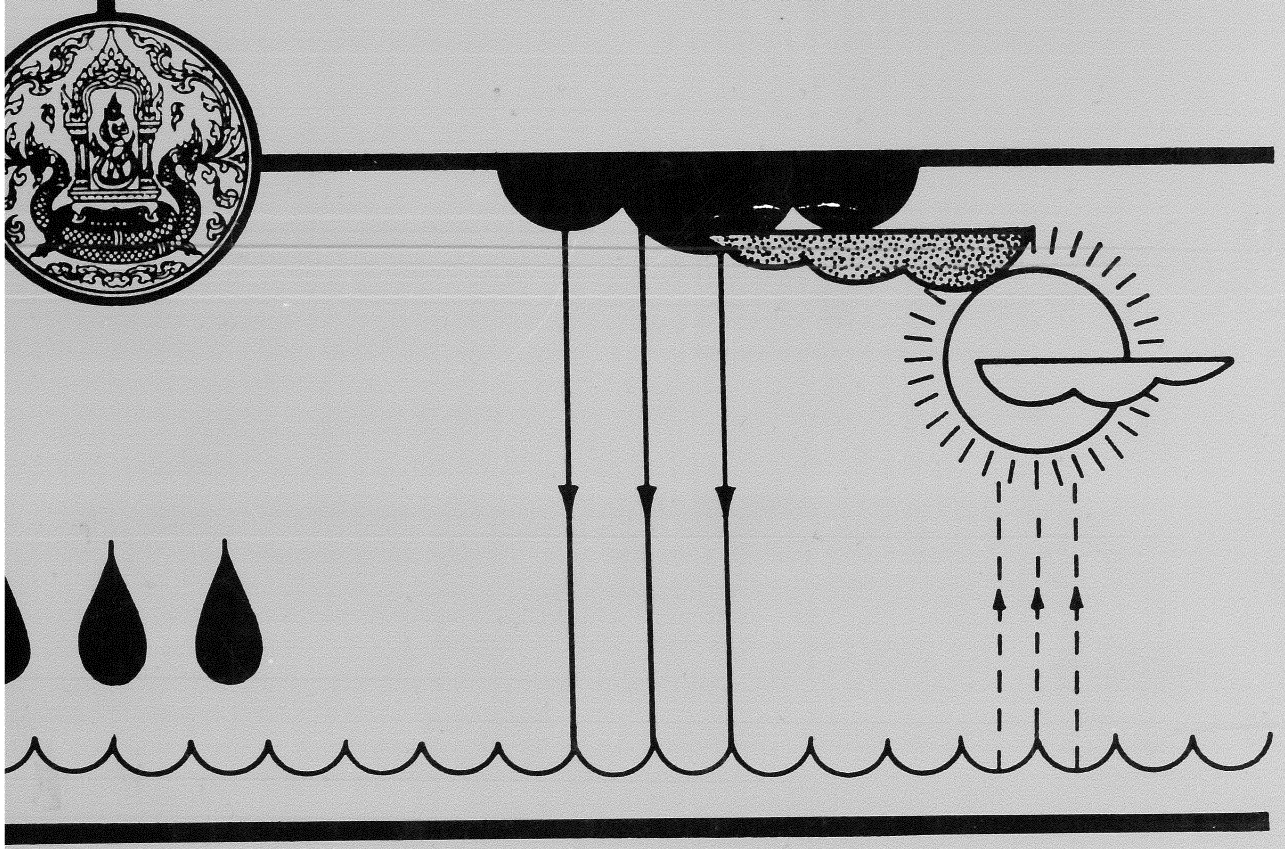
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HYDROLOGICAL YEARBOOK

WATER YEAR 1998

VOLUME 41



ROYAL IRRIGATION DEPARTMENT

HYDROLOGY DIVISION

BANGKOK

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FOREWORD

The programme of yearbook publication was initiated in 1966. Great efforts have been made in editing as well as the setting up of standard for yearbook publication. The previously processed data have been reviewed and rearranged in serial order or volumes to be published. The first issue was published in 1968 as Volume 8. It consists of the data set, such as stage and discharge of 59 streams at 86 actual streamflow data calibrating sites and at 27 previously calibrated ones recording in 1965 water year. Up untill now 40 volumes of yearbooks presenting streamflow data as early as 1912 up to 1997 totalling 8,117 station-years of record had been published.

This Volume 41 which is the forty first issues of the series was prepared by the Analysis and Statistics Branch. It consists record, during 1998 water year, of stage and discharge of 173 streams at 258 currently calibrating sites.

Hydrology Division

August 2000

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The editorial staff of this hydrological yearbook publication feels particularly indebted to Mr. Boonchob Kanchanalak, former senior engineer hydrologist of the Royal Irrigation Department, who had initiated and directed the editing work of yearbook publication in 1966. He made a great attempt in setting up procedure for yearbook publication and adopting engineering standard, method and steps for implementation upon which the further publication of the series will be based.

Special thanks are conveyed to the Budget Bureau, office of the Prime Minister, who always renders great support to this work, also others who gave valuable advices in improving the work standard are kindly pleased to accept our sincere thanks.

Thank to Mr.Virat Khao-Uppatum, Director, Office of Hydrology and Water Management and Mr.Thada Sukhabunnaphan, chief of Regional Hydrology Center I, for the initiative of Hydrology Data Processing with Computer to Data Processing Section from 1978 and for the valuable advice.

Also may we express our sincere wish to Hydrological Investigation Section, Study and Discharge Analysis Unit and Study and Water-Level Analysis Unit for the complete issue of Thailand Hydrological yearbook Volume 41.

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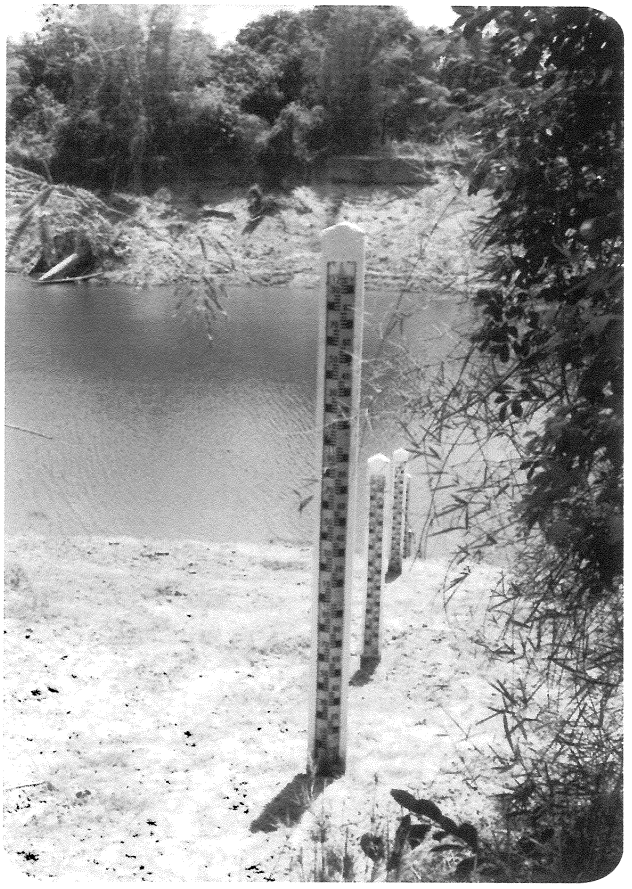


Fig. 1 Typical vertical staff gage

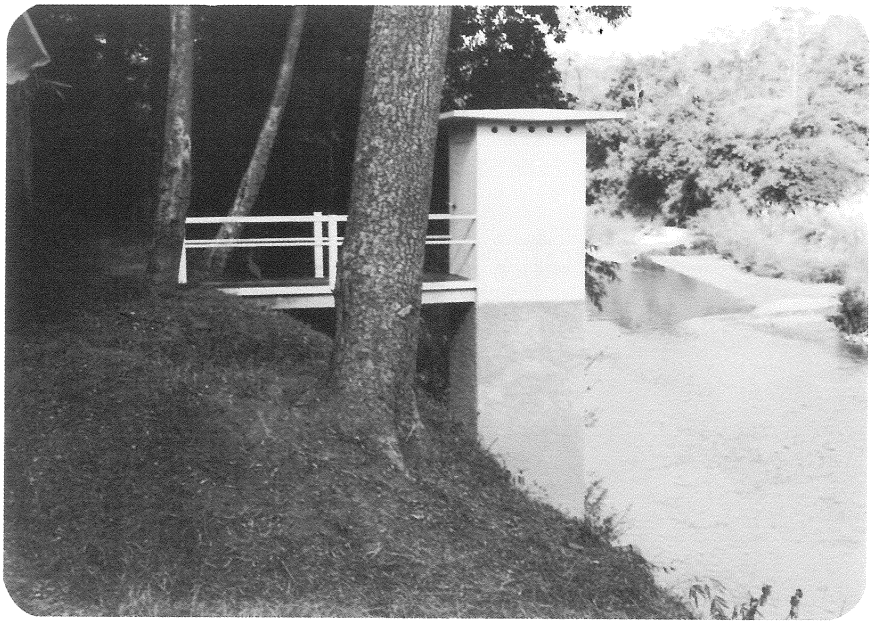


Fig. 2 Typical shelter for water level recorder (Float Type)



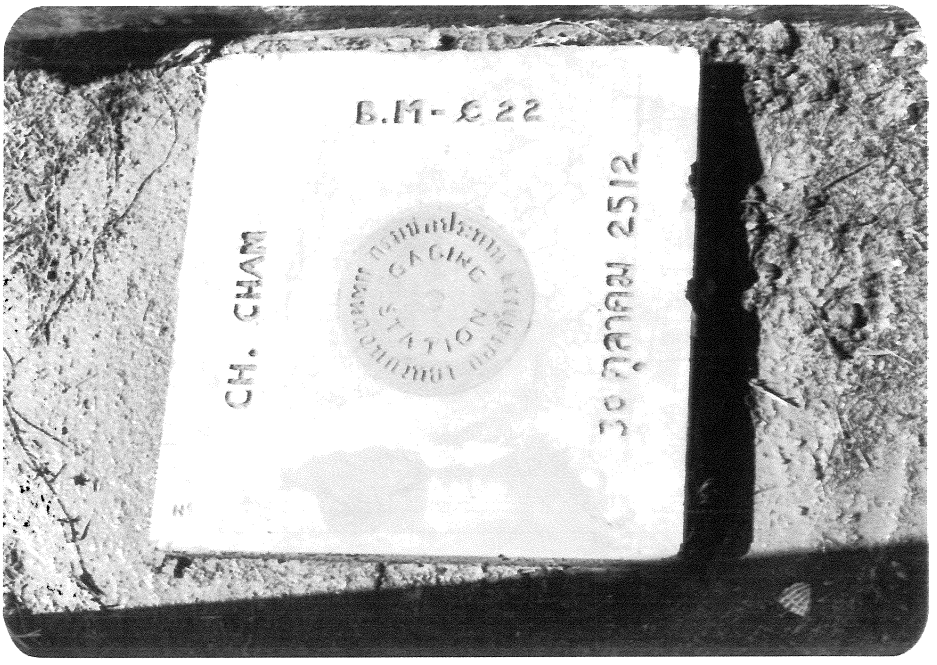


Fig. 3 Standard bench mark



Fig. 4 Close - up of rating operation



Fig. 5 Standard hydrologic equipment

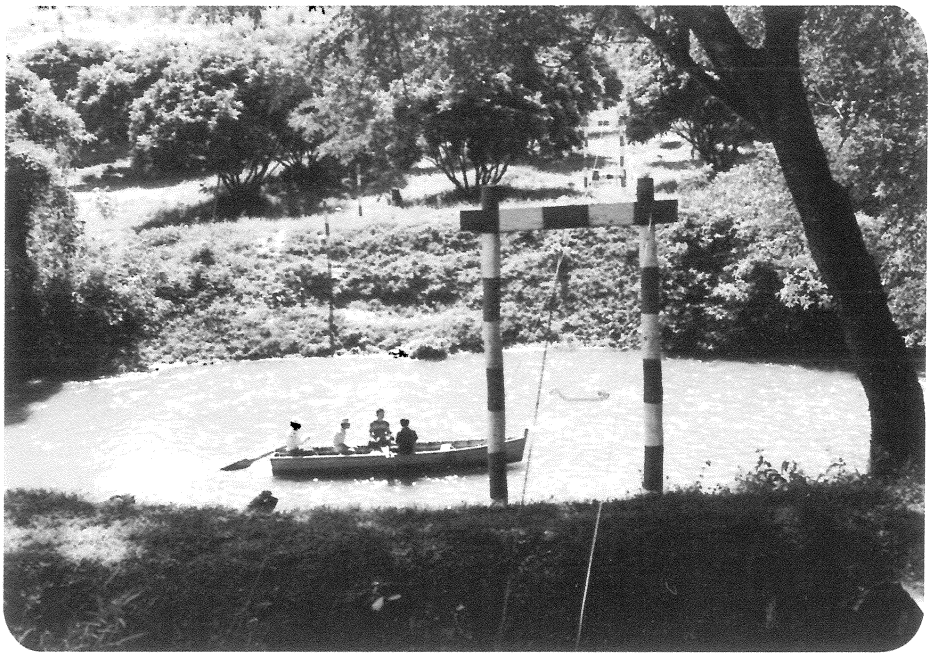


Fig. 6 Measuring line



Fig. 7 Camp for hydrological station

HYDROLOGICAL YEAR BOOK PUBLICATION

* **** ** **** *

Introduction

Great Attempt has been made all along to expedite the engineering processing of the streamflow data to be ready for publication, and to translate the publication plan into implementation. Efforts from various working units as well as personnel concerned are pulled together to drive this work into reality. Publication of streamflow data has begun since 1966. The first yearbook publication came out as Volume 8 for the 1965 water year. It presents records of stage and discharge of 113 gaging stations in 59 streams.

Definition of terms and abbreviations

Table for converting Metric Units to English Units is on page XXX Terms related to streamflow and other hydrologic data, as used in this report, are defined as follows:

CMS-day is the volume of water represented by a flow of 1 cubic meter per second for 24 hours. It is equivalent to 86,400 cubic meters, 0.0864 million cubic meter, or 3,050,784 cubic feet, or 70.07 acre-feet, and represents a runoff of 86.4 millimeters from 1 square kilometer.

Control designates of feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Cubic meter per second (cms) is the rate of stream discharge expressed in volume per a unit of time. One cubic meter per second is the rate of discharge representing a volume of 1 cubic meter passing a given point during 1 second.

Discharge is the volume of water (or more broadly, total fluids), that passes a given point within a given period of time.

Mean discharge is the arithmetic average of individual daily mean discharge during a specific period.

Momentary peak discharge is the peak discharge at a particular instant of time, at least once a year.

Drainage area of a stream at a specified location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from rainfall would normally drains by gravity into the stream above the specified point. Figures of drainage area given herein are determined from Royal Thai Survey Department AMS map with scale of 1 to 50,000, unless otherwise noted. They include all closed basins, or noncontributing areas, within the area unless otherwise noted.

Gage height (G.H.) is the water surface elevation above some arbitrary gage datum to which, in most cases, referred the Mean Sea Level (M.S.L.) Ko Lak datum, otherwise the arbitrary assumed datum (A.D.) being used.

Gaging station is a particular site on a stream, canal, lake, or reservoir where systematic observations of gage height or discharge are obtained. The term "staff gaging station" is applied only those gaging stations where only a gage height record is observed at an installed staff gage. If a water stage recorder is also installed, such a gaging station is referred as recording gaging station. In case of discharge measurements being practiced, it is referred as streamflow calibration or rating station.

Million cubic meter (mcm) is the volume of water expressed in millions of cubic meter.

One million cubic meter is the quantity of water required to cover 1 square kilometer to a depth of 1 meter and is equivalent to 811 acre-feet, or 408.6 cfs-day, or 264.2 million gallons.

Runoff in mcm shows the volume of approximately effective runoff from rainfall, passing a given point for a given period of time.

Annual runoff is the volume of approximately effective runoff from rainfall accumulated during the water year.

Stage-discharge relation is the relation between gage height and the volume of water per unit of time, flowing in a channel.

Rating tables giving the discharge for any gage height are prepared from stage-discharge relation curves or rating curves.

Water year is the 12-month period, April 1 through March 31, related to annual cycle of river flow during which the river begins to rise, reaching its flood stage and subsiding toward its cyclic minimum

The water year is designated by the calendar year in which it begins and which includes 9 of 12 months. Thus, the year began April 1, 1969 is called the "1969 water year".

Order of listing of gaging data

In this format, gaging data are listed according to their code running number order. It has been found more convenient in locating the required data when the list is arranged in such manner. The station code name contains the letters standing for river name and number in running order according to the age of the station installed in that river. The station code, for example, for the Chao Phraya River at Wat Tha Hat installed in 1905 is C. 1, which is the first streamflow rating station ever built in this river.

Series of yearbook publications

The yearbook series in which the streamflow data had been published was issued as follows:

Volume	Water Years	No. of station - years	Date of Issuance
1	1912 - 1937	112	September 1976
2	1938 - 1947	103	September 1976
3	1948 - 1953	146	September 1976
4	1954- 1956	178	September 1976
5	1957 - 1959	203	May 1974

Volume	Water Years	No.of station-years	Date of issuance
6	1960 - 1962	213	October 1973
7	1963 - 1964	182	July 1969
8	1965	113	May 1967
9	1966	129	June 1975
10	1967	172	September 1976
11	1968	187	September 1976
12	1969	182	March 1979
13	1970	182	March 1979
14	1971	182	June 1979
15	1972	184	October 1979
16	1973	187	January 1980
17	1974	191	March 1980
18	1975	182	August 1980
19	1976	184	November 1980
20	1977	192	February 1981
21	1978	210	May 1982
22	1979	237	July 1981
23	1980	231	August 1982
24	1981	213	November 1983
25	1982	224	June 1986
26	1983	235	October 1986
27	1984	242	February 1988
28	1985	232	January 1989
29	1986	245	June 1989
30	1987	271	July 1990
31	1988	267	February 1990
32	1989	224	July 1991
33	1990	225	July 1992

Volume	Water Years	No.of station-years	Date of issuance
34	1991	227	July 1993
35	1992	220	May 1994
36	1993	228	April 1995
37	1994	224	August 1996
38	1995	232	July 1997
39	1996	244	August 1998
40	1997	269	August 1999
41	1998	258	August 2000

The preparation of the manuscripts of the further Volume is in progress. It is expected that they would be issued in serial order in the very near future.

STANDARD OF STREAMFLOW DATA PROCUREMENT

****** ** ******

Network design

The location of stream gaging stations is primarily based upon the urgent need at various damsites which is accessible. By the time of expansion of the network at later date, the area or basin of "blind spot" is put at first priority backing up by the following conditions:

(a) Accessibility.

(b) Geographical location.

(c) Mean annual rainfall.

(d) Vegetation cover determined from Army Map Service topographic map with 1:50,000 or 1:250,000 scale.

(e) Basin soil type.

(f) Type of surface rock.

Field work

The minimum standard of basic hydrologic data for observations and measurements are equal to those recommended in the United Nations ECAFE Flood Control series No. 6.

Water stage data are obtained by staff gage and by water stage recorder. Normally a vertical section staff gage is installed for manual observation with usual frequency of reading varies from 1 to 5 times of equal interval during the daytime. At some specific station where streamflow measurement camps are situated, the reading of water stage by night is also made, in addition, usually 1 to 3 times of equal interval. The standard bench mark is also established near the gage site. The 1.00-m standard enamelled staff gage sections with 1 cm graduation are used with zero reading, in most cases, referred to Mean Sea Level (M.S.L.) Ko Lak datum, otherwise the assumed datum being used. Few wire-weight gages are also adopted on highway bridges.

In some mountainous headwater area as well as in the estuary, additional installation of water stage recorder is made. A continuous record of water stage is obtained at such station. The German A. Ott type X has so for been adopted as our standard equipment. Some pneumatic recorder is also being used. Weekly visit to the gage for inspection and changing chart paper by the crew or gage observer is under practice.

At the streamflow gaging station, flow measurement by a current meter is periodically performed so that the calibration of stream section related to flow can be made through the development of stage-flow relationship or simply called "rating curve". Two types of the streamflow gaging station are under operation: with and without crew camp. Those without crew camp are under moving team and are capable for flow measurements of several stations. Those with crew camp are subject to less accessibility.

At station operated by a moving crew, at least twice a month during the monsoon period and once a month during the low flow period are expected for flow rating performance. The moving crew frequently fails to reach the stations while at their crest stages because of road damage and time available. At station with crew camp, daily rating performance may be expected, at least once whenever change of stage per day is over 30 centimeters. Fixed boat by cableway across the river is one of typical means of flow measurement by current meter for medium river, 100 m wide. Fow wider river, the boat is fixed in position by anchors.

The river cross section is requested to be made simultaneously during flow velocity measurement, so that shifting of the section could be determined. This request is lawful because there had been in the older day fashion of using cross section made during dry season for discharge computation.

The German A. Ott current meter has so far been adopted as standard equipment. The multiple-point method has been used as velocity measurement practice. At present the two-point method is carefully practiced.

Office data processing

The standard techniques used overseas are adopted in processing the data. In fact the standard methods of U.S. Geological Survey and U.S. Department of Agriculture (for small streams) are adopted as general basis.

Development of rating curve - Yearly mean rating curve is generally used as a tool in determining the daily flow. Periodically developed rating is frequently used when dictated by the conditions, so that the shifting control could be eliminated or reduced. Zero flow elevation of the rating section is determined by trial and error method with logarithmic plotting of the rating curve. Extension of the logarithmic rating line is frequently used to determine the channel flow at the overbank flow stage. The overbank flow is assessed by either direct velocity measurement or slope-area method whenever applicable.

Determination of daily mean flow - Application of the adjusted daily mean gage height to rating table gives the corresponding daily mean discharge from which the monthly and the yearly mean discharges are computed. Shifting adjustment for observed gage height is made when necessary. Shifting design is made basing on flood stages and times, if any. Other adjustments such as back water, rise and fall of flood, etc., which necessitate the use of other parametric factors, are also made, if any.

At some gaging stations where rises and falls of floods are immediate, hourly basis of gage height application to the rating curve is used to determine daily mean discharge.

At stations where rises and falls of streams are gentle, gage height data are usually obtained by manual reading.

It has been found that application of 1 to 5 times average reading (for daytime) gives an error of daily mean flow not more than 15% for mountainous streams, less than 10% for larger valley streams and not more than 5% for lower deltaic streams. Most of mountainous and valley streams are under recording operation, only deltaic streams that daytime reading are still used.

The daily mean gage heights are obtained by arithmetic mean of the observed data available. Adjusted gage heights due to shifting, which are applicable to rating curve for daily mean

flow computation, are practically made.

It is noted that the daily mean flow are mostly subject to upstream diversion. Headwater utilization of water by people diversions and state-owned diversions are expected in many river basins in this country. Consequently, the virgin flow is hardly determined. Daily mean values may be replaced by the monthly mean in the case of flow measured at tailwaters of existing reservoirs.

Time basis used for daily mean flow is from midnight to midnight.

Review of procedure for streamflow data processing.

Following are steps used for review the overall data before finalizing the process:

1) Checking of gage height data which are obtained either from staff gage or from water stage recorder, for the following cases:

a) Representability of daytime observation for the daily mean value, if the data are from staff gage reading.

b) Discrepancies of recording charts, if any.

c) Desirability of hourly-basis process for daily mean flow.

d) Datums of gage observation and of the rating curve used.

e) Location of gage from which data are taken and location of gage at which the rating curve is developed.

2) Checking of availability and goodness of field measurement notes.

3) Checking of differential magnitude of gage height during discharge measurement as to which arithmetic average or weighted average is desirable.

4) Checking stability of rating curve used.

5) Review of shifting control sample and design shifting, if any.

6) Adjustment of backwater, flood wave, etc., by rate of change of falls as index, if any.

7) Overall review of daily mean flow data as an end product.

8) Checking consistency of runoff volume among those observed at the upstream and downstream stations, taking into account intervening diversions of flow, if any.

Classification of streamflow data

The station description states the degree of accuracy of the records. "Excellent" indicates that, in general, the error in the daily records is believed to be less than 5 percent; "good", less than 10 percent; "fair", less than 15 percent; "poor", probably more than 15 percent.

Future plan for computerization

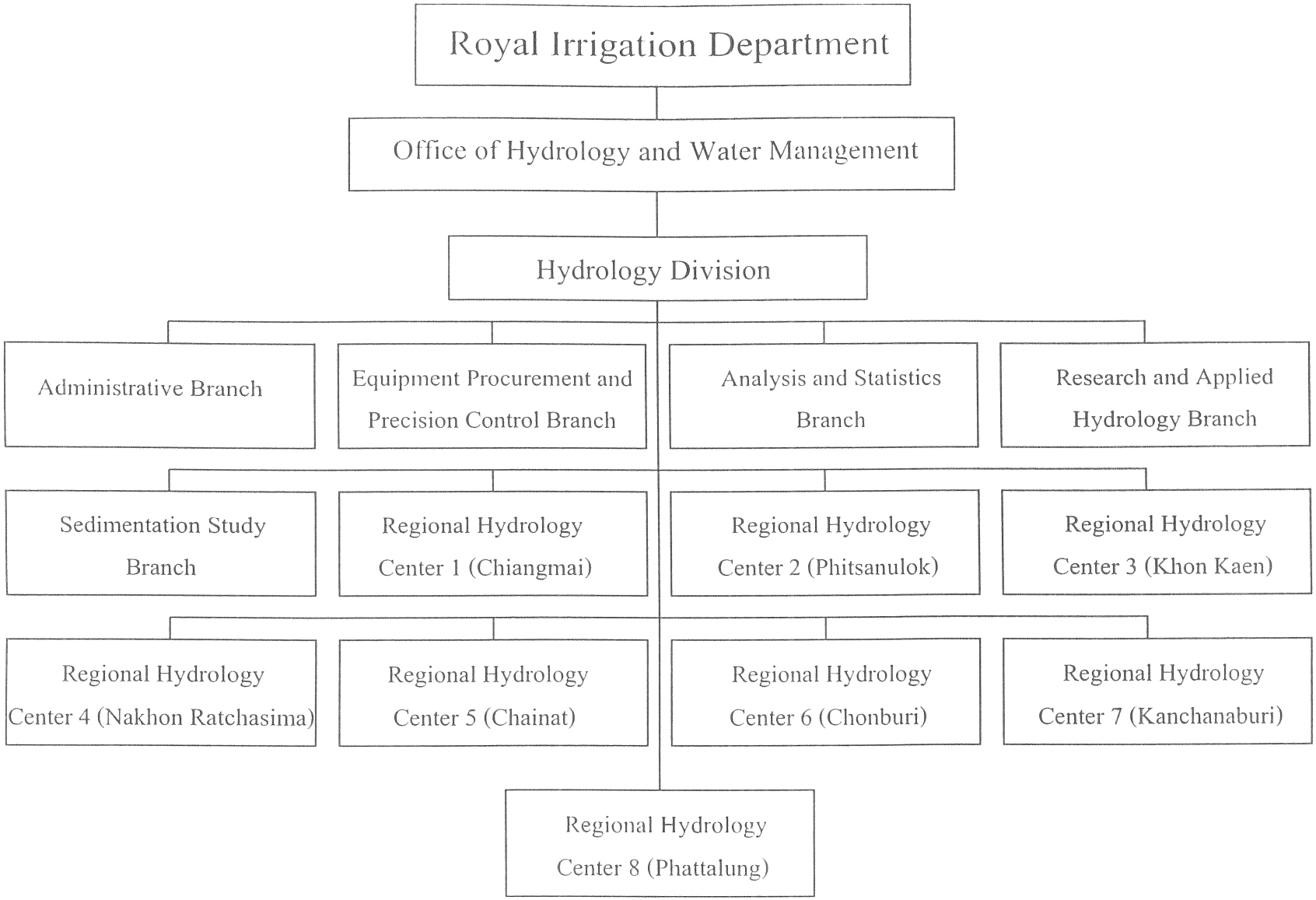
The Royal Irrigation Department (RID) has developed data system which includes computerization of storage, processing and retrieval of rainfall data since 1969. During the streamflow data system was being developed at RID in 1976, the National Economic and Social Development Board has made in agreement with the Asian Institute of Technology (AIT) to study on "Development of Water Resources Information System for Thailand". In the contract AIT will recommend a standardized procedure to various agencies for collecting and recording hydrometeorological and hydrological data and develop a computer based data storage and retrieval system to process, store, analyse and publish the data furnished by various agencies involved in data collection.

The Water Resources Information System for Thailand (WRIST) package has been designed to provide permanent computer media storage of hydrometeorological and hydrological data in such a form that it can be readily added, to, altered or deleted and also called for analysis and presentation as required. The Indexed Sequencial Method has been used for mass storage of the data and the processing and storing system have been designed taking into consideration the data processing schemes followed by the agencies, the probable frequency of retrieval expected and also the order or grouping of data elements differently for different agencies so that the system is best suited and efficient in operation for the current requirements and anticipated uses by the agencies in Thailand. The system will process and store data agencywise. The system is also designed to allow for the inclusion of additional data types if the need arise in the future. IBM 370/145 Computer facility at the AIT Bangkok will be used to develop the WRIST package. Operating programs will be written in ANS COBOL language independent of machine hardware to facilitate machine to machine transferability of the package for medium scale computers. The system has the data retrieval facility in the form of monthly and yearly publication agencywise; raw data and analysed data either in the form of computer printouts or in the direct accessible forms like cards of tapes controlled by basin, sub-basin, region, station and data type. Data stored can also be available in the form of punched cards or punched card image on magnetic tapes so that they can be accessed by FORTRAN programs.

Organization

Streamflow data presented herein are from the hydrologic network operating by the Hydrology Division of the Royal Irrigation Department (RID). Field data collection and office data processing as well as yearbook publication are hydrologic activities undertaken by the Division.

The organization structure of the Division is diagrammatically shown below:-


Royal Irrigation Department
Office of Hydrology and Water Management
Hydrology Division
Administrative Branch
Equipment Procurement and Precision Control Branch
Analysis and Statistics Branch
Research and Applied Hydrology Branch
Sedimentation Study Branch
Regional Hydrology Center 1 (Chiangmai)
Regional Hydrology Center 2 (Phitsanulok)
Regional Hydrology Center 3 (Khon Kaen)
Regional Hydrology Center 4 (Nakhon Ratchasima)
Regional Hydrology Center 5 (Chainat)
Regional Hydrology Center 6 (Chonburi)
Regional Hydrology Center 7 (Kanchanaburi)
Regional Hydrology Center 8 (Phattalung)

XXIX

PARTICIPATION IN STREAM GAGING WORKS

* * * * * * *

Among 22 water related government agencies, several of them operate streamflow gaging works according to their own purposes. In early 1949 the Hydrology Section was established in the Survey Division of the Royal Irrigation Department. The Section is responsible for its activity in hydrology as prerequisite for water resources development. The activity includes:

(1) Procurement of basic hydrologic data including precipitation, streamflow, sediment, evaporation, etc.

(2) Analyses and research to produce the facts governing the behavior of water, their occurrences, circulation and distribution in its varied forms, their properties and their interaction with other allied factors.

(3) Application to water resources development and management, utilizing basic data and the facts disclosed by analyses and research.

Just one year after the beginning of water storage work, in 1953 there were only 49 discharge stations and 114 stage stations as operated by the Hydrology Section. In February 1975 the Section was separated from the Survey Division and was raised the status to be the Hydrology Division of the Royal Irrigation Department. The present network of stream gaging works contains 221 discharge stations of which 147 are currently operated and 74 are previously calibrated with continuous stage observation while 145 were abandoned, and 315 stage stations are currently operated while 232 were abandoned.

After the onset of the Lower Mekong River Basin Development Scheme, the Hydrology Section was also established in the Investigation and Planning Division of the National Energy Administration which is a representative agency of Thai Government in the Lower Mekong Committee. During the period of November 1958 - Mary 1962, seven hydrologic stations were installed and operated by the Harza Engineering Company contracted by the Agency for International Development of the United States Government. At present the NEA operates about 90 discharge stations and 140 stage stations. A series of yearbooks has also been published.

The third agency which operates the stream gaging works is the Hydrometeorology Division of the Meteorological Department. With the technical and financial support from the World Meteorelogical Organization, this agency began the stream gaging works in 1967. Up till now, about 11 discharge stations and 32 stage stations are under operation. The stream gaging data are also included in their yearbook.

The last agency which operates the stream gaging works for the planning purpose is the Electricity Generating Authority of Thailand. They began to operate 15 discharge stations and 4 stage stations in 1971.

In addition, there are other agencies operating the stream gaging works for their own purposes such as watershed management and conservation program of the Royal Forestry Department. The Port Authority of Thailand carries on discharge measurement along the estuary of the Chao Phraya River for studying the sedimentation in the vicinity of the service area.

UNITS OF MEASURE AND CONVERSION FACTORS

The following factors may be used to convert the metric and Thai unit published herein to the English units.

Multiply metric or Thai units	By	To obtain English units
	Length	
millimeters (mm)	.03973	inches (in)
meters (m)	39.73	inches (in)
	3.2808	feet (ft)
	1.0936	yards (yd)
	.1988	rods
kilometers (km)	.6214	miles (mi)
	Area	
square meters (m^2)	10.76	square feet (ft^2)
	1.196	square yards (yd^2)
	2.47×10^{-4}	acres
rai (1,600 m^2-Thai)	.3952	acres
hectares (ha)	2.4709	acres
square hectometers (hm^2)	2.4709	acres
square kilometers (km^2)	247.1	acres
	.3861	square miles (mi^2)
	Volume	
liters (l)	.2642	gallons (gal)
cubic decimeters (dm^3)	.2642	gallons (gal)
	.03531	cubic feet (ft^3)
cubic meters (m^3)	264.2	gallons (gal)
	2.642×10^{-4}	million gallons (10^6 gal)
	35.31	cubic feet (ft^3)
	4.086×10^{-4}	cfs-day (ft^3/s-day)
	8.11×10^{-4}	acre-feet (acre-ft)
cubic hectometers (hm^3)	264.2	million gallons (10^6 gal)
	408.6	cfs-day (ft^3/s-day)
	811	acre-feet (acre-ft)
million cubic meters (mcm)	811	acre-feet (acre-ft)
cubic kilometers (km^3)	811×10^3	acre-feet (acre-ft)
	Flow	
liters per second (l/s)	.03531	cubic feet per second (ft^3/s)
	15.85	gallons per minute (gpm)
cubic decimeters per second (dm^3/s)	.03531	cubic feet per second (ft^3/s)
	15.85	gallons per minute (gpm)
	22.82×10^{-3}	million gallons per day (mgd)

Multiply metric or Thai units	By	To obtain English units
	Flow (Cont.)	
cubic meters per second (m^3/s)	35.31	cubic feet per second (ft^3/s)
	15,850	gallons per minute (gpm)
	22.82	million gallons per day (mgd)

* * * * * * *

Stream Gaging Data

Water Year 1998

WATER YEAR 1998

PING RIVER BASIN

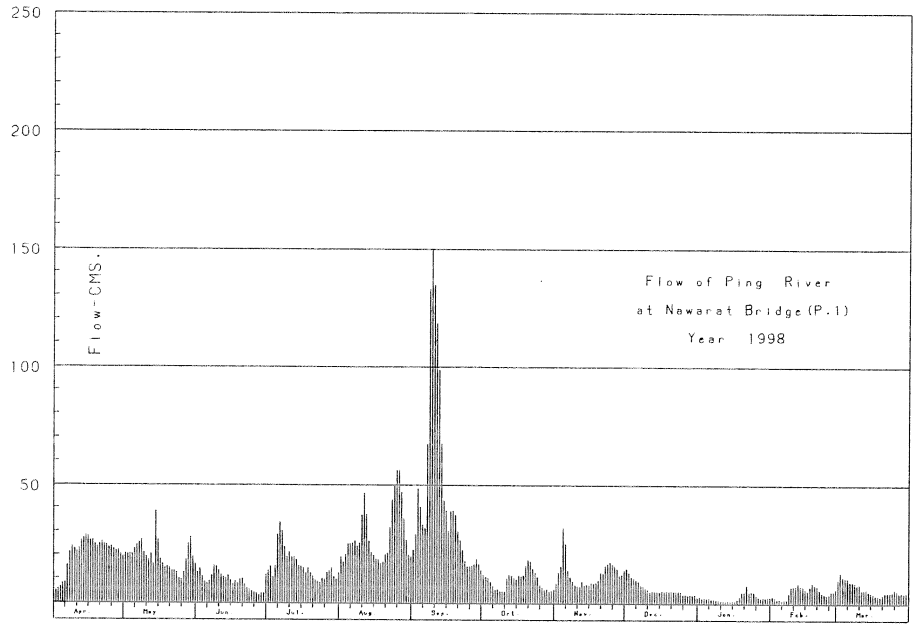
Ping River at Nawarat Bridge, Chiang Mai (P.1)

Location	Lat. 18°-47'-09" N., Long. 99°-00'-29" E., on left bank about 100 meters downstream from Nawarat Bridge, Amphoe Muang, Chiang Mai.
Drainage Area	6,355 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+300.50 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank near automatic gage building.
Elevation	+305.310 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1921 to date.
Rating Operation	
Period of Rating	1954-1960, 1967 to date.
Rated by Float	1936-1938
Rated by Current Meter	1954-1960, 1967 to date.
Stability of Channel Regimes	Rather unstable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Mae Ngat Dam and Mae Taeng Weir above gage site. Phaya Kham weir situated about 2 kilometers downstream from the gage site. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	301.46	301.70	301.81	301.82	301.88	301.91	301.80	301.75	301.83	301.61	301.62	301.77	
2	301.47	301.70	301.83	301.84	301.86	301.96	301.79	301.81	301.81	301.59	301.60	301.81	
3	301.49	301.70	301.79	301.79	301.89	302.09	301.78	301.84	301.79	301.58	301.55	301.79	
4	301.51	301.70	301.76	301.84	301.93	302.04	301.76	301.98	301.78	301.58	301.54	301.78	
5	301.52	301.73	301.75	301.96	301.93	301.99	301.73	301.93	301.77	301.58	301.52	301.78	
6	301.63	301.75	301.76	302.00	301.93	301.98	301.71	301.82	301.76	301.56	301.52	301.76	
7	301.71	301.77	301.80	301.97	301.94	302.21	301.71	301.79	301.74	301.54	301.54	301.76	
8	301.74	301.78	301.84	301.92	301.92	302.57	301.70	301.76	301.73	301.54	301.66	301.75	
9	301.73	301.71	301.84	301.88	301.93	302.65	301.69	301.74	301.72	301.52	301.73	301.74	
10	301.71	301.68	301.82	301.90	302.02	302.58	301.70	301.73	301.71	301.51	301.73	301.74	
11	301.73	301.66	301.80	301.88	302.08	302.50	301.78	301.73	301.69	301.48	301.73	301.71	
12	301.78	301.70	301.79	301.88	302.02	302.40	301.80	301.76	301.70	301.48	301.75	301.71	
13	301.79	301.85	301.78	301.87	301.94	302.21	301.80	301.74	301.70	301.48	301.73	301.71	
14	301.81	302.03	301.80	301.84	301.90	302.06	301.78	301.74	301.69	301.48	301.73	301.70	
15	301.80	301.94	301.77	301.84	301.89	302.03	301.77	301.74	301.69	301.48	301.71	301.67	
16	301.78	301.87	301.74	301.83	301.87	301.97	301.80	301.75	301.70	301.50	301.70	301.65	
17	301.78	301.85	301.76	301.81	301.87	302.03	301.79	301.75	301.70	301.53	301.73	301.64	
18	301.76	301.83	301.75	301.83	301.85	302.03	301.80	301.75	301.70	301.62	301.75	301.62	
19	301.74	301.84	301.77	301.81	301.86	302.02	301.84	301.77	301.70	301.68	301.74	301.62	
20	301.76	301.83	301.78	301.79	301.89	301.97	301.87	301.81	301.70	301.68	301.73	301.64	
21	301.77	301.82	301.74	301.77	301.90	301.94	301.86	301.81	301.70	301.74	301.71	301.68	
22	301.76	301.82	301.72	301.76	301.98	301.91	301.83	301.84	301.69	301.69	301.67	301.68	
23	301.75	301.81	301.71	301.75	302.06	301.86	301.81	301.85	301.70	301.69	301.66	301.67	
24	301.74	301.78	301.70	301.78	302.10	301.84	301.79	301.86	301.69	301.69	301.64	301.69	
25	301.74	301.77	301.67	301.77	302.14	301.84	301.74	301.85	301.65	301.64	301.66	301.71	
26	301.73	301.81	301.66	301.81	302.14	301.84	301.72	301.84	301.64	301.60	301.69	301.70	
27	301.72	301.87	301.64	301.82	302.08	301.85	301.71	301.83	301.64	301.59	301.70	301.67	
28	301.72	301.93	301.66	301.83	302.01	301.87	301.71	301.80	301.64	301.59	301.71	301.67	
29	301.70	301.95	301.67	301.79	301.94	301.85	301.70	301.80	301.64	301.60		301.67	
30	301.68	301.88	301.80	301.77	301.89	301.82	301.70	301.82	301.64	301.60		301.67	
31		301.85		301.81	301.88		301.71		301.61	301.60		301.66	
Mean	301.70	301.80	301.76	301.84	301.95	302.06	301.76	301.80	301.70	301.58	301.67	301.70	
Max	301.81	302.03	301.84	302.00	302.14	302.65	301.87	301.98	301.83	301.74	301.75	301.81	302.65
Min	301.46	301.66	301.64	301.75	301.85	301.82	301.69	301.73	301.61	301.48	301.52	301.62	301.46

Annual Max Momentary Gage Height 302.66 M (MSL), at 19.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 300.50 M (MSL), River Bed 299.35 M (MSL)
Left Bank Elevation 307.78 M (MSL)
Right Bank Elevation 307.65 M (MSL), Drainage Area 6355 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	5.38	21.00	12.95	13.90	19.60	22.80	12.00	8.60	14.85	2.82	3.09	9.96	
2	5.91	21.00	14.85	15.80	17.70	29.30	11.32	12.95	12.95	2.42	2.56	12.95	
3	6.97	21.00	11.32	11.32	20.55	48.45	10.64	15.80	11.32	2.29	1.88	11.32	
4	8.15	21.00	9.28	15.80	25.40	40.70	9.28	31.90	10.64	2.29	1.74	10.64	
5	8.80	23.16	8.60	29.30	25.40	33.20	7.24	25.40	9.96	2.29	1.47	10.64	
6	16.10	24.60	9.28	34.50	25.40	31.90	5.88	13.90	9.28	2.02	1.47	9.28	
7	21.72	26.04	12.00	30.60	26.70	67.60	5.88	11.32	7.92	1.74	1.74	9.28	
8	23.88	26.76	15.80	24.10	24.10	132.85	5.20	9.28	7.24	1.74	4.14	8.60	
9	23.16	21.72	15.80	19.60	25.40	150.00	4.94	7.92	6.56	1.47	7.24	7.92	
10	21.72	19.60	13.90	21.50	37.60	134.90	5.20	7.24	5.88	1.34	7.24	7.92	
11	23.16	18.20	12.00	19.60	46.90	118.50	10.64	7.24	4.94	1.12	7.24	5.88	
12	26.76	21.00	11.32	19.60	37.60	99.00	12.00	9.28	5.20	1.12	8.60	5.88	
13	27.48	16.75	10.64	18.65	26.70	67.60	12.00	7.92	5.20	1.12	7.24	5.88	
14	28.94	39.15	12.00	15.80	21.50	43.80	10.64	7.92	4.94	1.12	7.24	5.20	
15	28.20	26.70	9.96	15.80	20.55	39.15	9.96	7.92	4.94	1.12	5.88	4.41	
16	26.76	18.65	7.92	14.85	18.65	30.60	12.00	8.60	5.20	1.20	5.20	3.88	
17	26.76	16.75	9.28	12.95	18.65	39.15	11.32	8.60	5.20	1.61	7.24	3.62	
18	25.32	14.85	8.60	14.85	16.75	39.15	12.00	8.60	5.20	3.09	8.60	3.09	
19	23.88	15.80	9.96	12.95	17.70	37.60	15.80	9.96	5.20	4.67	7.92	3.09	
20	25.32	14.85	10.64	11.32	20.55	30.60	18.65	12.95	5.20	4.67	7.24	3.62	
21	26.04	13.90	7.92	9.96	21.50	26.70	17.70	12.95	5.20	7.92	5.88	4.67	
22	25.32	13.90	6.56	9.28	31.90	22.80	14.85	15.80	4.94	4.94	4.41	4.67	
23	24.60	12.95	5.88	8.60	43.80	17.70	12.95	16.75	5.20	4.94	4.14	4.41	
24	23.88	10.64	5.20	10.64	50.00	15.80	11.32	17.70	4.94	4.94	3.62	4.94	
25	23.88	9.96	4.41	9.96	56.40	15.80	7.92	16.75	3.88	3.62	4.14	5.88	
26	23.16	12.95	4.14	12.95	56.40	15.80	6.56	15.80	3.62	2.56	4.94	5.20	
27	22.44	18.65	3.62	13.90	46.90	16.75	5.88	14.85	3.62	2.42	5.20	4.41	
28	22.44	25.40	4.14	14.85	36.05	18.65	5.88	12.00	3.62	2.42	5.88	4.41	
29	21.00	28.00	4.41	11.32	26.70	16.75	5.20	12.00	3.62	2.56		4.41	
30	19.60	19.60	12.00	9.96	20.55	13.90	5.20	13.90	3.62	2.56		4.41	
31		16.75		12.95	19.60		5.88		2.82	2.56		4.14	
Total	636.73	611.28	284.38	497.16	903.20	1417.50	301.93	381.80	192.90	82.70	143.18	194.61	5647.37 CMSDAY
Mean	21.22	19.72	9.48	16.04	29.14	47.25	9.74	12.73	6.22	2.67	5.11	6.28	15.47 CMS
Max	28.94	39.15	15.80	34.50	56.40	150.00	18.65	31.90	14.85	7.92	8.60	12.95	150.00 CMS
Min	5.38	9.96	3.62	8.60	16.75	13.90	4.94	7.24	2.82	1.12	1.47	3.09	1.12 CMS
Runoff	55.013	52.815	24.570	42.955	78.036	122.472	26.087	32.988	16.667	7.145	12.371	16.814	487.933 MCM

Momentary Peak 152.20 CMS, at 302.66 M (MSL), at 19.00 Hours, on Sep 8, 1998

Runoff Yield 2.43 Liters/Second/Square KM, Momentary Peak Yield 23.950 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

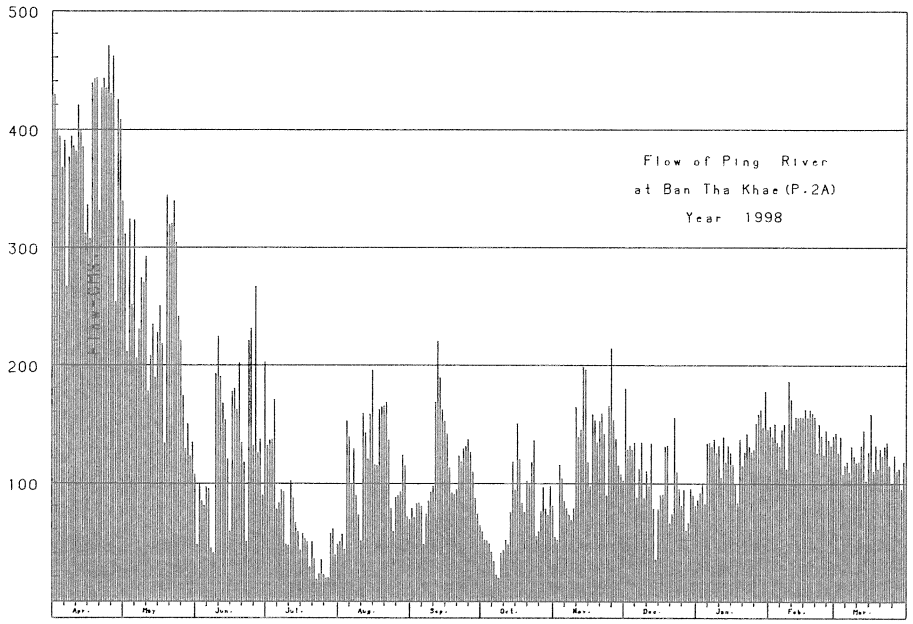
Ping River at Ban Tha Khae, Tak (P.2A)

Location	Lat. 16-51-14 N., Long. 99-07-50 E., on right bank about 200 meters downstream from Kittikhachon I Bridge, Ban Tha Khae, Amphoe Muang, Tak.
Drainage Area	38,862 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+104.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near automatic gage building.
Elevation	+115.321 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1952 to date.
Rating Operation	
Period of Rating	1952-1960, 1963-1967, 1971 to date.
Rated by Float	-
Rated by Current Meter	1952-1960, 1963-1967, 1971 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Phumiphol Dam reservoir since 1964. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	105.55	105.27	104.36	104.71	104.37	104.50	104.42	104.40	104.88	104.53	104.77	104.75	
2	105.48	104.98	104.59	104.73	104.41	104.47	104.38	104.38	104.70	104.56	104.74	104.69	
3	105.47	105.30	104.53	104.73	104.33	104.52	104.38	104.65	104.71	104.59	104.78	104.74	
4	105.41	105.10	104.51	104.85	104.79	104.52	104.36	104.61	104.70	104.52	104.72	104.62	
5	105.46	105.30	104.58	104.50	104.74	104.51	104.32	104.53	104.72	104.72	104.71	104.65	
6	105.15	104.96	104.57	104.52	104.59	104.36	104.27	104.50	104.54	104.72	104.76	104.66	
7	105.43	105.04	104.34	104.57	104.70	104.48	104.19	104.48	104.64	104.71	104.78	104.63	
8	105.47	105.17	104.31	104.56	104.55	104.53	104.17	104.46	104.72	104.73	104.64	104.71	
9	105.45	105.16	104.92	104.36	104.48	104.56	104.31	104.50	104.54	104.69	104.90	104.68	
10	105.44	105.22	105.02	104.35	104.38	104.58	104.33	104.83	104.63	104.71	104.85	104.66	
11	105.53	104.87	104.91	104.60	104.81	104.84	104.38	104.74	104.58	104.61	104.76	104.66	
12	105.48	104.97	104.84	104.54	104.75	105.01	104.36	104.76	104.72	104.74	104.80	104.71	
13	105.45	105.05	104.79	104.45	104.67	104.91	104.49	104.94	104.50	104.66	104.80	104.76	
14	105.27	104.91	104.67	104.42	104.81	104.82	104.66	104.93	104.28	104.71	104.80	104.60	
15	105.33	105.03	104.42	104.33	104.93	104.79	104.57	104.66	104.50	104.69	104.80	104.69	
16	105.26	105.10	104.87	104.41	104.65	104.75	104.78	104.58	104.55	104.65	104.82	104.81	
17	105.57	105.00	104.88	104.39	104.65	104.64	104.67	104.81	104.55	104.59	104.80	104.63	
18	105.58	104.72	104.82	104.37	104.82	104.56	104.52	104.79	104.71	104.52	104.82	104.71	
19	105.58	105.35	104.95	104.24	104.83	104.55	104.49	104.72	104.71	104.73	104.81	104.64	
20	105.32	105.29	104.72	104.37	104.83	104.57	104.60	104.79	104.45	104.65	104.80	104.70	
21	105.56	105.29	104.66	104.28	104.84	104.68	104.59	104.81	104.48	104.69	104.69	104.68	
22	105.58	105.34	104.37	104.16	104.73	104.66	104.66	104.75	104.80	104.75	104.78	104.71	
23	105.56	105.25	105.01	104.20	104.50	104.70	104.73	104.55	104.63	104.71	104.74	104.72	
24	105.64	105.07	105.04	104.28	104.42	104.71	104.40	104.83	104.57	104.69	104.68	104.65	
25	105.55	105.01	104.71	104.20	104.54	104.73	104.42	104.99	104.51	104.70	104.76	104.59	
26	105.62	104.86	105.15	104.16	104.55	104.69	104.49	104.79	104.57	104.78	104.73	104.68	
27	105.11	104.70	104.69	104.17	104.56	104.63	104.58	104.73	104.42	104.81	104.71	104.63	
28	105.54	104.78	104.73	104.41	104.68	104.54	104.50	104.65	104.45	104.82	104.74	104.64	
29	105.50	104.68	104.55	104.43	104.65	104.48	104.48	104.62	104.57	104.77		104.57	
30	105.34	104.72	104.95	104.30	104.47	104.44	104.58	104.60	104.55	104.87		104.66	
31		104.62		104.36	104.46		104.51		104.51	104.76		104.65	
Mean	105.46	105.04	104.72	104.42	104.63	104.62	104.47	104.68	104.59	104.69	104.77	104.67	
Max	105.64	105.35	105.15	104.85	104.93	105.01	104.78	104.99	104.88	104.87	104.90	104.81	105.64
Min	105.11	104.62	104.31	104.16	104.33	104.36	104.17	104.38	104.28	104.52	104.64	104.57	104.16

Annual Max Momentary Gage Height 106.17 M (MSL), at 8.00 Hours, on Apr 19, 1998
Zero Gage at Bottom Elevation 104.00 M (MSL), River Bed 102.44 M (MSL)
Left Bank Elevation 110.01 M (MSL)
Right Bank Elevation 109.84 M (MSL), Drainage Area 38862 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	430.0	312.0	48.6	131.7	50.2	78.5	59.7	55.0	180.8	85.5	147.9	142.5	
2	399.2	211.8	99.6	137.1	57.4	71.5	51.8	51.8	129.0	92.6	139.8	126.3	
3	394.8	324.0	85.5	137.1	43.8	83.2	51.8	115.5	131.7	99.6	150.6	139.8	
4	368.4	251.0	80.9	171.5	153.3	83.2	48.6	104.7	129.0	83.2	134.4	107.4	
5	390.4	324.0	97.3	78.5	139.8	80.9	42.2	85.5	134.4	134.4	131.7	115.5	
6	267.5	205.6	95.0	83.2	99.6	48.6	34.2	78.5	87.9	134.4	145.2	118.2	
7	377.2	231.2	45.4	95.0	129.0	73.8	22.1	73.8	112.8	131.7	150.6	110.1	
8	394.8	274.1	40.6	92.6	90.3	85.5	20.2	69.1	134.4	137.1	112.8	131.7	
9	386.0	270.8	193.2	48.6	73.8	92.6	40.6	78.5	87.9	126.3	187.0	123.6	
10	381.6	292.0	224.6	47.0	51.8	97.3	43.8	165.3	110.1	131.7	171.5	118.2	
11	421.2	177.7	190.1	102.0	159.1	168.4	51.8	139.8	97.3	104.7	145.2	118.2	
12	399.2	208.7	168.4	87.9	142.5	221.3	48.6	145.2	134.4	139.8	156.0	131.7	
13	386.0	234.5	153.3	66.7	120.9	190.1	76.1	199.4	78.5	118.2	156.0	145.2	
14	312.0	190.1	120.9	59.7	159.1	162.2	118.2	196.3	35.8	131.7	156.0	102.0	
15	336.0	227.9	59.7	43.8	196.3	153.3	95.0	118.2	78.5	126.3	156.0	126.3	
16	308.0	251.0	177.7	57.4	115.5	142.5	150.6	97.3	90.3	115.5	162.2	159.1	
17	438.8	218.0	180.8	53.4	115.5	112.8	120.9	159.1	90.3	99.6	156.0	110.1	
18	443.2	134.4	162.2	50.2	162.2	92.6	83.2	153.3	131.7	83.2	162.2	131.7	
19	443.2	344.0	202.5	29.4	165.3	90.3	76.1	134.4	131.7	137.1	159.1	112.8	
20	332.0	320.0	134.4	50.2	165.3	95.0	102.0	153.3	66.7	115.5	156.0	129.0	
21	434.4	320.0	118.2	35.8	168.4	123.6	99.6	159.1	73.8	126.3	126.3	123.6	
22	443.2	340.0	50.2	19.2	137.1	118.2	118.2	142.5	156.0	142.5	150.6	131.7	
23	434.4	304.0	221.3	23.0	78.5	129.0	137.1	90.3	110.1	131.7	139.8	134.4	
24	471.0	241.1	231.2	35.8	59.7	131.7	55.0	165.3	95.0	126.3	123.6	115.5	
25	430.0	221.3	131.7	23.0	87.9	137.1	59.7	214.9	80.9	129.0	145.2	99.6	
26	461.5	174.6	267.5	19.2	90.3	126.3	76.1	153.3	95.0	150.6	137.1	123.6	
27	254.3	129.0	126.3	20.2	92.6	110.1	97.3	137.1	59.7	159.1	131.7	110.1	
28	425.6	150.6	137.1	57.4	123.6	87.9	78.5	115.5	66.7	162.2	139.8	112.8	
29	408.0	123.6	90.3	62.0	115.5	73.8	73.8	107.4	95.0	147.9		95.0	
30	340.0	134.4	202.5	39.0	71.5	64.4	97.3	102.0	90.3	177.7		118.2	
31		107.4		48.6	69.1		80.9		80.9	145.2		115.5	
Total	11711.9	7248.8	4137.0	2006.2	3484.9	3325.7	2311.0	3761.4	3176.6	3926.6	4130.3	3779.4	52999.8 CMSDAY
Mean	390.4	233.8	137.9	64.7	112.4	110.9	74.5	125.4	102.5	126.7	147.5	121.9	145.2 CMS
Max	471.0	344.0	267.5	171.5	196.3	221.3	150.6	214.9	180.8	177.7	187.0	159.1	471.0 CMS
Min	254.3	107.4	40.6	19.2	43.8	48.6	20.2	51.8	35.8	83.2	112.8	95.0	19.2 CMS
Runoff	1011.91	626.30	357.44	173.34	301.10	287.34	199.67	324.98	274.46	339.26	356.86	326.54	4579.18 MCM

Momentary Peak 739.80 CMS, at 106.17 M (MSL), at 8.00 Hours, on Apr 19, 1998

Runoff Yield 3.74 Liters/Second/Square KM, Momentary Peak Yield 19.037 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

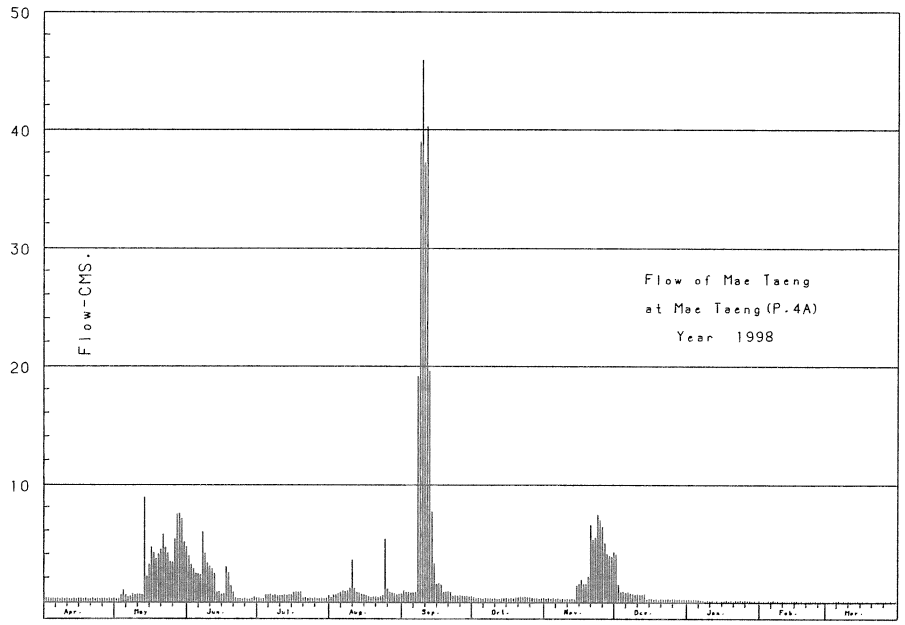
Mae Taeng River at Mae Taeng, Chiang Mai (P.4A)

Location	Lat. 19°07'15" N., Long. 98°56'51" E., on right bank at the bridge of Chiang Mai-Fang Highway, Amphoe Mae Taeng, Chiang Mai.
Drainage Area	1,902 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+334.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	In the vicinity of Amphoe Mae Taeng office.
Elevation	+338.736 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1955 to date.
Rating Operation	
Period of Rating	1955-1960, 1967 to date.
Rated by Float	-
Rated by Current Meter	1955-1960, 1967 to date.
Stability of Channel Regimes	Unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Mae Taeng weir about 7 kilometers above gage site. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	334.71	334.67	335.13	334.70	334.72	334.81	334.71	334.69	335.14	334.64	334.59	334.57	
2	334.70	334.68	335.07	334.69	334.75	334.80	334.70	334.69	334.89	334.64	334.59	334.57	
3	334.70	334.76	335.03	334.69	334.76	334.79	334.70	334.69	334.80	334.64	334.59	334.58	
4	334.69	334.82	335.00	334.76	334.77	334.79	334.70	334.69	334.80	334.65	334.59	334.58	
5	334.69	334.76	335.00	334.76	334.80	334.79	334.69	334.69	334.79	334.65	334.59	334.58	
6	334.69	334.72	334.98	334.76	334.81	334.79	334.70	334.68	334.79	334.60	334.59	334.58	
7	334.69	334.74	335.31	334.75	334.81	336.21	334.70	334.67	334.78	334.60	334.59	334.58	
8	334.69	334.77	335.15	334.75	334.81	337.18	334.70	334.67	334.76	334.60	334.59	334.58	
9	334.69	334.76	335.08	334.74	334.85	337.47	334.69	334.67	334.76	334.60	334.59	334.58	
10	334.69	334.76	335.05	334.74	335.10	337.10	334.69	334.67	334.76	334.60	334.59	334.58	
11	334.69	334.76	335.03	334.75	334.84	337.24	334.69	334.67	334.76	334.60	334.59	334.58	
12	334.69	334.76	335.00	334.75	334.80	336.23	334.69	334.67	334.76	334.60	334.59	334.57	
13	334.69	335.54	334.80	334.75	334.78	335.45	334.69	334.67	334.76	334.59	334.59	334.57	
14	334.69	334.97	334.80	334.75	334.77	335.07	334.71	334.87	334.67	334.59	334.59	334.57	
15	334.69	335.07	334.77	334.76	334.76	334.90	334.70	334.90	334.67	334.59	334.59	334.57	
16	334.69	335.20	334.77	334.80	334.74	334.90	334.70	334.94	334.67	334.60	334.58	334.57	
17	334.69	335.16	335.05	334.80	334.73	334.89	334.70	334.89	334.67	334.60	334.58	334.57	
18	334.69	335.11	335.00	334.80	334.71	334.80	334.70	334.89	334.65	334.60	334.58	334.57	
19	334.69	335.15	334.88	334.80	334.73	334.80	334.71	334.97	334.65	334.60	334.58	334.57	
20	334.69	335.18	334.79	334.71	334.72	334.80	334.72	335.36	334.66	334.60	334.57	334.57	
21	334.69	335.29	334.70	334.71	334.72	334.80	334.72	335.25	334.67	334.60	334.57	334.57	
22	334.69	335.20	334.70	334.70	334.73	334.74	334.72	335.27	334.67	334.61	334.57	334.57	
23	334.69	335.15	334.68	334.70	334.74	334.74	334.72	335.43	334.66	334.61	334.57	334.57	
24	334.69	335.09	334.68	334.70	335.26	334.74	334.72	335.39	334.66	334.61	334.57	334.57	
25	334.69	335.08	334.70	334.70	334.84	334.74	334.71	335.34	334.66	334.61	334.57	334.57	
26	334.69	335.26	334.68	334.70	334.79	334.74	334.71	335.23	334.66	334.61	334.57	334.57	
27	334.69	335.43	334.67	334.70	334.79	334.74	334.70	335.15	334.66	334.61	334.57	334.57	
28	334.69	335.44	334.69	334.70	334.77	334.73	334.69	335.13	334.65	334.59	334.57	334.57	
29	334.69	335.40	334.73	334.70	334.76	334.73	334.69	335.13	334.65	334.59		334.57	
30	334.69	335.24	334.70	334.70	334.76	334.73	334.69	335.16	334.65	334.59		334.57	
31		335.20		334.74	334.77		334.69		334.65	334.59		334.57	
Mean	334.69	335.04	334.89	334.73	334.80	335.24	334.70	334.94	334.72	334.61	334.58	334.57	
Max	334.71	335.54	335.31	334.80	335.26	337.47	334.72	335.43	335.14	334.65	334.59	334.58	337.47
Min	334.69	334.67	334.67	334.69	334.71	334.73	334.69	334.67	334.65	334.59	334.57	334.57	334.57

Annual Max Momentary Gage Height 337.56 M (MSL), at 13.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 334.00 M (MSL), River Bed 334.29 M (MSL)
Left Bank Elevation 337.74 M (MSL)
Right Bank Elevation 338.46 M (MSL), Drainage Area 1902 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.40	0.29	3.93	0.35	0.46	0.97	0.40	0.33	4.04	0.23	0.13	0.11	
2	0.35	0.31	3.27	0.33	0.63	0.90	0.35	0.33	1.53	0.23	0.13	0.11	
3	0.35	0.68	2.83	0.33	0.68	0.85	0.35	0.33	0.90	0.23	0.13	0.12	
4	0.33	1.04	2.50	0.68	0.73	0.85	0.35	0.33	0.90	0.25	0.13	0.12	
5	0.33	0.68	2.50	0.68	0.90	0.85	0.33	0.33	0.85	0.25	0.13	0.12	
6	0.33	0.46	2.32	0.68	0.97	0.85	0.35	0.31	0.85	0.15	0.13	0.12	
7	0.33	0.57	6.02	0.63	0.97	19.20	0.35	0.29	0.79	0.15	0.13	0.12	
8	0.33	0.73	4.15	0.63	0.97	38.96	0.35	0.29	0.68	0.15	0.13	0.12	
9	0.33	0.68	3.38	0.57	1.25	45.93	0.33	0.29	0.68	0.15	0.13	0.12	
10	0.33	0.68	3.05	0.57	3.60	37.20	0.33	0.29	0.68	0.15	0.13	0.12	
11	0.33	0.68	2.83	0.63	1.18	40.32	0.33	0.29	0.68	0.15	0.13	0.12	
12	0.33	0.68	2.50	0.63	0.90	19.60	0.33	0.29	0.68	0.15	0.13	0.11	
13	0.33	8.96	0.90	0.63	0.79	7.75	0.33	0.29	0.68	0.13	0.13	0.11	
14	0.33	2.23	0.90	0.63	0.73	3.27	0.40	1.39	0.29	0.13	0.13	0.11	
15	0.33	3.27	0.73	0.68	0.68	1.60	0.35	1.60	0.29	0.13	0.13	0.11	
16	0.33	4.70	0.73	0.90	0.57	1.60	0.35	1.96	0.29	0.15	0.12	0.11	
17	0.33	4.26	3.05	0.90	0.52	1.53	0.35	1.53	0.29	0.15	0.12	0.11	
18	0.33	3.71	2.50	0.90	0.40	0.90	0.35	1.53	0.25	0.15	0.12	0.11	
19	0.33	4.15	1.46	0.90	0.52	0.90	0.40	2.23	0.25	0.15	0.12	0.11	
20	0.33	4.48	0.85	0.40	0.46	0.90	0.46	6.62	0.27	0.15	0.11	0.11	
21	0.33	5.78	0.35	0.40	0.46	0.90	0.46	5.30	0.29	0.15	0.11	0.11	
22	0.33	4.70	0.35	0.35	0.52	0.57	0.46	5.54	0.29	0.17	0.11	0.11	
23	0.33	4.15	0.31	0.35	0.57	0.57	0.46	7.49	0.27	0.17	0.11	0.11	
24	0.33	3.49	0.31	0.35	5.42	0.57	0.46	6.98	0.27	0.17	0.11	0.11	
25	0.33	3.38	0.35	0.35	1.18	0.57	0.40	6.38	0.27	0.17	0.11	0.11	
26	0.33	5.42	0.31	0.35	0.85	0.57	0.40	5.06	0.27	0.17	0.11	0.11	
27	0.33	7.49	0.29	0.35	0.85	0.57	0.35	4.15	0.27	0.17	0.11	0.11	
28	0.33	7.62	0.33	0.35	0.73	0.52	0.33	3.93	0.25	0.13	0.11	0.11	
29	0.33	7.10	0.52	0.35	0.68	0.52	0.33	3.93	0.25	0.13		0.11	
30	0.33	5.18	0.35	0.35	0.68	0.52	0.33	4.26	0.25	0.13		0.11	
31		4.70		0.57	0.73		0.33		0.25	0.13		0.11	
Total	10.01	102.25	53.87	16.77	30.58	230.81	11.45	73.87	18.80	5.07	3.42	3.50	560.40 CMSDAY
Mean	0.33	3.30	1.80	0.54	0.99	7.69	0.37	2.46	0.61	0.16	0.12	0.11	1.54 CMS
Max	0.40	8.96	6.02	0.90	5.42	45.93	0.46	7.49	4.04	0.25	0.13	0.12	45.93 CMS
Min	0.33	0.29	0.29	0.33	0.40	0.52	0.33	0.29	0.25	0.13	0.11	0.11	0.11 CMS
Runoff	0.865	8.834	4.654	1.449	2.642	19.942	0.989	6.382	1.624	0.438	0.295	0.302	48.419 MCM

Momentary Peak 48.40 CMS, at 337.56 M (MSL), at 13.00 Hours, on Sep 9, 1998

Runoff Yield 0.81 Liters/Second/Square KM, Momentary Peak Yield 25.447 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

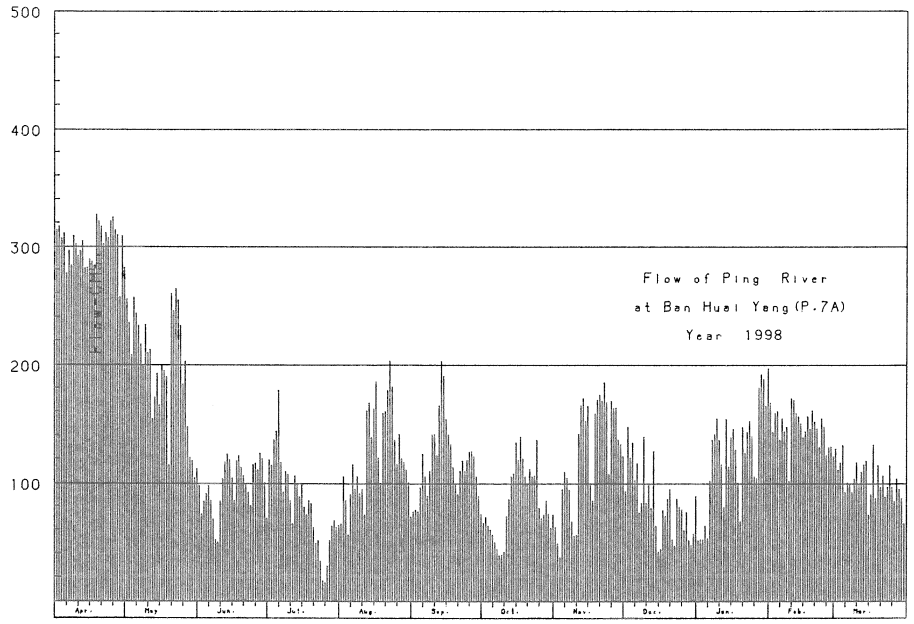
Ping River at Ban Huai Yang, Kamphaeng Phet (P.7A)

Location	Lat. 16°28'38" N., Long. 99°31'06" E., on right bank about 100 meters upstream from the bridge on highway at Ban Nakhon Chum, Amphoe Muang, Kamphaeng Phet.
Drainage Area	42,700 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+71.73 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the gage observer's house.
Elevation	+77.446 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1960 to date.
Rating Operation	
Period of Rating	1960-1961, 1967 to date.
Rated by Float	-
Rated by Current Meter	1960-1961, 1967 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow completely regulated by Phumiphol Dam reservior above gage site. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	73.38	73.14	72.42	72.53	72.25	72.30	72.25	72.23	72.39	72.17	72.76	72.58	
2	73.39	73.06	72.29	72.51	72.46	72.31	72.28	72.15	72.67	72.17	72.65	72.49	
3	73.35	72.94	72.35	72.62	72.35	72.30	72.24	72.08	72.54	72.17	72.72	72.52	
4	73.37	73.15	72.38	72.65	72.20	72.41	72.22	72.40	72.61	72.24	72.73	72.60	
5	73.23	73.09	72.42	72.81	72.38	72.56	72.20	72.48	72.44	72.18	72.62	72.39	
6	73.31	73.05	72.35	72.52	72.51	72.46	72.16	72.45	72.52	72.44	72.70	72.43	
7	73.26	72.98	72.27	72.39	72.40	72.37	72.12	72.40	72.30	72.62	72.65	72.42	
8	73.36	72.90	72.17	72.48	72.46	72.48	72.09	72.26	72.34	72.64	72.67	72.39	
9	73.33	73.05	72.16	72.47	72.38	72.64	72.09	72.19	72.63	72.70	72.44	72.45	
10	73.29	72.95	72.35	72.35	72.40	72.64	72.11	72.20	72.34	72.62	72.78	72.52	
11	73.31	72.96	72.45	72.25	72.29	72.55	72.28	72.64	72.43	72.51	72.77	72.42	
12	73.34	72.70	72.52	72.46	72.73	72.75	72.36	72.75	72.32	72.32	72.72	72.48	
13	73.25	72.78	72.56	72.42	72.76	72.92	72.46	72.78	72.57	72.70	72.71	72.51	
14	73.25	72.87	72.53	72.37	72.63	72.86	72.47	72.69	72.24	72.50	72.68	72.53	
15	73.28	72.75	72.45	72.43	72.74	72.70	72.61	72.75	72.11	72.63	72.63	72.29	
16	73.27	72.90	72.35	72.32	72.84	72.64	72.53	72.43	72.12	72.66	72.65	72.38	
17	73.26	72.88	72.53	72.29	72.54	72.60	72.63	72.35	72.31	72.58	72.71	72.60	
18	73.43	72.86	72.55	72.35	72.43	72.50	72.54	72.72	72.28	72.43	72.66	72.36	
19	73.41	72.51	72.50	72.34	72.72	72.42	72.46	72.77	72.36	72.26	72.73	72.51	
20	73.39	73.16	72.46	72.23	72.73	72.38	72.42	72.79	72.40	72.67	72.69	72.41	
21	73.33	73.10	72.42	72.15	72.81	72.48	72.49	72.77	72.17	72.56	72.66	72.46	
22	73.37	73.18	72.39	72.17	72.92	72.53	72.46	72.84	72.14	72.65	72.59	72.37	
23	73.35	73.14	72.33	72.06	72.82	72.48	72.46	72.76	72.36	72.69	72.70	72.41	
24	73.41	73.05	72.51	71.94	72.62	72.53	72.62	72.47	72.32	72.63	72.67	72.51	
25	73.42	72.83	72.52	71.93	72.51	72.57	72.32	72.77	72.31	72.46	72.55	72.41	
26	73.38	72.92	72.49	72.03	72.64	72.57	72.27	72.74	72.22	72.45	72.59	72.35	
27	73.36	72.67	72.56	72.17	72.54	72.55	72.29	72.74	72.30	72.82	72.59	72.45	
28	73.15	72.54	72.54	72.24	72.52	72.46	72.35	72.62	72.17	72.87	72.55	72.40	
29	73.36	72.53	72.43	72.26	72.49	72.37	72.29	72.60	72.14	72.85		72.36	
30	73.25	72.45	72.27	72.23	72.43	72.29	72.23	72.55	72.20	72.75		72.25	
31		72.49		72.24	72.28		72.29		72.37	72.89		72.42	
Mean	73.33	72.89	72.42	72.33	72.54	72.52	72.34	72.55	72.34	72.54	72.66	72.44	
Max	73.43	73.18	72.56	72.81	72.92	72.92	72.63	72.84	72.67	72.89	72.78	72.60	73.43
Min	73.15	72.45	72.16	71.93	72.20	72.29	72.09	72.08	72.11	72.17	72.44	72.25	71.93

Annual Max Momentary Gage Height 73.78 M (MSL), at 6.00 Hours, on Apr 18, 1998
Zero Gage at Bottom Elevation 71.73 M (MSL), River Bed 69.68 M (MSL)
Left Bank Elevation 78.07 M (MSL)
Right Bank Elevation 78.05 M (MSL), Drainage Area 42700 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	315.00	255.60	98.80	119.70	66.50	76.00	66.50	62.70	93.10	52.20	168.20	129.20	
2	317.50	236.40	74.10	115.90	106.40	77.90	72.20	49.00	148.40	52.20	144.00	112.10	
3	307.50	208.50	85.50	137.40	85.50	76.00	64.60	37.80	121.60	52.20	159.40	117.80	
4	312.50	258.00	91.20	144.00	57.00	96.90	60.80	95.00	135.20	64.60	161.60	133.00	
5	277.50	243.60	98.80	179.25	91.20	125.40	57.00	110.20	102.60	53.80	137.40	93.10	
6	297.50	234.00	85.50	117.80	115.90	106.40	50.60	104.50	117.80	102.60	155.00	100.70	
7	285.00	217.50	70.30	93.10	95.00	89.30	44.20	95.00	76.00	137.40	144.00	98.80	
8	310.00	199.50	52.20	110.20	106.40	110.20	39.40	68.40	83.60	141.80	148.40	93.10	
9	302.50	234.00	50.60	108.30	91.20	141.80	39.40	55.40	139.60	155.00	102.60	104.50	
10	292.50	210.75	85.50	85.50	95.00	141.80	42.60	57.00	83.60	137.40	172.60	117.80	
11	297.50	213.00	104.50	66.50	74.10	123.50	72.20	141.80	100.70	115.90	170.40	98.80	
12	305.00	155.00	117.80	106.40	161.60	166.00	87.40	166.00	79.80	79.80	159.40	110.20	
13	282.50	172.60	125.40	98.80	168.20	204.00	106.40	172.60	127.30	155.00	157.20	115.90	
14	282.50	192.75	119.70	89.30	139.60	190.50	108.30	152.80	64.60	114.00	150.60	119.70	
15	290.00	166.00	104.50	100.70	163.80	155.00	135.20	166.00	42.60	139.60	139.60	74.10	
16	287.50	199.50	85.50	79.80	186.00	141.80	119.70	100.70	44.20	146.20	144.00	91.20	
17	285.00	195.00	119.70	74.10	121.60	133.00	139.60	85.50	77.90	129.20	157.20	133.00	
18	327.80	190.50	123.50	85.50	100.70	114.00	121.60	159.40	72.20	100.70	146.20	87.40	
19	322.60	115.90	114.00	83.60	159.40	98.80	106.40	170.40	87.40	68.40	161.60	115.90	
20	317.50	260.40	106.40	62.70	161.60	91.20	98.80	174.80	95.00	148.40	152.80	96.90	
21	302.50	246.00	98.80	49.00	179.25	110.20	112.10	170.40	52.20	125.40	146.20	106.40	
22	312.50	265.20	93.10	52.20	204.00	119.70	106.40	186.00	47.40	144.00	131.10	89.30	
23	307.50	255.60	81.70	34.60	181.50	110.20	106.40	168.20	87.40	152.80	155.00	96.90	
24	322.60	234.00	115.90	17.50	137.40	119.70	137.40	108.30	79.80	139.60	148.40	115.90	
25	325.20	183.75	117.80	16.25	115.90	127.30	79.80	170.40	77.90	106.40	123.50	96.90	
26	315.00	204.00	112.10	29.80	141.80	127.30	70.30	163.80	60.80	104.50	131.10	85.50	
27	310.00	148.40	125.40	52.20	121.60	123.50	74.10	163.80	76.00	181.50	131.10	104.50	
28	258.00	121.60	121.60	64.60	117.80	106.40	85.50	137.40	52.20	192.75	123.50	95.00	
29	310.00	119.70	100.70	68.40	112.10	89.30	74.10	133.00	47.40	188.25		87.40	
30	282.50	104.50	70.30	62.70	100.70	74.10	62.70	123.50	57.00	166.00		66.50	
31		112.10		64.60	72.20		74.10		89.30	197.25		98.80	
Total	9061.20	6153.35	2950.90	2570.40	3830.95	3567.20	2615.80	3749.80	2620.60	3844.85	4122.10	3186.30	48273.46 CMSDAY
Mean	302.04	198.50	98.36	82.92	123.58	118.91	84.38	124.99	84.54	124.03	147.22	102.78	132.26 CMS
Max	327.80	265.20	125.40	179.25	204.00	204.00	139.60	186.00	148.40	197.25	172.60	133.00	327.80 CMS
Min	258.00	104.50	50.60	16.25	57.00	74.10	39.40	37.80	42.60	52.20	102.60	66.50	16.25 CMS
Runoff	782.888	531.649	254.958	222.083	330.994	308.206	226.005	323.983	226.420	332.195	356.150	275.296	4170.827 MCM

Momentary Peak 422.40 CMS, at 73.78 M (MSL), at 6.00 Hours, on Apr 18, 1998

Runoff Yield 3.10 Liters/Second/Square KM, Momentary Peak Yield 9.892 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

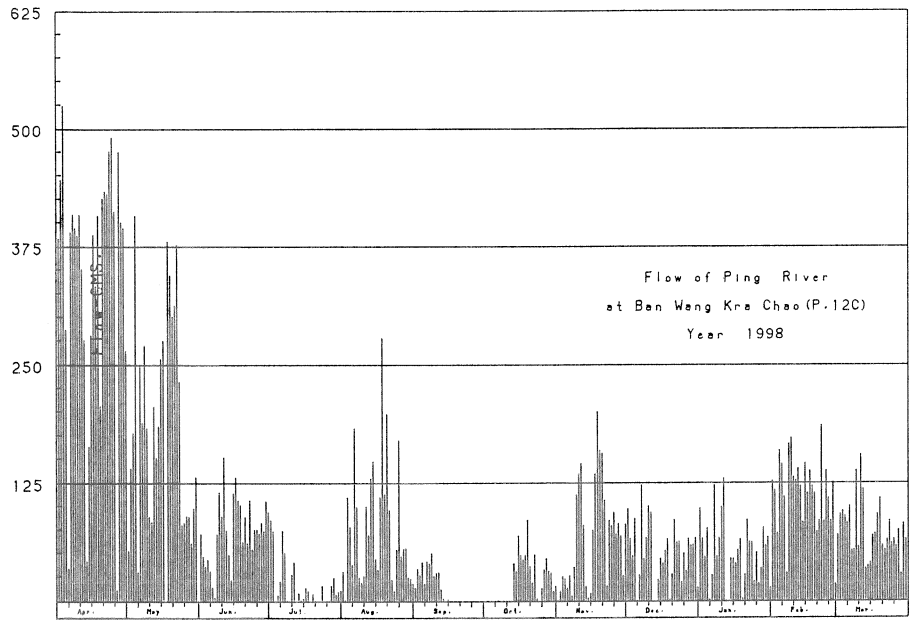
Ping River at Cham Thewi Bridge, Tak (P.12C)

Location	Lat. 17-14-27 N., Long. 99-01-30 E., on left bank about 3 kilometers from Phumiphol Dam reservoir, Amphoe Sam Ngao, Tak.
Drainage Area	26,396 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+129.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the pier of the bridge.
Elevation	+136.995 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1995 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Phumiphol Dam reservior downstream from the gage site. Stage-discharge relation defined by 30 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	131.49	130.17	130.29	130.38	130.00	129.79	129.46	129.20	130.44	130.44	130.58	130.28	
2	131.66	130.64	130.12	130.30	129.52	130.02	129.39	129.70	130.25	130.25	130.53	130.41	
3	131.86	130.80	130.04	129.40	130.50	129.96	129.48	129.94	130.12	130.12	130.29	130.43	
4	131.20	131.56	130.10	129.65	130.33	130.08	129.43	129.90	130.38	130.32	130.72	130.40	
5	130.03	130.00	130.01	129.88	130.06	129.84	129.38	129.78	129.35	129.55	130.66	130.36	
6	131.51	131.07	129.80	130.31	130.82	130.08	129.09	129.94	129.96	129.96	130.50	130.45	
7	131.56	130.84	129.60	130.15	130.45	130.07	129.08	129.62	130.56	130.56	129.99	130.17	
8	131.52	131.14	130.28	129.54	129.92	130.15	129.08	130.04	130.10	130.12	130.75	130.17	
9	131.50	130.82	130.52	129.34	129.86	129.95	129.07	130.51	130.26	130.26	130.78	130.63	
10	131.56	130.40	130.40	129.96	129.94	129.98	129.07	130.61	130.45	130.45	130.60	130.20	
11	131.40	130.36	130.69	130.08	130.45	130.00	129.07	130.66	130.42	130.59	130.58	130.70	
12	131.16	130.91	130.31	129.52	130.28	129.76	129.33	130.34	129.20	129.20	130.64	130.54	
13	130.08	130.69	130.14	129.69	130.59	129.58	130.07	129.81	129.15	129.15	130.55	130.03	
14	130.74	130.83	129.89	129.52	130.67	129.38	130.00	129.57	129.90	130.11	130.36	130.05	
15	131.18	131.09	130.52	129.58	130.10	129.56	130.27	129.68	130.10	130.10	130.66	130.07	
16	131.50	131.16	130.60	129.78	130.02	129.10	130.13	130.31	130.07	130.07	130.52	130.27	
17	131.34	129.42	130.48	129.72	130.50	129.09	130.10	130.61	130.17	130.17	130.63	130.29	
18	131.56	131.48	130.46	129.45	131.17	129.08	130.13	130.89	130.25	130.25	130.55	130.41	
19	130.91	131.38	130.23	129.66	130.51	129.07	130.38	130.72	129.56	129.58	130.52	130.49	
20	131.61	131.24	130.40	129.48	130.88	129.06	130.04	130.71	129.96	129.96	130.30	130.21	
21	131.63	131.28	130.22	129.46	130.43	129.05	129.85	130.48	130.38	130.38	130.37	130.17	
22	131.62	131.47	130.48	129.48	129.90	129.05	130.14	129.81	130.23	130.23	130.83	130.25	
23	131.74	131.01	130.18	129.82	129.71	129.04	129.55	130.37	130.23	130.23	130.37	130.37	
24	131.78	130.34	130.31	129.20	130.18	129.04	129.51	130.34	129.86	129.87	130.63	130.22	
25	131.57	130.36	130.31	129.20	130.77	129.03	129.78	130.42	130.15	130.15	130.49	130.25	
26	129.73	130.40	130.29	129.20	130.12	129.02	130.02	130.28	130.01	129.85	130.37	130.20	
27	131.74	130.40	130.36	129.81	130.18	129.01	130.11	130.35	130.25	130.03	130.57	130.31	
28	131.54	130.22	130.30	129.93	130.19	129.01	130.00	130.27	130.21	130.32	129.84	129.98	
29	131.52	130.44	130.48	129.66	129.93	129.29	129.99	129.94	130.21	130.21		130.35	
30	131.12	130.60	130.42	129.70	129.90	129.32	129.72	130.35	130.26	130.26		130.25	
31		129.30		129.74	129.84		129.80		129.78	129.78		130.11	
Mean	131.31	130.70	130.27	129.70	130.25	129.48	129.69	130.17	130.07	130.08	130.51	130.29	
Max	131.86	131.56	130.69	130.38	131.17	130.15	130.38	130.89	130.56	130.59	130.83	130.70	131.86
Min	129.73	129.30	129.60	129.20	129.52	129.01	129.07	129.20	129.15	129.15	129.84	129.98	129.01

Annual Max Momentary Gage Height 132.75 M (MSL), at 15.00 Hours, on Jun 21, 1998
Zero Gage at Bottom Elevation 129.00 M (MSL), River Bed 127.92 M (MSL)
Left Bank Elevation 133.31 M (MSL)
Right Bank Elevation 133.82 M (MSL), Drainage Area 26396 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	384.0	54.0	72.4	86.8	31.0	14.4	0.0	0.0	98.4	98.4	127.8	70.8	
2	445.8	141.2	47.2	74.0	0.8	33.7	0.0	9.5	66.0	66.0	117.3	92.1	
3	524.5	178.0	36.4	0.0	111.0	27.8	0.0	26.2	47.2	47.2	72.4	96.3	
4	288.0	408.8	44.5	6.7	78.8	41.8	0.0	23.0	86.8	77.2	159.6	90.0	
5	35.0	31.0	32.3	21.4	39.1	18.2	0.0	13.9	0.0	2.0	145.8	83.6	
6	391.0	250.3	15.0	75.6	183.2	41.8	0.0	26.2	27.8	27.8	111.0	100.5	
7	408.8	188.4	4.0	51.2	100.5	40.5	0.0	5.1	123.6	123.6	30.2	54.0	
8	394.6	270.6	70.8	1.6	24.6	51.2	0.0	36.4	44.5	47.2	166.5	54.0	
9	387.5	183.2	115.2	0.0	19.8	27.0	0.0	113.1	67.6	67.6	173.4	138.9	
10	408.8	90.0	90.0	27.8	26.2	29.4	0.0	134.3	100.5	100.5	132.0	58.0	
11	352.0	83.6	152.7	41.8	100.5	31.0	0.0	145.8	94.2	129.9	127.8	155.0	
12	276.4	206.6	75.6	0.8	70.8	12.8	0.0	80.4	0.0	0.0	141.2	119.4	
13	41.8	152.7	49.9	8.9	129.9	3.2	40.5	15.8	0.0	0.0	121.5	35.0	
14	164.2	185.8	22.2	0.8	148.1	0.0	31.0	2.8	23.0	45.9	83.6	37.8	
15	282.2	256.1	115.2	3.2	44.5	2.4	69.2	8.4	44.5	44.5	145.8	40.5	
16	387.5	276.4	132.0	13.9	33.7	0.0	48.6	75.6	40.5	40.5	115.2	69.2	
17	332.8	0.0	106.8	10.6	111.0	0.0	44.5	134.3	54.0	54.0	138.9	72.4	
18	408.8	380.4	102.6	0.0	279.3	0.0	48.6	201.4	66.0	66.0	121.5	92.1	
19	206.6	345.6	62.8	7.3	113.1	0.0	86.8	159.6	2.4	3.2	115.2	108.9	
20	426.8	300.8	90.0	0.0	198.8	0.0	36.4	157.3	27.8	27.8	74.0	59.6	
21	434.4	313.6	61.2	0.0	96.3	0.0	19.0	106.8	86.8	86.8	85.2	54.0	
22	430.6	376.9	106.8	0.0	23.0	0.0	49.9	15.8	62.8	62.8	185.8	66.0	
23	476.2	232.9	55.3	16.6	10.1	0.0	2.0	85.2	62.8	62.8	85.2	85.2	
24	491.4	80.4	75.6	0.0	55.3	0.0	0.4	80.4	19.8	20.6	138.9	61.2	
25	412.4	83.6	75.6	0.0	171.1	0.0	13.9	94.2	51.2	51.2	108.9	66.0	
26	11.1	90.0	72.4	0.0	47.2	0.0	33.7	70.8	32.3	19.0	85.2	58.0	
27	476.2	90.0	83.6	15.8	55.3	0.0	45.9	82.0	66.0	35.0	125.7	75.6	
28	401.7	61.2	74.0	25.4	56.7	0.0	31.0	69.2	59.6	77.2	18.2	29.4	
29	394.6	98.4	106.8	7.3	25.4	0.0	30.2	26.2	59.6	59.6		82.0	
30	264.8	132.0	94.2	9.5	23.0	0.0	10.6	82.0	67.6	67.6		66.0	
31		0.0		11.7	18.2		15.0		13.9	13.9		45.9	
Total	10340.5	5542.5	2243.1	518.7	2426.3	375.2	657.2	2081.7	1597.2	1625.8	3253.8	2317.4	32979.4 CMSDAY
Mean	344.7	178.8	74.8	16.7	78.3	12.5	21.2	69.4	51.5	52.4	116.2	74.8	90.4 CMS
Max	524.5	408.8	152.7	86.8	279.3	51.2	86.8	201.4	123.6	129.9	185.8	155.0	524.5 CMS
Min	11.1	0.0	4.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	18.2	29.4	0.0 CMS
Runoff	893.42	478.87	193.80	44.82	209.63	32.42	56.78	179.86	138.00	140.47	281.13	200.22	2849.42 MCM

Momentary Peak 949.50 CMS, at 132.75 M (MSL), at 15.00 Hours, on Jun 21, 1998

Runoff Yield 3.42 Liters/Second/Square KM, Momentary Peak Yield 35.971 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

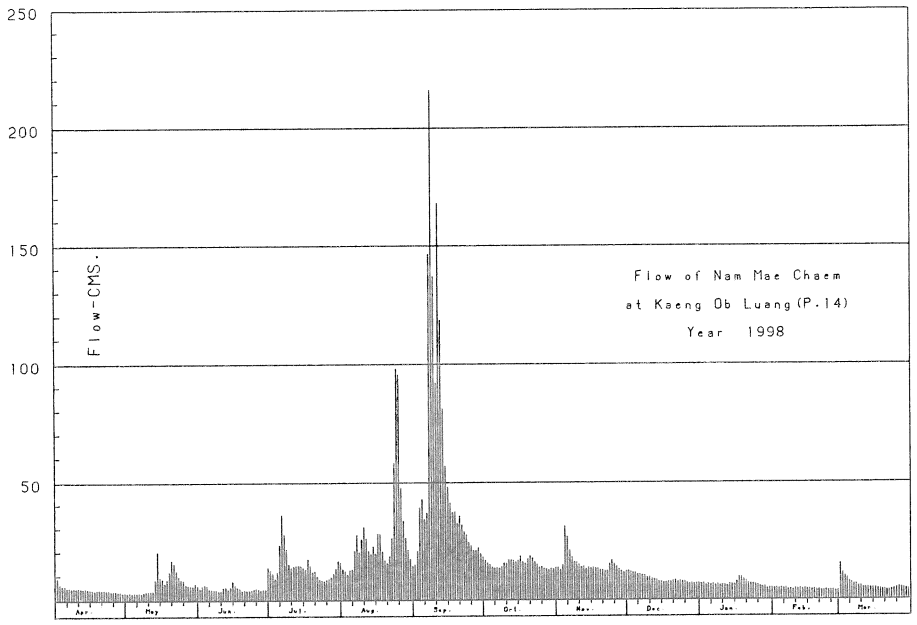
Nam Mae Chaem at Kaeng Ob Luang, Chiang Mai (P.14)

Location	Lat. 18°-13'-49" N., Long. 98°-33'-35" E., on right bank near the bridge of Hot-Mae Sariang Highway at guidepost 7+500, Amphoe Hot, Chiang Mai.
Drainage Area	3,853 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+275.80 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	About 10 meters infront of automatic gage building.
Elevation	+282.200 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1953 to date.
Rating Operation	
Period of Rating	1954-1960, 1967 to date.
Rated by Float	-
Rated by Current Meter	1954-1960, 1967 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. The concrete weir situated about 6 kilometers downstream from the gage site. Stage-discharge relation defined by 100 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	278.08	277.83	277.93	278.16	278.18	278.22	278.26	278.19	278.16	278.00	277.92	278.20	
2	277.99	277.83	277.96	278.13	278.15	278.35	278.24	278.17	278.14	278.00	277.92	278.07	
3	277.97	277.83	277.99	278.07	278.12	278.70	278.22	278.22	278.14	277.98	277.92	278.04	
4	277.96	277.83	277.96	278.14	278.16	278.76	278.20	278.56	278.13	277.99	277.92	278.00	
5	277.94	277.83	277.92	278.41	278.18	278.62	278.19	278.48	278.12	277.99	277.92	277.96	
6	277.93	277.83	277.90	278.65	278.36	278.66	278.19	278.36	278.11	277.99	277.92	277.93	
7	277.93	277.83	277.90	278.50	278.49	279.98	278.19	278.29	278.11	277.98	277.90	277.92	
8	277.93	277.84	277.89	278.37	278.34	280.57	278.20	278.25	278.10	277.98	277.90	277.91	
9	277.93	277.86	277.88	278.23	278.46	279.88	278.24	278.24	278.08	277.98	277.90	277.89	
10	277.93	277.86	277.87	278.19	278.56	279.40	278.23	278.22	278.08	277.97	277.91	277.88	
11	277.93	277.86	277.93	278.21	278.46	280.19	278.27	278.20	278.06	277.97	277.91	277.86	
12	277.92	277.88	277.95	278.21	278.35	279.69	278.27	278.20	278.06	277.97	277.91	277.86	
13	277.92	278.06	277.90	278.22	278.32	279.28	278.26	278.18	278.04	277.99	277.91	277.85	
14	277.92	278.35	277.95	278.21	278.40	278.97	278.25	278.19	278.03	277.99	277.91	277.85	
15	277.90	278.08	278.04	278.20	278.33	278.84	278.26	278.19	278.02	277.99	277.91	277.84	
16	277.89	278.06	277.97	278.17	278.50	278.73	278.30	278.19	278.02	278.02	277.90	277.84	
17	277.89	278.01	277.95	278.28	278.50	278.67	278.25	278.19	278.02	278.09	277.90	277.84	
18	277.89	278.05	277.92	278.21	278.35	278.67	278.23	278.18	278.02	278.08	277.90	277.82	
19	277.90	278.15	277.89	278.15	278.26	278.59	278.28	278.17	278.03	278.06	277.89	277.82	
20	277.90	278.26	277.88	278.15	278.24	278.64	278.30	278.16	278.03	278.03	277.88	277.81	
21	277.89	278.23	277.88	278.10	278.30	278.57	278.28	278.15	278.04	278.00	277.88	277.81	
22	277.89	278.16	277.89	278.06	278.46	278.52	278.25	278.16	278.03	278.00	277.88	277.81	
23	277.88	278.09	277.89	278.04	278.99	278.49	278.22	278.23	278.03	277.99	277.88	277.81	
24	277.87	278.06	277.91	278.04	279.47	278.43	278.20	278.26	278.03	277.99	277.88	277.83	
25	277.86	278.04	277.92	278.05	279.44	278.40	278.20	278.23	278.02	277.97	277.87	277.84	
26	277.86	277.99	277.91	278.06	278.83	278.36	278.18	278.20	278.01	277.96	277.87	277.86	
27	277.86	277.98	277.90	278.09	278.61	278.36	278.18	278.18	278.00	277.95	277.87	277.86	
28	277.85	277.96	277.90	278.13	278.47	278.38	278.17	278.15	278.00	277.94	277.86	277.84	
29	277.84	277.97	277.91	278.18	278.36	278.33	278.18	278.14	278.00	277.92		277.84	
30	277.83	278.00	278.20	278.26	278.28	278.29	278.18	278.15	278.00	277.92		277.82	
31		277.96		278.24	278.21		278.19		278.00	277.92		277.82	
Mean	277.91	277.99	277.93	278.20	278.46	278.85	278.23	278.22	278.05	277.99	277.90	277.88	
Max	278.08	278.35	278.20	278.65	279.47	280.57	278.30	278.56	278.16	278.09	277.92	278.20	280.57
Min	277.83	277.83	277.87	278.04	278.12	278.22	278.17	278.14	278.00	277.92	277.86	277.81	277.81

Annual Max Momentary Gage Height 280.65 M (MSL), at 7.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 275.80 M (MSL), River Bed 277.45 M (MSL)
Left Bank Elevation 285.00 M (MSL)
Right Bank Elevation 282.15 M (MSL), Drainage Area 3853 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	9.54	3.07	5.15	12.48	13.24	14.90	16.70	13.62	12.48	6.90	4.90	15.50	
2	6.65	3.07	5.90	11.34	12.10	20.75	15.80	12.86	11.72	6.90	4.90	11.17	
3	6.15	3.07	6.65	9.21	10.96	39.30	14.90	14.90	11.72	6.40	4.90	10.24	
4	5.90	3.07	5.90	11.72	12.48	43.14	14.00	31.24	11.34	6.65	4.90	9.00	
5	5.40	3.07	4.90	23.52	13.24	34.50	13.62	27.12	10.96	6.65	4.90	7.88	
6	5.15	3.07	4.40	36.30	21.20	36.90	13.62	21.20	10.58	6.65	4.90	7.04	
7	5.15	3.07	4.40	28.15	27.63	146.92	13.62	18.05	10.58	6.40	4.40	6.76	
8	5.15	3.26	4.21	21.65	20.30	216.00	14.00	16.25	10.20	6.40	4.40	6.48	
9	5.15	3.64	4.02	15.35	26.09	137.08	15.80	15.80	9.54	6.40	4.40	5.96	
10	5.15	3.64	3.83	13.62	31.24	92.00	15.35	14.90	9.54	6.15	4.65	5.72	
11	5.15	3.64	5.15	14.45	26.09	168.45	17.15	14.00	8.88	6.15	4.65	5.24	
12	4.90	4.02	5.65	14.45	20.75	118.96	17.15	14.00	8.88	6.15	4.65	5.24	
13	4.90	8.88	4.40	14.90	19.40	81.22	16.70	13.24	8.22	6.65	4.65	5.00	
14	4.90	20.75	5.65	14.45	23.00	57.16	16.25	13.62	7.89	6.65	4.65	5.00	
15	4.40	9.54	8.22	14.00	19.85	48.38	16.70	13.62	7.56	6.65	4.65	4.76	
16	4.21	8.88	6.15	12.86	28.15	41.22	18.50	13.62	7.56	7.56	4.40	4.76	
17	4.21	7.23	5.65	17.60	28.15	37.50	16.25	13.62	7.56	9.87	4.40	4.76	
18	4.21	8.55	4.90	14.45	20.75	37.50	15.35	13.24	7.56	9.54	4.40	4.28	
19	4.40	12.10	4.21	12.10	16.70	32.78	17.60	12.86	7.89	8.88	4.21	4.28	
20	4.40	16.70	4.02	12.10	15.80	35.70	18.50	12.48	7.89	7.89	4.02	4.04	
21	4.21	15.35	4.02	10.20	18.50	31.76	17.60	12.10	8.22	6.90	4.02	4.04	
22	4.21	12.48	4.21	8.88	26.09	29.18	16.25	12.48	7.89	6.90	4.02	4.04	
23	4.02	9.87	4.21	8.22	58.52	27.63	14.90	15.35	7.89	6.65	4.02	4.04	
24	3.83	8.88	4.65	8.22	98.37	24.54	14.00	16.70	7.89	6.65	4.02	4.52	
25	3.64	8.22	4.90	8.55	95.64	23.00	14.00	15.35	7.56	6.15	3.83	4.76	
26	3.64	6.65	4.65	8.88	47.71	21.20	13.24	14.00	7.23	5.90	3.83	5.24	
27	3.64	6.40	4.40	9.87	33.90	21.20	13.24	13.24	6.90	5.65	3.83	5.24	
28	3.45	5.90	4.40	11.34	26.61	22.10	12.86	12.10	6.90	5.40	3.64	4.76	
29	3.26	6.15	4.65	13.24	21.20	19.85	13.24	11.72	6.90	4.90		4.76	
30	3.07	6.90	14.00	16.70	17.60	18.05	13.24	12.10	6.90	4.90		4.28	
31		5.90		15.80	14.45		13.62		6.90	4.90		4.28	
Total	142.04	225.02	157.45	444.60	865.71	1678.87	473.75	455.38	269.73	206.39	123.14	183.07	5225.15 CMSDAY
Mean	4.73	7.26	5.25	14.34	27.93	55.96	15.28	15.18	8.70	6.66	4.40	5.91	14.32 CMS
Max	9.54	20.75	14.00	36.30	98.37	216.00	18.50	31.24	12.48	9.87	4.90	15.50	216.00 CMS
Min	3.07	3.07	3.83	8.22	10.96	14.90	12.86	11.72	6.90	4.90	3.64	4.04	3.07 CMS
Runoff	12.272	19.442	13.604	38.413	74.797	145.054	40.932	39.345	23.305	17.832	10.639	15.817	451.453 MCM

Momentary Peak 229.25 CMS, at 280.65 M (MSL), at 7.00 Hours, on Sep 8, 1998

Runoff Yield 3.72 Liters/Second/Square KM, Momentary Peak Yield 59.499 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

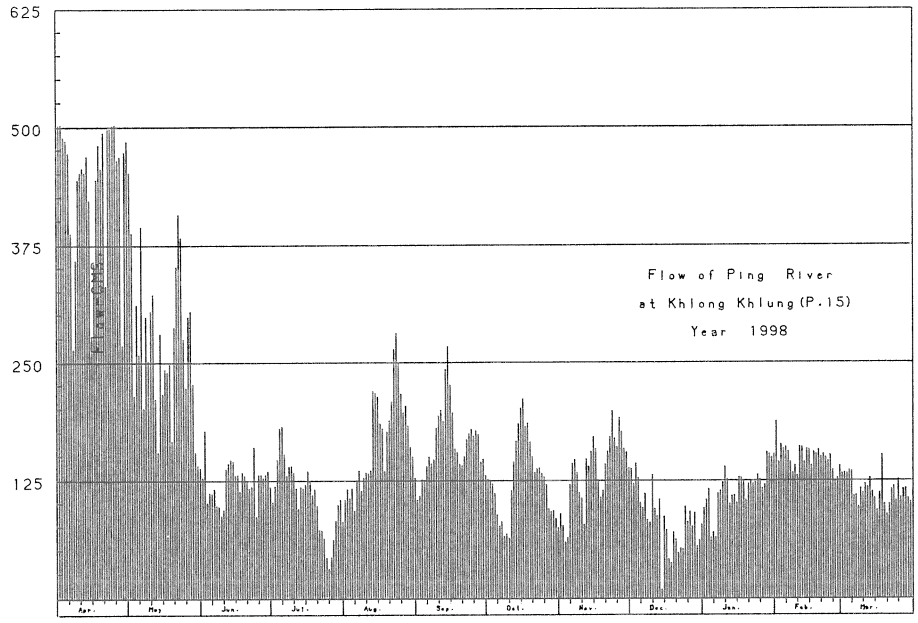
Ping River at Khlong Khlung, Kamphaeng Phet (P.15)

Location	Lat. 16-12-50 N., Long. 99-43-26 E., on right bank in front of Amphoe Khlong Khlung Office, Kamphaeng Phet.
Drainage Area	43,805 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+51.56 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 30 meters from the south of Wat Si Phirom.
Elevation	+56.617 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1964-1974, 1997 to date.
Rated by Float	-
Rated by Current Meter	1964-1974, 1997 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 24 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	54.61	54.49	53.51	53.40	53.41	53.41	53.50	53.34	53.55	53.37	53.74	53.53	
2	54.61	54.33	53.70	53.47	53.46	53.43	53.50	53.28	53.48	53.41	53.58	53.53	
3	54.58	53.83	53.40	53.59	53.42	53.50	53.48	53.20	53.57	53.46	53.65	53.53	
4	54.57	54.13	53.44	53.71	53.46	53.50	53.44	53.22	53.51	53.22	53.63	53.54	
5	54.54	53.97	53.44	53.72	53.36	53.56	53.34	53.48	53.40	53.25	53.64	53.54	
6	54.33	54.35	53.46	53.61	53.50	53.60	53.28	53.57	53.37	53.22	53.62	53.43	
7	53.99	53.79	53.38	53.52	53.54	53.57	53.30	53.59	53.44	53.44	53.58	53.43	
8	54.26	54.09	53.38	53.56	53.45	53.59	53.23	53.53	53.31	53.45	53.53	53.38	
9	54.47	53.95	53.33	53.56	53.51	53.71	53.24	53.44	53.30	53.49	53.56	53.46	
10	54.49	54.11	53.36	53.53	53.53	53.76	53.22	53.42	53.52	53.56	53.52	53.44	
11	54.50	54.16	53.55	53.46	53.53	53.78	53.45	53.29	53.37	53.50	53.64	53.48	
12	54.49	53.82	53.57	53.37	53.54	53.74	53.58	53.59	53.33	53.39	53.64	53.47	
13	54.53	53.62	53.59	53.47	53.85	53.92	53.66	53.56	53.41	53.43	53.58	53.51	
14	54.42	54.04	53.58	53.46	53.84	54.00	53.73	53.62	52.83	53.43	53.63	53.45	
15	54.03	53.84	53.52	53.48	53.83	53.87	53.79	53.68	53.33	53.40	53.63	53.42	
16	54.25	53.92	53.52	53.54	53.73	53.77	53.82	53.63	53.26	53.51	53.56	53.36	
17	54.47	53.91	53.45	53.49	53.71	53.63	53.72	53.50	53.09	53.51	53.62	53.44	
18	54.56	53.94	53.53	53.43	53.54	53.62	53.73	53.42	53.06	53.49	53.61	53.61	
19	54.50	53.66	53.52	53.46	53.70	53.57	53.66	53.45	53.25	53.41	53.63	53.39	
20	54.59	54.06	53.49	53.38	53.74	53.56	53.60	53.57	53.21	53.48	53.60	53.34	
21	54.19	54.24	53.46	53.26	53.81	53.60	53.53	53.62	53.13	53.50	53.61	53.39	
22	54.60	54.38	53.47	53.26	53.99	53.67	53.55	53.68	53.16	53.48	53.60	53.46	
23	54.60	54.32	53.64	53.22	54.04	53.69	53.55	53.78	53.15	53.49	53.58	53.47	
24	54.61	54.02	53.33	53.10	53.94	53.71	53.53	53.67	53.38	53.52	53.61	53.41	
25	54.61	53.86	53.52	53.03	53.84	53.68	53.51	53.64	53.30	53.50	53.54	53.50	
26	54.52	54.09	53.52	53.10	53.77	53.70	53.48	53.75	53.35	53.46	53.49	53.42	
27	54.53	54.11	53.51	53.21	53.80	53.69	53.37	53.70	53.28	53.48	53.51	53.46	
28	54.00	53.87	53.52	53.31	53.72	53.58	53.35	53.63	53.35	53.62	53.56	53.46	
29	54.54	53.62	53.54	53.39	53.64	53.59	53.36	53.62	53.17	53.61		53.42	
30	54.57	53.56	53.47	53.41	53.60	53.52	53.32	53.55	53.21	53.60		53.40	
31		53.55		53.30	53.51		53.27		53.29	53.61		53.45	
Mean	54.45	53.99	53.49	53.41	53.66	53.65	53.49	53.53	53.30	53.46	53.60	53.46	
Max	54.61	54.49	53.70	53.72	54.04	54.00	53.82	53.78	53.57	53.62	53.74	53.61	54.61
Min	53.99	53.55	53.33	53.03	53.36	53.41	53.22	53.20	52.83	53.22	53.49	53.34	52.83

Annual Max Momentary Gage Height 54.90 M (MSL), at 18.00 Hours, on May 11, 1998
Zero Gage at Bottom Elevation 51.56 M (MSL), River Bed 52.08 M (MSL)
Left Bank Elevation 58.37 M (MSL)
Right Bank Elevation 57.84 M (MSL), Drainage Area 43805 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	502.2	452.4	128.4	102.0	104.4	104.4	126.0	89.4	138.0	95.7	188.5	133.2	
2	502.2	387.4	177.5	118.8	116.4	109.2	126.0	76.8	121.2	104.4	145.2	133.2	
3	489.7	214.5	102.0	147.6	106.8	126.0	121.2	60.0	142.8	116.4	163.8	133.2	
4	485.5	312.2	111.6	180.3	116.4	126.0	111.6	64.2	128.4	64.2	158.3	135.6	
5	473.1	258.6	111.6	183.0	93.6	140.4	89.4	121.2	102.0	70.5	161.0	135.6	
6	387.4	395.2	116.4	152.8	126.0	150.0	76.8	142.8	95.7	64.2	155.5	109.2	
7	264.9	202.3	97.8	130.8	135.6	142.8	81.0	147.6	111.6	111.6	145.2	109.2	
8	359.7	298.6	97.8	140.4	114.0	147.6	66.3	133.2	83.1	114.0	133.2	97.8	
9	444.1	252.3	87.3	140.4	128.4	180.3	68.4	111.6	81.0	123.6	140.4	116.4	
10	452.4	305.4	93.6	133.2	133.2	194.0	64.2	106.8	130.8	140.4	130.8	111.6	
11	456.5	322.4	138.0	116.4	133.2	199.5	114.0	78.9	95.7	126.0	161.0	121.2	
12	452.4	211.3	142.8	95.7	135.6	188.5	145.2	147.6	87.3	99.9	161.0	118.8	
13	468.9	155.5	147.6	118.8	220.7	242.8	166.5	140.4	104.4	109.2	145.2	128.4	
14	423.3	281.6	145.2	116.4	217.6	268.0	185.8	155.5	10.0	109.2	158.3	114.0	
15	278.2	217.6	130.8	121.2	214.5	227.0	202.3	172.0	87.3	102.0	158.3	106.8	
16	355.7	242.8	130.8	135.6	185.8	196.8	211.3	158.3	72.6	128.4	140.4	93.6	
17	444.1	239.7	114.0	123.6	180.3	158.3	183.0	126.0	41.8	128.4	155.5	111.6	
18	481.4	249.1	133.2	109.2	135.6	155.5	185.8	106.8	36.9	123.6	152.8	152.8	
19	456.5	166.5	130.8	116.4	177.5	142.8	166.5	114.0	70.5	104.4	158.3	99.9	
20	493.8	288.4	123.6	97.8	188.5	140.4	150.0	142.8	62.1	121.2	150.0	89.4	
21	332.6	351.8	116.4	72.6	208.2	150.0	133.2	155.5	48.5	126.0	152.8	99.9	
22	498.0	407.1	118.8	72.6	264.9	169.2	138.0	172.0	53.4	121.2	150.0	116.4	
23	498.0	383.4	161.0	64.2	281.6	174.7	138.0	199.5	51.8	123.6	145.2	118.8	
24	502.2	274.8	87.3	43.5	249.1	180.3	133.2	169.2	97.8	130.8	152.8	104.4	
25	502.2	223.9	130.8	31.9	217.6	172.0	128.4	161.0	81.0	126.0	135.6	126.0	
26	464.8	298.6	130.8	43.5	196.8	177.5	121.2	191.3	91.5	116.4	123.6	106.8	
27	468.9	305.4	128.4	62.1	205.0	174.7	95.7	177.5	76.8	121.2	128.4	116.4	
28	268.0	227.0	130.8	83.1	183.0	145.2	91.5	158.3	91.5	155.5	140.4	116.4	
29	473.1	155.5	135.6	99.9	161.0	147.6	93.6	155.5	55.0	152.8		106.8	
30	485.5	140.4	118.8	104.4	150.0	130.8	85.2	138.0	62.1	150.0		102.0	
31		138.0		81.0	128.4		74.7		78.9	152.8		114.0	
Total	13165.3	8359.7	3719.5	3339.2	5209.7	4962.3	3874.0	4073.7	2591.5	3633.6	4191.5	3579.4	60699.4 CMSDAY
Mean	438.8	269.7	124.0	107.7	168.1	165.4	125.0	135.8	83.6	117.2	149.7	115.5	166.3 CMS
Max	502.2	452.4	177.5	183.0	281.6	268.0	211.3	199.5	142.8	155.5	188.5	152.8	502.2 CMS
Min	264.9	138.0	87.3	31.9	93.6	104.4	64.2	60.0	10.0	64.2	123.6	89.4	10.0 CMS
Runoff	1137.48	722.28	321.36	288.51	450.12	428.74	334.71	351.97	223.91	313.94	362.15	309.26	5244.43 MCM

Momentary Peak 620.90 CMS, at 54.90 M (MSL), at 18.00 Hours, on May 11, 1998

Runoff Yield 3.80 Liters/Second/Square KM, Momentary Peak Yield 14.174 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

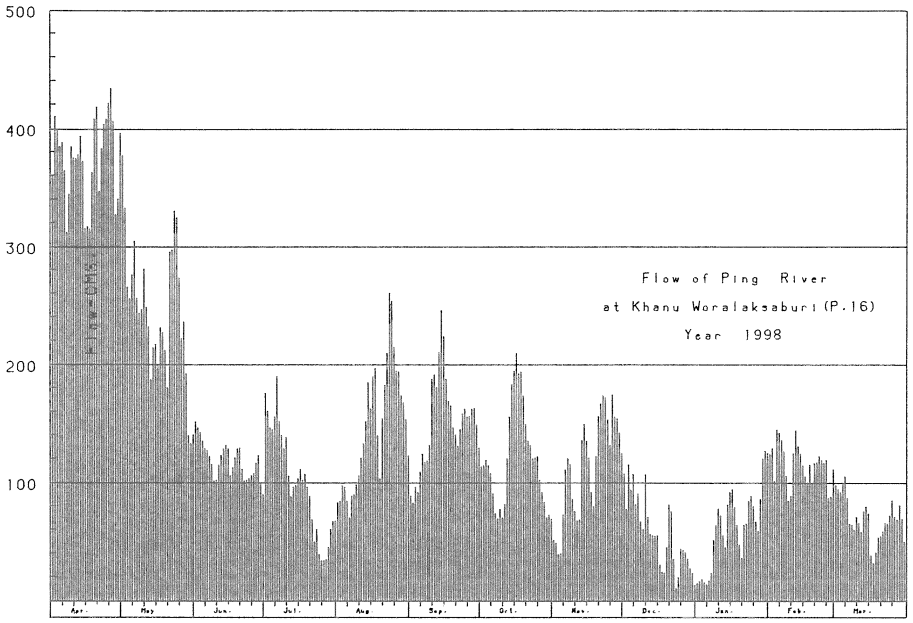
Ping River at Khanu Woralaksaburi, Kamphaeng Phet (P.16)

Location	Lat. 16°-03'-42" N., Long. 99°-51'-51" E., on right bank behind the Post Office, Amphoe Khanu Woralaksaburi, Kamphaeng Phet.
Drainage Area	45,677 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+41.78 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank near the automatic gage building.
Elevation	+46.604 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1960, 1967 - 1974, 1990 to date.
Rated by Float	-
Rated by Current Meter	1960, 1964 - 1975, 1979, 1990 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Phumiphol Dam. Stage-discharge relation defined by 23 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	42.79	42.86	41.92	42.03	41.58	41.61	41.74	41.40	41.71	41.14	41.80	41.66	
2	42.99	42.68	41.90	41.96	41.59	41.58	41.75	41.38	41.55	41.15	41.82	41.64	
3	42.94	42.41	41.88	41.90	41.66	41.65	41.77	41.32	41.75	41.17	41.68	41.63	
4	42.89	42.37	41.85	41.89	41.65	41.63	41.75	41.32	41.64	41.14	41.89	41.67	
5	42.90	42.45	41.82	41.94	41.59	41.72	41.71	41.52	41.71	41.13	41.88	41.70	
6	42.81	42.57	41.81	42.09	41.51	41.80	41.62	41.73	41.57	41.16	41.85	41.60	
7	42.60	42.37	41.79	41.92	41.61	41.76	41.53	41.78	41.62	41.21	41.81	41.48	
8	42.73	42.32	41.75	41.87	41.62	41.77	41.50	41.75	41.49	41.40	41.70	41.47	
9	42.89	42.33	41.68	41.82	41.66	41.83	41.55	41.60	41.45	41.47	41.59	41.45	
10	42.85	42.47	41.68	41.86	41.70	42.08	41.51	41.54	41.71	41.55	41.61	41.51	
11	42.85	42.34	41.75	41.70	41.78	42.10	41.57	41.49	41.51	41.52	41.80	41.48	
12	42.86	42.27	41.79	41.61	41.84	42.05	41.78	41.50	41.43	41.42	41.89	41.44	
13	42.92	42.08	41.82	41.65	41.92	42.18	41.94	41.85	41.42	41.36	41.83	41.54	
14	42.84	42.20	41.83	41.66	42.07	42.33	42.06	41.91	41.42	41.57	41.80	41.56	
15	42.61	42.21	41.82	41.69	41.97	42.24	42.11	41.85	41.42	41.63	41.75	41.53	
16	42.62	42.13	41.70	41.73	42.09	42.08	42.18	41.78	41.26	41.64	41.70	41.31	
17	42.61	42.27	41.74	41.68	42.12	42.00	42.10	41.63	41.22	41.56	41.67	41.27	
18	42.80	42.25	41.78	41.71	41.87	41.98	42.11	41.56	41.21	41.47	41.75	41.33	
19	42.98	42.19	41.82	41.65	41.69	41.90	42.02	41.79	41.36	41.37	41.67	41.41	
20	43.02	42.05	41.82	41.61	41.93	41.87	41.91	41.94	41.57	41.30	41.76	41.42	
21	42.74	42.53	41.73	41.50	42.06	41.83	41.85	41.99	41.54	41.47	41.76	41.44	
22	42.88	42.54	41.68	41.39	42.18	41.89	41.83	42.02	41.29	41.48	41.79	41.48	
23	42.96	42.67	41.68	41.45	42.39	41.95	41.78	42.01	41.10	41.59	41.77	41.48	
24	42.98	42.65	41.69	41.32	42.36	41.97	41.78	41.93	41.18	41.61	41.76	41.52	
25	43.03	42.44	41.70	41.28	42.20	41.94	41.79	41.83	41.35	41.56	41.77	41.59	
26	43.08	42.23	41.71	41.28	42.11	41.94	41.68	42.02	41.34	41.49	41.60	41.51	
27	42.97	42.29	41.76	41.29	42.11	41.97	41.63	41.94	41.33	41.44	41.61	41.50	
28	42.66	42.10	41.79	41.36	42.02	41.97	41.58	41.93	41.29	41.60	41.73	41.57	
29	42.71	41.87	41.67	41.45	41.99	41.91	41.51	41.88	41.24	41.78		41.50	
30	42.93	41.84	41.62	41.49	41.93	41.82	41.52	41.80	41.21	41.81		41.39	
31		41.87		41.49	41.79		41.50		41.12	41.80		41.38	
Mean	42.85	42.32	41.77	41.65	41.89	41.91	41.76	41.73	41.42	41.45	41.75	41.50	
Max	43.08	42.86	41.92	42.09	42.39	42.33	42.18	42.02	41.75	41.81	41.89	41.70	43.08
Min	42.60	41.84	41.62	41.28	41.51	41.58	41.50	41.32	41.10	41.13	41.59	41.27	41.10

Annual Max Momentary Gage Height 43.26 M (MSL), at 24.00 Hours, on Apr 25, 1998
Zero Gage at Bottom Elevation 41.78 M (MSL), River Bed 39.22 M (MSL)
Left Bank Elevation 48.90 M (MSL)
Right Bank Elevation 49.02 M (MSL), Drainage Area 45677 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	360.5	378.3	152.0	176.7	83.5	88.9	113.6	52.0	107.9	15.4	125.0	98.4	
2	411.5	333.0	147.5	161.0	85.3	83.5	115.5	49.0	78.3	16.5	129.5	94.6	
3	398.7	266.5	143.0	147.5	98.4	96.5	119.3	40.0	115.5	18.7	102.2	92.7	
4	385.9	256.6	136.2	145.2	96.5	92.7	115.5	40.0	94.6	15.4	145.2	100.3	
5	388.5	276.3	129.5	156.5	85.3	109.8	107.9	73.0	107.9	14.3	143.0	106.0	
6	365.6	305.7	127.3	190.2	71.2	125.0	90.8	111.7	81.8	17.6	136.2	87.0	
7	313.0	256.6	123.1	152.0	88.9	117.4	74.7	121.2	90.8	23.5	127.3	66.0	
8	345.5	244.4	115.5	140.7	90.8	119.3	69.5	115.5	67.8	52.0	106.0	64.3	
9	385.9	246.9	102.2	129.5	98.4	131.8	78.3	87.0	60.7	64.3	85.3	60.7	
10	375.7	281.2	102.2	138.5	106.0	188.0	71.2	76.5	107.9	78.3	88.9	71.2	
11	375.7	249.3	115.5	106.0	121.2	192.5	81.8	67.8	71.2	73.0	125.0	66.0	
12	378.3	232.2	123.1	88.9	134.0	181.2	121.2	69.5	57.2	55.5	145.2	59.0	
13	393.6	188.0	129.5	96.5	152.0	210.5	156.5	136.2	55.5	46.0	131.8	76.5	
14	373.2	215.0	131.8	98.4	185.7	246.9	183.5	149.8	55.5	81.8	125.0	80.0	
15	315.5	217.4	129.5	104.1	163.3	224.8	194.8	136.2	55.5	92.7	115.5	74.7	
16	318.0	199.3	106.0	111.7	190.2	188.0	210.5	121.2	31.0	94.6	106.0	38.5	
17	315.5	232.2	113.6	102.2	197.0	170.0	192.5	92.7	25.0	80.0	100.3	32.5	
18	363.0	227.2	121.2	107.9	140.7	165.5	194.8	80.0	23.5	64.3	115.5	41.5	
19	408.9	212.7	129.5	96.5	104.1	147.5	174.5	123.1	46.0	47.5	100.3	53.7	
20	419.2	181.2	129.5	88.9	154.3	140.7	149.8	156.5	81.8	37.0	117.4	55.5	
21	348.0	295.8	111.7	69.5	183.5	131.8	136.2	167.8	76.5	64.3	117.4	59.0	
22	383.4	298.3	102.2	50.5	210.5	145.2	131.8	174.5	35.5	66.0	123.1	66.0	
23	403.8	330.5	102.2	60.7	261.5	158.8	121.2	172.2	11.0	85.3	119.3	66.0	
24	408.9	325.5	104.1	40.0	254.2	163.3	121.2	154.3	19.8	88.9	117.4	73.0	
25	421.8	273.8	106.0	34.0	215.0	156.5	123.1	131.8	44.5	80.0	119.3	85.3	
26	434.8	222.3	107.9	34.0	194.8	156.5	102.2	174.5	43.0	67.8	87.0	71.2	
27	406.4	237.1	117.4	35.5	194.8	163.3	92.7	156.5	41.5	59.0	88.9	69.5	
28	328.0	192.5	123.1	46.0	174.5	163.3	83.5	154.3	35.5	87.0	111.7	81.8	
29	340.5	140.7	100.3	60.7	167.8	149.8	71.2	143.0	28.0	121.2		69.5	
30	396.2	134.0	90.8	67.8	154.3	129.5	73.0	125.0	23.5	127.3		50.5	
31		140.7		67.8	123.1		69.5		13.2	125.0		49.0	
Total	11263.5	7591.2	3573.4	3105.4	4580.8	4538.5	3741.8	3452.8	1787.4	1960.2	3254.7	2159.9	51009.6 CMSDAY
Mean	375.5	244.9	119.1	100.2	147.8	151.3	120.7	115.1	57.7	63.2	116.2	69.7	139.8 CMS
Max	434.8	378.3	152.0	190.2	261.5	246.9	210.5	174.5	115.5	127.3	145.2	106.0	434.8 CMS
Min	313.0	134.0	90.8	34.0	71.2	83.5	69.5	40.0	11.0	14.3	85.3	32.5	11.0 CMS
Runoff	973.17	655.88	308.74	268.31	395.78	392.13	323.29	298.32	154.43	169.36	281.21	186.62	4407.23 MCM

Momentary Peak 483.10 CMS, at 43.26 M (MSL), at 24.00 Hours, on Apr 25, 1998
Runoff Yield 3.06 Liters/Second/Square KM, Momentary Peak Yield 10.576 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

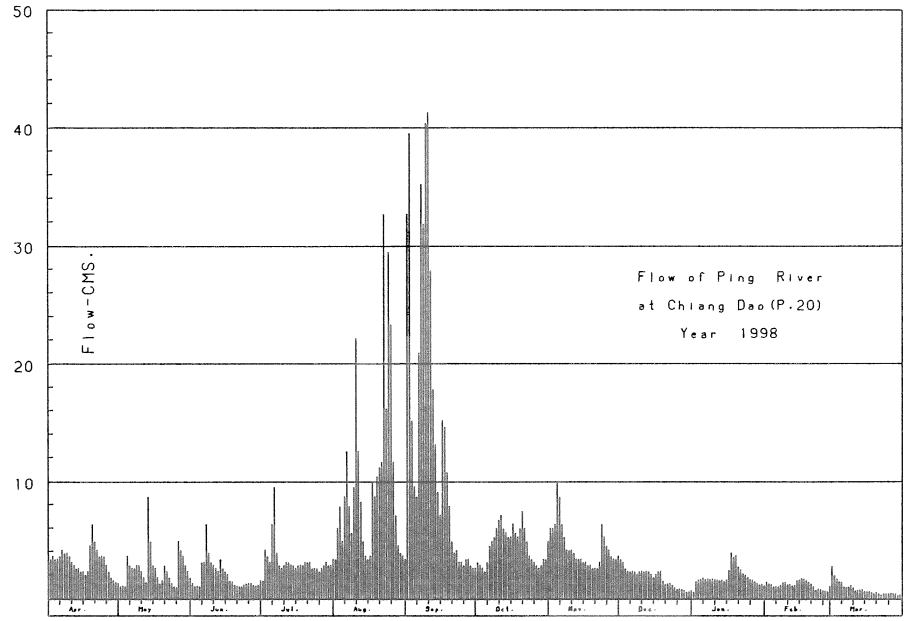
Ping River at Chiang Dao, Chiang Mai (P.20)

Location	Lat. 19-21-09 N., Long. 98-58-25 E., on right bank near Wat Inthra Ram, Amphoe Chiang Dao, Chiang Mai.
Drainage Area	1,355 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	About 2 meters from automatic gage building.
Elevation	+4.133 m. (A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1979 - 1982, 1989 to date.
Rated by Float	-
Rated by Current Meter	1979 - 1982, 1989 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	NO overbank flow.
General Description	Records good. Flow effected by the local weir about 300 meters downstream from the gage site. Stage-discharge relation defined by 37 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.37	0.26	0.28	0.30	0.37	0.92	0.36	0.45	0.37	0.34	0.45	0.56	
2	0.38	0.26	0.26	0.40	0.45	1.00	0.35	0.45	0.36	0.46	0.44	0.51	
3	0.37	0.26	0.26	0.38	0.50	0.66	0.34	0.46	0.34	0.47	0.43	0.48	
4	0.37	0.38	0.26	0.36	0.42	0.54	0.33	0.55	0.33	0.48	0.41	0.46	
5	0.38	0.35	0.36	0.46	0.52	0.52	0.36	0.52	0.33	0.49	0.41	0.45	
6	0.40	0.34	0.36	0.54	0.61	0.76	0.41	0.46	0.33	0.48	0.41	0.41	
7	0.39	0.34	0.46	0.39	0.50	0.95	0.42	0.43	0.33	0.48	0.42	0.40	
8	0.39	0.35	0.39	0.35	0.44	0.91	0.43	0.40	0.32	0.48	0.45	0.41	
9	0.38	0.35	0.36	0.34	0.54	1.01	0.45	0.40	0.33	0.48	0.45	0.42	
10	0.36	0.33	0.35	0.35	0.78	1.02	0.47	0.40	0.33	0.48	0.43	0.40	
11	0.35	0.31	0.34	0.36	0.61	0.86	0.48	0.39	0.33	0.47	0.43	0.36	
12	0.34	0.29	0.33	0.36	0.51	0.71	0.45	0.37	0.33	0.47	0.42	0.36	
13	0.34	0.52	0.37	0.35	0.42	0.62	0.44	0.37	0.33	0.47	0.42	0.37	
14	0.33	0.42	0.34	0.35	0.38	0.53	0.43	0.37	0.32	0.46	0.47	0.37	
15	0.33	0.35	0.33	0.34	0.37	0.48	0.43	0.36	0.31	0.47	0.47	0.35	
16	0.32	0.34	0.32	0.35	0.38	0.66	0.46	0.36	0.32	0.54	0.49	0.34	
17	0.33	0.31	0.30	0.35	0.55	0.65	0.44	0.35	0.33	0.64	0.48	0.35	
18	0.41	0.28	0.29	0.35	0.52	0.57	0.43	0.35	0.33	0.61	0.47	0.33	
19	0.46	0.30	0.27	0.36	0.56	0.50	0.45	0.34	0.30	0.62	0.45	0.32	
20	0.42	0.35	0.26	0.36	0.58	0.42	0.49	0.34	0.27	0.56	0.44	0.33	
21	0.40	0.33	0.26	0.36	0.59	0.39	0.45	0.34	0.28	0.54	0.41	0.32	
22	0.38	0.31	0.26	0.34	0.92	0.40	0.42	0.36	0.28	0.52	0.37	0.28	
23	0.38	0.28	0.27	0.34	0.68	0.36	0.38	0.46	0.27	0.51	0.38	0.32	
24	0.38	0.26	0.28	0.34	0.88	0.36	0.37	0.43	0.25	0.50	0.38	0.31	
25	0.35	0.25	0.28	0.33	0.80	0.35	0.36	0.41	0.24	0.48	0.36	0.32	
26	0.33	0.42	0.28	0.34	0.59	0.37	0.35	0.40	0.24	0.47	0.35	0.32	
27	0.31	0.40	0.27	0.35	0.48	0.37	0.34	0.38	0.24	0.46	0.35	0.32	
28	0.30	0.38	0.26	0.36	0.41	0.35	0.35	0.37	0.23	0.44	0.41	0.31	
29	0.29	0.35	0.27	0.35	0.39	0.34	0.37	0.37	0.22	0.43		0.29	
30	0.28	0.33	0.30	0.35	0.38	0.34	0.37	0.38	0.22	0.43		0.29	
31		0.31		0.37	0.37		0.42		0.23	0.42		0.29	
Mean	0.36	0.33	0.31	0.36	0.53	0.60	0.41	0.40	0.30	0.49	0.42	0.37	
Max	0.46	0.52	0.46	0.54	0.92	1.02	0.49	0.55	0.37	0.64	0.49	0.56	1.02
Min	0.28	0.25	0.26	0.30	0.37	0.34	0.33	0.34	0.22	0.34	0.35	0.28	0.22

Annual Max Momentary Gage Height 1.41 M (A.D), at 22.00 Hours, on Sep 1, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.77 M (A.D)
Left Bank Elevation 3.88 M (A.D)
Right Bank Elevation 3.43 M (A.D), Drainage Area 1355 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.42	1.12	1.36	1.60	3.42	32.72	3.16	6.05	3.42	0.64	1.45	2.80	
2	3.68	1.12	1.12	4.20	6.05	39.60	2.90	6.05	3.16	1.54	1.36	2.05	
3	3.42	1.12	1.12	3.68	7.90	15.22	2.64	6.42	2.64	1.63	1.27	1.72	
4	3.42	3.68	1.12	3.16	4.94	9.58	2.38	10.00	2.38	1.72	1.09	1.54	
5	3.68	2.90	3.16	6.42	8.74	8.74	3.16	8.74	2.38	1.81	1.09	1.45	
6	4.20	2.64	3.16	9.58	12.62	20.96	4.57	6.42	2.38	1.72	1.09	1.09	
7	3.94	2.64	6.42	3.94	7.90	35.30	4.94	5.31	2.38	1.72	1.18	1.00	
8	3.94	2.90	3.94	2.90	5.68	31.86	5.31	4.20	2.12	1.72	1.45	1.09	
9	3.68	2.90	3.16	2.64	9.58	40.46	6.05	4.20	2.38	1.72	1.45	1.18	
10	3.16	2.38	2.90	2.90	22.18	41.32	6.79	4.20	2.38	1.72	1.27	1.00	
11	2.90	1.86	2.64	3.16	12.62	27.96	7.16	3.94	2.38	1.63	1.27	0.76	
12	2.64	1.48	2.38	3.16	8.32	17.91	6.05	3.42	2.38	1.63	1.18	0.76	
13	2.64	8.74	3.42	2.90	4.94	13.14	5.68	3.42	2.38	1.63	1.18	0.82	
14	2.38	4.94	2.64	2.90	3.68	9.16	5.31	3.42	2.12	1.54	1.63	0.82	
15	2.38	2.90	2.38	2.64	3.42	7.16	5.31	3.16	1.86	1.63	1.63	0.70	
16	2.12	2.64	2.12	2.90	3.68	15.22	6.42	3.16	2.12	2.50	1.81	0.64	
17	2.38	1.86	1.60	2.90	10.00	14.70	5.68	2.90	2.38	4.00	1.72	0.70	
18	4.57	1.36	1.48	2.90	8.74	10.84	5.31	2.90	2.38	3.55	1.63	0.58	
19	6.42	1.60	1.24	3.16	10.42	7.90	6.05	2.64	1.60	3.70	1.45	0.52	
20	4.94	2.90	1.12	3.16	11.26	4.94	7.53	2.64	1.24	2.80	1.36	0.58	
21	4.20	2.38	1.12	3.16	11.68	3.94	6.05	2.64	1.36	2.50	1.09	0.52	
22	3.68	1.86	1.12	2.64	32.72	4.20	4.94	3.16	1.36	2.20	0.82	0.36	
23	3.68	1.36	1.24	2.64	16.26	3.16	3.68	6.42	1.24	2.05	0.88	0.52	
24	3.68	1.12	1.36	2.64	29.48	3.16	3.42	5.31	1.00	1.90	0.88	0.46	
25	2.90	1.00	1.36	2.38	23.40	2.90	3.16	4.57	0.88	1.72	0.76	0.52	
26	2.38	4.94	1.36	2.64	11.68	3.42	2.90	4.20	0.88	1.63	0.70	0.52	
27	1.86	4.20	1.24	2.90	7.16	3.42	2.64	3.68	0.88	1.54	0.70	0.52	
28	1.60	3.68	1.12	3.16	4.57	2.90	2.90	3.42	0.76	1.36	1.09	0.46	
29	1.48	2.90	1.24	2.90	3.94	2.64	3.42	3.42	0.64	1.27		0.38	
30	1.36	2.38	1.60	2.90	3.68	2.64	3.42	3.68	0.64	1.27		0.38	
31		1.86		3.42	3.42		4.94		0.76	1.18		0.38	
Total	96.73	81.36	61.24	102.18	314.08	437.07	143.87	133.69	56.86	59.17	34.48	26.82	1547.55 CMSDAY
Mean	3.22	2.62	2.04	3.30	10.13	14.57	4.64	4.46	1.83	1.91	1.23	0.87	4.24 CMS
Max	6.42	8.74	6.42	9.58	32.72	41.32	7.53	10.00	3.42	4.00	1.81	2.80	41.32 CMS
Min	1.36	1.00	1.12	1.60	3.42	2.64	2.38	2.64	0.64	0.64	0.70	0.36	0.36 CMS
Runoff	8.357	7.030	5.291	8.828	27.137	37.763	12.430	11.551	4.913	5.112	2.979	2.317	133.708 MCM

Momentary Peak 74.90 CMS, at 1.41 M (A.D), at 22.00 Hours, on Sep 1, 1998

Runoff Yield 3.13 Liters/Second/Square KM, Momentary Peak Yield 55.277 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

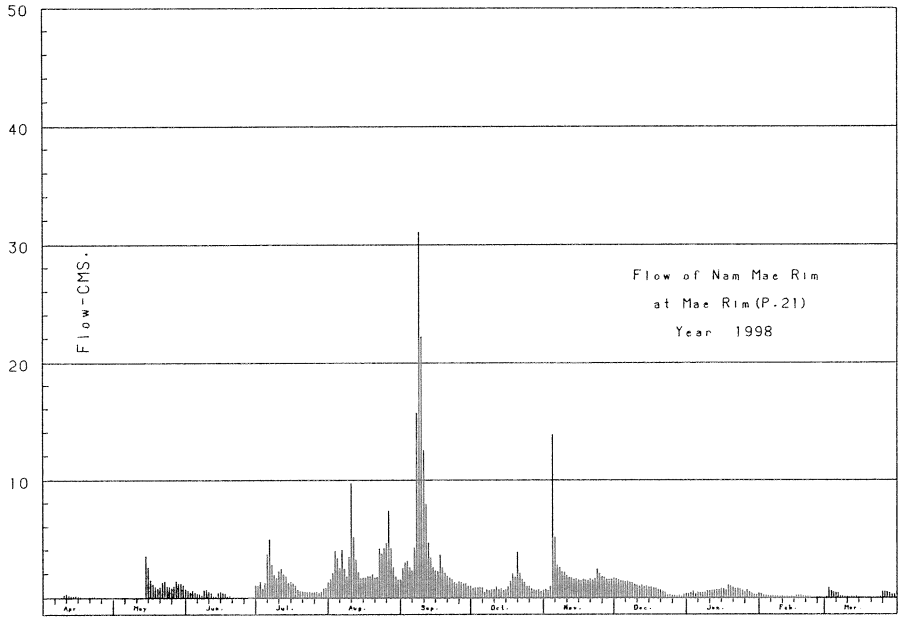
Nam Mae Rim at Mae Rim, Chiang Mai (P.21)

Location	Lat. 18°-55'-29" N., Long. 98°-56'-34" E., on right bank about 100 meters downstream from the bridge of Chiang Mai-Fang Highway, Amphoe Mae Rim, Chiang Mai.
Drainage Area	515 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+319.70 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	B.M.1 in the vicinity of gage observer's house. B.M.2 on left bank at the abutment of the bridge.
Elevation	B.M.1 = +323.982 m.(M.S.L.), B.M.2 = +323.562 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1954-1960, 1977 to date.
Rated by Float	-
Rated by Current Meter	1954-1960, 1977 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 41 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	320.10	320.05	320.28	320.39	320.50	320.65	320.35	320.32	320.52	320.21	320.22	320.14	
2	320.08	320.06	320.25	320.46	320.60	320.72	320.35	320.28	320.50	320.24	320.17	320.35	
3	320.08	320.05	320.28	320.34	320.82	320.73	320.37	320.39	320.49	320.27	320.17	320.29	
4	320.09	320.06	320.24	320.44	320.76	320.67	320.36	321.64	320.48	320.21	320.15	320.25	
5	320.09	320.04	320.21	320.79	320.65	320.62	320.36	320.95	320.47	320.24	320.16	320.24	
6	320.10	320.03	320.19	320.93	320.83	320.85	320.25	320.69	320.47	320.24	320.15	320.23	
7	320.09	320.02	320.17	320.70	320.65	321.76	320.30	320.67	320.46	320.23	320.15	320.16	
8	320.12	320.01	320.30	320.57	320.54	322.56	320.29	320.61	320.45	320.25	320.14	320.14	
9	320.18	320.02	320.30	320.52	320.77	322.12	320.30	320.61	320.43	320.28	320.15	320.14	
10	320.20	320.01	320.26	320.62	321.34	321.55	320.33	320.56	320.41	320.29	320.15	320.14	
11	320.17	320.00	320.21	320.64	320.95	321.20	320.37	320.54	320.40	320.28	320.14	320.13	
12	320.14	320.01	320.14	320.58	320.74	320.90	320.32	320.52	320.41	320.30	320.13	320.13	
13	320.15	320.09	320.12	320.54	320.61	320.76	320.33	320.51	320.39	320.30	320.13	320.14	
14	320.14	320.78	320.23	320.45	320.51	320.67	320.30	320.51	320.39	320.31	320.13	320.13	
15	320.15	320.66	320.25	320.46	320.53	320.62	320.31	320.50	320.38	320.33	320.13	320.13	
16	320.12	320.49	320.24	320.44	320.52	320.62	320.37	320.48	320.37	320.32	320.16	320.12	
17	320.12	320.43	320.21	320.40	320.55	320.79	320.48	320.51	320.36	320.30	320.17	320.11	
18	320.11	320.37	320.14	320.31	320.54	320.66	320.58	320.49	320.34	320.42	320.17	320.10	
19	320.10	320.34	320.15	320.26	320.58	320.60	320.54	320.49	320.32	320.39	320.15	320.10	
20	320.11	320.36	320.10	320.27	320.52	320.55	320.81	320.51	320.30	320.37	320.15	320.09	
21	320.13	320.45	320.09	320.25	320.54	320.53	320.59	320.50	320.27	320.33	320.14	320.10	
22	320.12	320.48	320.09	320.25	320.84	320.50	320.51	320.51	320.24	320.35	320.13	320.10	
23	320.11	320.39	320.09	320.25	320.80	320.46	320.45	320.65	320.18	320.32	320.12	320.09	
24	320.11	320.37	320.08	320.24	320.85	320.43	320.40	320.59	320.18	320.30	320.13	320.12	
25	320.11	320.35	320.08	320.25	320.89	320.47	320.38	320.55	320.17	320.26	320.12	320.27	
26	320.10	320.38	320.09	320.25	321.15	320.45	320.33	320.53	320.15	320.29	320.11	320.25	
27	320.10	320.48	320.09	320.23	320.85	320.44	320.31	320.51	320.15	320.27	320.11	320.26	
28	320.10	320.43	320.09	320.25	320.66	320.43	320.30	320.50	320.16	320.21	320.10	320.22	
29	320.08	320.44	320.11	320.34	320.54	320.40	320.30	320.51	320.15	320.20		320.20	
30	320.06	320.40	320.41	320.34	320.49	320.39	320.27	320.52	320.19	320.17		320.19	
31		320.33		320.46	320.50		320.29		320.22	320.22		320.19	
Mean	320.12	320.27	320.18	320.43	320.70	320.80	320.38	320.57	320.34	320.28	320.14	320.17	
Max	320.20	320.78	320.41	320.93	321.34	322.56	320.81	321.64	320.52	320.42	320.22	320.35	322.56
Min	320.06	320.00	320.08	320.23	320.49	320.39	320.25	320.28	320.15	320.17	320.10	320.09	320.00

Annual Max Momentary Gage Height 322.64 M (MSL), at 11.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 319.70 M (MSL), River Bed 320.00 M (MSL)
Left Bank Elevation 324.25 M (MSL)
Right Bank Elevation 324.69 M (MSL), Drainage Area 515 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.06	0.04	0.63	1.02	1.58	2.51	0.88	0.77	1.70	0.38	0.42	0.18	
2	0.05	0.04	0.52	1.37	2.16	3.05	0.88	0.63	1.58	0.49	0.26	0.88	
3	0.05	0.04	0.63	0.84	3.99	3.14	0.94	1.02	1.53	0.59	0.26	0.67	
4	0.06	0.04	0.49	1.26	3.42	2.65	0.91	13.90	1.47	0.38	0.20	0.52	
5	0.06	0.04	0.38	3.71	2.51	2.30	0.91	5.23	1.42	0.49	0.23	0.49	
6	0.06	0.03	0.32	5.03	4.08	4.28	0.52	2.79	1.42	0.49	0.20	0.46	
7	0.06	0.03	0.26	2.86	2.51	15.76	0.70	2.65	1.37	0.46	0.20	0.23	
8	0.12	0.02	0.70	1.99	1.81	31.16	0.67	2.23	1.32	0.52	0.18	0.18	
9	0.29	0.03	0.70	1.70	3.52	22.18	0.70	2.23	1.21	0.63	0.20	0.18	
10	0.35	0.02	0.56	2.30	9.72	12.55	0.80	1.93	1.10	0.67	0.20	0.18	
11	0.26	0.02	0.38	2.44	5.23	8.00	0.94	1.81	1.05	0.63	0.18	0.15	
12	0.18	0.02	0.18	2.04	3.24	4.75	0.77	1.70	1.10	0.70	0.15	0.15	
13	0.20	0.06	0.12	1.81	2.23	3.42	0.80	1.64	1.02	0.70	0.15	0.18	
14	0.18	3.61	0.46	1.32	1.64	2.65	0.70	1.64	1.02	0.73	0.15	0.15	
15	0.20	2.58	0.52	1.37	1.75	2.30	0.73	1.58	0.98	0.80	0.15	0.15	
16	0.12	1.53	0.49	1.26	1.70	2.30	0.94	1.47	0.94	0.77	0.23	0.12	
17	0.12	1.21	0.38	1.05	1.87	3.71	1.47	1.64	0.91	0.70	0.26	0.09	
18	0.09	0.94	0.18	0.73	1.81	2.58	2.04	1.53	0.84	1.16	0.26	0.06	
19	0.06	0.84	0.20	0.56	2.04	2.16	1.81	1.53	0.77	1.02	0.20	0.06	
20	0.09	0.91	0.06	0.59	1.70	1.87	3.90	1.64	0.70	0.94	0.20	0.06	
21	0.15	1.32	0.06	0.52	1.81	1.75	2.10	1.58	0.59	0.80	0.18	0.06	
22	0.12	1.47	0.06	0.52	4.18	1.58	1.64	1.64	0.49	0.88	0.15	0.06	
23	0.09	1.02	0.06	0.52	3.80	1.37	1.32	2.51	0.29	0.77	0.12	0.06	
24	0.09	0.94	0.05	0.49	4.28	1.21	1.05	2.10	0.29	0.70	0.15	0.12	
25	0.09	0.88	0.05	0.52	4.66	1.42	0.98	1.87	0.26	0.56	0.12	0.59	
26	0.06	0.98	0.06	0.52	7.40	1.32	0.80	1.75	0.20	0.67	0.09	0.52	
27	0.06	1.47	0.06	0.46	4.28	1.26	0.73	1.64	0.20	0.59	0.09	0.56	
28	0.06	1.21	0.06	0.52	2.58	1.21	0.70	1.58	0.23	0.38	0.06	0.42	
29	0.05	1.26	0.09	0.84	1.81	1.05	0.70	1.64	0.20	0.35		0.35	
30	0.04	1.05	1.10	0.84	1.53	1.02	0.59	1.70	0.32	0.26		0.32	
31		0.80		1.37	1.58		0.67		0.42	0.42		0.32	
Total	3.47	24.45	9.81	42.37	96.42	146.51	33.29	67.57	26.94	19.63	5.24	8.52	484.22 CMSDAY
Mean	0.12	0.79	0.33	1.37	3.11	4.88	1.07	2.25	0.87	0.63	0.19	0.27	1.33 CMS
Max	0.35	3.61	1.10	5.03	9.72	31.16	3.90	13.90	1.70	1.16	0.42	0.88	31.16 CMS
Min	0.04	0.02	0.05	0.46	1.53	1.02	0.52	0.63	0.20	0.26	0.06	0.06	0.02 CMS
Runoff	0.300	2.112	0.848	3.661	8.331	12.658	2.876	5.838	2.328	1.696	0.453	0.736	41.837 MCM

Momentary Peak 32.84 CMS, at 322.64 M (MSL), at 11.00 Hours, on Sep 8, 1998

Runoff Yield 2.58 Liters/Second/Square KM, Momentary Peak Yield 63.767 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

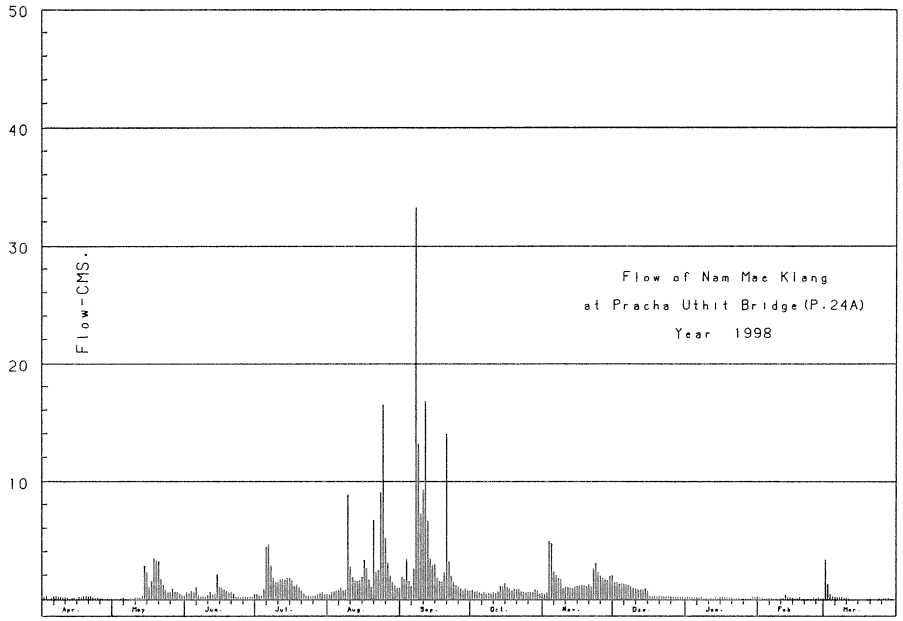
Nam Mae Klang at Pracha Uthit Bridge, Chaiang Mai (P.24A)

Location	Lat. 18°-25'-01" N., Long. 98°-40'-29" E., on left bank at Pracha Uthit Bridge, Amphoe Chom Thong, Chiang Mai.
Drainage Area	460 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+275.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	B.M.1 near the gage observer's house, B.M.2 on left bank at abutment.
Elevation	B.M.1 =+277.954 m. (M.S.L.), B.M.2 =+280.309 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1973 to date.
Rating Operation	
Period of Rating	1973 to date.
Rated by Float	-
Rated by Current Meter	1973 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	275.57	275.51	275.63	275.61	275.61	275.76	275.65	275.61	275.72	275.56	275.55	275.88	
2	275.58	275.52	275.62	275.60	275.63	275.74	275.64	275.63	275.72	275.56	275.53	275.71	
3	275.52	275.53	275.64	275.58	275.64	275.88	275.64	275.99	275.71	275.56	275.53	275.61	
4	275.53	275.51	275.63	275.66	275.64	275.73	275.63	275.98	275.71	275.55	275.53	275.58	
5	275.58	275.53	275.68	275.96	275.65	275.69	275.62	275.80	275.71	275.55	275.53	275.57	
6	275.58	275.50	275.59	275.97	275.67	275.82	275.63	275.77	275.70	275.55	275.51	275.54	
7	275.57	275.49	275.58	275.84	275.65	277.20	275.62	275.75	275.70	275.55	275.50	275.56	
8	275.55	275.53	275.57	275.75	275.65	276.42	275.62	275.74	275.68	275.53	275.51	275.56	
9	275.55	275.53	275.57	275.72	276.21	276.12	275.62	275.67	275.67	275.52	275.51	275.55	
10	275.55	275.54	275.60	275.72	275.83	276.23	275.63	275.68	275.66	275.52	275.52	275.54	
11	275.55	275.55	275.63	275.74	275.76	276.58	275.62	275.68	275.66	275.53	275.52	275.53	
12	275.52	275.55	275.61	275.74	275.73	276.09	275.64	275.67	275.66	275.54	275.61	275.51	
13	275.53	275.59	275.61	275.74	275.73	275.89	275.69	275.67	275.65	275.55	275.54	275.50	
14	275.53	275.84	275.78	275.75	275.73	275.84	275.68	275.68	275.67	275.53	275.56	275.49	
15	275.53	275.79	275.68	275.75	275.76	275.85	275.71	275.69	275.64	275.56	275.54	275.48	
16	275.56	275.68	275.67	275.73	275.88	275.75	275.68	275.69	275.59	275.56	275.51	275.49	
17	275.56	275.73	275.66	275.69	275.82	275.73	275.66	275.70	275.58	275.56	275.54	275.49	
18	275.58	275.89	275.64	275.70	275.74	275.72	275.65	275.69	275.58	275.54	275.55	275.49	
19	275.59	275.87	275.63	275.68	275.68	275.79	275.66	275.69	275.58	275.55	275.52	275.51	
20	275.57	275.87	275.63	275.64	276.09	276.46	275.66	275.70	275.58	275.55	275.51	275.49	
21	275.58	275.74	275.61	275.62	275.79	275.87	275.66	275.68	275.58	275.54	275.52	275.49	
22	275.55	275.70	275.57	275.60	275.81	275.77	275.64	275.82	275.58	275.53	275.51	275.49	
23	275.54	275.65	275.56	275.59	276.22	275.72	275.63	275.86	275.57	275.52	275.52	275.50	
24	275.53	275.63	275.55	275.58	276.57	275.70	275.63	275.79	275.57	275.51	275.54	275.53	
25	275.52	275.63	275.56	275.58	276.01	275.68	275.63	275.77	275.56	275.51	275.53	275.53	
26	275.52	275.66	275.57	275.60	275.86	275.67	275.63	275.75	275.57	275.53	275.54	275.52	
27	275.51	275.64	275.56	275.61	275.77	275.65	275.63	275.74	275.57	275.52	275.53	275.53	
28	275.51	275.63	275.57	275.62	275.72	275.66	275.66	275.73	275.56	275.52	275.52	275.52	
29	275.53	275.62	275.57	275.63	275.69	275.65	275.64	275.77	275.56	275.56		275.52	
30	275.52	275.60	275.61	275.61	275.67	275.64	275.62	275.77	275.56	275.56		275.50	
31		275.60		275.61	275.67		275.62		275.55	275.56		275.50	
Mean	275.55	275.63	275.61	275.68	275.80	275.91	275.64	275.74	275.63	275.54	275.53	275.54	
Max	275.59	275.89	275.78	275.97	276.57	277.20	275.71	275.99	275.72	275.56	275.61	275.88	277.20
Min	275.51	275.49	275.55	275.58	275.61	275.64	275.62	275.61	275.55	275.51	275.50	275.48	275.48

Annual Max Momentary Gage Height 277.40 M (MSL), at 12.00 Hours, on Sep 7, 1998
Zero Gage at Bottom Elevation 275.00 M (MSL), River Bed 275.07 M (MSL)
Left Bank Elevation 278.50 M (MSL)
Right Bank Elevation 278.43 M (MSL), Drainage Area 460 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.26	0.08	0.62	0.44	0.44	1.94	0.80	0.44	1.48	0.23	0.20	3.40	
2	0.29	0.11	0.53	0.35	0.62	1.71	0.71	0.62	1.48	0.23	0.14	1.36	
3	0.11	0.14	0.71	0.29	0.71	3.40	0.71	4.95	1.36	0.23	0.14	0.44	
4	0.14	0.08	0.62	0.89	0.71	1.60	0.62	4.81	1.36	0.20	0.14	0.29	
5	0.29	0.14	1.07	4.52	0.80	1.16	0.53	2.40	1.36	0.20	0.14	0.26	
6	0.29	0.05	0.32	4.67	0.98	2.65	0.62	2.05	1.25	0.20	0.08	0.17	
7	0.26	0.04	0.29	2.90	0.80	33.30	0.53	1.83	1.25	0.20	0.05	0.23	
8	0.20	0.14	0.26	1.83	0.80	13.20	0.53	1.71	1.07	0.14	0.08	0.23	
9	0.20	0.14	0.26	1.48	8.93	7.27	0.53	0.98	0.98	0.11	0.08	0.20	
10	0.20	0.17	0.35	1.48	2.77	9.31	0.62	1.07	0.89	0.11	0.11	0.17	
11	0.20	0.20	0.62	1.71	1.94	16.80	0.53	1.07	0.89	0.14	0.11	0.14	
12	0.11	0.20	0.44	1.71	1.60	6.72	0.71	0.98	0.89	0.17	0.44	0.08	
13	0.14	0.32	0.44	1.71	1.60	3.53	1.16	0.98	0.80	0.20	0.17	0.05	
14	0.14	2.90	2.17	1.83	1.60	2.90	1.07	1.07	0.98	0.14	0.23	0.04	
15	0.14	2.29	1.07	1.83	1.94	3.03	1.36	1.16	0.71	0.23	0.17	0.04	
16	0.23	1.07	0.98	1.60	3.40	1.83	1.07	1.16	0.32	0.23	0.08	0.04	
17	0.23	1.60	0.89	1.16	2.65	1.60	0.89	1.25	0.29	0.23	0.17	0.04	
18	0.29	3.53	0.71	1.25	1.71	1.48	0.80	1.16	0.29	0.17	0.20	0.04	
19	0.32	3.28	0.62	1.07	1.07	2.29	0.89	1.16	0.29	0.20	0.11	0.08	
20	0.26	3.28	0.62	0.71	6.72	14.10	0.89	1.25	0.29	0.20	0.08	0.04	
21	0.29	1.71	0.44	0.53	2.29	3.28	0.89	1.07	0.29	0.17	0.11	0.04	
22	0.20	1.25	0.26	0.35	2.53	2.05	0.71	2.65	0.29	0.14	0.08	0.04	
23	0.17	0.80	0.23	0.32	9.12	1.48	0.62	3.15	0.26	0.11	0.11	0.05	
24	0.14	0.62	0.20	0.29	16.58	1.25	0.62	2.29	0.26	0.08	0.17	0.14	
25	0.11	0.62	0.23	0.29	5.28	1.07	0.62	2.05	0.23	0.08	0.14	0.14	
26	0.11	0.89	0.26	0.35	3.15	0.98	0.62	1.83	0.26	0.14	0.17	0.11	
27	0.08	0.71	0.23	0.44	2.05	0.80	0.62	1.71	0.26	0.11	0.14	0.14	
28	0.08	0.62	0.26	0.53	1.48	0.89	0.89	1.60	0.23	0.11	0.11	0.11	
29	0.14	0.53	0.26	0.62	1.16	0.80	0.71	2.05	0.23	0.23		0.11	
30	0.11	0.35	0.44	0.44	0.98	0.71	0.53	2.05	0.23	0.23		0.05	
31		0.35		0.44	0.98		0.53		0.20	0.23		0.05	
Total	5.73	28.21	16.40	38.03	87.39	143.13	22.93	52.55	20.97	5.39	3.95	8.32	433.00 CMSDAY
Mean	0.19	0.91	0.55	1.23	2.82	4.77	0.74	1.75	0.68	0.17	0.14	0.27	1.19 CMS
Max	0.32	3.53	2.17	4.67	16.58	33.30	1.36	4.95	1.48	0.23	0.44	3.40	33.30 CMS
Min	0.08	0.04	0.20	0.29	0.44	0.71	0.53	0.44	0.20	0.08	0.05	0.04	0.04 CMS
Runoff	0.495	2.437	1.417	3.286	7.550	12.366	1.981	4.540	1.812	0.466	0.341	0.719	37.411 MCM

Momentary Peak 39.50 CMS, at 277.40 M (MSL), at 12.00 Hours, on Sep 7, 1998

Runoff Yield 2.58 Liters/Second/Square KM, Momentary Peak Yield 85.870 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

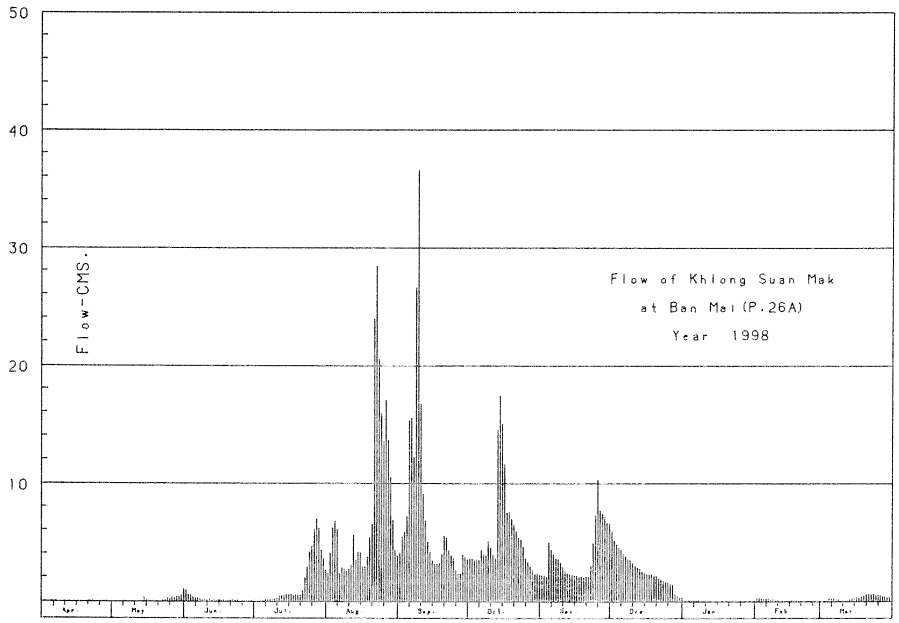
Khlong Suan Mak at Ban Mai, Kamphaeng Phet (P.26A)

Location	Lat. 16°-26'-57" N., Long. 99°-26'-27" E., on right bank about 615 meters downstream from Tha Kradan Weir, Amphoe Muang, Kamphaeng Phet.
Drainage Area	969 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	Near the automatic gage building
Elevation	+6.000 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1971 to date.
Rating Operation	
Period of Rating	1972-1974, 1980 to date.
Rated by Float	-
Rated by Current Meter	1972-1974, 1980 to date.
Stability of Channel Regimes	Rather unstable by some silting.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Tha Kradan weir about 3.5 kilometers above gage site. Stage-discharge relation defined by 26 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.46	-0.44	0.04	-0.38	0.31	0.56	0.50	0.29	0.74	-0.19	-0.10	-0.21	
2	-0.46	-0.44	-0.05	-0.36	0.55	0.70	0.49	0.28	0.67	-0.18	-0.10	-0.21	
3	-0.46	-0.45	-0.10	-0.31	0.78	0.74	0.48	0.27	0.63	-0.18	-0.10	-0.22	
4	-0.46	-0.45	-0.16	-0.31	0.83	0.87	0.48	0.65	0.61	-0.17	-0.11	-0.23	
5	-0.46	-0.46	-0.21	-0.31	0.76	1.44	0.48	0.59	0.58	-0.17	-0.12	-0.25	
6	-0.46	-0.47	-0.25	-0.31	0.32	1.45	0.59	0.53	0.54	-0.18	-0.13	-0.28	
7	-0.46	-0.48	-0.30	-0.31	0.40	1.25	0.53	0.50	0.52	-0.18	-0.14	-0.30	
8	-0.46	-0.48	-0.32	-0.31	0.37	2.00	0.53	0.48	0.49	-0.19	-0.15	-0.35	
9	-0.45	-0.48	-0.33	-0.31	0.35	2.31	0.66	0.45	0.47	-0.20	-0.16	-0.37	
10	-0.45	-0.48	-0.34	-0.20	0.37	1.52	0.61	0.40	0.44	-0.20	-0.17	-0.38	
11	-0.45	-0.48	-0.35	-0.13	0.42	1.03	0.53	0.35	0.42	-0.21	-0.17	-0.38	
12	-0.45	-0.49	-0.36	-0.10	0.72	0.83	0.50	0.32	0.40	-0.23	-0.18	-0.35	
13	-0.45	-0.49	-0.36	-0.10	0.48	0.66	1.39	0.30	0.37	-0.22	-0.18	-0.30	
14	-0.45	-0.15	-0.37	-0.04	0.56	0.56	1.56	0.30	0.34	-0.22	-0.19	-0.25	
15	-0.45	-0.42	-0.37	-0.04	0.56	0.47	1.42	0.29	0.31	-0.22	-0.19	-0.20	
16	-0.45	-0.40	-0.37	-0.06	0.41	0.44	1.21	0.28	0.30	-0.22	-0.20	-0.18	
17	-0.45	-0.40	-0.38	-0.07	0.40	0.44	0.90	0.27	0.30	-0.22	-0.20	-0.18	
18	-0.45	-0.38	-0.38	-0.08	0.52	0.44	0.90	0.27	0.29	-0.22	-0.21	-0.15	
19	-0.45	-0.39	-0.38	-0.08	0.69	0.54	0.85	0.26	0.28	-0.22	-0.21	-0.10	
20	-0.45	-0.39	-0.38	-0.10	0.81	0.71	0.80	0.26	0.27	-0.22	-0.21	-0.06	
21	-0.42	-0.39	-0.39	0.04	1.88	0.69	0.75	0.26	0.25	-0.22	-0.22	-0.05	
22	-0.42	-0.33	-0.39	0.26	2.07	0.58	0.69	0.42	0.23	-0.22	-0.22	-0.05	
23	-0.42	-0.30	-0.40	0.40	1.72	0.53	0.68	0.65	0.20	-0.22	-0.23	-0.05	
24	-0.42	-0.24	-0.40	0.57	1.47	0.49	0.61	0.88	0.20	-0.22	-0.23	-0.08	
25	-0.42	-0.24	-0.40	0.62	1.33	0.37	0.50	1.12	0.17	-0.22	-0.24	-0.08	
26	-0.43	-0.19	-0.41	0.77	1.54	0.30	0.45	0.91	0.15	-0.22	-0.24	-0.10	
27	-0.43	-0.19	-0.41	0.85	1.34	0.32	0.41	0.89	0.15	-0.22	-0.24	-0.13	
28	-0.44	-0.16	-0.41	0.77	1.13	0.54	0.35	0.86	-0.04	-0.22	-0.24	-0.15	
29	-0.44	-0.13	-0.41	0.59	0.84	0.51	0.31	0.82	-0.14	-0.22		-0.17	
30	-0.45	-0.09	-0.42	0.49	0.58	0.48	0.31	0.81	-0.17	-0.22		-0.19	
31		0.08		0.37	0.52		0.29		-0.20	-0.22		-0.20	
Mean	-0.45	-0.35	-0.33	0.06	0.81	0.79	0.67	0.50	0.32	-0.21	-0.18	-0.20	
Max	-0.42	0.08	0.04	0.85	2.07	2.31	1.56	1.12	0.74	-0.17	-0.10	-0.05	2.31
Min	-0.46	-0.49	-0.42	-0.38	0.31	0.30	0.29	0.26	-0.20	-0.23	-0.24	-0.38	-0.49

Annual Max Momentary Gage Height 2.31 M (A.D), at 6.00 Hours, on Sep 14, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.65 M (A.D)
Left Bank Elevation 4.84 M (A.D)
Right Bank Elevation 6.43 M (A.D), Drainage Area 969 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.04	0.06	0.90	0.12	2.36	4.18	3.70	2.24	5.90	0.10	0.29	0.07	
2	0.04	0.06	0.60	0.14	4.10	5.50	3.62	2.18	5.20	0.12	0.29	0.07	
3	0.04	0.05	0.50	0.19	6.30	5.90	3.54	2.12	4.80	0.12	0.29	0.06	
4	0.04	0.05	0.38	0.19	6.83	7.27	3.54	5.00	4.60	0.14	0.27	0.27	
5	0.04	0.04	0.29	0.19	6.10	15.40	3.54	4.42	4.34	0.14	0.25	0.25	
6	0.04	0.03	0.25	0.19	2.42	15.58	4.42	3.94	4.02	0.12	0.23	0.22	
7	0.04	0.02	0.20	0.19	2.90	12.30	3.94	3.70	3.86	0.12	0.21	0.20	
8	0.04	0.02	0.18	0.19	2.72	26.60	3.94	3.54	3.62	0.10	0.19	0.15	
9	0.05	0.02	0.17	0.19	2.60	36.62	5.10	3.30	3.46	0.08	0.16	0.13	
10	0.05	0.02	0.16	0.30	2.72	16.80	4.60	2.90	3.22	0.08	0.14	0.12	
11	0.05	0.02	0.15	0.44	3.06	9.12	3.94	2.60	3.06	0.07	0.14	0.12	
12	0.05	0.01	0.14	0.50	5.70	6.83	3.70	2.42	2.90	0.06	0.12	0.15	
13	0.05	0.01	0.14	0.50	3.54	5.10	14.54	2.30	2.72	0.06	0.12	0.20	
14	0.05	0.40	0.13	0.62	4.18	4.18	17.50	2.30	2.54	0.06	0.10	0.25	
15	0.05	0.08	0.13	0.62	4.18	3.46	15.05	2.24	2.36	0.06	0.10	0.30	
16	0.05	0.10	0.13	0.58	2.98	3.22	11.66	2.18	2.30	0.06	0.08	0.34	
17	0.05	0.10	0.12	0.56	2.90	3.22	7.60	2.12	2.30	0.06	0.08	0.34	
18	0.05	0.12	0.12	0.54	3.86	3.22	7.60	2.12	2.24	0.06	0.07	0.40	
19	0.05	0.11	0.12	0.54	5.40	4.02	7.05	2.06	2.18	0.06	0.07	0.50	
20	0.05	0.11	0.12	0.50	6.61	5.60	6.50	2.06	2.12	0.06	0.07	0.58	
21	0.08	0.11	0.11	0.90	23.96	5.40	6.00	2.06	2.00	0.06	0.06	0.60	
22	0.08	0.17	0.11	2.06	28.49	4.34	5.40	3.06	1.88	0.06	0.06	0.60	
23	0.08	0.20	0.10	2.90	20.60	3.94	5.30	5.00	1.70	0.06	0.06	0.60	
24	0.08	0.26	0.10	4.26	15.93	3.62	4.60	7.38	1.70	0.06	0.06	0.54	
25	0.08	0.26	0.10	4.70	13.58	2.72	3.70	10.38	1.55	0.06	0.05	0.54	
26	0.07	0.32	0.09	6.20	17.15	2.30	3.30	7.71	1.45	0.06	0.05	0.50	
27	0.07	0.32	0.09	7.05	13.74	2.42	2.98	7.49	1.45	0.06	0.05	0.44	
28	0.06	0.38	0.09	6.20	10.52	4.02	2.60	7.16	0.62	0.06	0.05	0.40	
29	0.06	0.44	0.09	4.42	6.94	3.78	2.36	6.72	0.42	0.06		0.36	
30	0.05	0.52	0.08	3.62	4.34	3.54	2.36	6.61	0.36	0.06		0.32	
31		1.10		2.72	3.86		2.24		0.30	0.06		0.30	
Total	1.63	5.51	5.89	52.32	240.57	230.20	175.92	119.31	81.17	2.39	3.71	9.92	928.54 CMSDAY
Mean	0.05	0.18	0.20	1.69	7.76	7.67	5.67	3.98	2.62	0.08	0.13	0.32	2.54 CMS
Max	0.08	1.10	0.90	7.05	28.49	36.62	17.50	10.38	5.90	0.14	0.29	0.60	36.62 CMS
Min	0.04	0.01	0.08	0.12	2.36	2.30	2.24	2.06	0.30	0.06	0.05	0.06	0.01 CMS
Runoff	0.141	0.476	0.509	4.520	20.785	19.889	15.199	10.308	7.013	0.206	0.321	0.857	80.226 MCM

Momentary Peak 36.62 CMS, at 2.31 M (A.D), at 6.00 Hours, on Sep 14, 1998

Runoff Yield 2.63 Liters/Second/Square KM, Momentary Peak Yield 37.792 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

Khlong Khlung at Ban Pang Wai, Kamphaeng Phet (P.35)

Location — Lat. 16°-04'-22" N., Long. 99°-24'-18" E., on right bank at Ban Pang Wai about 1.5 kilometers from Khao Song Phi Nong, Amphoe Khlong Khlung, Kamphaeng Phet.

Drainage Area — 730 sq.km.

Type of Gage — Staff gage.

Zero Gage at Bottom — +0.00 m. (A.D.)

Bench Mark — B.M.-H.D.

Location — On right bank about 34 meters from the top staff gage.

Elevation — +4.502 m. (A.D.)

Gage Reading Frequency — 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height — Arithmetic mean of 5 readings.

Period of Available Gage Records — 1974 to date.

Rating Operation

Period of Rating — 1974 to date.

Rated by Float — -

Rated by Current Meter — 1974 to date.

Stability of Channel Regimes — Stable.

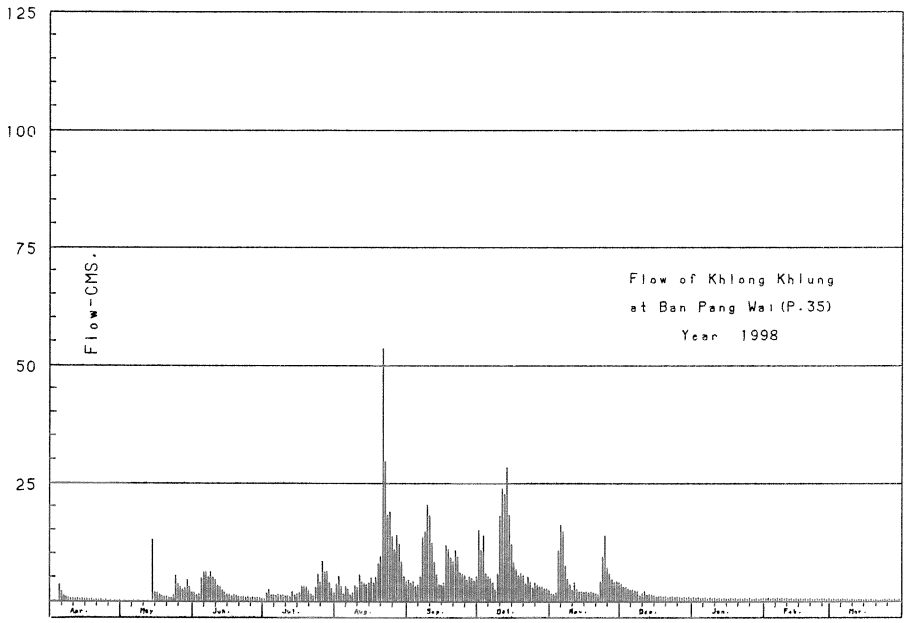
Overbank Flow Conditions — No overbank flow.

General Description — Records good. Stage-discharge relation defined by 32 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.35	-0.35	0.11	-0.19	0.52	0.69	1.97	0.08	0.51	-0.10	-0.16	-0.21	
2	-0.35	-0.35	0.04	0.13	0.87	0.57	1.61	0.09	0.41	-0.11	-0.17	-0.22	
3	-0.33	-0.37	0.06	0.26	0.40	0.61	1.89	0.12	0.36	-0.13	-0.17	-0.22	
4	0.51	-0.38	0.78	0.06	0.10	0.43	1.00	1.60	0.33	-0.14	-0.17	-0.22	
5	0.19	-0.35	1.04	0.02	0.41	0.47	0.84	2.07	0.27	-0.15	-0.17	-0.22	
6	0.03	-0.36	1.02	0.02	0.27	0.83	0.74	1.94	0.25	-0.15	-0.16	-0.22	
7	-0.05	-0.35	0.84	0.06	0.05	1.83	0.57	1.25	0.22	-0.17	-0.16	-0.22	
8	-0.14	-0.36	1.03	0.04	0.11	1.95	0.25	0.72	0.17	-0.17	-0.17	-0.23	
9	-0.17	-0.36	0.81	0.02	0.45	2.41	0.96	0.51	0.02	-0.17	-0.17	-0.23	
10	-0.19	-0.36	0.68	0.00	0.35	2.24	2.22	0.28	0.09	-0.17	-0.18	-0.23	
11	-0.20	-0.36	0.44	-0.04	0.91	1.74	2.55	0.58	0.18	-0.17	-0.18	-0.23	
12	-0.20	-0.36	0.37	-0.04	0.59	1.34	2.51	0.28	0.05	-0.17	-0.19	-0.23	
13	-0.21	-0.36	0.24	0.16	0.54	0.92	2.73	0.20	0.05	-0.18	-0.19	-0.24	
14	-0.21	1.81	0.13	0.04	0.48	0.51	2.25	0.18	0.04	-0.18	-0.19	-0.24	
15	-0.22	0.16	0.05	0.07	0.58	0.48	1.72	0.17	0.00	-0.18	-0.19	-0.24	
16	-0.23	0.12	0.02	0.14	0.77	0.57	1.31	0.16	-0.05	-0.18	-0.20	-0.24	
17	-0.23	0.07	-0.02	0.43	0.57	1.71	1.11	0.15	-0.05	-0.18	-0.20	-0.24	
18	-0.24	-0.01	0.01	0.37	0.79	1.62	0.89	0.15	-0.06	-0.18	-0.20	-0.25	
19	-0.25	-0.05	0.00	0.37	1.30	1.46	0.96	0.14	-0.07	-0.19	-0.20	-0.24	
20	-0.26	-0.06	-0.09	0.19	1.46	1.35	0.88	0.08	-0.08	-0.19	-0.20	-0.24	
21	-0.26	-0.09	-0.11	0.08	3.46	1.61	0.53	0.05	-0.09	-0.19	-0.21	-0.25	
22	-0.27	-0.10	-0.11	-0.04	2.79	1.46	0.82	0.63	-0.06	-0.19	-0.21	-0.25	
23	-0.27	0.02	-0.13	0.38	2.24	1.03	0.58	1.47	-0.07	-0.19	-0.21	-0.23	
24	-0.27	0.86	-0.13	0.97	2.31	0.94	0.36	1.89	-0.08	-0.19	-0.21	-0.23	
25	-0.29	0.52	-0.14	0.58	1.87	0.91	0.54	1.17	-0.10	-0.20	-0.22	-0.23	
26	-0.32	0.37	-0.14	1.37	1.61	0.69	0.45	0.94	-0.10	-0.20	-0.22	-0.23	
27	-0.32	0.28	-0.13	1.03	1.88	0.85	0.40	0.73	-0.11	-0.20	-0.22	-0.24	
28	-0.33	0.33	-0.13	1.05	1.73	0.75	0.36	0.57	-0.12	-0.20	-0.20	-0.24	
29	-0.33	0.70	-0.13	0.57	1.34	0.67	0.32	0.62	-0.12	-0.20		-0.24	
30	-0.33	0.38	-0.23	0.30	0.87	0.83	0.28	0.57	-0.12	-0.20		-0.24	
31		0.15		0.12	0.63		0.26		-0.12	-0.18		-0.24	
Mean	-0.20	0.03	0.21	0.27	1.04	1.12	1.09	0.65	0.05	-0.17	-0.19	-0.23	
Max	0.51	1.81	1.04	1.37	3.46	2.41	2.73	2.07	0.51	-0.10	-0.16	-0.21	3.46
Min	-0.35	-0.38	-0.23	-0.19	0.05	0.43	0.25	0.05	-0.12	-0.20	-0.22	-0.25	-0.38

Annual Max Momentary Gage Height 3.74 M (A.D), at 12.00 Hours, on Aug 21, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.40 M (A.D)
Left Bank Elevation 10.06 M (A.D)
Right Bank Elevation 10.89 M (A.D), Drainage Area 730 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.15	0.15	1.73	0.63	3.70	4.51	15.04	1.58	3.65	0.90	0.72	0.57	
2	0.15	0.15	1.39	1.82	5.38	3.94	10.91	1.63	3.17	0.87	0.69	0.54	
3	0.21	0.09	1.49	2.45	3.12	4.13	14.08	1.78	2.93	0.81	0.69	0.54	
4	3.65	0.06	4.94	1.49	1.68	3.26	6.00	10.80	2.78	0.78	0.69	0.54	
5	2.11	0.15	6.24	1.30	3.17	3.46	5.23	16.24	2.50	0.75	0.69	0.54	
6	1.34	0.12	6.12	1.30	2.50	5.18	4.75	14.68	2.40	0.75	0.72	0.54	
7	1.05	0.15	5.23	1.49	1.44	13.36	3.94	7.60	2.26	0.69	0.72	0.54	
8	0.78	0.12	6.18	1.39	1.73	14.80	2.40	4.66	2.02	0.69	0.69	0.51	
9	0.69	0.12	5.09	1.30	3.36	20.44	5.81	3.65	1.30	0.69	0.69	0.51	
10	0.63	0.12	4.46	1.20	2.88	18.28	18.04	2.54	1.63	0.69	0.66	0.51	
11	0.60	0.12	3.31	1.08	5.57	12.34	23.87	3.98	2.06	0.69	0.66	0.51	
12	0.60	0.12	2.98	1.08	4.03	8.32	22.89	2.54	1.44	0.69	0.63	0.51	
13	0.57	0.12	2.35	1.97	3.79	5.62	28.29	2.16	1.44	0.66	0.63	0.48	
14	0.57	13.12	1.82	1.39	3.50	3.65	18.40	2.06	1.39	0.66	0.63	0.48	
15	0.54	1.97	1.44	1.54	3.98	3.50	12.12	2.02	1.20	0.66	0.63	0.48	
16	0.51	1.78	1.30	1.87	4.90	3.94	8.08	1.97	1.05	0.66	0.60	0.48	
17	0.51	1.54	1.14	3.26	3.94	12.01	6.66	1.92	1.05	0.66	0.60	0.48	
18	0.48	1.17	1.25	2.98	4.99	11.02	5.47	1.92	1.02	0.66	0.60	0.45	
19	0.45	1.05	1.20	2.98	8.00	9.40	5.81	1.87	0.99	0.63	0.60	0.48	
20	0.42	1.02	0.93	2.11	9.40	8.40	5.42	1.58	0.96	0.63	0.60	0.48	
21	0.42	0.93	0.87	1.58	53.70	10.91	3.74	1.44	0.93	0.63	0.57	0.45	
22	0.39	0.90	0.87	1.08	29.76	9.40	5.14	4.22	1.02	0.63	0.57	0.45	
23	0.39	1.30	0.81	3.02	18.28	6.18	3.98	9.50	0.99	0.63	0.57	0.51	
24	0.39	5.33	0.81	5.86	19.12	5.71	2.93	14.08	0.96	0.63	0.57	0.51	
25	0.33	3.70	0.78	3.98	13.84	5.57	3.79	7.02	0.90	0.60	0.54	0.51	
26	0.24	2.98	0.78	8.56	10.91	4.51	3.36	5.71	0.90	0.60	0.54	0.51	
27	0.24	2.54	0.81	6.18	13.96	5.28	3.12	4.70	0.87	0.60	0.54	0.48	
28	0.21	2.78	0.81	6.30	12.23	4.80	2.93	3.94	0.84	0.60	0.60	0.48	
29	0.21	4.56	0.81	3.94	8.32	4.42	2.74	4.18	0.84	0.60		0.48	
30	0.21	3.02	0.51	2.64	5.38	5.18	2.54	3.94	0.84	0.60		0.48	
31		1.92		1.78	4.22		2.45		0.84	0.66		0.48	
Total	19.04	53.20	68.45	79.55	270.78	231.52	259.93	145.91	47.17	21.00	17.64	15.51	1229.70 CMSDAY
Mean	0.63	1.72	2.28	2.57	8.73	7.72	8.38	4.86	1.52	0.68	0.63	0.50	3.37 CMS
Max	3.65	13.12	6.24	8.56	53.70	20.44	28.29	16.24	3.65	0.90	0.72	0.57	53.70 CMS
Min	0.15	0.06	0.51	0.63	1.44	3.26	2.40	1.44	0.84	0.60	0.54	0.45	0.06 CMS
Runoff	1.645	4.596	5.914	6.873	23.395	20.003	22.458	12.607	4.075	1.814	1.524	1.340	106.246 MCM

Momentary Peak 67.00 CMS, at 3.74 M (A.D), at 12.00 Hours, on Aug 21, 1998

Runoff Yield 4.62 Liters/Second/Square KM, Momentary Peak Yield 91.781 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

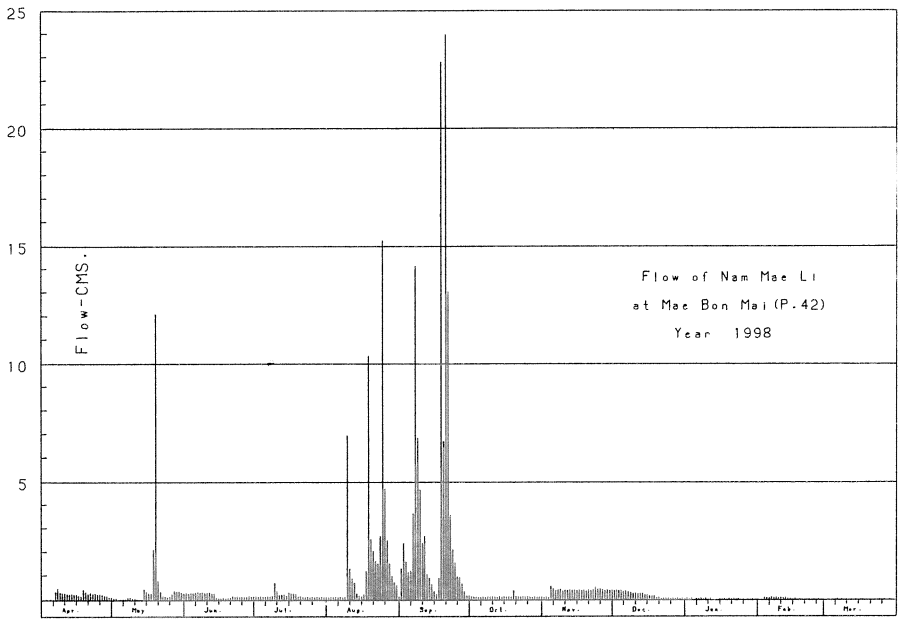
Nam Mae Li at Ban Mae Bon Mai, Lamphun (P.42)

Location	Lat. 17-53-16 N., Long. 99-05-20 E., on right bank near Ban Puang, Amphoe Thung Hua Chang, Lamphun.
Drainage Area	315 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+500.10 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the top staff gage.
Elevation	+505.708 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1978 to date.
Rated by Float	-
Rated by Current Meter	1978 to date.
Stability of Channel Regimes	Rather unstable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The concrete weir situated about 2 kilometers downstream from the gage site. Stage-discharge relation defined by 85 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	500.37	500.45	500.68	500.53	500.50	500.84	500.52	500.50	500.76	500.43	500.38	500.37	
2	500.37	500.42	500.68	500.53	500.50	500.97	500.52	500.50	500.76	500.43	500.38	500.37	
3	500.37	500.40	500.68	500.53	500.50	500.88	500.50	500.50	500.76	500.43	500.49	500.37	
4	500.36	500.38	500.69	500.53	500.50	500.82	500.50	500.86	500.75	500.43	500.44	500.37	
5	500.35	500.36	500.71	500.53	500.50	500.83	500.51	500.81	500.74	500.43	500.45	500.37	
6	500.74	500.36	500.71	500.53	500.50	501.11	500.49	500.75	500.74	500.43	500.48	500.37	
7	500.81	500.48	500.71	500.54	500.50	501.89	500.51	500.78	500.73	500.43	500.49	500.37	
8	500.72	500.46	500.70	500.54	500.50	501.39	500.51	500.78	500.69	500.43	500.47	500.37	
9	500.68	500.44	500.70	500.92	501.40	501.21	500.52	500.75	500.68	500.43	500.47	500.37	
10	500.67	500.42	500.68	500.73	500.84	500.97	500.52	500.76	500.67	500.43	500.47	500.37	
11	500.66	500.41	500.70	500.59	500.78	501.00	500.52	500.77	500.67	500.43	500.47	500.37	
12	500.66	500.37	500.68	500.63	500.75	500.81	500.51	500.77	500.67	500.43	500.46	500.37	
13	500.64	500.37	500.65	500.62	500.63	500.79	500.53	500.77	500.66	500.43	500.43	500.37	
14	500.64	500.80	500.48	500.59	500.56	500.73	500.52	500.76	500.63	500.42	500.40	500.37	
15	500.62	500.72	500.46	500.71	500.56	500.66	500.52	500.76	500.60	500.41	500.40	500.37	
16	500.57	500.69	500.46	500.65	500.61	500.61	500.52	500.76	500.57	500.41	500.39	500.37	
17	500.56	500.68	500.45	500.67	500.83	500.79	500.52	500.76	500.57	500.41	500.39	500.36	
18	500.79	500.94	500.45	500.63	501.64	502.39	500.52	500.76	500.54	500.41	500.39	500.36	
19	500.71	501.76	500.44	500.54	500.99	501.38	500.67	500.75	500.49	500.41	500.39	500.36	
20	500.67	500.76	500.48	500.53	500.93	502.45	500.54	500.77	500.47	500.41	500.39	500.36	
21	500.68	500.73	500.53	500.52	500.88	501.82	500.53	500.76	500.43	500.40	500.39	500.35	
22	500.67	500.56	500.52	500.51	500.87	501.10	500.53	500.78	500.46	500.40	500.39	500.35	
23	500.66	500.52	500.52	500.51	501.00	500.94	500.53	500.83	500.45	500.40	500.38	500.35	
24	500.65	500.50	500.52	500.51	501.96	500.87	500.53	500.80	500.43	500.40	500.38	500.35	
25	500.63	500.52	500.52	500.51	501.21	500.80	500.53	500.79	500.43	500.40	500.38	500.35	
26	500.60	500.62	500.52	500.51	500.98	500.79	500.52	500.78	500.43	500.40	500.37	500.35	
27	500.58	500.75	500.52	500.51	500.87	500.74	500.51	500.76	500.43	500.39	500.37	500.34	
28	500.54	500.72	500.54	500.51	500.80	500.65	500.51	500.76	500.43	500.38	500.37	500.34	
29	500.51	500.74	500.55	500.50	500.75	500.59	500.50	500.76	500.43	500.38		500.34	
30	500.49	500.69	500.52	500.50	500.72	500.56	500.50	500.76	500.43	500.38		500.34	
31		500.68		500.50	500.54		500.50		500.43	500.40		500.34	
Mean	500.60	500.60	500.58	500.57	500.81	501.05	500.52	500.75	500.58	500.41	500.42	500.36	
Max	500.81	501.76	500.71	500.92	501.96	502.45	500.67	500.86	500.76	500.43	500.49	500.37	502.45
Min	500.35	500.36	500.44	500.50	500.50	500.56	500.49	500.50	500.43	500.38	500.37	500.34	500.34

Annual Max Momentary Gage Height 503.00 M (MSL), at 16.00 Hours, on Sep 18, 1998
Zero Gage at Bottom Elevation 500.10 M (MSL), River Bed 500.20 M (MSL)
Left Bank Elevation 505.28 M (MSL)
Right Bank Elevation 506.01 M (MSL), Drainage Area 315 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.04	0.09	0.29	0.15	0.12	1.32	0.14	0.12	0.41	0.07	0.04	0.04	
2	0.04	0.06	0.29	0.15	0.12	2.43	0.14	0.12	0.41	0.07	0.04	0.04	
3	0.04	0.05	0.29	0.15	0.12	1.64	0.12	0.12	0.41	0.07	0.11	0.04	
4	0.04	0.04	0.30	0.15	0.12	1.16	0.12	0.60	0.39	0.07	0.08	0.04	
5	0.04	0.04	0.33	0.15	0.12	1.24	0.13	0.49	0.37	0.07	0.09	0.04	
6	0.37	0.04	0.33	0.15	0.12	3.70	0.11	0.39	0.37	0.07	0.11	0.04	
7	0.49	0.11	0.33	0.16	0.12	14.15	0.13	0.44	0.36	0.07	0.11	0.04	
8	0.34	0.09	0.31	0.16	0.12	6.88	0.13	0.44	0.30	0.07	0.10	0.04	
9	0.29	0.08	0.31	0.74	7.00	4.71	0.14	0.39	0.29	0.07	0.10	0.04	
10	0.28	0.06	0.29	0.36	1.32	2.43	0.14	0.41	0.28	0.07	0.10	0.04	
11	0.27	0.06	0.31	0.20	0.90	2.70	0.14	0.42	0.28	0.07	0.10	0.04	
12	0.27	0.04	0.29	0.24	0.75	1.08	0.13	0.42	0.28	0.07	0.09	0.04	
13	0.25	0.04	0.26	0.23	0.29	0.95	0.14	0.42	0.27	0.07	0.07	0.04	
14	0.25	0.47	0.11	0.20	0.17	0.65	0.14	0.41	0.24	0.06	0.05	0.04	
15	0.23	0.34	0.09	0.33	0.17	0.38	0.14	0.41	0.21	0.06	0.05	0.04	
16	0.18	0.30	0.09	0.26	0.23	0.23	0.14	0.41	0.18	0.06	0.05	0.04	
17	0.17	0.29	0.09	0.28	1.24	0.95	0.14	0.41	0.18	0.06	0.05	0.04	
18	0.45	2.16	0.09	0.24	10.38	22.81	0.14	0.41	0.16	0.06	0.05	0.04	
19	0.33	12.15	0.08	0.16	2.61	6.75	0.41	0.39	0.11	0.06	0.05	0.04	
20	0.28	0.80	0.11	0.15	2.07	24.00	0.15	0.42	0.10	0.06	0.05	0.04	
21	0.29	0.36	0.15	0.14	1.64	13.06	0.14	0.41	0.07	0.05	0.05	0.04	
22	0.28	0.17	0.14	0.13	1.56	3.60	0.14	0.44	0.09	0.05	0.05	0.04	
23	0.27	0.14	0.14	0.13	2.70	2.16	0.14	0.53	0.09	0.05	0.04	0.04	
24	0.26	0.12	0.14	0.13	15.26	1.56	0.14	0.47	0.07	0.05	0.04	0.04	
25	0.24	0.14	0.14	0.13	4.71	1.00	0.14	0.45	0.07	0.05	0.04	0.04	
26	0.21	0.23	0.14	0.13	2.52	0.95	0.14	0.44	0.07	0.05	0.04	0.04	
27	0.19	0.39	0.14	0.13	1.56	0.70	0.13	0.41	0.07	0.05	0.04	0.03	
28	0.16	0.34	0.16	0.13	1.00	0.35	0.13	0.41	0.07	0.04	0.04	0.03	
29	0.13	0.37	0.16	0.12	0.75	0.19	0.12	0.41	0.07	0.04		0.03	
30	0.11	0.30	0.14	0.12	0.60	0.17	0.12	0.41	0.07	0.04		0.03	
31		0.29		0.12	0.15		0.12		0.07	0.05		0.03	
Total	6.79	20:16	6.04	6.02	60.54	123.90	4.43	12.02	6.41	1.85	1.83	1.19	251.18 CMSDAY
Mean	0.23	0.65	0.20	0.19	1.95	4.13	0.14	0.40	0.21	0.06	0.07	0.04	0.69 CMS
Max	0.49	12.15	0.33	0.74	15.26	24.00	0.41	0.60	0.41	0.07	0.11	0.04	24.00 CMS
Min	0.04	0.04	0.08	0.12	0.12	0.17	0.11	0.12	0.07	0.04	0.04	0.03	0.03 CMS
Runoff	0.587	1.742	0.522	0.520	5.231	10.705	0.383	1.039	0.554	0.160	0.158	0.103	21.702 MCM

Momentary Peak 38.40 CMS, at 503.00 M (MSL), at 16.00 Hours, on Sep 18, 1998
Runoff Yield 2.18 Liters/Second/Square KM, Momentary Peak Yield 121.905 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

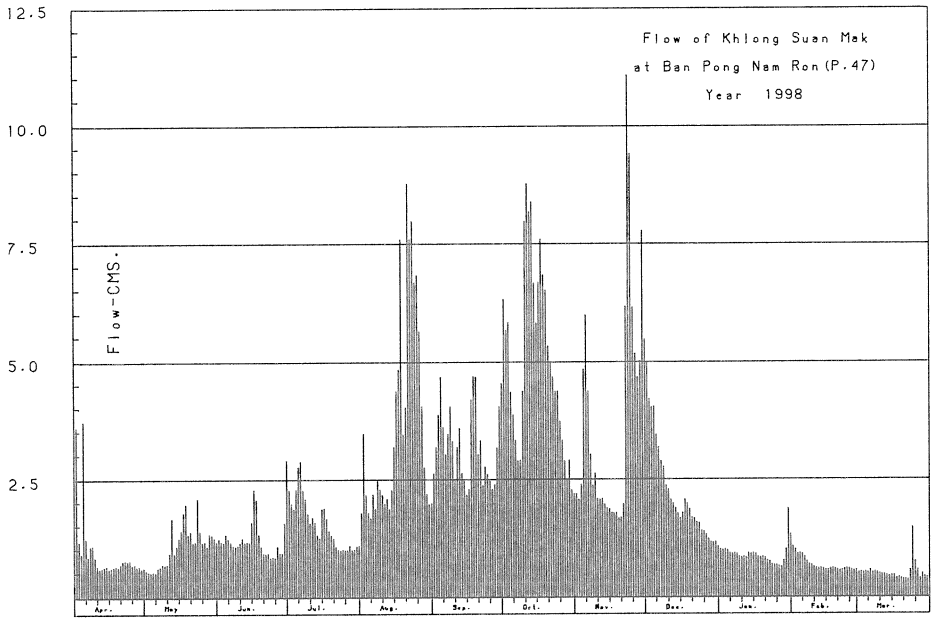
Khlong Suan Mak at Ban Pong Nam Ron, Kamphaeng Phet (P.47)

Location	Lat. 16°20'03" N., Long. 99°16'29" E., on right bank at Ban Pong Nam Ron, Amphoe Khlong Lan, Kamphaeng Phet.
Drainage Area	521 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 9 meters from the top staff gage.
Elevation	+4.740 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1983 to date.
Rated by Float	-
Rated by Current Meter	1983 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.18	-0.13	-0.03	0.08	0.03	0.11	0.35	0.07	0.27	-0.06	-0.05	-0.14	
2	-0.04	-0.14	-0.04	0.05	0.17	0.15	0.31	0.06	0.22	-0.06	-0.06	-0.14	
3	-0.07	-0.14	-0.04	0.04	0.07	0.20	0.32	0.09	0.21	-0.06	-0.07	-0.14	
4	0.19	-0.14	-0.02	0.08	0.03	0.25	0.23	0.26	0.21	-0.06	-0.07	-0.14	
5	-0.03	-0.14	-0.03	0.12	0.02	0.18	0.20	0.33	0.17	-0.07	-0.07	-0.14	
6	-0.08	-0.12	-0.04	0.13	0.07	0.14	0.16	0.23	0.15	-0.07	-0.08	-0.13	
7	-0.05	-0.11	-0.05	0.08	0.04	0.17	0.13	0.14	0.13	-0.07	-0.09	-0.14	
8	-0.05	-0.10	-0.05	0.06	0.10	0.21	0.13	0.09	0.12	-0.07	-0.10	-0.14	
9	-0.08	-0.10	-0.05	0.03	0.08	0.16	0.23	0.11	0.09	-0.08	-0.10	-0.14	
10	-0.11	-0.10	-0.04	0.01	0.07	0.10	0.44	0.06	0.08	-0.08	-0.11	-0.15	
11	-0.12	-0.07	-0.03	0.02	0.05	0.15	0.48	0.06	0.06	-0.08	-0.12	-0.15	
12	-0.12	0.02	-0.04	0.01	0.06	0.18	0.45	0.06	0.05	-0.08	-0.12	-0.15	
13	-0.11	-0.07	-0.04	-0.02	0.04	0.11	0.46	0.05	0.04	-0.07	-0.12	-0.16	
14	-0.11	-0.05	-0.04	-0.03	0.08	0.10	0.37	0.04	0.03	-0.07	-0.12	-0.16	
15	-0.12	-0.03	0.01	0.04	0.15	0.07	0.32	0.04	0.02	-0.07	-0.13	-0.16	
16	-0.12	-0.01	0.08	0.04	0.23	0.08	0.37	0.03	0.03	-0.07	-0.13	-0.16	
17	-0.11	0.03	0.06	0.02	0.26	0.22	0.42	0.03	0.06	-0.08	-0.12	-0.17	
18	-0.11	0.05	-0.02	-0.01	0.42	0.25	0.38	0.03	0.05	-0.08	-0.12	-0.17	
19	-0.11	-0.02	-0.05	-0.02	0.17	0.25	0.36	0.02	0.04	-0.08	-0.12	-0.17	
20	-0.10	-0.01	-0.07	-0.03	0.21	0.14	0.29	0.02	0.02	-0.08	-0.13	-0.18	
21	-0.09	-0.04	-0.07	-0.05	0.48	0.16	0.27	0.05	0.02	-0.09	-0.13	-0.18	
22	-0.09	-0.04	-0.07	-0.06	0.42	0.09	0.25	0.34	0.01	-0.09	-0.13	-0.18	
23	-0.09	0.06	-0.08	-0.06	0.44	0.12	0.23	0.59	0.01	-0.10	-0.12	-0.13	
24	-0.09	-0.01	-0.08	-0.06	0.37	0.11	0.23	0.51	-0.01	-0.10	-0.12	0.00	
25	-0.10	-0.04	-0.08	-0.06	0.38	0.10	0.19	0.34	-0.01	-0.10	-0.12	-0.09	
26	-0.10	-0.04	-0.05	-0.06	0.31	0.08	0.16	0.28	-0.02	-0.11	-0.13	-0.13	
27	-0.11	-0.05	-0.07	-0.05	0.21	0.09	0.13	0.25	-0.03	-0.11	-0.13	-0.17	
28	-0.11	-0.02	-0.07	-0.06	0.12	0.15	0.10	0.27	-0.04	-0.09	-0.13	-0.15	
29	-0.12	-0.02	0.01	-0.06	0.07	0.21	0.13	0.43	-0.04	-0.06		-0.16	
30	-0.12	-0.03	0.13	-0.05	0.05	0.24	0.08	0.30	-0.04	0.04		-0.17	
31		-0.04		-0.05	0.05		0.07		-0.05	-0.02		-0.17	
Mean	-0.08	-0.05	-0.03	0.00	0.17	0.15	0.27	0.17	0.06	-0.07	-0.11	-0.15	
Max	0.19	0.06	0.13	0.13	0.48	0.25	0.48	0.59	0.27	0.04	-0.05	0.00	0.59
Min	-0.12	-0.14	-0.08	-0.06	0.02	0.07	0.07	0.02	-0.05	-0.11	-0.13	-0.18	-0.18

Annual Max Momentary Gage Height 0.60 M (A.D), at 6.00 Hours, on Aug 18, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.68 M (A.D)
Left Bank Elevation 4.26 M (A.D)
Right Bank Elevation 4.91 M (A.D), Drainage Area 521 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.62	0.58	1.26	2.30	1.80	2.64	6.35	2.20	5.02	1.02	1.10	0.54	
2	1.18	0.54	1.18	2.00	3.48	3.20	5.67	2.10	4.22	1.02	1.02	0.54	
3	0.94	0.54	1.18	1.90	2.20	3.90	5.84	2.40	4.06	1.02	0.94	0.54	
4	3.76	0.54	1.34	2.30	1.80	4.70	4.38	4.86	4.06	1.02	0.94	0.54	
5	1.26	0.54	1.26	2.78	1.70	3.62	3.90	6.01	3.48	0.94	0.94	0.54	
6	0.86	0.62	1.18	2.92	2.20	3.06	3.34	4.38	3.20	0.94	0.86	0.58	
7	1.10	0.66	1.10	2.30	1.90	3.48	2.92	3.06	2.92	0.94	0.78	0.54	
8	1.10	0.70	1.10	2.10	2.50	4.06	2.92	2.40	2.78	0.94	0.70	0.54	
9	0.86	0.70	1.10	1.80	2.30	3.34	4.38	2.64	2.40	0.86	0.70	0.54	
10	0.66	0.70	1.18	1.60	2.20	2.50	8.00	2.10	2.30	0.86	0.66	0.50	
11	0.62	0.94	1.26	1.70	2.00	3.20	8.80	2.10	2.10	0.86	0.62	0.50	
12	0.62	1.70	1.18	1.60	2.10	3.62	8.20	2.10	2.00	0.86	0.62	0.50	
13	0.66	0.94	1.18	1.34	1.90	2.64	8.40	2.00	1.90	0.94	0.62	0.46	
14	0.66	1.10	1.18	1.26	2.30	2.50	6.69	1.90	1.80	0.94	0.62	0.46	
15	0.62	1.26	1.60	1.90	3.20	2.20	5.84	1.90	1.70	0.94	0.58	0.46	
16	0.62	1.42	2.30	1.90	4.38	2.30	6.69	1.80	1.80	0.94	0.58	0.46	
17	0.66	1.80	2.10	1.70	4.86	4.22	7.60	1.80	2.10	0.86	0.62	0.42	
18	0.66	2.00	1.34	1.42	7.60	4.70	6.86	1.80	2.00	0.86	0.62	0.42	
19	0.66	1.34	1.10	1.34	3.48	4.70	6.52	1.70	1.90	0.86	0.62	0.42	
20	0.70	1.42	0.94	1.26	4.06	3.06	5.34	1.70	1.70	0.86	0.58	0.38	
21	0.78	1.18	0.94	1.10	8.80	3.34	5.02	2.00	1.70	0.78	0.58	0.38	
22	0.78	1.18	0.94	1.02	7.60	2.40	4.70	6.18	1.60	0.78	0.58	0.38	
23	0.78	2.10	0.86	1.02	8.00	2.78	4.38	11.09	1.60	0.70	0.62	0.58	
24	0.78	1.42	0.86	1.02	6.69	2.64	4.38	9.41	1.42	0.70	0.62	1.50	
25	0.70	1.18	0.86	1.02	6.86	2.50	3.76	6.18	1.42	0.70	0.62	0.78	
26	0.70	1.18	1.10	1.02	5.67	2.30	3.34	5.18	1.34	0.66	0.58	0.58	
27	0.66	1.10	0.94	1.10	4.06	2.40	2.92	4.70	1.26	0.66	0.58	0.42	
28	0.66	1.34	0.94	1.02	2.78	3.20	2.50	5.02	1.18	0.78	0.58	0.50	
29	0.62	1.34	1.60	1.02	2.20	4.06	2.92	7.80	1.18	1.02		0.46	
30	0.62	1.26	2.92	1.10	2.00	4.54	2.30	5.50	1.18	1.90		0.42	
31		1.18		1.10	2.00		2.20		1.10	1.34		0.42	
Total	28.90	34.50	38.02	48.96	114.62	97.80	157.06	114.01	68.42	28.50	19.48	16.30	766.57 CMSDAY
Mean	0.96	1.11	1.27	1.58	3.70	3.26	5.07	3.80	2.21	0.92	0.70	0.53	2.10 CMS
Max	3.76	2.10	2.92	2.92	8.80	4.70	8.80	11.09	5.02	1.90	1.10	1.50	11.09 CMS
Min	0.62	0.54	0.86	1.02	1.70	2.20	2.20	1.70	1.10	0.66	0.58	0.38	0.38 CMS
Runoff	2.497	2.981	3.285	4.230	9.903	8.450	13.570	9.850	5.911	2.462	1.683	1.408	66.232 MCM

Momentary Peak 11.30 CMS, at 0.60 M (A.D), at 6.00 Hours, on Aug 18, 1998

Runoff Yield 4.03 Liters/Second/Square KM, Momentary Peak Yield 21.689 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

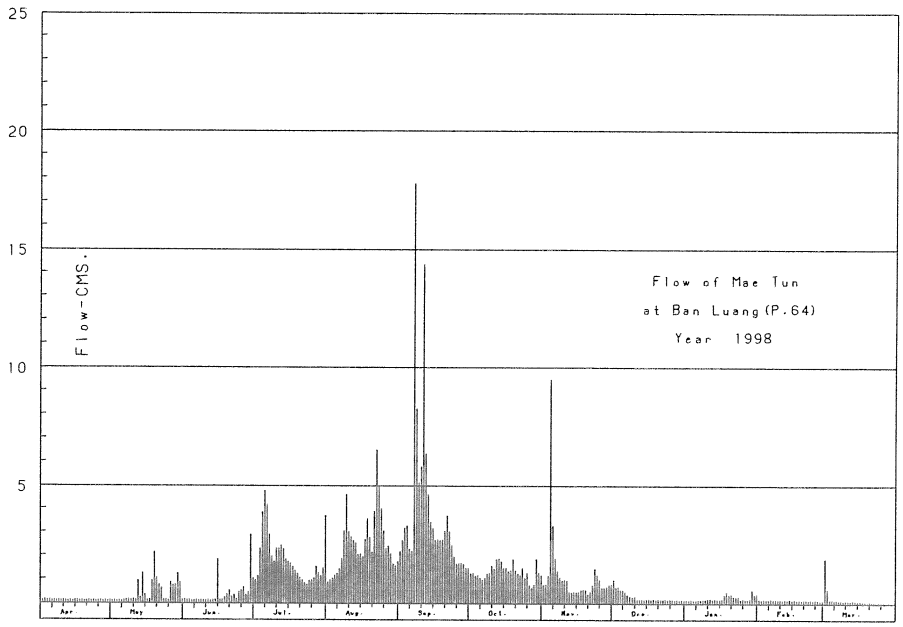
Nam Mae Tun at Ban Luang, Chiang Mai (P.64)

Location	Lat. 17°47'01" N., Long. 98°22'31" E., on right bank at the bridge on highway, Ban Luang, Amphoe Omkoi, Chiang Mai.
Drainage Area	503 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 35.00 meters from the top staff gage.
Elevation	+9.00 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1990 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Fairly stable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Stage-discharge relation defined by 88 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.38	0.35	0.39	0.48	0.47	0.60	0.51	0.46	0.48	0.36	0.38	0.57	
2	0.38	0.35	0.38	0.50	0.48	0.64	0.51	0.46	0.45	0.36	0.38	0.44	
3	0.38	0.35	0.38	0.61	0.49	0.68	0.50	0.50	0.45	0.36	0.38	0.38	
4	0.38	0.35	0.37	0.73	0.50	0.69	0.50	1.02	0.44	0.36	0.38	0.36	
5	0.37	0.35	0.37	0.79	0.51	0.61	0.49	0.69	0.44	0.36	0.39	0.34	
6	0.37	0.35	0.37	0.75	0.53	0.60	0.48	0.57	0.43	0.36	0.39	0.33	
7	0.37	0.39	0.37	0.66	0.57	1.26	0.49	0.52	0.42	0.37	0.38	0.33	
8	0.37	0.39	0.37	0.58	0.67	0.97	0.51	0.49	0.41	0.37	0.37	0.31	
9	0.37	0.40	0.37	0.56	0.78	0.81	0.51	0.48	0.41	0.40	0.37	0.31	
10	0.37	0.40	0.35	0.61	0.67	0.85	0.54	0.48	0.41	0.40	0.37	0.31	
11	0.37	0.39	0.37	0.61	0.65	1.17	0.53	0.48	0.40	0.40	0.37	0.32	
12	0.36	0.48	0.36	0.62	0.64	0.88	0.57	0.43	0.40	0.39	0.37	0.32	
13	0.36	0.41	0.36	0.61	0.63	0.78	0.57	0.43	0.39	0.39	0.37	0.32	
14	0.36	0.51	0.39	0.57	0.59	0.70	0.56	0.43	0.39	0.39	0.38	0.31	
15	0.36	0.42	0.57	0.56	0.59	0.68	0.53	0.43	0.39	0.39	0.37	0.30	
16	0.36	0.38	0.39	0.55	0.58	0.64	0.53	0.43	0.39	0.39	0.37	0.30	
17	0.36	0.38	0.38	0.54	0.64	0.64	0.52	0.44	0.39	0.42	0.36	0.30	
18	0.36	0.48	0.41	0.52	0.71	0.64	0.52	0.44	0.39	0.43	0.36	0.27	
19	0.36	0.60	0.42	0.51	0.65	0.64	0.57	0.44	0.39	0.42	0.36	0.28	
20	0.36	0.49	0.44	0.49	0.60	0.67	0.52	0.42	0.39	0.42	0.35	0.29	
21	0.36	0.46	0.41	0.48	0.73	0.72	0.51	0.43	0.39	0.41	0.37	0.28	
22	0.36	0.45	0.42	0.47	0.89	0.67	0.50	0.46	0.39	0.41	0.35	0.28	
23	0.35	0.40	0.40	0.46	0.80	0.62	0.53	0.53	0.39	0.41	0.34	0.24	
24	0.35	0.39	0.43	0.48	0.74	0.58	0.49	0.50	0.39	0.40	0.34	0.25	
25	0.35	0.38	0.44	0.48	0.67	0.55	0.51	0.48	0.37	0.40	0.33	0.24	
26	0.35	0.47	0.45	0.49	0.61	0.55	0.46	0.45	0.36	0.39	0.32	0.23	
27	0.35	0.46	0.42	0.54	0.62	0.55	0.45	0.45	0.37	0.39	0.32	0.22	
28	0.35	0.46	0.43	0.51	0.59	0.55	0.46	0.45	0.36	0.39	0.31	0.24	
29	0.35	0.51	0.66	0.50	0.55	0.53	0.57	0.46	0.36	0.44		0.22	
30	0.35	0.47	0.49	0.53	0.54	0.53	0.51	0.46	0.36	0.42		0.22	
31		0.40		0.72	0.56		0.50		0.36	0.42		0.22	
Mean	0.36	0.42	0.41	0.56	0.62	0.70	0.51	0.49	0.40	0.39	0.36	0.30	
Max	0.38	0.60	0.66	0.79	0.89	1.26	0.57	1.02	0.48	0.44	0.39	0.57	1.26
Min	0.35	0.35	0.35	0.46	0.47	0.53	0.45	0.42	0.36	0.36	0.31	0.22	0.22

Annual Max Momentary Gage Height 1.67 M (A.D), at 20.00 Hours, on Sep 7, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.17 M (A.D)
Left Bank Elevation 4.51 M (A.D)
Right Bank Elevation 4.53 M (A.D), Drainage Area 503 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.16	0.13	0.17	0.99	0.89	2.20	1.29	0.79	0.99	0.14	0.16	1.90	
2	0.16	0.13	0.16	1.19	0.99	2.70	1.29	0.79	0.68	0.14	0.16	0.58	
3	0.16	0.13	0.16	2.33	1.09	3.20	1.19	1.19	0.68	0.14	0.16	0.16	
4	0.16	0.13	0.15	3.90	1.19	3.33	1.19	9.50	0.58	0.14	0.16	0.14	
5	0.15	0.13	0.15	4.80	1.29	2.33	1.09	3.33	0.58	0.14	0.17	0.13	
6	0.15	0.13	0.15	4.20	1.49	2.20	0.99	1.90	0.48	0.14	0.17	0.12	
7	0.15	0.17	0.15	2.95	1.90	17.81	1.09	1.39	0.38	0.15	0.16	0.12	
8	0.15	0.17	0.15	2.00	3.08	8.28	1.29	1.09	0.28	0.15	0.15	0.10	
9	0.15	0.18	0.15	1.80	4.65	5.12	1.29	0.99	0.28	0.18	0.15	0.10	
10	0.15	0.18	0.13	2.33	3.08	5.83	1.59	0.99	0.28	0.18	0.15	0.10	
11	0.15	0.17	0.15	2.33	2.82	14.36	1.49	0.99	0.18	0.18	0.15	0.11	
12	0.14	0.99	0.14	2.45	2.70	6.35	1.90	0.48	0.18	0.17	0.15	0.11	
13	0.14	0.28	0.14	2.33	2.57	4.65	1.90	0.48	0.17	0.17	0.15	0.11	
14	0.14	1.29	0.17	1.90	2.10	3.45	1.80	0.48	0.17	0.17	0.16	0.10	
15	0.14	0.38	1.90	1.80	2.10	3.20	1.49	0.48	0.17	0.17	0.15	0.09	
16	0.14	0.16	0.17	1.70	2.00	2.70	1.49	0.48	0.17	0.17	0.15	0.09	
17	0.14	0.16	0.16	1.59	2.70	2.70	1.39	0.58	0.17	0.38	0.14	0.09	
18	0.14	0.99	0.28	1.39	3.60	2.70	1.39	0.58	0.17	0.48	0.14	0.06	
19	0.14	2.20	0.38	1.29	2.82	2.70	1.90	0.58	0.17	0.38	0.14	0.07	
20	0.14	1.09	0.58	1.09	2.20	3.08	1.39	0.38	0.17	0.38	0.13	0.08	
21	0.14	0.79	0.28	0.99	3.90	3.75	1.29	0.48	0.17	0.28	0.15	0.07	
22	0.14	0.68	0.38	0.89	6.53	3.08	1.19	0.79	0.17	0.28	0.13	0.07	
23	0.13	0.18	0.18	0.79	4.95	2.45	1.49	1.49	0.17	0.28	0.13	0.04	
24	0.13	0.17	0.48	0.99	4.05	2.00	1.09	1.19	0.17	0.18	0.13	0.04	
25	0.13	0.16	0.58	0.99	3.08	1.70	1.29	0.99	0.15	0.18	0.12	0.04	
26	0.13	0.89	0.68	1.09	2.33	1.70	0.79	0.68	0.14	0.17	0.11	0.03	
27	0.13	0.79	0.38	1.59	2.45	1.70	0.68	0.68	0.15	0.17	0.11	0.02	
28	0.13	0.79	0.48	1.29	2.10	1.70	0.79	0.68	0.14	0.17	0.10	0.04	
29	0.13	1.29	2.95	1.19	1.70	1.49	1.90	0.79	0.14	0.58		0.02	
30	0.13	0.89	1.09	1.49	1.59	1.49	1.29	0.79	0.14	0.38		0.02	
31		0.18		3.75	1.80		1.19		0.14	0.38		0.02	
Total	4.27	16.00	13.07	59.41	79.74	119.95	41.43	36.03	8.61	7.20	4.03	4.77	394.51 CMSDAY
Mean	0.14	0.52	0.44	1.92	2.57	4.00	1.34	1.20	0.28	0.23	0.14	0.15	1.08 CMS
Max	0.16	2.20	2.95	4.80	6.53	17.81	1.90	9.50	0.99	0.58	0.17	1.90	17.81 CMS
Min	0.13	0.13	0.13	0.79	0.89	1.49	0.68	0.38	0.14	0.14	0.10	0.02	0.02 CMS
Runoff	0.369	1.382	1.129	5.133	6.890	10.364	3.580	3.113	0.744	0.622	0.348	0.412	34.086 MCM

Momentary Peak 40.82 CMS, at 1.67 M (A.D), at 20.00 Hours, on Sep 7, 1998

Runoff Yield 2.15 Liters/Second/Square KM, Momentary Peak Yield 81.153 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

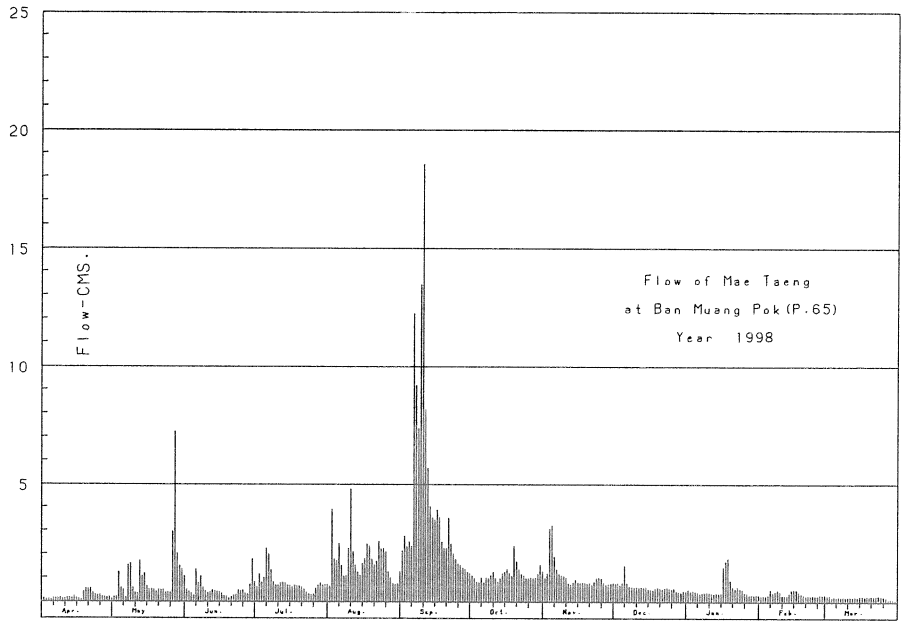
Mae Taeng River at Ban Muang Pok, Chiang Mai, (P.65)

Location	Lat. 19°-38'-10" N., Long. 98°-38'-19" E., on left bank in front of King Amphoe Wiang Haeng Office, Amphoe Wiang Haeng, Chiang Mai.
Drainage Area	240 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank in front of the station office.
Elevation	+3.900 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1992 to date.
Rating Operation	
Period of Rating	1992 to date.
Rated by Float	-
Rated by Current Meter	1992 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The concrete weir situated about 300 meters upstream from the gage site. Stage-discharge relation defined by 136 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.55	0.57	0.64	0.66	0.67	0.84	0.73	0.72	0.69	0.64	0.58	0.59	
2	0.54	0.58	0.63	0.74	1.00	0.90	0.72	0.74	0.69	0.63	0.59	0.59	
3	0.54	0.75	0.61	0.70	0.81	0.86	0.70	0.93	0.68	0.63	0.58	0.57	
4	0.54	0.66	0.60	0.72	0.80	0.88	0.70	0.94	0.69	0.63	0.60	0.57	
5	0.55	0.64	0.76	0.85	0.87	0.86	0.72	0.82	0.78	0.62	0.64	0.57	
6	0.56	0.57	0.69	0.83	0.78	1.63	0.70	0.76	0.69	0.61	0.62	0.57	
7	0.56	0.78	0.73	0.76	0.73	1.41	0.72	0.74	0.67	0.61	0.62	0.57	
8	0.56	0.79	0.66	0.70	0.73	1.27	0.72	0.73	0.66	0.62	0.64	0.57	
9	0.55	0.66	0.63	0.68	0.85	1.71	0.73	0.73	0.66	0.62	0.62	0.57	
10	0.55	0.62	0.62	0.68	1.07	2.03	0.75	0.72	0.66	0.62	0.59	0.57	
11	0.57	0.61	0.62	0.69	0.84	1.33	0.72	0.69	0.66	0.61	0.59	0.57	
12	0.56	0.80	0.64	0.70	0.78	1.14	0.70	0.68	0.66	0.61	0.59	0.57	
13	0.56	0.73	0.63	0.69	0.75	1.01	0.72	0.70	0.66	0.61	0.61	0.57	
14	0.58	0.74	0.63	0.68	0.73	0.97	0.74	0.71	0.66	0.61	0.64	0.57	
15	0.56	0.67	0.62	0.67	0.79	0.96	0.75	0.70	0.65	0.61	0.64	0.58	
16	0.54	0.64	0.61	0.66	0.81	1.00	0.76	0.69	0.64	0.77	0.64	0.58	
17	0.54	0.65	0.59	0.68	0.87	0.97	0.74	0.70	0.64	0.80	0.62	0.58	
18	0.63	0.64	0.58	0.67	0.86	0.88	0.73	0.69	0.65	0.81	0.61	0.58	
19	0.65	0.63	0.56	0.67	0.81	0.85	0.86	0.69	0.66	0.71	0.60	0.58	
20	0.65	0.64	0.57	0.66	0.78	0.85	0.80	0.69	0.65	0.66	0.59	0.58	
21	0.65	0.64	0.60	0.65	0.80	0.97	0.76	0.68	0.65	0.65	0.59	0.58	
22	0.62	0.64	0.60	0.62	0.88	0.87	0.74	0.70	0.65	0.66	0.59	0.58	
23	0.60	0.62	0.64	0.61	0.85	0.83	0.73	0.72	0.66	0.65	0.59	0.59	
24	0.60	0.62	0.63	0.60	0.85	0.81	0.72	0.72	0.65	0.64	0.59	0.58	
25	0.60	0.62	0.64	0.61	0.84	0.79	0.72	0.72	0.65	0.62	0.59	0.58	
26	0.58	0.92	0.61	0.65	0.75	0.78	0.72	0.69	0.65	0.61	0.60	0.56	
27	0.57	1.26	0.61	0.68	0.72	0.77	0.72	0.68	0.63	0.60	0.60	0.54	
28	0.57	0.83	0.68	0.69	0.69	0.76	0.72	0.68	0.62	0.60	0.60	0.54	
29	0.57	0.78	0.81	0.68	0.68	0.75	0.74	0.69	0.62	0.60		0.54	
30	0.55	0.76	0.70	0.68	0.69	0.74	0.78	0.69	0.63	0.60		0.53	
31		0.73		0.68	0.75		0.75		0.63	0.60		0.52	
Mean	0.57	0.70	0.64	0.69	0.80	1.01	0.74	0.72	0.66	0.64	0.61	0.57	
Max	0.65	1.26	0.81	0.85	1.07	2.03	0.86	0.94	0.78	0.81	0.64	0.59	2.03
Min	0.54	0.57	0.56	0.60	0.67	0.74	0.70	0.68	0.62	0.60	0.58	0.52	0.52

Annual Max Momentary Gage Height 2.56 M (A.D), at 5.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.41 M (A.D)
Left Bank Elevation 5.06 M (A.D)
Right Bank Elevation 5.06 M (A.D), Drainage Area 240 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.15	0.21	0.52	0.63	0.69	2.17	1.12	1.03	0.80	0.52	0.24	0.27	
2	0.12	0.24	0.46	1.21	3.95	2.80	1.03	1.21	0.80	0.46	0.27	0.27	
3	0.12	1.30	0.36	0.85	1.85	2.38	0.85	3.15	0.74	0.46	0.24	0.21	
4	0.12	0.63	0.30	1.03	1.75	2.59	0.85	3.26	0.80	0.46	0.30	0.21	
5	0.15	0.52	1.39	2.28	2.49	2.38	1.03	1.96	1.57	0.41	0.52	0.21	
6	0.18	0.21	0.80	2.06	1.57	12.25	0.85	1.39	0.80	0.36	0.41	0.21	
7	0.18	1.57	1.12	1.39	1.12	9.23	1.03	1.21	0.69	0.36	0.41	0.21	
8	0.18	1.66	0.63	0.85	1.12	7.41	1.03	1.12	0.63	0.41	0.52	0.21	
9	0.15	0.63	0.46	0.74	2.28	13.46	1.12	1.12	0.63	0.41	0.41	0.21	
10	0.15	0.41	0.41	0.74	4.83	18.58	1.30	1.03	0.63	0.41	0.27	0.21	
11	0.21	0.36	0.41	0.80	2.17	8.19	1.03	0.80	0.63	0.36	0.27	0.21	
12	0.18	1.75	0.52	0.85	1.57	5.72	0.85	0.74	0.63	0.36	0.27	0.21	
13	0.18	1.12	0.46	0.80	1.30	4.07	1.03	0.85	0.63	0.36	0.36	0.21	
14	0.24	1.21	0.46	0.74	1.12	3.61	1.21	0.94	0.63	0.36	0.52	0.21	
15	0.18	0.69	0.41	0.69	1.66	3.49	1.30	0.85	0.57	0.36	0.52	0.24	
16	0.12	0.52	0.36	0.63	1.85	3.95	1.39	0.80	0.52	1.48	0.52	0.24	
17	0.12	0.57	0.27	0.74	2.49	3.61	1.21	0.85	0.52	1.75	0.41	0.24	
18	0.46	0.52	0.24	0.69	2.38	2.59	1.12	0.80	0.57	1.85	0.36	0.24	
19	0.57	0.46	0.18	0.69	1.85	2.28	2.38	0.80	0.63	0.94	0.30	0.24	
20	0.57	0.52	0.21	0.63	1.57	2.28	1.75	0.80	0.57	0.63	0.27	0.24	
21	0.57	0.52	0.30	0.57	1.75	3.61	1.39	0.74	0.57	0.57	0.27	0.24	
22	0.41	0.52	0.30	0.41	2.59	2.49	1.21	0.85	0.57	0.63	0.27	0.24	
23	0.30	0.41	0.52	0.36	2.28	2.06	1.12	1.03	0.63	0.57	0.27	0.27	
24	0.30	0.41	0.46	0.30	2.28	1.85	1.03	1.03	0.57	0.52	0.27	0.24	
25	0.30	0.41	0.52	0.36	2.17	1.66	1.03	1.03	0.57	0.41	0.27	0.24	
26	0.24	3.03	0.36	0.57	1.30	1.57	1.03	0.80	0.57	0.36	0.30	0.18	
27	0.21	7.28	0.36	0.74	1.03	1.48	1.03	0.74	0.46	0.30	0.30	0.12	
28	0.21	2.06	0.74	0.80	0.80	1.39	1.03	0.74	0.41	0.30	0.30	0.12	
29	0.21	1.57	1.85	0.74	0.74	1.30	1.21	0.80	0.41	0.30		0.12	
30	0.15	1.39	0.85	0.74	0.80	1.21	1.57	0.80	0.46	0.30		0.09	
31		1.12		0.74	1.30		1.30		0.46	0.30		0.06	
Total	7.23	33.82	16.23	25.37	56.65	131.66	36.43	33.27	19.67	17.27	9.64	6.42	393.66 CMSDAY
Mean	0.24	1.09	0.54	0.82	1.83	4.39	1.18	1.11	0.63	0.56	0.34	0.21	1.08 CMS
Max	0.57	7.28	1.85	2.28	4.83	18.58	2.38	3.26	1.57	1.85	0.52	0.27	18.58 CMS
Min	0.12	0.21	0.18	0.30	0.69	1.21	0.85	0.74	0.41	0.30	0.24	0.06	0.06 CMS
Runoff	0.625	2.922	1.402	2.192	4.895	11.375	3.148	2.875	1.699	1.492	0.833	0.555	34.012 MCM

Momentary Peak 27.78 CMS, at 2.56 M (A.D), at 5.00 Hours, on Sep 10, 1998

Runoff Yield 4.49 Liters/Second/Square KM, Momentary Peak Yield 115.750 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

Ping River at Ban Mae Tae, Chiang Mai (P.67)

Location — Lat. 19°01'11" N., Long. 98°57'42" E., on left bank at the bridge on highway, Ban Mae Tae, Amphoe San Sai, Chiang Mai.

Drainage Area — 5,289 sq.km.

Type of Gage — Water-stage recorder.

Zero Gage at Bottom — +315.93 m.(M.S.L.)

Bench Mark — B.M.-H.D.

Location — On left bank about 20 meters from the top staff gage.

Elevation — +323.690 m.(M.S.L.)

Gage Reading Frequency — Recording.

Basis of Mean Daily Gage Height — Arithmetic mean of 24 readings.

Period of Available Gage Records — 1995 to date.

Rating Operation

Period of Rating — 1995 to date.

Rated by Float — -

Rated by Current Meter — 1995 to date.

Stability of Channel Regimes — Rather unstable by some scouring.

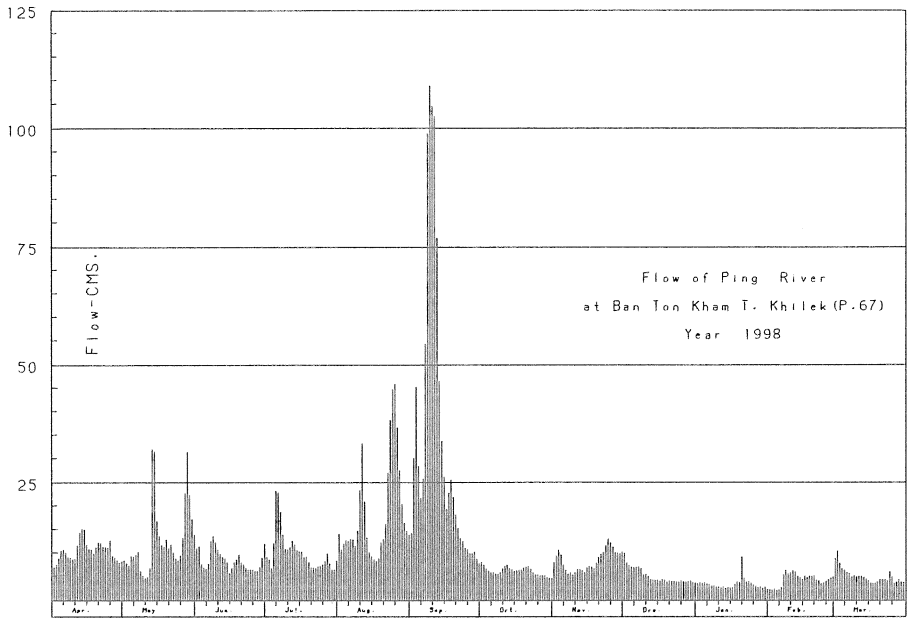
Overbank Flow Conditions — No overbank flow.

General Description — Records good. Flow regulated by Mae Faek and Mae Taeng weir situated above gage site. Flow effected by the sand-dredger about 10 kilometers downstream from the gage site. Stage-discharge relation defined by 49 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	317.31	317.37	317.48	317.41	317.59	317.50	317.24	317.24	317.33	316.96	316.81	317.28	
2	317.33	317.35	317.50	317.38	317.47	317.93	317.22	317.31	317.24	316.97	316.82	317.35	
3	317.40	317.32	317.34	317.30	317.52	318.24	317.17	317.36	317.21	316.96	316.83	317.24	
4	317.46	317.42	317.30	317.52	317.54	317.89	317.15	317.32	317.20	316.97	316.81	317.17	
5	317.47	317.41	317.29	317.82	317.54	317.72	317.13	317.22	317.19	316.95	316.82	317.16	
6	317.45	317.43	317.34	317.81	317.55	317.83	317.12	317.15	317.19	316.93	316.86	317.13	
7	317.41	317.45	317.54	317.72	317.55	318.41	317.11	317.11	317.20	316.91	317.10	317.11	
8	317.40	317.26	317.57	317.58	317.50	319.11	317.10	317.12	317.17	316.90	317.15	317.07	
9	317.39	317.19	317.53	317.48	317.61	319.25	317.13	317.10	317.10	316.89	317.11	317.08	
10	317.39	317.16	317.47	317.47	317.82	319.19	317.17	317.12	317.10	316.88	317.12	317.06	
11	317.51	317.17	317.43	317.49	318.01	319.16	317.20	317.16	317.07	316.87	317.15	317.08	
12	317.60	317.30	317.41	317.54	317.77	318.78	317.22	317.17	317.03	316.88	317.13	317.08	
13	317.62	317.99	317.39	317.51	317.56	318.26	317.18	317.15	317.01	316.86	317.08	317.05	
14	317.62	317.98	317.36	317.47	317.45	318.01	317.16	317.13	317.02	316.87	317.05	317.04	
15	317.51	317.67	317.23	317.46	317.41	317.84	317.14	317.19	317.01	316.87	317.03	317.00	
16	317.48	317.57	317.29	317.45	317.38	317.66	317.15	317.20	317.01	316.87	317.07	316.97	
17	317.47	317.51	317.36	317.41	317.37	317.75	317.15	317.20	317.03	316.94	317.06	316.95	
18	317.44	317.49	317.38	317.41	317.40	317.82	317.16	317.17	317.01	316.98	317.07	316.97	
19	317.49	317.55	317.43	317.36	317.42	317.73	317.18	317.24	316.99	316.98	317.08	316.98	
20	317.53	317.48	317.35	317.30	317.45	317.62	317.20	317.29	317.00	317.30	317.08	317.02	
21	317.52	317.51	317.33	317.30	317.56	317.53	317.20	317.32	316.99	317.04	317.01	317.03	
22	317.50	317.45	317.30	317.30	317.86	317.46	317.17	317.34	317.00	316.99	317.01	317.03	
23	317.49	317.40	317.27	317.31	318.10	317.43	317.12	317.40	316.98	316.99	316.96	317.00	
24	317.49	317.37	317.28	317.32	318.23	317.38	317.10	317.45	316.99	316.97	316.96	317.14	
25	317.54	317.42	317.27	317.33	318.25	317.36	317.09	317.42	317.00	316.92	316.99	317.06	
26	317.42	317.56	317.25	317.37	318.07	317.33	317.08	317.39	317.00	316.90	317.03	316.95	
27	317.40	317.81	317.26	317.44	317.87	317.33	317.09	317.34	316.99	316.88	317.05	316.99	
28	317.38	317.98	317.31	317.34	317.69	317.34	317.08	317.33	316.99	316.88	317.06	317.02	
29	317.35	317.80	317.40	317.28	317.57	317.28	317.06	317.33	317.01	316.86		316.99	
30	317.37	317.68	317.52	317.27	317.51	317.23	317.04	317.34	316.97	316.88		316.97	
31		317.58		317.37	317.48		317.05		316.96	316.84		317.03	
Mean	317.46	317.50	317.37	317.44	317.65	317.91	317.14	317.25	317.06	316.93	317.01	317.06	
Max	317.62	317.99	317.57	317.82	318.25	319.25	317.24	317.45	317.33	317.30	317.15	317.35	319.25
Min	317.31	317.16	317.23	317.27	317.37	317.23	317.04	317.10	316.96	316.84	316.81	316.95	316.81

Annual Max Momentary Gage Height 319.28 M (MSL), at 22.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 315.93 M (MSL), River Bed 316.12 M (MSL)
Left Bank Elevation 321.54 M (MSL)
Right Bank Elevation 323.31 M (MSL), Drainage Area 5289 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.11	8.37	11.00	9.25	14.20	14.40	8.04	8.04	10.02	3.66	2.19	8.88	
2	7.53	7.95	11.50	8.58	10.75	30.28	7.62	9.54	8.04	3.77	2.28	10.50	
3	9.00	7.32	7.74	6.90	12.10	45.48	6.69	10.74	7.41	3.66	2.37	8.04	
4	10.50	9.50	6.90	12.10	12.70	28.48	6.35	9.78	7.20	3.77	2.19	6.69	
5	10.75	9.25	6.74	23.38	12.70	21.66	6.01	7.62	7.03	3.55	2.28	6.52	
6	10.25	9.75	7.74	22.89	13.00	25.96	5.84	6.35	7.03	3.33	2.64	6.01	
7	9.25	10.25	12.70	18.88	13.00	54.59	5.67	5.67	7.20	3.11	5.50	5.67	
8	9.00	6.26	13.60	13.90	11.50	99.01	5.50	5.84	6.69	3.00	6.35	5.08	
9	8.79	5.15	12.40	11.00	14.85	109.10	6.01	5.50	5.50	2.91	5.67	5.22	
10	8.79	4.70	10.75	10.75	23.38	104.69	6.69	5.84	5.50	2.82	5.84	4.94	
11	11.80	4.85	9.75	11.25	33.35	102.56	7.20	6.52	5.08	2.73	6.35	5.22	
12	14.50	6.90	9.25	12.70	21.08	77.04	7.62	6.69	4.52	2.82	6.01	5.22	
13	15.20	32.25	8.79	11.80	13.30	46.52	6.86	6.35	4.24	2.64	5.22	4.80	
14	15.20	31.70	8.16	10.75	10.25	33.98	6.52	6.01	4.38	2.73	4.80	4.66	
15	11.80	16.95	5.78	10.50	9.25	26.38	6.18	7.03	4.24	2.73	4.52	4.10	
16	11.00	13.60	6.74	10.25	8.58	19.50	6.35	7.20	4.24	2.73	5.08	3.77	
17	10.75	11.80	8.16	9.25	8.37	22.80	6.35	7.20	4.52	3.44	4.94	3.55	
18	10.00	11.25	8.58	9.25	9.00	25.54	6.52	6.69	4.24	3.88	5.08	3.77	
19	11.25	13.00	9.75	8.16	12.24	22.04	6.86	8.04	3.99	3.88	5.22	3.88	
20	12.40	11.00	7.95	6.90	13.05	18.10	7.20	9.09	4.10	9.30	5.22	4.38	
21	12.10	11.80	7.53	6.90	16.20	15.30	7.20	9.78	3.99	4.66	4.24	4.52	
22	11.50	10.25	6.90	6.90	27.22	13.32	6.69	10.26	4.10	3.99	4.24	4.52	
23	11.25	9.00	6.42	7.11	38.30	12.51	5.84	11.70	3.88	3.99	3.66	4.10	
24	11.25	8.37	6.58	7.32	44.96	11.22	5.50	13.05	3.99	3.77	3.66	6.18	
25	12.70	9.50	6.42	7.53	46.00	10.74	5.36	12.24	4.10	3.22	3.99	4.94	
26	9.50	13.30	6.10	8.37	36.86	10.02	5.22	11.46	4.10	3.00	4.52	3.55	
27	9.00	22.89	6.26	10.00	27.64	10.02	5.36	10.26	3.99	2.82	4.80	3.99	
28	8.58	31.70	7.11	7.74	20.55	10.26	5.22	10.02	3.99	2.82	4.94	4.38	
29	7.95	22.40	9.00	6.58	16.50	8.88	4.94	10.02	4.24	2.64		3.99	
30	8.37	17.30	12.10	6.42	14.70	7.83	4.66	10.26	3.77	2.82		3.77	
31		13.90		8.37	13.86		4.80		3.66	2.46		4.52	
Total	317.07	402.21	258.40	321.68	579.44	1038.21	192.87	254.79	158.98	106.65	123.80	159.36	3913.46 CMSDAY
Mean	10.57	12.97	8.61	10.38	18.69	34.61	6.22	8.49	5.13	3.44	4.42	5.14	10.72 CMS
Max	15.20	32.25	13.60	23.38	46.00	109.10	8.04	13.05	10.02	9.30	6.35	10.50	109.10 CMS
Min	7.11	4.70	5.78	6.42	8.37	7.83	4.66	5.50	3.66	2.46	2.19	3.55	2.19 CMS
Runoff	27.395	34.751	22.326	27.793	50.064	89.701	16.664	22.014	13.736	9.215	10.696	13.769	338.123 MCM

Momentary Peak 111.32 CMS, at 319.28 M (MSL), at 22.00 Hours, on Sep 8, 1998

Runoff Yield 2.03 Liters/Second/Square KM, Momentary Peak Yield 21.047 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

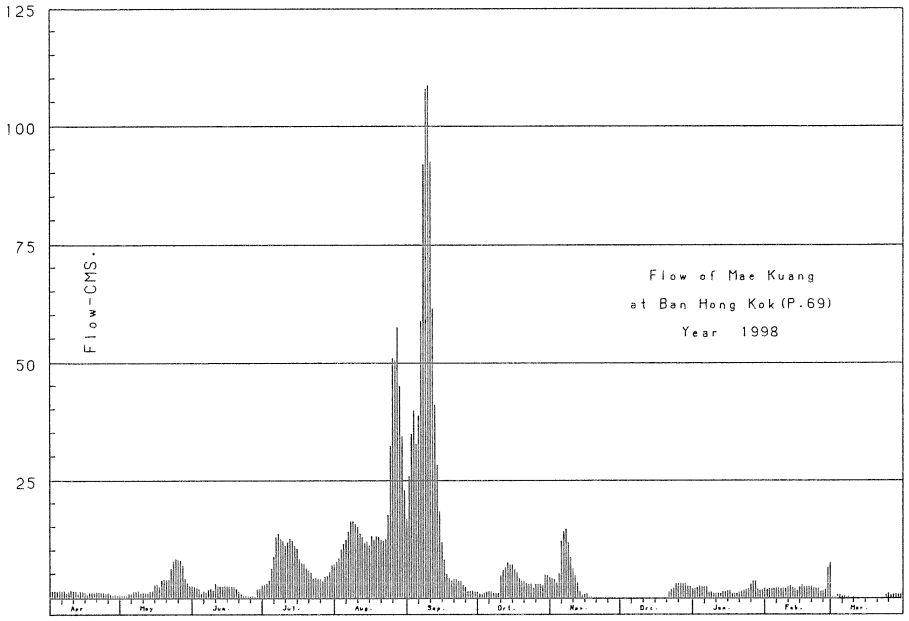
Nam Mae Kuang at Ban Hong Kok, Lamphun (P.69)

Location	Lat. 18°-39'-06" N., Long. 99°-04'-02" E., on right bank at the bridge on highway, Ban Hong Kok, Amphoe Muang, Lamphun.
Drainage Area	1,602 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 3 meters from the top staff gage.
Elevation	+5.590 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1995 to date.
Rating Operation	
Period of Rating	1995 to date.
Rated by Float	-
Rated by Current Meter	1995 to date.
Stability of Channel Regimes	Stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The local weir situated about 500 meters downstream from the gage site. Stage-discharge relation defined by 45 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.59	0.47	0.67	0.71	1.07	2.33	0.81	1.12	0.46	0.64	0.63	0.66	
2	0.58	0.47	0.66	0.74	1.11	2.67	0.80	1.10	0.45	0.67	0.64	0.55	
3	0.58	0.46	0.62	0.78	1.23	2.84	0.82	1.04	0.43	0.69	0.64	0.79	
4	0.59	0.52	0.53	0.97	1.29	2.60	0.86	1.22	0.41	0.69	0.64	0.76	
5	0.59	0.53	0.59	1.14	1.35	2.81	0.87	1.65	0.38	0.68	0.66	0.72	
6	0.59	0.57	0.54	1.38	1.45	3.39	0.85	1.76	0.37	0.67	0.64	0.70	
7	0.54	0.58	0.62	1.43	1.56	4.17	0.83	1.80	0.38	0.57	0.65	0.66	
8	0.57	0.59	0.63	1.36	1.57	4.51	0.81	1.62	0.34	0.56	0.64	0.65	
9	0.61	0.54	0.61	1.33	1.53	4.53	0.83	1.45	0.39	0.54	0.65	0.63	
10	0.58	0.54	0.74	1.27	1.50	4.18	1.18	1.28	0.37	0.53	0.67	0.58	
11	0.59	0.55	0.69	1.32	1.43	3.46	1.26	1.17	0.37	0.54	0.69	0.58	
12	0.53	0.55	0.68	1.36	1.38	2.88	1.31	1.05	0.39	0.54	0.67	0.55	
13	0.58	0.58	0.69	1.34	1.31	2.43	1.38	0.88	0.43	0.57	0.64	0.52	
14	0.58	0.59	0.69	1.27	1.32	1.98	1.34	0.81	0.40	0.58	0.61	0.49	
15	0.54	0.72	0.70	1.24	1.27	1.64	1.34	0.80	0.37	0.61	0.68	0.43	
16	0.49	0.72	0.68	1.10	1.40	1.41	1.28	0.81	0.39	0.60	0.71	0.42	
17	0.56	0.67	0.69	1.05	1.35	1.21	1.22	0.70	0.38	0.53	0.68	0.39	
18	0.54	0.79	0.67	1.03	1.39	1.12	1.13	0.63	0.38	0.53	0.68	0.38	
19	0.55	0.80	0.64	0.97	1.39	1.09	1.07	0.63	0.33	0.54	0.69	0.37	
20	0.57	0.79	0.57	0.93	1.34	1.11	1.07	0.57	0.35	0.56	0.68	0.38	
21	0.55	0.80	0.51	0.90	1.33	1.11	1.04	0.53	0.58	0.58	0.65	0.37	
22	0.55	0.97	0.46	0.82	1.36	1.08	1.02	0.49	0.63	0.61	0.65	0.35	
23	0.54	1.07	0.46	0.82	1.64	1.07	1.02	0.56	0.65	0.62	0.64	0.37	
24	0.53	1.11	0.45	0.81	2.27	1.00	0.94	0.57	0.74	0.65	0.59	0.79	
25	0.54	1.09	0.43	0.80	2.91	0.95	1.01	0.61	0.73	0.72	0.58	0.82	
26	0.49	1.08	0.46	0.78	2.89	0.87	1.01	0.55	0.74	0.77	0.62	0.79	
27	0.49	1.02	0.44	0.84	3.11	0.87	1.02	0.53	0.74	0.78	0.98	0.80	
28	0.49	0.82	0.63	0.86	3.01	0.87	0.98	0.51	0.73	0.64	1.05	0.79	
29	0.48	0.74	0.63	0.91	2.66	0.86	1.19	0.46	0.70	0.59		0.79	
30	0.48	0.70	0.71	1.02	2.19	0.84	1.17	0.51	0.68	0.62		0.79	
31		0.69		1.02	1.90		1.15		0.64	0.64		0.78	
Mean	0.55	0.71	0.60	1.04	1.69	2.06	1.05	0.91	0.49	0.61	0.68	0.60	
Max	0.61	1.11	0.74	1.43	3.11	4.53	1.38	1.80	0.74	0.78	1.05	0.82	4.53
Min	0.48	0.46	0.43	0.71	1.07	0.84	0.80	0.46	0.33	0.53	0.58	0.35	0.33

Annual Max Momentary Gage Height 4.54 M (AD), at 22.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -0.05 M (AD)
Left Bank Elevation 5.96 M (AD)
Right Bank Elevation 5.71 M (AD), Drainage Area 1602 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.56	0.60	2.36	2.80	7.87	26.12	0.99	4.19	0.15	2.06	1.96	0.37	
2	1.47	0.60	2.26	3.20	8.47	34.96	0.90	3.95	0.14	2.36	2.06	0.25	
3	1.47	0.55	1.85	3.73	10.51	39.90	1.09	3.29	0.12	2.57	2.06	0.85	
4	1.56	0.93	1.02	6.42	11.53	33.00	1.47	5.42	0.10	2.57	2.06	0.70	
5	1.56	1.02	1.56	8.98	12.55	39.00	1.57	12.32	0.07	2.47	2.26	0.51	
6	1.56	1.38	1.11	13.06	14.30	58.92	1.38	14.25	0.06	2.36	2.06	0.41	
7	1.11	1.47	1.85	13.94	16.37	92.11	1.18	14.95	0.07	1.38	2.16	0.37	
8	1.38	1.56	1.96	12.72	16.56	107.87	0.99	11.80	0.04	1.29	2.06	0.36	
9	1.75	1.11	1.75	12.21	15.78	108.81	1.18	8.85	0.08	1.11	2.16	0.33	
10	1.47	1.11	3.20	11.19	15.20	92.56	4.91	6.23	0.06	1.02	2.36	0.28	
11	1.56	1.20	2.57	12.04	13.94	61.64	5.96	4.79	0.06	1.11	2.57	0.28	
12	1.02	1.20	2.47	12.72	13.06	41.10	6.65	3.40	0.08	1.11	2.36	0.25	
13	1.47	1.47	2.57	12.38	11.87	28.55	7.70	1.66	0.12	1.38	2.06	0.21	
14	1.47	1.56	2.57	11.19	12.04	18.48	7.10	0.99	0.09	1.47	1.75	0.18	
15	1.11	2.94	2.67	10.68	11.19	12.15	7.10	0.90	0.06	1.75	2.47	0.12	
16	0.70	2.94	2.47	8.30	13.40	8.17	6.23	0.99	0.08	1.65	2.80	0.11	
17	1.29	2.36	2.57	7.57	12.55	5.29	5.42	0.41	0.07	1.02	2.47	0.08	
18	1.11	3.87	2.36	7.28	13.23	4.19	4.31	0.33	0.07	1.02	2.47	0.07	
19	1.20	4.00	2.06	6.42	13.23	3.84	3.62	0.33	0.08	1.11	2.57	0.06	
20	1.38	3.87	1.38	5.84	12.38	4.07	3.62	0.27	0.12	1.29	2.47	0.07	
21	1.20	4.00	0.84	5.40	12.21	4.07	3.29	0.22	1.47	1.47	2.16	0.06	
22	1.20	6.42	0.55	4.28	12.72	3.73	3.07	0.18	1.96	1.75	2.16	0.04	
23	1.11	7.87	0.55	4.28	17.93	3.62	3.07	0.26	2.16	1.85	2.06	0.06	
24	1.02	8.47	0.50	4.14	32.42	2.85	2.25	0.27	3.20	2.16	1.56	0.85	
25	1.11	8.16	0.40	4.00	51.12	2.35	2.96	0.31	3.07	2.94	1.47	1.09	
26	0.70	8.01	0.55	3.73	50.48	1.57	2.96	0.25	3.20	3.60	1.85	0.85	
27	0.70	7.14	0.45	4.56	57.74	1.57	3.07	0.22	3.20	3.73	6.56	0.90	
28	0.70	4.28	1.96	4.84	45.23	1.57	2.65	0.20	3.07	2.06	7.57	0.85	
29	0.65	3.20	1.96	5.55	34.68	1.47	5.03	0.15	2.67	1.56		0.85	
30	0.65	2.67	2.80	7.14	22.98	1.28	4.79	0.20	2.47	1.85		0.85	
31		2.57		7.14	16.80		4.55		2.06	2.06		0.80	
Total	36.24	98.53	53.17	237.73	610.34	844.81	111.06	101.58	30.25	57.13	70.58	13.06	2264.48 CMSDAY
Mean	1.21	3.18	1.77	7.67	19.69	28.16	3.58	3.39	0.98	1.84	2.52	0.42	6.20 CMS
Max	1.75	8.47	3.20	13.94	57.74	108.81	7.70	14.95	3.20	3.73	7.57	1.09	108.81 CMS
Min	0.65	0.55	0.40	2.80	7.87	1.28	0.90	0.15	0.04	1.02	1.47	0.04	0.04 CMS
Runoff	3.131	8.513	4.594	20.540	52.733	72.992	9.596	8.777	2.614	4.936	6.098	1.128	195.651 MCM

Momentary Peak 109.28 CMS, at 4.54 M (AD), at 22.00 Hours, on Sep 8, 1998
Runoff Yield 3.87 Liters/Second/Square KM, Momentary Peak Yield 68.215 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

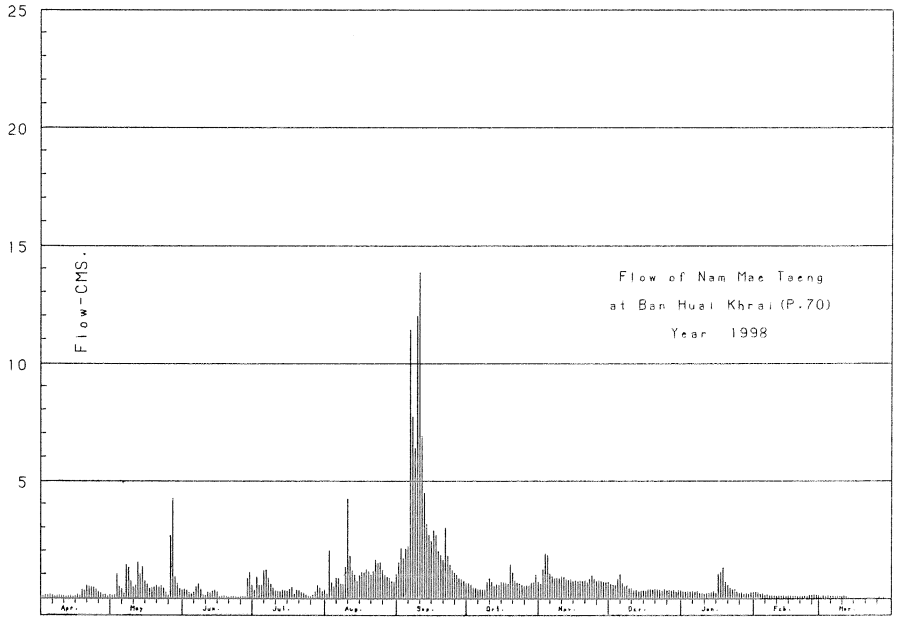
Nam Mae Taeng at Ban Huai Khrai, Chiang Mai (P.70)

Location	Lat. 19°-39'-08" N., Long. 98°-40'-10" E., on right bank at the bridge on highway, Ban Huai Khrai, Amphoe Wiang Haeng, Chiang Mai.
Drainage Area	182 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Temporary.
Location	On right bank downstream side at the pier of the bridge.
Elevation	+5.275 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1995 to date.
Rating Operation	
Period of Rating	1995 to date.
Rated by Float	-
Rated by Current Meter	1995 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The concrete weir situated about 150 meters upstream from the gage site. Stage-discharge relation defined by 124 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.37	0.39	0.45	0.44	0.41	0.63	0.50	0.50	0.50	0.43	0.43	0.36	
2	0.38	0.39	0.44	0.55	0.68	0.69	0.49	0.60	0.49	0.43	0.42	0.38	
3	0.39	0.57	0.42	0.48	0.51	0.65	0.46	0.67	0.49	0.43	0.41	0.38	
4	0.40	0.47	0.41	0.49	0.47	0.69	0.46	0.66	0.53	0.43	0.41	0.38	
5	0.39	0.45	0.42	0.59	0.54	0.70	0.45	0.57	0.57	0.43	0.40	0.38	
6	0.35	0.41	0.47	0.60	0.54	1.28	0.45	0.55	0.50	0.43	0.40	0.37	
7	0.37	0.62	0.50	0.54	0.50	1.09	0.44	0.54	0.48	0.43	0.39	0.37	
8	0.38	0.61	0.45	0.50	0.49	1.01	0.45	0.54	0.48	0.42	0.38	0.37	
9	0.38	0.52	0.40	0.46	0.61	1.31	0.51	0.54	0.46	0.41	0.38	0.37	
10	0.36	0.47	0.39	0.44	0.87	1.40	0.54	0.55	0.46	0.41	0.38	0.37	
11	0.36	0.48	0.42	0.43	0.66	1.04	0.51	0.55	0.44	0.41	0.38	0.37	
12	0.36	0.63	0.42	0.43	0.59	0.89	0.48	0.53	0.44	0.42	0.38	0.37	
13	0.36	0.57	0.43	0.44	0.56	0.78	0.49	0.53	0.43	0.42	0.38	0.32	
14	0.36	0.61	0.44	0.44	0.52	0.74	0.49	0.53	0.43	0.43	0.38	0.29	
15	0.36	0.52	0.42	0.43	0.56	0.72	0.51	0.52	0.44	0.42	0.38	0.29	
16	0.39	0.49	0.36	0.45	0.58	0.76	0.51	0.52	0.43	0.57	0.38	0.29	
17	0.38	0.46	0.36	0.47	0.58	0.74	0.50	0.52	0.45	0.58	0.38	0.29	
18	0.44	0.46	0.38	0.41	0.60	0.68	0.50	0.52	0.45	0.61	0.37	0.29	
19	0.44	0.47	0.36	0.44	0.59	0.66	0.62	0.52	0.45	0.51	0.37	0.29	
20	0.48	0.48	0.35	0.44	0.56	0.64	0.58	0.52	0.45	0.49	0.37	0.31	
21	0.47	0.47	0.35	0.42	0.59	0.77	0.52	0.51	0.45	0.46	0.37	0.32	
22	0.47	0.48	0.36	0.42	0.64	0.66	0.51	0.53	0.44	0.45	0.37	0.32	
23	0.46	0.46	0.35	0.40	0.63	0.62	0.50	0.56	0.44	0.45	0.37	0.32	
24	0.45	0.42	0.35	0.38	0.63	0.60	0.49	0.53	0.45	0.43	0.39	0.32	
25	0.42	0.40	0.35	0.37	0.60	0.58	0.48	0.52	0.44	0.42	0.40	0.33	
26	0.41	0.74	0.36	0.39	0.56	0.56	0.48	0.52	0.44	0.42	0.40	0.35	
27	0.40	0.87	0.35	0.43	0.55	0.54	0.48	0.52	0.44	0.41	0.40	0.33	
28	0.40	0.55	0.54	0.48	0.54	0.53	0.50	0.51	0.44	0.41	0.39	0.34	
29	0.38	0.50	0.58	0.46	0.52	0.52	0.51	0.51	0.43	0.41		0.32	
30	0.39	0.46	0.48	0.43	0.51	0.50	0.56	0.51	0.44	0.42		0.32	
31		0.44		0.44	0.57		0.51		0.44	0.42		0.35	
Mean	0.40	0.51	0.41	0.45	0.57	0.77	0.50	0.54	0.46	0.45	0.39	0.34	
Max	0.48	0.87	0.58	0.60	0.87	1.40	0.62	0.67	0.57	0.61	0.43	0.38	1.40
Min	0.35	0.39	0.35	0.37	0.41	0.50	0.44	0.50	0.43	0.41	0.37	0.29	0.29

Annual Max Momentary Gage Height 1.96 M (A.D), at 1.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.11 M (A.D)
Left Bank Elevation 7.18 M (A.D)
Right Bank Elevation 2.56 M (A.D), Drainage Area 182 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.13	0.16	0.41	0.37	0.23	1.55	0.65	0.65	0.65	0.32	0.32	0.11	
2	0.14	0.16	0.37	0.95	2.05	2.15	0.60	1.25	0.60	0.32	0.27	0.14	
3	0.16	1.07	0.27	0.56	0.71	1.75	0.46	1.95	0.60	0.32	0.23	0.14	
4	0.18	0.51	0.23	0.60	0.51	2.15	0.46	1.85	0.83	0.32	0.23	0.14	
5	0.16	0.41	0.27	1.19	0.89	2.25	0.41	1.07	1.07	0.32	0.18	0.14	
6	0.09	0.23	0.51	1.25	0.89	11.44	0.41	0.95	0.65	0.32	0.18	0.13	
7	0.13	1.45	0.65	0.89	0.65	7.78	0.37	0.89	0.56	0.32	0.16	0.13	
8	0.14	1.35	0.41	0.65	0.60	6.42	0.41	0.89	0.56	0.27	0.14	0.13	
9	0.14	0.77	0.18	0.46	1.35	12.05	0.71	0.89	0.46	0.23	0.14	0.13	
10	0.11	0.51	0.16	0.37	4.28	13.90	0.89	0.95	0.46	0.23	0.14	0.13	
11	0.11	0.56	0.27	0.32	1.85	6.93	0.71	0.95	0.37	0.23	0.14	0.13	
12	0.11	1.55	0.27	0.32	1.19	4.53	0.56	0.83	0.37	0.27	0.14	0.13	
13	0.11	1.07	0.32	0.37	1.01	3.17	0.60	0.83	0.32	0.27	0.14	0.04	
14	0.11	1.35	0.37	0.37	0.77	2.71	0.60	0.83	0.32	0.32	0.14	0.00	
15	0.11	0.77	0.27	0.32	1.01	2.48	0.71	0.77	0.37	0.27	0.14	0.00	
16	0.16	0.60	0.11	0.41	1.13	2.94	0.71	0.77	0.32	1.07	0.14	0.00	
17	0.14	0.46	0.11	0.51	1.13	2.71	0.65	0.77	0.41	1.13	0.14	0.00	
18	0.37	0.46	0.14	0.23	1.25	2.05	0.65	0.77	0.41	1.35	0.13	0.00	
19	0.37	0.51	0.11	0.37	1.19	1.85	1.45	0.77	0.41	0.71	0.13	0.00	
20	0.56	0.56	0.09	0.37	1.01	1.65	1.13	0.77	0.41	0.60	0.13	0.02	
21	0.51	0.51	0.09	0.27	1.19	3.05	0.77	0.71	0.41	0.46	0.13	0.04	
22	0.51	0.56	0.11	0.27	1.65	1.85	0.71	0.83	0.37	0.41	0.13	0.04	
23	0.46	0.46	0.09	0.18	1.55	1.45	0.65	1.01	0.37	0.41	0.13	0.04	
24	0.41	0.27	0.09	0.14	1.55	1.25	0.60	0.83	0.41	0.32	0.16	0.04	
25	0.27	0.18	0.09	0.13	1.25	1.13	0.56	0.77	0.37	0.27	0.18	0.05	
26	0.23	2.71	0.11	0.16	1.01	1.01	0.56	0.77	0.37	0.27	0.18	0.09	
27	0.18	4.28	0.09	0.32	0.95	0.89	0.56	0.77	0.37	0.23	0.18	0.05	
28	0.18	0.95	0.89	0.56	0.89	0.83	0.65	0.71	0.37	0.23	0.16	0.07	
29	0.14	0.65	1.13	0.46	0.77	0.77	0.71	0.71	0.32	0.23		0.04	
30	0.16	0.46	0.56	0.32	0.71	0.65	1.01	0.71	0.37	0.27		0.04	
31		0.37		0.37	1.07		0.71		0.37	0.27		0.09	
Total	6.58	25.91	8.77	14.06	36.29	105.34	20.63	27.22	14.25	12.56	4.61	2.23	278.45 CMSDAY
Mean	0.22	0.84	0.29	0.45	1.17	3.51	0.67	0.91	0.46	0.41	0.16	0.07	0.76 CMS
Max	0.56	4.28	1.13	1.25	4.28	13.90	1.45	1.95	1.07	1.35	0.32	0.14	13.90 CMS
Min	0.09	0.16	0.09	0.13	0.23	0.65	0.37	0.65	0.32	0.23	0.13	0.00	0.00 CMS
Runoff	0.569	2.239	0.758	1.215	3.135	9.101	1.782	2.352	1.231	1.085	0.398	0.193	24.058 MCM

Momentary Peak 26.62 CMS, at 1.96 M (A.D), at 1.00 Hours, on Sep 10, 1998

Runoff Yield 4.19 Liters/Second/Square KM, Momentary Peak Yield 146.264 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

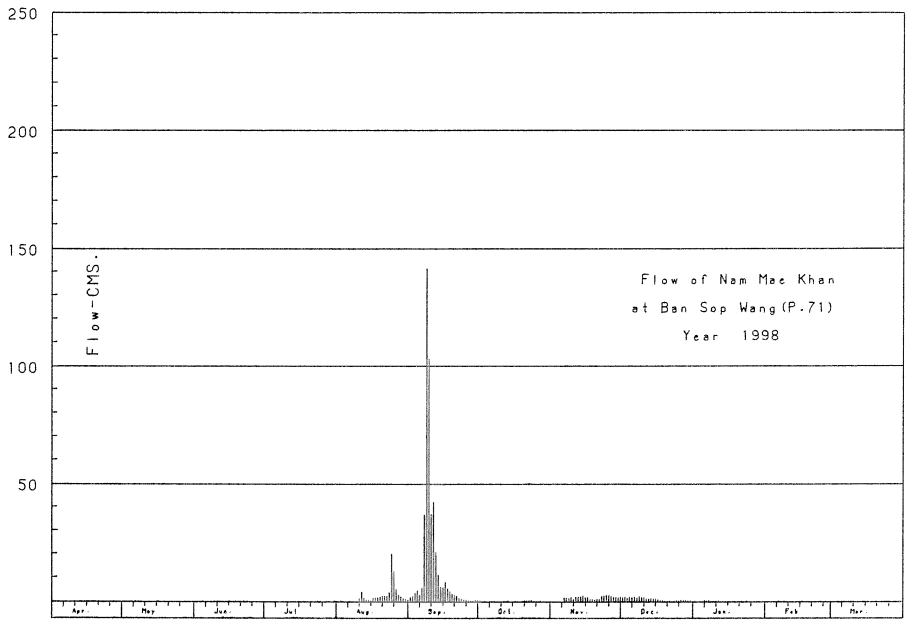
Ping River at Ban Sop Wang, Chiang Mai (P.71)

Location	Lat. 18-32-14 N., Long. 98-51-47 E., on left bank at the bridge on highway, Ban Sop Wang, Amphoe San Pa Tong, Chiang Mai.
Drainage Area	1,771 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 3 meters from the top staff gage.
Elevation	+6.400 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The concrete weir made by R.I.D about 3 kilometers and the temporary weir about 300 meters downstream from the gage site. Stage-discharge relation defined by 39 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.56	0.40	0.57	0.50	0.54	0.79	0.56	0.46	0.78	0.58	1.03	1.03	
2	0.56	0.40	0.57	0.48	0.54	0.82	0.53	0.47	0.78	0.57	1.05	1.01	
3	0.56	0.40	0.57	0.48	0.54	0.98	0.53	0.47	0.75	0.57	1.03	1.00	
4	0.56	0.40	0.57	0.48	0.55	1.04	0.51	0.50	0.78	0.57	1.04	1.02	
5	0.56	0.40	0.57	0.55	0.55	0.92	0.51	0.48	0.78	0.57	1.04	1.00	
6	0.56	0.40	0.57	0.56	0.55	1.15	0.50	0.80	0.78	0.57	1.02	0.98	
7	0.56	0.40	0.57	0.54	0.55	2.51	0.50	0.73	0.77	0.57	1.00	1.01	
8	0.57	0.40	0.57	0.55	0.55	4.76	0.50	0.76	0.80	0.54	1.00	1.03	
9	0.57	0.40	0.57	0.54	0.55	4.04	0.49	0.78	0.78	0.54	1.02	1.01	
10	0.62	0.40	0.57	0.54	0.69	2.51	0.48	0.77	0.75	0.54	0.95	0.99	
11	0.65	0.40	0.57	0.54	1.02	2.67	0.48	0.82	0.70	0.53	0.96	0.98	
12	0.65	0.40	0.57	0.50	0.75	1.92	0.47	0.79	0.70	0.53	0.96	0.98	
13	0.62	0.46	0.57	0.54	0.65	1.48	0.47	0.84	0.69	0.51	0.96	0.92	
14	0.62	0.48	0.58	0.58	0.60	1.17	0.47	0.85	0.68	0.51	0.95	0.95	
15	0.62	0.48	0.58	0.57	0.55	1.16	0.48	0.80	0.67	0.50	0.97	0.93	
16	0.62	0.48	0.58	0.57	0.73	1.29	0.50	0.77	0.62	0.50	0.97	0.92	
17	0.63	0.48	0.58	0.57	0.78	1.13	0.52	0.69	0.61	0.85	0.96	0.98	
18	0.65	0.48	0.58	0.57	0.75	1.02	0.48	0.65	0.58	0.92	0.98	0.98	
19	0.65	0.51	0.58	0.57	0.83	0.95	0.48	0.64	0.58	0.93	1.01	0.96	
20	0.65	0.52	0.57	0.58	0.84	0.89	0.58	0.66	0.56	0.93	0.97	0.96	
21	0.65	0.53	0.57	0.57	0.84	0.84	0.53	0.68	0.56	0.98	0.97	0.92	
22	0.65	0.61	0.57	0.56	0.86	0.76	0.59	0.85	0.57	0.97	0.97	0.92	
23	0.65	0.58	0.57	0.55	1.01	0.66	0.57	0.85	0.56	0.96	0.97	0.92	
24	0.53	0.57	0.57	0.55	1.90	0.65	0.53	0.90	0.56	0.96	0.97	0.97	
25	0.53	0.56	0.57	0.54	1.54	0.60	0.55	0.86	0.60	0.96	0.97	0.96	
26	0.53	0.56	0.56	0.52	1.09	0.57	0.52	0.84	0.58	0.95	0.97	0.96	
27	0.53	0.56	0.55	0.54	0.92	0.56	0.51	0.80	0.59	0.93	0.97	0.98	
28	0.48	0.57	0.49	0.54	0.81	0.55	0.49	0.75	0.59	0.93	0.97	0.99	
29	0.48	0.57	0.49	0.54	0.74	0.58	0.47	0.77	0.60	0.92		0.99	
30	0.48	0.57	0.48	0.54	0.66	0.58	0.48	0.78	0.54	0.92		0.95	
31		0.57		0.54	0.60		0.48		0.58	0.93		0.87	
Mean	0.58	0.48	0.56	0.54	0.78	1.32	0.51	0.73	0.66	0.73	0.99	0.97	
Max	0.65	0.61	0.58	0.58	1.90	4.76	0.59	0.90	0.80	0.98	1.05	1.03	4.76
Min	0.48	0.40	0.48	0.48	0.54	0.55	0.47	0.46	0.54	0.50	0.95	0.87	0.40

Annual Max Momentary Gage Height 4.81 M (A.D), at 17.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.22 M (A.D)
Left Bank Elevation 4.49 M (A.D)
Right Bank Elevation 4.48 M (A.D), Drainage Area 1771 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.10	0.04	0.11	0.08	0.10	1.93	0.59	0.26	1.86	0.66	0.32	0.32	
2	0.10	0.04	0.11	0.07	0.10	2.18	0.47	0.29	1.86	0.63	0.33	0.31	
3	0.10	0.04	0.11	0.07	0.10	3.74	0.47	0.29	1.66	0.63	0.32	0.30	
4	0.10	0.04	0.11	0.07	0.10	4.49	0.40	0.36	1.86	0.63	0.32	0.31	
5	0.10	0.04	0.11	0.10	0.10	3.11	0.40	0.31	1.86	0.63	0.32	0.30	
6	0.10	0.04	0.11	0.10	0.10	6.00	0.36	2.00	1.86	0.63	0.31	0.29	
7	0.10	0.04	0.11	0.10	0.10	36.94	0.36	1.52	1.80	0.63	0.30	0.31	
8	0.11	0.04	0.11	0.10	0.10	141.80	0.36	1.73	2.00	0.51	0.30	0.32	
9	0.11	0.04	0.11	0.10	0.10	103.08	0.34	1.86	1.86	0.51	0.31	0.31	
10	0.13	0.04	0.11	0.10	1.26	36.94	0.31	1.80	1.66	0.51	0.28	0.30	
11	0.14	0.04	0.11	0.10	4.22	42.38	0.31	2.18	1.32	0.47	0.28	0.29	
12	0.14	0.04	0.11	0.08	1.66	20.88	0.29	1.93	1.32	0.47	0.28	0.29	
13	0.13	0.06	0.11	0.10	1.03	11.52	0.29	2.36	1.26	0.40	0.28	0.26	
14	0.13	0.07	0.11	0.11	0.74	6.28	0.29	2.45	1.20	0.40	0.28	0.28	
15	0.13	0.07	0.11	0.11	0.55	6.14	0.31	2.00	1.15	0.36	0.29	0.27	
16	0.13	0.07	0.11	0.11	1.52	8.14	0.36	1.80	0.86	0.36	0.29	0.26	
17	0.13	0.07	0.11	0.11	1.86	5.72	0.44	1.26	0.80	0.23	0.28	0.29	
18	0.14	0.07	0.11	0.11	1.66	4.22	0.31	1.03	0.66	0.26	0.29	0.29	
19	0.14	0.08	0.11	0.11	2.27	3.43	0.31	0.97	0.66	0.27	0.31	0.28	
20	0.14	0.09	0.11	0.11	2.36	2.81	0.66	1.09	0.59	0.27	0.29	0.28	
21	0.14	0.09	0.11	0.11	2.36	2.36	0.47	1.20	0.59	0.29	0.29	0.26	
22	0.14	0.12	0.11	0.10	2.54	1.73	0.70	2.45	0.63	0.29	0.29	0.26	
23	0.14	0.11	0.11	0.10	4.09	1.09	0.63	2.45	0.59	0.28	0.29	0.26	
24	0.09	0.11	0.11	0.10	20.40	1.03	0.47	2.90	0.59	0.28	0.29	0.29	
25	0.09	0.10	0.11	0.10	12.66	0.74	0.55	2.54	0.74	0.28	0.29	0.28	
26	0.09	0.10	0.10	0.09	5.17	0.63	0.44	2.36	0.66	0.28	0.29	0.28	
27	0.09	0.10	0.10	0.10	3.11	0.59	0.40	2.00	0.70	0.27	0.29	0.29	
28	0.07	0.11	0.08	0.10	2.09	0.55	0.34	1.66	0.70	0.27	0.29	0.30	
29	0.07	0.11	0.08	0.10	1.59	0.66	0.29	1.80	0.74	0.26		0.30	
30	0.07	0.11	0.07	0.10	1.09	0.66	0.31	1.86	0.51	0.26		0.28	
31		0.11		0.10	0.74		0.31		0.66	0.27		0.24	
Total	3.39	2.23	3.18	3.04	75.87	461.77	12.54	48.71	35.21	12.49	8.30	8.90	675.63 CMSDAY
Mean	0.11	0.07	0.11	0.10	2.45	15.39	0.40	1.62	1.14	0.40	0.30	0.29	1.85 CMS
Max	0.14	0.12	0.11	0.11	20.40	141.80	0.70	2.90	2.00	0.66	0.33	0.32	141.80 CMS
Min	0.07	0.04	0.07	0.07	0.10	0.55	0.29	0.26	0.51	0.23	0.28	0.24	0.04 CMS
Runoff	0.293	0.193	0.275	0.263	6.555	39.897	1.083	4.209	3.042	1.079	0.717	0.769	58.374 MCM

Momentary Peak 144.56 CMS, at 4.81 M (A.D), at 17.00 Hours, on Sep 8, 1998

Runoff Yield 1.05 Liters/Second/Square KM, Momentary Peak Yield 81.612 Liters/Second/Square KM

WATER YEAR 1998

PING RIVER BASIN

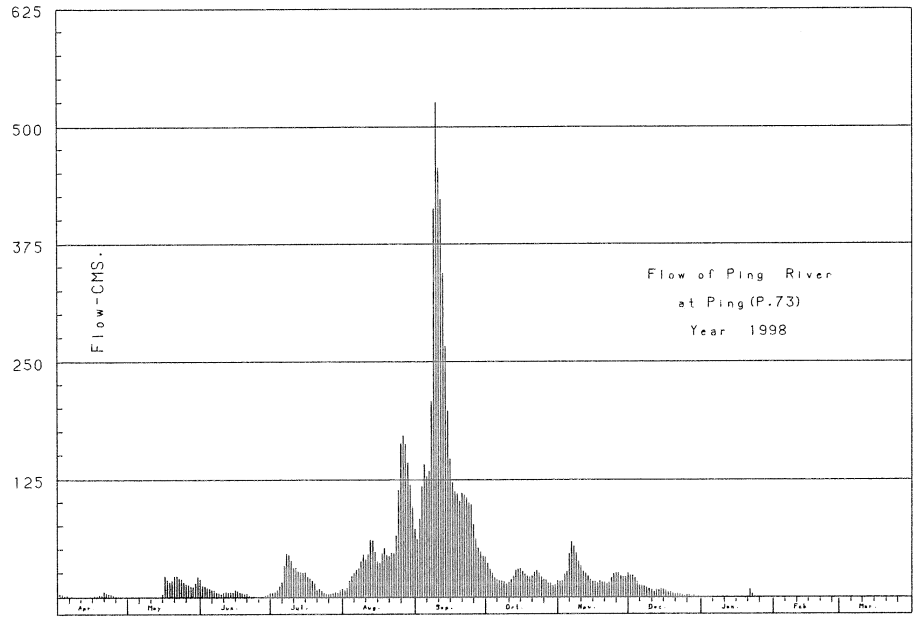
Ping River at Ban Sop Soi, Chiang Mai (P.73)

Location	Lat. 18°-17'-18" N., Long. 98°-39'-11" E., on left bank at Sop Soi Phatana Bridge, Ban Sop Soi, Amphoe Chom Thong, Chiang Mai.
Drainage Area	13,353 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+261.75 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 15 meters from the abutment of the bridge.
Elevation	+267.505 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1998 to date.
Rated by Float	-
Rated by Current Meter	1998 to date.
Stability of Channel Regimes	Fairly stable by some silting.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. No gage hieght in the drought period. Stage-discharge relation defined by 36 discharge made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	262.26	262.08	262.38	262.29	262.33	262.93	262.66	262.44	262.52	262.19	262.04	261.87	
2	262.24	262.07	262.38	262.29	262.35	263.13	262.60	262.44	262.51	262.16	261.98	261.87	
3	262.22	262.07	262.35	262.33	262.45	263.41	262.54	262.53	262.49	262.21	261.95	262.12	
4	262.22	262.07	262.35	262.37	262.50	263.59	262.49	262.56	262.43	262.20	261.89	262.05	
5	262.20	262.07	262.33	262.43	262.55	263.49	262.46	262.78	262.39	262.20	261.89	262.02	
6	262.20	262.07	262.32	262.64	262.58	263.54	262.45	262.90	262.38	262.16	261.89	261.97	
7	262.19	262.07	262.30	262.77	262.61	264.05	262.44	262.86	262.38	262.15	261.87	261.97	
8	262.16	262.07	262.27	262.76	262.68	265.26	262.43	262.78	262.36	262.18	261.87	261.89	
9	262.16	262.07	262.26	262.69	262.76	265.86	262.41	262.69	262.35	262.17	261.87	261.87	
10	262.20	262.07	262.28	262.61	262.71	265.49	262.43	262.63	262.33	262.12	261.87	261.87	
11	262.17	262.07	262.30	262.61	262.77	265.32	262.46	262.57	262.31	262.12	261.87	261.87	
12	262.17	262.07	262.30	262.57	262.92	264.88	262.51	262.54	262.33	262.11	261.87	261.87	
13	262.16	262.07	262.29	262.55	262.92	264.42	262.58	262.51	262.33	262.10	261.87	261.87	
14	262.19	262.07	262.30	262.55	262.79	263.99	262.60	262.46	262.34	262.10	261.87	261.87	
15	262.20	262.26	262.33	262.55	262.68	263.63	262.60	262.44	262.34	262.10	261.87	261.87	
16	262.21	262.51	262.31	262.50	262.67	263.45	262.57	262.43	262.32	262.10	261.87	261.87	
17	262.22	262.45	262.30	262.47	262.78	263.37	262.53	262.42	262.30	262.09	261.87	261.87	
18	262.23	262.43	262.27	262.45	262.83	263.35	262.51	262.44	262.30	262.09	261.87	261.87	
19	262.23	262.44	262.26	262.41	262.76	263.29	262.49	262.43	262.28	262.09	261.87	261.87	
20	262.31	262.50	262.26	262.33	262.74	263.36	262.51	262.42	262.25	262.09	261.87	261.87	
21	262.27	262.51	262.25	262.34	262.78	263.34	262.55	262.41	262.27	262.34	261.87	261.87	
22	262.26	262.48	262.21	262.32	262.78	263.32	262.58	262.42	262.25	262.27	261.87	261.87	
23	262.24	262.46	262.19	262.28	262.97	263.27	262.54	262.49	262.24	262.24	261.87	261.87	
24	262.22	262.43	262.17	262.27	263.38	263.26	262.50	262.53	262.25	262.12	261.87	261.87	
25	262.21	262.40	262.18	262.26	263.75	263.08	262.47	262.55	262.24	262.12	261.87	261.87	
26	262.20	262.39	262.19	262.26	263.81	262.93	262.45	262.54	262.23	262.03	261.87	261.87	
27	262.17	262.38	262.19	262.28	263.74	262.84	262.42	262.51	262.21	262.02	261.87	261.87	
28	262.16	262.36	262.23	262.29	263.60	262.79	262.41	262.49	262.23	262.05	261.87	261.87	
29	262.13	262.42	262.23	262.29	263.43	262.75	262.39	262.50	262.20	262.09		261.87	
30	262.10	262.50	262.27	262.32	263.24	262.73	262.39	262.54	262.20	262.07		261.87	
31		262.46		262.34	263.03		262.44		262.18	262.05		261.87	
Mean	262.20	262.27	262.28	262.43	262.90	263.67	262.50	262.54	262.31	262.13	261.89	261.90	
Max	262.31	262.51	262.38	262.77	263.81	265.86	262.66	262.90	262.52	262.34	262.04	262.12	265.86
Min	262.10	262.07	262.17	262.26	262.33	262.73	262.39	262.41	262.18	262.02	261.87	261.87	261.87

Annual Max Momentary Gage Height 265.93 M (MSL), at 11.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 261.75 M (MSL), River Bed 261.60 M (MSL)
Left Bank Elevation 267.71 M (MSL)
Right Bank Elevation 268.01 M (MSL), Drainage Area 13353 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.00	0.54	12.36	5.35	8.26	62.00	36.12	17.32	23.96	1.23	0.42	0.00	
2	3.10	0.51	12.36	5.35	9.90	83.95	30.60	17.32	23.13	1.02	0.24	0.00	
3	2.20	0.51	9.90	8.26	18.15	117.35	25.62	24.79	21.47	1.75	0.15	0.74	
4	2.20	0.51	9.90	11.54	22.30	141.65	21.47	27.28	16.49	1.30	0.00	0.45	
5	1.30	0.51	8.26	16.49	26.45	128.15	18.98	47.16	13.18	1.30	0.00	0.36	
6	1.30	0.51	7.44	34.28	28.94	134.90	18.15	59.00	12.36	1.02	0.00	0.21	
7	1.23	0.51	5.80	46.24	31.52	208.00	17.32	55.00	12.36	0.95	0.00	0.21	
8	1.02	0.51	4.45	45.32	37.96	412.80	16.49	47.16	10.72	1.16	0.00	0.00	
9	1.02	0.51	4.00	38.88	45.32	526.40	14.83	38.88	9.90	1.09	0.00	0.00	
10	1.30	0.51	4.90	31.52	40.72	456.10	16.49	33.36	8.26	0.74	0.00	0.00	
11	1.09	0.51	5.80	31.52	46.24	423.80	18.98	28.11	6.62	0.74	0.00	0.00	
12	1.09	0.51	5.80	28.11	61.00	344.40	23.13	25.62	8.26	0.67	0.00	0.00	
13	1.02	0.51	5.35	26.45	61.00	267.20	28.94	23.13	8.26	0.60	0.00	0.00	
14	1.23	0.51	5.80	26.45	48.08	198.55	30.60	18.98	9.08	0.60	0.00	0.00	
15	1.30	4.00	8.26	26.45	37.96	147.20	30.60	17.32	9.08	0.60	0.00	0.00	
16	1.75	23.13	6.62	22.30	37.04	122.75	28.11	16.49	7.44	0.60	0.00	0.00	
17	2.20	18.15	5.80	19.81	47.16	112.40	24.79	15.66	5.80	0.57	0.00	0.00	
18	2.65	16.49	4.45	18.15	52.00	110.00	23.13	17.32	5.80	0.57	0.00	0.00	
19	2.65	17.32	4.00	14.83	45.32	102.80	21.47	16.49	4.90	0.57	0.00	0.00	
20	6.62	22.30	4.00	8.26	43.48	111.20	23.13	15.66	3.55	0.57	0.00	0.00	
21	4.45	23.13	3.55	9.08	47.16	108.80	26.45	14.83	4.45	9.08	0.00	0.00	
22	4.00	20.64	1.75	7.44	47.16	106.40	28.94	15.66	3.55	4.45	0.00	0.00	
23	3.10	18.98	1.23	4.90	66.00	100.40	25.62	21.47	3.10	3.10	0.00	0.00	
24	2.20	16.49	1.09	4.45	113.60	99.20	22.30	24.79	3.55	0.74	0.00	0.00	
25	1.75	14.00	1.16	4.00	164.00	78.20	19.81	26.45	3.10	0.74	0.00	0.00	
26	1.30	13.18	1.23	4.00	172.45	62.00	18.15	25.62	2.65	0.39	0.00	0.00	
27	1.09	12.36	1.23	4.90	162.60	53.00	15.66	23.13	1.75	0.36	0.00	0.00	
28	1.02	10.72	2.65	5.35	143.00	48.08	14.83	21.47	2.65	0.45	0.00	0.00	
29	0.81	15.66	2.65	5.35	120.05	44.40	13.18	22.30	1.30	0.57		0.00	
30	0.60	22.30	4.45	7.44	96.80	42.56	13.18	25.62	1.30	0.51		0.00	
31		18.98		9.08	72.45		17.32		1.16	0.45		0.00	
Total	60.59	295.00	156.24	531.55	1954.07	4954.64	684.39	783.39	249.18	38.49	0.81	1.97	9710.32 CMSDAY
Mean	2.02	9.52	5.21	17.15	63.03	165.15	22.08	26.11	8.04	1.24	0.03	0.06	26.60 CMS
Max	6.62	23.13	12.36	46.24	172.45	526.40	36.12	59.00	23.96	9.08	0.42	0.74	526.40 CMS
Min	0.60	0.51	1.09	4.00	8.26	42.56	13.18	14.83	1.16	0.36	0.00	0.00	0.00 CMS
Runoff	5.235	25.488	13.499	45.926	168.832	428.081	59.131	67.685	21.529	3.326	0.070	0.170	838.972 MCM

Momentary Peak 539.70 CMS, at 265.93 M (MSL), at 11.00 Hours, on Sep 9, 1998

Runoff Yield 1.99 Liters/Second/Square KM, Momentary Peak Yield 40.418 Liters/Second/Square KM

WATER YEAR 1998

WANG RIVER BASIN

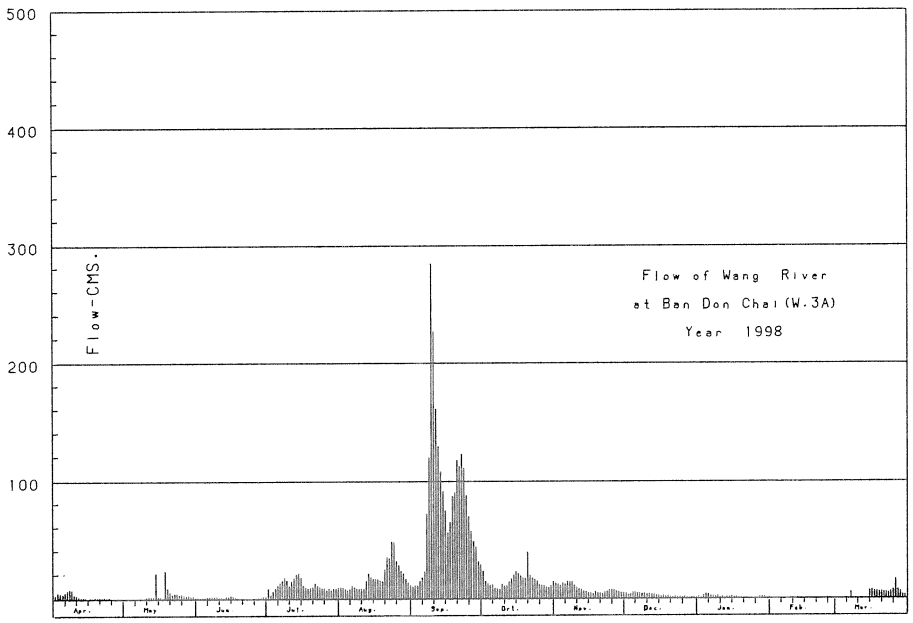
Wang River at Ban Don Chai, Lampang (W.3A)

Location	Lat. 17°-38'-29" N., Long. 99°-14'-04" E., on right bank about 30 meters upstream from Siriyong Bridge, Amphoe Thoen, Lampang.
Drainage Area	8,985 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+161.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 15 meters from automatic gage building.
Elevation	+167.074 m.(M.S.L.).
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967 to date.
Rated by Float	-
Rated by Current Meter	1967 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The carcass of the bridge is on the right bank of the gage site. stage-discharge relation defined by 38 disccharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	160.99	160.77	160.87	161.28	161.31	161.33	161.68	161.41	161.09	160.93	160.83	160.69	
2	161.14	160.76	160.86	161.04	161.29	161.34	161.46	161.37	161.05	160.86	160.82	160.68	
3	161.09	160.76	160.85	161.16	161.26	161.35	161.39	161.35	161.05	160.98	160.82	160.74	
4	161.08	160.75	160.88	161.29	161.20	161.44	161.36	161.40	161.14	161.09	160.80	160.78	
5	161.15	160.74	160.90	161.35	161.26	161.54	161.36	161.39	161.13	161.04	160.80	160.76	
6	161.20	160.72	160.91	161.40	161.34	161.68	161.29	161.43	161.12	161.00	160.80	160.75	
7	161.25	160.71	160.92	161.47	161.32	162.65	161.25	161.44	161.10	160.97	160.79	161.15	
8	161.22	160.78	160.94	161.53	161.26	163.45	161.25	161.43	161.09	160.95	160.76	160.78	
9	161.06	160.84	160.92	161.48	161.26	165.41	161.37	161.36	161.09	160.98	160.88	160.84	
10	160.98	160.88	160.91	161.34	161.26	164.81	161.34	161.30	161.07	160.91	160.87	160.78	
11	160.95	160.94	160.89	161.44	161.27	164.05	161.33	161.26	161.06	160.90	160.85	160.80	
12	160.92	160.93	160.85	161.52	161.45	163.59	161.44	161.23	161.06	160.88	160.84	160.80	
13	160.88	160.89	160.91	161.62	161.64	163.27	161.50	161.19	161.04	160.89	160.82	160.76	
14	160.85	161.64	160.96	161.63	161.54	162.99	161.60	161.15	161.02	160.92	160.79	160.82	
15	160.83	160.95	160.98	161.55	161.51	162.71	161.66	161.13	160.98	160.93	160.79	161.21	
16	160.85	160.91	160.93	161.36	161.50	162.35	161.62	161.10	160.96	160.91	160.79	161.21	
17	160.86	160.84	160.88	161.29	161.50	162.53	161.58	161.09	160.98	160.90	160.80	161.19	
18	160.88	161.68	160.82	161.28	161.46	162.93	161.52	161.15	160.95	160.89	160.81	161.17	
19	160.88	161.29	160.81	161.28	161.46	162.97	161.52	161.12	160.96	160.85	160.79	161.16	
20	160.88	161.13	160.80	161.32	161.71	163.41	162.03	161.09	160.94	160.83	160.78	161.16	
21	160.90	161.06	160.78	161.40	161.94	163.34	161.58	161.09	160.92	160.83	160.76	161.15	
22	160.88	161.10	160.74	161.35	161.93	163.50	161.53	161.13	160.93	160.82	160.75	161.13	
23	160.87	161.08	160.66	161.30	162.21	163.31	161.49	161.18	160.92	160.80	160.75	161.12	
24	160.86	161.05	160.72	161.29	162.19	162.94	161.46	161.22	160.91	160.78	160.80	161.16	
25	160.84	161.04	160.78	161.27	161.87	162.62	161.37	161.24	160.91	160.80	160.86	161.24	
26	160.82	161.01	160.83	161.22	161.81	162.38	161.34	161.21	160.90	160.81	160.83	161.49	
27	160.80	160.99	160.86	161.26	161.69	162.22	161.35	161.19	160.90	160.94	160.77	161.24	
28	160.77	160.98	160.88	161.22	161.62	162.11	161.30	161.15	160.84	160.93	160.73	161.15	
29	160.76	160.96	160.92	161.26	161.51	161.87	161.30	161.13	160.90	160.90		161.05	
30	160.77	160.93	160.92	161.28	161.41	161.81	161.34	161.11	160.88	160.87		161.00	
31		160.88		161.29	161.34		161.43		160.91	160.85		160.99	
Mean	160.94	160.97	160.86	161.35	161.53	162.73	161.45	161.23	160.99	160.90	160.80	161.00	
Max	161.25	161.68	160.98	161.63	162.21	165.41	162.03	161.44	161.14	161.09	160.88	161.49	165.41
Min	160.76	160.71	160.66	161.04	161.20	161.33	161.25	161.09	160.84	160.78	160.73	160.68	160.66

Annual Max Momentary Gage Height 165.46 M (MSL), at 11.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 161.00 M (MSL), River Bed 159.75 M (MSL)
Left Bank Elevation 169.05 M (MSL)
Right Bank Elevation 167.24 M (MSL), Drainage Area 8985 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.97	0.67	1.47	9.36	10.25	10.95	23.72	13.76	4.76	2.15	1.10	0.31	
2	5.84	0.62	1.38	3.84	9.63	11.30	15.56	12.35	4.02	1.38	1.01	0.28	
3	4.76	0.62	1.29	6.30	8.82	11.65	13.05	11.65	4.02	2.83	1.01	0.53	
4	4.57	0.58	1.56	9.63	7.20	14.84	12.00	13.40	5.84	4.76	0.82	0.72	
5	6.07	0.53	1.75	11.65	8.82	18.44	12.00	13.05	5.62	3.84	0.82	0.62	
6	7.20	0.43	1.89	13.40	11.30	23.72	9.63	14.48	5.39	3.10	0.82	0.58	
7	8.55	0.38	2.02	15.92	10.60	72.25	8.55	14.84	4.94	2.70	0.77	6.07	
8	7.74	0.72	2.29	18.08	8.82	120.25	8.55	14.48	4.76	2.43	0.62	0.72	
9	4.20	1.19	2.02	16.28	8.82	285.00	12.35	12.00	4.76	2.83	1.56	1.19	
10	2.83	1.56	1.89	11.30	8.82	226.90	11.30	9.90	4.39	1.89	1.47	0.72	
11	2.43	2.29	1.66	14.84	9.09	162.00	10.95	8.82	4.20	1.75	1.29	0.82	
12	2.02	2.15	1.29	17.72	15.20	129.35	14.84	8.01	4.20	1.56	1.19	0.82	
13	1.56	1.66	1.89	21.38	22.16	108.55	17.00	6.97	3.84	1.66	1.01	0.62	
14	1.29	22.16	2.56	21.77	18.44	91.40	20.60	6.07	3.47	2.02	0.77	1.01	
15	1.10	2.43	2.83	18.80	17.36	75.55	22.94	5.62	2.83	2.15	0.77	7.47	
16	1.29	1.89	2.15	12.00	17.00	56.00	21.38	4.94	2.56	1.89	0.77	7.47	
17	1.38	1.19	1.56	9.63	17.00	65.65	19.88	4.76	2.83	1.75	0.82	6.97	
18	1.56	23.72	1.01	9.36	15.56	87.80	17.72	6.07	2.43	1.66	0.91	6.52	
19	1.56	9.63	0.91	9.36	15.56	90.20	17.72	5.39	2.56	1.29	0.77	6.30	
20	1.56	5.62	0.82	10.60	24.90	117.65	40.00	4.76	2.29	1.10	0.72	6.30	
21	1.75	4.20	0.72	13.40	35.50	113.10	19.88	4.76	2.02	1.10	0.62	6.07	
22	1.56	4.94	0.53	11.65	35.00	123.50	18.08	5.62	2.15	1.01	0.58	5.62	
23	1.47	4.57	0.24	9.90	49.00	111.15	16.64	6.75	2.02	0.82	0.58	5.39	
24	1.38	4.02	0.43	9.63	48.00	88.40	15.56	7.74	1.89	0.72	0.82	6.30	
25	1.19	3.84	0.72	9.09	32.00	70.60	12.35	8.28	1.89	0.82	1.38	8.28	
26	1.01	3.28	1.10	7.74	29.00	57.50	11.30	7.47	1.75	0.91	1.10	16.64	
27	0.82	2.97	1.38	8.82	24.11	49.50	11.65	6.97	1.75	2.29	0.67	8.28	
28	0.67	2.83	1.56	7.74	21.38	44.00	9.90	6.07	1.19	2.15	0.48	6.07	
29	0.62	2.56	2.02	8.82	17.36	32.00	9.90	5.62	1.75	1.75		4.02	
30	0.67	2.15	2.02	9.36	13.76	29.00	11.30	5.17	1.56	1.47		3.10	
31		1.56		9.63	11.30		14.48		1.89	1.29		2.97	
Total	81.62	116.96	44.96	367.00	581.76	2498.20	480.78	255.77	99.57	59.07	25.25	128.78	4739.72 CMSDAY
Mean	2.72	3.77	1.50	11.84	18.77	83.27	15.51	8.53	3.21	1.91	0.90	4.15	12.99 CMS
Max	8.55	23.72	2.83	21.77	49.00	285.00	40.00	14.84	5.84	4.76	1.56	16.64	285.00 CMS
Min	0.62	0.38	0.24	3.84	7.20	10.95	8.55	4.76	1.19	0.72	0.48	0.28	0.24 CMS
Runoff	7.052	10.105	3.885	31.709	50.264	215.844	41.539	22.099	8.603	5.104	2.182	11.127	409.512 MCM

Momentary Peak 290.00 CMS, at 165.46 M (MSL), at 11.00 Hours, on Sep 9, 1998

Runoff Yield 1.45 Liters/Second/Square KM, Momentary Peak Yield 32.276 Liters/Second/Square KM

WATER YEAR 1998

WANG RIVER BASIN

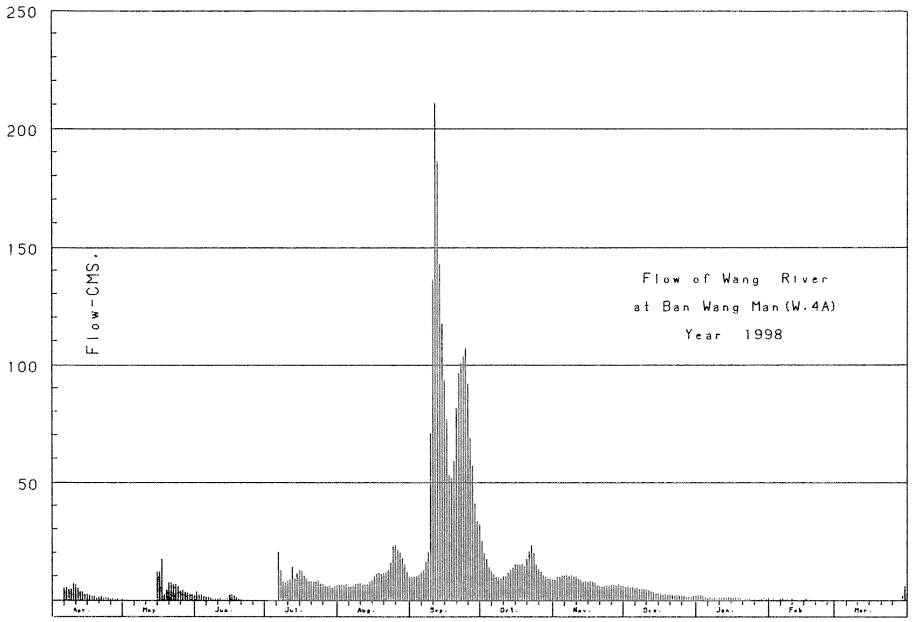
Wang River at Ban Wang Man, Tak (W.4A)

Location	Lat. 17°-12'-22" N., Long. 99°-06'-08" E., on left bank about 200 meters upstream from the bridge on highway, Amphoe Sam Ngao, Tak.
Drainage Area	10,507 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+130.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of Wat Wang Man.
Elevation	+136.000 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1968 to date.
Rating Operation	
Period of Rating	1971 to date.
Rated by Float	-
Rated by Current Meter	1971 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 37 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	130.08	130.34	130.90	130.08	131.14	131.35	132.09	131.30	131.09	130.76	130.50	130.00	
2	130.08	130.28	130.80	130.08	131.13	131.36	131.88	131.36	131.08	130.76	130.50	130.00	
3	130.08	130.24	130.76	130.08	131.14	131.39	131.75	131.38	131.07	130.68	130.48	130.00	
4	130.08	130.14	130.71	130.08	131.15	131.40	131.60	131.40	131.06	130.66	130.47	130.00	
5	131.06	130.08	130.67	130.08	131.09	131.48	131.51	131.41	131.05	130.55	130.45	130.00	
6	131.06	130.08	130.60	131.90	131.07	131.51	131.42	131.40	131.04	130.55	130.45	130.00	
7	131.03	130.08	130.54	131.53	131.12	131.71	131.37	131.40	131.03	130.55	130.45	130.00	
8	131.01	130.08	130.47	131.22	131.16	131.88	131.34	131.40	131.02	130.55	130.45	130.00	
9	131.20	130.08	130.45	131.22	131.19	133.34	131.33	131.39	131.01	130.55	130.44	130.00	
10	131.14	130.08	130.46	131.24	131.17	134.54	131.37	131.38	131.00	130.53	130.44	130.00	
11	131.06	130.08	130.49	131.28	131.15	135.60	131.39	131.33	130.98	130.58	130.43	130.00	
12	130.95	130.08	130.43	131.58	131.14	135.27	131.47	131.27	130.94	130.59	130.43	130.00	
13	130.90	130.08	130.55	131.33	131.17	134.65	131.52	131.24	130.88	130.60	130.40	130.00	
14	130.83	130.08	130.57	131.45	131.22	134.23	131.59	131.24	130.85	130.61	130.40	130.00	
15	130.78	131.50	130.80	131.53	131.28	133.79	131.64	131.24	130.82	130.61	130.36	130.00	
16	130.74	131.48	130.76	131.50	131.37	133.46	131.64	131.24	130.80	130.61	130.35	130.00	
17	130.70	131.76	130.74	131.41	131.45	132.91	131.65	131.24	130.80	130.61	130.34	130.00	
18	130.66	130.86	130.57	131.30	131.45	132.87	131.65	131.20	130.80	130.59	130.34	130.00	
19	130.60	131.00	130.44	131.25	131.45	133.06	131.62	131.14	130.80	130.50	130.34	130.00	
20	130.64	131.20	130.36	131.23	131.45	133.56	131.75	131.10	130.77	130.46	130.32	130.00	
21	130.66	131.20	130.16	131.21	131.46	133.85	131.91	131.10	130.77	130.45	130.30	130.00	
22	130.59	131.17	130.14	131.24	131.53	133.92	132.01	131.11	130.76	130.45	130.30	130.00	
23	130.57	131.15	130.08	131.25	131.68	133.98	131.86	131.11	130.74	130.45	130.27	130.00	
24	130.54	131.12	130.08	131.19	132.00	134.04	131.65	131.11	130.73	130.44	130.14	130.00	
25	130.51	130.96	130.08	131.15	132.01	133.76	131.54	131.13	130.70	130.44	130.06	130.00	
26	130.49	130.96	130.08	131.12	131.94	133.29	131.50	131.13	130.68	130.42	130.00	130.00	
27	130.46	130.93	130.08	131.10	131.87	133.00	131.41	131.13	130.65	130.41	130.00	130.00	
28	130.44	130.85	130.08	131.10	131.78	132.61	131.36	131.15	130.63	130.44	130.00	130.00	
29	130.40	130.83	130.08	131.06	131.64	132.38	131.33	131.13	130.63	130.50		130.74	
30	130.37	130.78	130.08	131.09	131.49	132.35	131.30	131.10	130.69	130.50		131.10	
31		130.75		131.12	131.35		131.28		130.74	130.50		131.09	
Mean	130.66	130.65	130.43	131.10	131.39	133.08	131.57	131.24	130.86	130.55	130.34	130.09	
Max	131.20	131.76	130.90	131.90	132.01	135.60	132.09	131.41	131.09	130.76	130.50	131.10	135.60
Min	130.08	130.08	130.08	130.08	131.07	131.35	131.28	131.10	130.63	130.41	130.00	130.00	130.00

Annual Max Momentary Gage Height 135.67 M (MSL), at 7.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 130.00 M (MSL), River Bed 128.75 M (MSL)
Left Bank Elevation 136.04 M (MSL)
Right Bank Elevation 136.34 M (MSL), Drainage Area 10507 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.41	3.55	0.00	6.56	9.73	25.25	8.95	5.86	2.24	0.85	0.00	
2	0.00	0.32	2.50	0.00	6.42	9.88	20.30	9.88	5.72	2.24	0.85	0.00	
3	0.00	0.26	2.24	0.00	6.56	10.35	17.45	10.19	5.58	1.72	0.78	0.00	
4	0.00	0.00	1.92	0.00	6.70	10.50	14.30	10.50	5.44	1.59	0.75	0.00	
5	5.44	0.00	1.65	0.00	5.86	12.02	12.59	10.69	5.30	1.03	0.68	0.00	
6	5.44	0.00	1.20	20.75	5.58	12.59	10.88	10.50	5.16	1.03	0.68	0.00	
7	5.02	0.00	0.99	12.97	6.28	16.61	10.04	10.50	5.02	1.03	0.68	0.00	
8	4.74	0.00	0.75	7.71	6.84	20.30	9.57	10.50	4.88	1.03	0.68	0.00	
9	7.40	0.00	0.68	7.71	7.26	71.30	9.42	10.35	4.74	1.03	0.64	0.00	
10	6.56	0.00	0.71	8.02	6.98	136.40	10.04	10.19	4.60	0.95	0.64	0.00	
11	5.44	0.00	0.82	8.64	6.70	211.00	10.35	9.42	4.39	1.13	0.60	0.00	
12	4.07	0.00	0.60	13.92	6.56	186.25	11.83	8.49	3.97	1.16	0.60	0.00	
13	3.55	0.00	1.03	9.42	6.98	143.25	12.78	8.02	3.34	1.20	0.50	0.00	
14	2.81	0.00	1.10	11.45	7.71	117.80	14.11	8.02	3.03	1.26	0.50	0.00	
15	2.37	12.40	2.50	12.97	8.64	93.50	15.14	8.02	2.71	1.26	0.44	0.00	
16	2.11	12.02	2.24	12.40	10.04	77.00	15.14	8.02	2.50	1.26	0.43	0.00	
17	1.85	17.66	2.11	10.69	11.45	53.40	15.35	8.02	2.50	1.26	0.41	0.00	
18	1.59	3.13	1.10	8.95	11.45	51.80	15.35	7.40	2.50	1.16	0.41	0.00	
19	1.20	4.60	0.64	8.18	11.45	59.40	14.72	6.56	2.50	0.85	0.41	0.00	
20	1.46	7.40	0.44	7.86	11.45	82.00	17.45	6.00	2.31	0.71	0.38	0.00	
21	1.59	7.40	0.07	7.56	11.64	96.75	20.98	6.00	2.31	0.68	0.35	0.00	
22	1.16	6.98	0.00	8.02	12.97	100.60	23.25	6.14	2.24	0.68	0.35	0.00	
23	1.10	6.70	0.00	8.18	15.98	103.90	19.85	6.14	2.11	0.68	0.31	0.00	
24	0.99	6.28	0.00	7.26	23.00	107.20	15.35	6.14	2.04	0.64	0.00	0.00	
25	0.88	4.18	0.00	6.70	23.25	92.00	13.16	6.42	1.85	0.64	0.00	0.00	
26	0.82	4.18	0.00	6.28	21.65	69.05	12.40	6.42	1.72	0.57	0.00	0.00	
27	0.71	3.86	0.00	6.00	20.07	57.00	10.69	6.42	1.52	0.54	0.00	0.00	
28	0.64	3.03	0.00	6.00	18.08	41.40	9.88	6.70	1.39	0.64	0.00	0.00	
29	0.50	2.81	0.00	5.44	15.14	33.40	9.42	6.42	1.39	0.85		2.11	
30	0.46	2.37	0.00	5.86	12.21	32.50	8.95	6.00	1.78	0.85		6.00	
31		2.17		6.28	9.73		8.64		2.11	0.85		5.86	
Total	69.90	108.16	28.84	235.22	341.19	2118.88	434.63	243.02	102.51	32.76	12.92	13.97	3742.00 CMSDAY
Mean	2.33	3.49	0.96	7.59	11.01	70.63	14.02	8.10	3.31	1.06	0.46	0.45	10.25 CMS
Max	7.40	17.66	3.55	20.75	23.25	211.00	25.25	10.69	5.86	2.24	0.85	6.00	211.00 CMS
Min	0.00	0.00	0.00	0.00	5.58	9.73	8.64	6.00	1.39	0.54	0.00	0.00	0.00 CMS
Runoff	6.039	9.345	2.492	20.323	29.479	183.071	37.552	20.997	8.857	2.830	1.116	1.207	323.309 MCM

Momentary Peak 216.60 CMS, at 135.67 M (MSL), at 7.00 Hours, on Sep 11, 1998
Runoff Yield 0.98 Liters/Second/Square KM, Momentary Peak Yield 20.615 Liters/Second/Square KM

WATER YEAR 1998

WANG RIVER BASIN

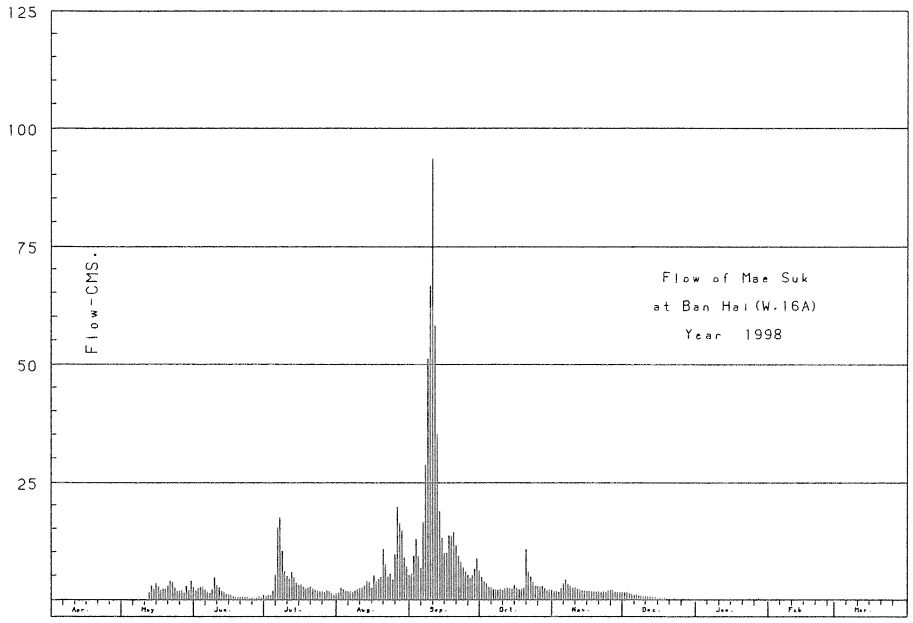
Wang River at Ban Hai, Lampang (W.16A)

Location	Lat. 18°-46'-45" N., Long. 99°-37'-52" E., on right bank at Ban Hai, Amphoe Chae Hom, Lampang.
Drainage Area	1,388 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 10.00 meters from the top staff gage.
Elevation	+6.177 m. (A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1995 to date.
Rating Operation	
Period of Rating	1995 to date.
Rated by Float	-
Rated by Current Meter	1995 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The pumping station is located about 150 meters upstream from the gage site. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.96	0.93	1.28	1.16	1.23	1.55	1.51	1.27	1.25	1.03	1.03	1.02	
2	0.96	0.94	1.32	1.17	1.34	1.77	1.45	1.27	1.25	1.01	1.04	1.03	
3	0.96	0.95	1.36	1.19	1.30	1.94	1.41	1.26	1.23	1.01	1.07	1.07	
4	0.98	0.91	1.35	1.27	1.28	1.76	1.36	1.32	1.21	1.02	1.07	1.07	
5	0.99	0.80	1.31	1.55	1.27	1.63	1.34	1.42	1.20	1.03	1.06	1.04	
6	1.00	0.79	1.25	2.04	1.26	2.08	1.31	1.47	1.20	1.04	1.04	1.03	
7	1.00	0.79	1.24	2.12	1.25	2.56	1.30	1.41	1.18	1.04	1.04	1.01	
8	1.00	0.79	1.30	1.82	1.27	3.23	1.30	1.37	1.16	1.03	1.03	1.00	
9	1.02	0.96	1.51	1.58	1.31	3.62	1.31	1.34	1.15	1.01	1.03	1.00	
10	1.02	1.02	1.38	1.52	1.32	4.27	1.30	1.34	1.16	1.02	1.03	1.00	
11	1.02	0.98	1.34	1.49	1.33	3.41	1.32	1.32	1.15	1.02	1.02	1.02	
12	1.01	1.25	1.28	1.58	1.38	2.77	1.34	1.30	1.14	1.01	1.01	1.00	
13	1.00	1.38	1.25	1.51	1.45	2.18	1.32	1.29	1.13	1.03	1.01	1.00	
14	1.00	1.31	1.22	1.43	1.44	1.94	1.32	1.27	1.13	1.02	1.00	0.99	
15	1.00	1.42	1.20	1.39	1.34	1.79	1.38	1.28	1.09	1.03	1.02	0.98	
16	0.99	1.36	1.18	1.39	1.53	1.80	1.33	1.27	1.10	1.05	1.03	0.97	
17	0.98	1.28	1.16	1.36	1.44	1.97	1.31	1.27	1.10	1.05	1.02	0.97	
18	0.97	1.32	1.11	1.31	1.49	1.96	1.31	1.26	1.10	1.04	1.02	0.95	
19	0.98	1.31	1.13	1.34	1.51	2.00	1.34	1.26	1.09	1.04	1.01	0.95	
20	0.99	1.38	1.13	1.35	1.84	1.87	1.84	1.26	1.07	1.04	1.01	0.92	
21	1.00	1.45	1.13	1.32	1.67	1.77	1.58	1.25	1.01	1.05	1.01	0.92	
22	1.01	1.44	1.14	1.30	1.52	1.70	1.52	1.26	1.07	1.04	1.01	0.93	
23	1.00	1.33	1.12	1.27	1.55	1.64	1.43	1.26	1.07	1.06	1.01	0.93	
24	1.00	1.27	1.10	1.27	1.48	1.58	1.38	1.28	1.07	1.06	1.01	0.94	
25	1.00	1.27	1.10	1.26	1.78	1.54	1.37	1.30	1.06	1.07	1.03	0.99	
26	0.99	1.28	1.10	1.25	2.21	1.50	1.35	1.29	1.05	1.09	1.03	0.98	
27	0.99	1.24	1.11	1.28	2.08	1.53	1.37	1.26	1.03	1.08	1.03	0.99	
28	0.98	1.37	1.14	1.27	2.01	1.62	1.32	1.25	1.05	1.07	1.02	1.03	
29	0.89	1.28	1.12	1.22	1.75	1.74	1.29	1.25	1.05	1.06		1.01	
30	0.84	1.46	1.18	1.20	1.64	1.59	1.30	1.25	1.04	1.04		0.99	
31		1.34		1.22	1.54		1.29		1.03	1.03		0.97	
Mean	0.98	1.18	1.22	1.40	1.51	2.08	1.37	1.30	1.12	1.04	1.03	0.99	
Max	1.02	1.46	1.51	2.12	2.21	4.27	1.84	1.47	1.25	1.09	1.07	1.07	4.27
Min	0.84	0.79	1.10	1.16	1.23	1.50	1.29	1.25	1.01	1.01	1.00	0.92	0.79

Annual Max Momentary Gage Height 4.42 M (A.D), at 10.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.42 M (A.D)
Left Bank Elevation 6.03 M (A.D)
Right Bank Elevation 6.44 M (A.D), Drainage Area 1388 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.04	0.03	1.99	0.87	1.47	5.52	4.86	1.89	1.68	0.18	0.18	0.14	
2	0.04	0.03	2.43	0.94	2.66	9.47	4.03	1.89	1.68	0.10	0.22	0.18	
3	0.04	0.04	2.89	1.08	2.20	13.15	3.48	1.78	1.47	0.10	0.33	0.33	
4	0.05	0.02	2.78	1.89	1.99	9.27	2.89	2.43	1.26	0.14	0.33	0.33	
5	0.06	0.00	2.31	5.52	1.89	6.87	2.66	3.62	1.15	0.18	0.29	0.22	
6	0.06	0.00	1.68	15.50	1.78	16.50	2.31	4.30	1.15	0.22	0.22	0.18	
7	0.06	0.00	1.57	17.50	1.68	28.83	2.20	3.48	1.01	0.22	0.22	0.10	
8	0.06	0.00	2.20	10.49	1.89	51.20	2.20	3.01	0.87	0.18	0.18	0.06	
9	0.14	0.04	4.86	6.02	2.31	66.80	2.31	2.66	0.80	0.10	0.18	0.06	
10	0.14	0.14	3.12	5.03	2.43	93.61	2.20	2.66	0.87	0.14	0.18	0.06	
11	0.14	0.05	2.66	4.57	2.55	58.40	2.43	2.43	0.80	0.14	0.14	0.14	
12	0.10	1.68	1.99	6.02	3.12	35.27	2.66	2.20	0.73	0.10	0.10	0.06	
13	0.06	3.12	1.68	4.86	4.03	19.00	2.43	2.10	0.66	0.18	0.10	0.06	
14	0.06	2.31	1.36	3.75	3.89	13.15	2.43	1.89	0.66	0.14	0.06	0.06	
15	0.06	3.62	1.15	3.24	2.66	9.86	3.12	1.99	0.41	0.18	0.14	0.05	
16	0.06	2.89	1.01	3.24	5.19	10.05	2.55	1.89	0.45	0.25	0.18	0.05	
17	0.05	1.99	0.87	2.89	3.89	13.83	2.31	1.89	0.45	0.25	0.14	0.05	
18	0.05	2.43	0.52	2.31	4.57	13.60	2.31	1.78	0.45	0.22	0.14	0.04	
19	0.05	2.31	0.66	2.66	4.86	14.50	2.66	1.78	0.41	0.22	0.10	0.04	
20	0.06	3.12	0.66	2.78	10.93	11.59	10.93	1.78	0.33	0.22	0.10	0.02	
21	0.06	4.03	0.66	2.43	7.57	9.47	6.02	1.68	0.10	0.25	0.10	0.02	
22	0.10	3.89	0.73	2.20	5.03	8.10	5.03	1.78	0.33	0.22	0.10	0.03	
23	0.06	2.55	0.59	1.89	5.52	7.05	3.75	1.78	0.33	0.29	0.10	0.03	
24	0.06	1.89	0.45	1.89	4.43	6.02	3.12	1.99	0.33	0.29	0.10	0.03	
25	0.06	1.89	0.45	1.78	9.66	5.36	3.01	2.20	0.29	0.33	0.18	0.06	
26	0.06	1.99	0.45	1.68	19.75	4.70	2.78	2.10	0.25	0.41	0.18	0.05	
27	0.06	1.57	0.52	1.99	16.50	5.19	3.01	1.78	0.18	0.37	0.18	0.06	
28	0.05	3.01	0.73	1.89	14.75	6.70	2.43	1.68	0.25	0.33	0.14	0.18	
29	0.01	1.99	0.59	1.36	9.08	8.88	2.10	1.68	0.25	0.29		0.10	
30	0.00	4.16	1.01	1.15	7.05	6.19	2.20	1.68	0.22	0.22		0.06	
31		2.66		1.36	5.36		2.10		0.18	0.18		0.05	
Total	1.90	53.45	44.57	120.78	170.69	568.13	98.52	65.80	20.00	6.64	4.61	2.90	1157.99 CMSDAY
Mean	0.06	1.72	1.49	3.90	5.51	18.94	3.18	2.19	0.65	0.21	0.16	0.09	3.17 CMS
Max	0.14	4.16	4.86	17.50	19.75	93.61	10.93	4.30	1.68	0.41	0.33	0.33	93.61 CMS
Min	0.00	0.00	0.45	0.87	1.47	4.70	2.10	1.68	0.10	0.10	0.06	0.02	0.00 CMS
Runoff	0.164	4.618	3.851	10.435	14.748	49.086	8.512	5.685	1.728	0.574	0.398	0.251	100.050 MCM

Momentary Peak 100.06 CMS, at 4.42 M (A.D), at 10.00 Hours, on Sep 10, 1998
Runoff Yield 2.29 Liters/Second/Square KM, Momentary Peak Yield 72.089 Liters/Second/Square KM

WATER YEAR 1998

WANG RIVER BASIN

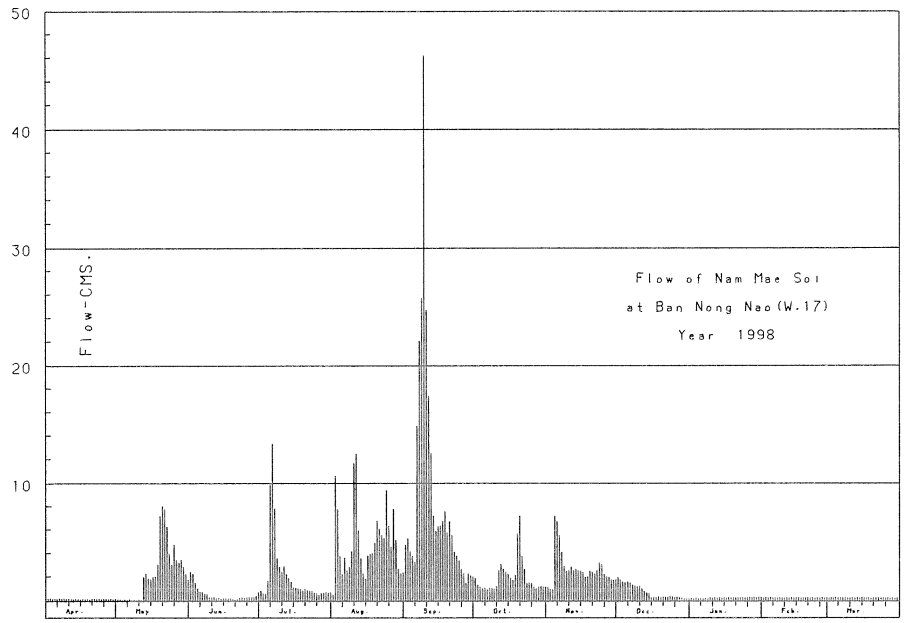
Nam Mae Soi at Ban Nong Nao, Lampang (W.17)

Location	Lat. 18°-43'-16" N., Long 99°-34'-12" E., on right bank at the bridge of Lampang-Wang Nua Road, Ban Nong Nao, Amphoe Chae Hom, Lampang.
Drainage Area	619 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+292.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	About 21 meters from the top staff gage.
Elevation	+295.790 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1980 to date.
Rating Operation	
Period of Rating	1980 to date.
Rated by Float	-
Rated by Current Meter	1980 to date.
Stability of Channel Regimes	Rather unstable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The local weir situated about 300 meters downstream from the gage site. Stage-discharge relation defined by 39 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	291.66	291.61	291.69	291.56	291.52	291.82	291.65	291.59	291.66	291.64	291.74	291.73	
2	291.64	291.58	291.68	291.53	292.09	291.85	291.61	291.57	291.64	291.66	291.74	291.74	
3	291.64	291.54	291.62	291.53	291.97	291.79	291.59	291.57	291.63	291.67	291.74	291.74	
4	291.64	291.54	291.58	291.63	291.77	291.77	291.58	291.94	291.62	291.67	291.74	291.74	
5	291.64	291.54	291.55	292.06	291.68	291.74	291.58	291.92	291.63	291.66	291.74	291.74	
6	291.64	291.56	291.54	292.19	291.76	292.24	291.57	291.86	291.62	291.65	291.72	291.73	
7	291.66	291.54	291.53	291.97	291.70	292.48	291.58	291.79	291.61	291.65	291.72	291.73	
8	291.66	291.54	291.52	291.76	291.72	292.59	291.58	291.72	291.60	291.64	291.73	291.73	
9	291.65	291.54	291.49	291.72	291.79	293.13	291.57	291.70	291.60	291.72	291.73	291.73	
10	291.63	291.54	291.48	291.69	292.13	292.56	291.60	291.70	291.60	291.71	291.72	291.73	
11	291.63	291.54	291.48	291.72	292.16	292.33	291.70	291.72	291.58	291.71	291.72	291.72	
12	291.61	291.66	291.47	291.68	291.88	292.16	291.73	291.70	291.55	291.71	291.72	291.72	
13	291.61	291.68	291.47	291.65	291.76	291.94	291.71	291.71	291.54	291.70	291.72	291.72	
14	291.60	291.65	291.46	291.63	291.68	291.88	291.69	291.70	291.53	291.70	291.72	291.72	
15	291.60	291.64	291.46	291.59	291.65	291.90	291.68	291.70	291.49	291.72	291.72	291.72	
16	291.60	291.66	291.46	291.58	291.77	291.90	291.65	291.69	291.49	291.72	291.72	291.72	
17	291.60	291.66	291.46	291.58	291.78	291.92	291.64	291.66	291.49	291.72	291.72	291.72	
18	291.60	291.73	291.46	291.57	291.78	291.96	291.67	291.66	291.50	291.74	291.72	291.72	
19	291.60	291.94	291.45	291.56	291.83	291.87	291.87	291.70	291.49	291.74	291.72	291.72	
20	291.62	291.98	291.44	291.57	291.92	291.92	291.94	291.69	291.49	291.74	291.72	291.72	
21	291.62	291.97	291.44	291.56	291.89	291.86	291.77	291.68	291.50	291.72	291.72	291.72	
22	291.62	291.90	291.48	291.56	291.86	291.79	291.71	291.70	291.49	291.74	291.72	291.72	
23	291.62	291.78	291.48	291.55	291.85	291.77	291.62	291.74	291.51	291.74	291.72	291.72	
24	291.62	291.73	291.48	291.54	292.04	291.75	291.62	291.73	291.50	291.74	291.73	291.72	
25	291.62	291.82	291.48	291.53	291.90	291.71	291.62	291.68	291.50	291.74	291.73	291.72	
26	291.62	291.75	291.49	291.52	291.81	291.68	291.59	291.66	291.49	291.75	291.73	291.71	
27	291.62	291.74	291.49	291.53	291.97	291.62	291.58	291.66	291.49	291.76	291.73	291.71	
28	291.62	291.75	291.48	291.54	291.84	291.68	291.59	291.64	291.47	291.75	291.73	291.70	
29	291.60	291.72	291.51	291.54	291.71	291.67	291.60	291.64	291.46	291.75		291.70	
30	291.61	291.68	291.54	291.54	291.68	291.66	291.59	291.64	291.45	291.75		291.69	
31		291.64		291.54	291.69		291.59		291.46	291.75		291.66	
Mean	291.62	291.68	291.51	291.64	291.83	291.96	291.65	291.70	291.54	291.71	291.73	291.72	
Max	291.66	291.98	291.69	292.19	292.16	293.13	291.94	291.94	291.66	291.76	291.74	291.74	293.13
Min	291.60	291.54	291.44	291.52	291.52	291.62	291.57	291.57	291.45	291.64	291.72	291.66	291.44

Annual Max Momentary Gage Height 293.40 M (MSL), at 12.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 292.00 M (MSL), River Bed 290.67 M (MSL)
Left Bank Elevation 296.42 M (MSL)
Right Bank Elevation 296.42 M (MSL), Drainage Area 619 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.26	0.21	2.47	0.94	0.58	4.80	1.95	1.21	2.08	0.24	0.34	0.33	
2	0.24	0.18	2.34	0.67	10.66	5.40	1.43	1.03	1.82	0.26	0.34	0.34	
3	0.24	0.14	1.56	0.67	7.87	4.22	1.21	1.03	1.69	0.27	0.34	0.34	
4	0.24	0.14	1.12	1.69	3.86	3.86	1.12	7.24	1.56	0.27	0.34	0.34	
5	0.24	0.14	0.85	9.94	2.34	3.32	1.12	6.82	1.69	0.26	0.34	0.34	
6	0.24	0.16	0.76	13.42	3.68	14.86	1.03	5.60	1.56	0.25	0.32	0.33	
7	0.26	0.14	0.67	7.87	2.60	22.16	1.12	4.22	1.43	0.25	0.32	0.33	
8	0.26	0.14	0.58	3.68	2.96	25.77	1.12	2.96	1.30	0.24	0.33	0.33	
9	0.25	0.14	0.36	2.96	4.22	46.29	1.03	2.60	1.30	0.32	0.33	0.33	
10	0.23	0.14	0.32	2.47	11.74	24.78	1.30	2.60	1.30	0.31	0.32	0.33	
11	0.23	0.14	0.32	2.96	12.58	17.50	2.60	2.96	1.12	0.31	0.32	0.32	
12	0.21	2.08	0.28	2.34	6.00	12.58	3.14	2.60	0.85	0.31	0.32	0.32	
13	0.21	2.34	0.28	1.95	3.68	7.24	2.78	2.78	0.76	0.30	0.32	0.32	
14	0.20	1.95	0.24	1.69	2.34	6.00	2.47	2.60	0.67	0.30	0.32	0.32	
15	0.20	1.82	0.24	1.21	1.95	6.40	2.34	2.60	0.36	0.32	0.32	0.32	
16	0.20	2.08	0.24	1.12	3.86	6.40	1.95	2.47	0.36	0.32	0.32	0.32	
17	0.20	2.08	0.24	1.12	4.04	6.82	1.82	2.08	0.36	0.32	0.32	0.32	
18	0.20	3.14	0.24	1.03	4.04	7.66	2.21	2.08	0.40	0.34	0.32	0.32	
19	0.20	7.24	0.20	0.94	5.00	5.80	5.80	2.60	0.36	0.34	0.32	0.32	
20	0.22	8.08	0.16	1.03	6.82	6.82	7.24	2.47	0.36	0.34	0.32	0.32	
21	0.22	7.87	0.16	0.94	6.20	5.60	3.86	2.34	0.40	0.32	0.32	0.32	
22	0.22	6.40	0.32	0.94	5.60	4.22	2.78	2.60	0.36	0.34	0.32	0.32	
23	0.22	4.04	0.32	0.85	5.40	3.86	1.56	3.32	0.49	0.34	0.32	0.32	
24	0.22	3.14	0.32	0.76	9.46	3.50	1.56	3.14	0.40	0.34	0.33	0.32	
25	0.22	4.80	0.32	0.67	6.40	2.78	1.56	2.34	0.40	0.34	0.33	0.32	
26	0.22	3.50	0.36	0.58	4.60	2.34	1.21	2.08	0.36	0.35	0.33	0.31	
27	0.22	3.32	0.36	0.67	7.87	1.56	1.12	2.08	0.36	0.36	0.33	0.31	
28	0.22	3.50	0.32	0.76	5.20	2.34	1.21	1.82	0.28	0.35	0.33	0.30	
29	0.20	2.96	0.49	0.76	2.78	2.21	1.30	1.82	0.24	0.35		0.30	
30	0.21	2.34	0.76	0.76	2.34	2.08	1.21	1.82	0.20	0.35		0.29	
31		1.82		0.76	2.47		1.21		0.24	0.35		0.26	
Total	6.70	76.17	17.20	68.15	159.14	269.17	63.36	83.91	25.06	9.66	9.13	9.91	797.56 CMSDAY
Mean	0.22	2.46	0.57	2.20	5.13	8.97	2.04	2.80	0.81	0.31	0.33	0.32	2.19 CMS
Max	0.26	8.08	2.47	13.42	12.58	46.29	7.24	7.24	2.08	0.36	0.34	0.34	46.29 CMS
Min	0.20	0.14	0.16	0.58	0.58	1.56	1.03	1.03	0.20	0.24	0.32	0.26	0.14 CMS
Runoff	0.579	6.581	1.486	5.888	13.750	23.256	5.474	7.250	2.165	0.835	0.789	0.856	68.909 MCM

Momentary Peak 58.90 CMS, at 293.40 M (MSL), at 12.00 Hours, on Sep 9, 1998

Runoff Yield 3.53 Liters/Second/Square KM, Momentary Peak Yield 95.153 Liters/Second/Square KM

WATER YEAR 1998

WANG RIVER BASIN

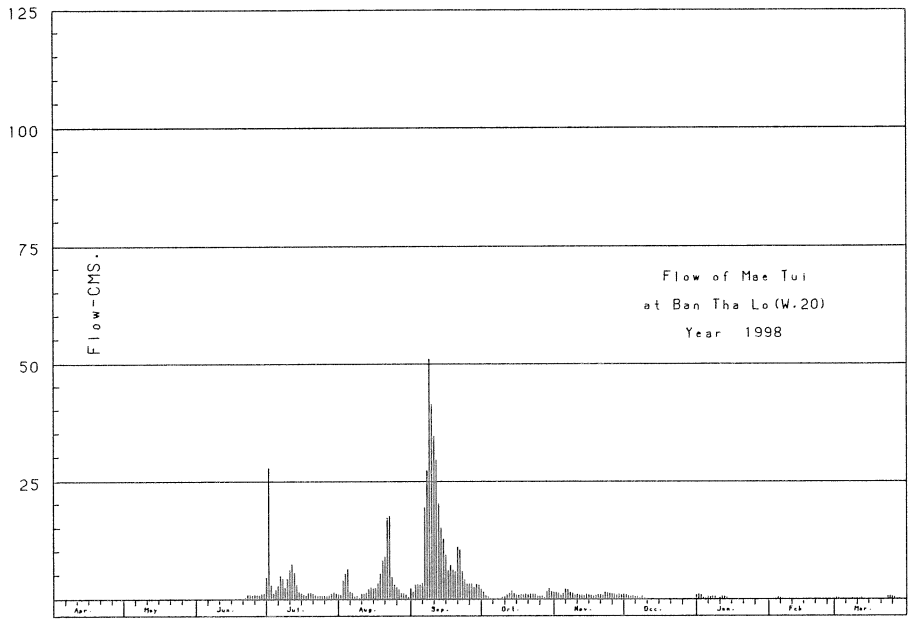
Nam Mae Tui at Ban Tha Lo, Lampang (W.20)

Location	LAT. 18°-18'-35" N., Long. 99°-27'-29" N., on left bank at the bridge of Lampang-Hang Chat Highway, Tambon Bo Haeo, Amphoe Muang, Lampang.
Drainage Area	1,065 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the approach of the bridge.
Elevation	+7.710 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1993 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Rather unstable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir about 200 meters downstream from the gage site. Stage-discharge relation defined by 49 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.75	0.60	0.73	2.42	0.97	1.08	1.07	1.07	1.00	1.00	0.73	0.91	
2	0.75	0.60	0.73	1.23	1.32	1.24	0.98	1.04	0.95	1.00	0.78	0.94	
3	0.75	0.60	0.73	1.04	1.42	1.24	0.93	0.98	0.95	0.89	0.88	0.87	
4	0.75	0.60	0.73	1.12	1.49	1.24	0.89	1.02	0.95	0.87	0.90	0.86	
5	0.75	0.60	0.74	1.22	1.09	1.27	0.87	1.15	0.94	0.93	0.91	0.86	
6	0.75	0.60	0.74	1.39	1.04	2.09	0.86	1.13	0.93	0.93	0.85	0.85	
7	0.73	0.65	0.74	1.34	0.94	2.40	0.85	1.07	0.90	0.93	0.80	0.85	
8	0.73	0.70	0.74	1.18	0.94	3.26	0.86	1.03	0.94	0.94	0.78	0.86	
9	0.73	0.70	0.74	1.35	0.90	2.91	0.90	0.99	0.89	0.90	0.75	0.87	
10	0.73	0.70	0.73	1.47	1.01	2.67	0.94	0.99	0.87	0.90	0.75	0.87	
11	0.75	0.72	0.73	1.54	1.03	2.48	0.98	0.99	0.85	0.93	0.75	0.88	
12	0.75	0.72	0.75	1.44	1.04	2.13	1.04	0.97	0.84	0.94	0.75	0.88	
13	0.80	0.72	0.80	1.23	1.15	1.91	1.10	0.97	0.84	0.89	0.76	0.78	
14	0.80	0.65	0.80	1.08	1.17	1.81	1.04	1.00	0.81	0.84	0.77	0.79	
15	0.80	0.65	0.80	1.04	1.16	1.64	0.98	1.00	0.80	0.78	0.78	0.76	
16	0.75	0.65	0.80	0.98	1.16	1.47	0.98	0.97	0.80	0.75	0.78	0.78	
17	0.75	0.65	0.83	0.96	1.27	1.53	0.98	0.95	0.80	0.76	0.85	0.78	
18	0.75	0.88	0.83	1.03	1.42	1.48	1.00	0.95	0.79	0.75	0.82	0.78	
19	0.75	0.85	0.83	1.05	1.59	1.45	1.00	1.00	0.79	0.75	0.83	0.78	
20	0.75	0.85	0.85	1.01	1.62	1.72	1.00	0.99	0.79	0.74	0.85	0.79	
21	0.75	0.75	0.88	0.97	2.00	1.70	1.00	0.98	0.79	0.80	0.84	0.79	
22	0.75	0.72	0.99	0.95	2.02	1.46	1.02	1.06	0.79	0.87	0.83	0.79	
23	0.75	0.70	0.98	0.95	1.38	1.33	1.00	1.06	0.79	0.85	0.81	0.95	
24	0.75	0.70	0.98	0.95	1.23	1.26	0.95	1.03	0.79	0.84	0.79	1.00	
25	0.75	0.70	0.98	0.95	1.19	1.26	0.95	1.03	0.80	0.81	0.78	0.94	
26	0.74	0.75	0.98	0.95	1.13	1.25	0.94	1.00	0.80	0.77	0.79	0.90	
27	0.74	0.73	0.98	0.95	1.05	1.19	0.91	0.98	0.80	0.74	0.78	0.86	
28	0.73	0.73	1.00	1.03	1.02	1.24	1.10	1.00	0.80	0.73	0.82	0.85	
29	0.73	0.73	1.03	1.05	1.00	1.24	1.15	0.99	0.80	0.74		0.83	
30	0.70	0.73	1.36	1.03	0.90	1.14	1.09	1.00	0.85	0.73		0.80	
31		0.73		0.99	1.15		1.06		1.00	0.73		0.79	
Mean	0.75	0.70	0.85	1.16	1.22	1.67	0.98	1.01	0.85	0.84	0.80	0.85	
Max	0.80	0.88	1.36	2.42	2.02	3.26	1.15	1.15	1.00	1.00	0.91	1.00	3.26
Min	0.70	0.60	0.73	0.95	0.90	1.08	0.85	0.95	0.79	0.73	0.73	0.76	0.60

Annual Max Momentary Gage Height 3.30 M (A.D), at 9.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.03 M (A.D)
Left Bank Elevation 7.93 M (A.D)
Right Bank Elevation 7.93 M (A.D), Drainage Area 1065 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.08	0.01	0.06	28.04	0.91	1.66	1.59	1.59	1.10	1.10	0.06	0.52	
2	0.08	0.01	0.06	3.11	4.09	3.21	0.97	1.38	0.78	1.10	0.10	0.72	
3	0.08	0.01	0.06	1.38	5.44	3.21	0.65	0.97	0.78	0.43	0.39	0.36	
4	0.08	0.01	0.06	2.00	6.54	3.21	0.43	1.24	0.78	0.36	0.46	0.32	
5	0.08	0.01	0.07	3.01	1.73	3.52	0.36	2.30	0.72	0.65	0.52	0.32	
6	0.08	0.01	0.07	4.99	1.38	19.46	0.32	2.10	0.65	0.65	0.29	0.29	
7	0.06	0.02	0.07	4.35	0.72	27.50	0.29	1.59	0.46	0.65	0.12	0.29	
8	0.06	0.03	0.07	2.60	0.72	51.18	0.32	1.31	0.72	0.72	0.10	0.32	
9	0.06	0.03	0.07	4.48	0.46	41.38	0.46	1.04	0.43	0.46	0.08	0.36	
10	0.06	0.03	0.06	6.23	1.17	34.79	0.72	1.04	0.36	0.46	0.08	0.36	
11	0.08	0.05	0.06	7.46	1.31	29.66	0.97	1.04	0.29	0.65	0.08	0.39	
12	0.08	0.05	0.08	5.75	1.38	20.45	1.38	0.91	0.26	0.72	0.08	0.39	
13	0.12	0.05	0.12	3.11	2.30	15.23	1.80	0.91	0.26	0.43	0.08	0.10	
14	0.12	0.02	0.12	1.66	2.50	13.02	1.38	1.10	0.15	0.26	0.09	0.11	
15	0.12	0.02	0.12	1.38	2.40	9.44	0.97	1.10	0.12	0.10	0.10	0.08	
16	0.08	0.02	0.12	0.97	2.40	6.23	0.97	0.91	0.12	0.08	0.10	0.10	
17	0.08	0.02	0.22	0.84	3.52	7.27	0.97	0.78	0.12	0.08	0.29	0.10	
18	0.08	0.39	0.22	1.31	5.44	6.38	1.10	0.78	0.11	0.08	0.19	0.10	
19	0.08	0.29	0.22	1.45	8.41	5.91	1.10	1.10	0.11	0.08	0.22	0.10	
20	0.08	0.29	0.29	1.17	9.02	11.12	1.10	1.04	0.11	0.07	0.29	0.11	
21	0.08	0.08	0.39	0.91	17.30	10.70	1.10	0.97	0.11	0.12	0.26	0.11	
22	0.08	0.05	1.04	0.78	17.78	6.07	1.24	1.52	0.11	0.36	0.22	0.11	
23	0.08	0.03	0.97	0.78	4.86	4.22	1.10	1.52	0.11	0.29	0.15	0.78	
24	0.08	0.03	0.97	0.78	3.11	3.42	0.78	1.31	0.11	0.26	0.11	1.10	
25	0.08	0.03	0.97	0.78	2.70	3.42	0.78	1.31	0.12	0.15	0.10	0.72	
26	0.07	0.08	0.97	0.78	2.10	3.32	0.72	1.10	0.12	0.09	0.11	0.46	
27	0.07	0.06	0.97	0.78	1.45	2.70	0.52	0.97	0.12	0.07	0.10	0.32	
28	0.06	0.06	1.10	1.31	1.24	3.21	1.80	1.10	0.12	0.06	0.19	0.29	
29	0.06	0.06	1.31	1.45	1.10	3.21	2.30	1.04	0.12	0.07		0.22	
30	0.03	0.06	4.60	1.31	0.46	2.20	1.73	1.10	0.29	0.06		0.12	
31		0.06		1.04	2.30		1.52		1.10	0.06		0.11	
Total	2.33	1.97	15.51	95.99	116.24	356.30	31.44	36.17	10.86	10.72	4.96	9.78	692.27 CMSDAY
Mean	0.08	0.06	0.52	3.10	3.75	11.88	1.01	1.21	0.35	0.35	0.18	0.32	1.90 CMS
Max	0.12	0.39	4.60	28.04	17.78	51.18	2.30	2.30	1.10	1.10	0.52	1.10	51.18 CMS
Min	0.03	0.01	0.06	0.78	0.46	1.66	0.29	0.78	0.11	0.06	0.06	0.08	0.01 CMS
Runoff	0.201	0.170	1.340	8.294	10.043	30.784	2.716	3.125	0.938	0.926	0.429	0.845	59.812 MCM

Momentary Peak 52.30 CMS, at 3.30 M (A.D), at 9.00 Hours, on Sep 8, 1998

Runoff Yield 1.78 Liters/Second/Square KM, Momentary Peak Yield 49.108 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

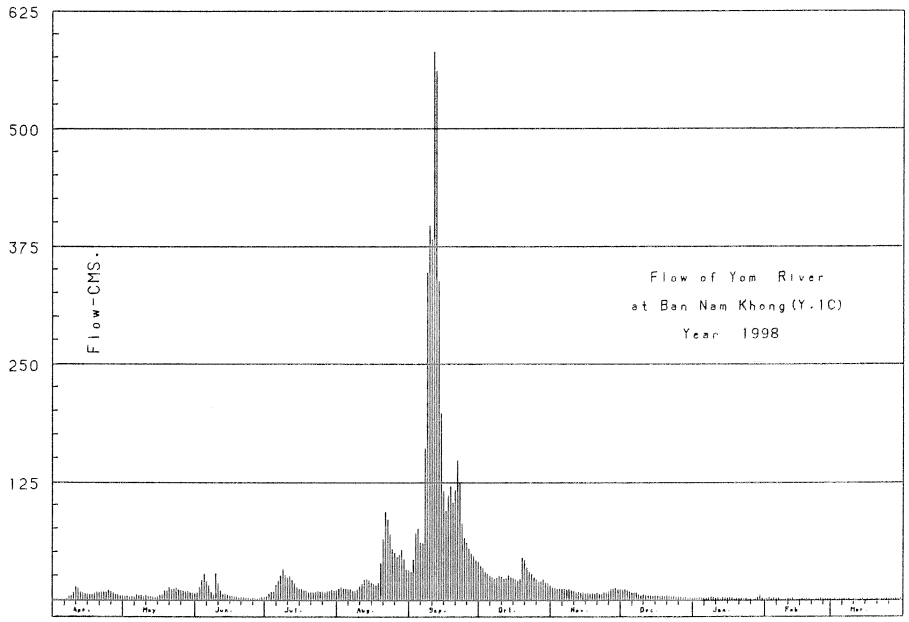
Yom River at Phathana Pak Nua 8 bridge, Phrae (Y.1C)

Location	Lat. 18°-07'-59" N., Long. 100°-07'-39" E., on right bank about 5 meters downstream from Phathana Phak Nua 8 bridge at Ban Nam Khong, Amphoe Muang, Phrae.
Drainage Area	7,624 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+143.50 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of the station office.
Elevation	+153.908 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Mae Yom weir situated about 76 kilometers above gage site. Stage-discharge relation defined by 72 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	143.98	144.01	144.11	143.98	144.24	144.70	144.84	144.27	144.20	143.93	143.92	143.86	
2	143.98	144.00	144.29	144.09	144.27	144.95	144.77	144.24	144.20	143.93	143.93	143.88	
3	143.97	143.99	144.47	144.13	144.24	145.49	144.69	144.23	144.19	143.93	143.91	143.87	
4	143.97	143.98	144.65	144.15	144.22	145.57	144.64	144.22	144.14	143.93	143.91	143.87	
5	143.96	143.99	144.44	144.36	144.23	145.29	144.60	144.23	144.12	143.92	143.90	143.86	
6	143.99	144.04	144.32	144.45	144.21	145.29	144.55	144.22	144.10	143.92	143.89	143.87	
7	144.10	144.03	144.14	144.61	144.18	146.87	144.52	144.21	144.12	143.93	143.79	143.87	
8	144.09	144.03	144.04	144.76	144.15	148.86	144.53	144.21	144.05	143.98	143.75	143.86	
9	144.22	144.00	144.66	144.61	144.22	149.26	144.59	144.19	144.03	143.93	143.87	143.85	
10	144.40	144.03	144.38	144.54	144.30	149.15	144.56	144.15	144.04	143.92	143.88	143.85	
11	144.24	144.02	144.15	144.57	144.36	150.44	144.52	144.13	144.03	143.92	143.91	143.85	
12	144.14	144.00	144.07	144.49	144.50	150.32	144.53	144.13	144.02	143.90	143.90	143.85	
13	144.10	143.98	144.06	144.38	144.51	148.77	144.59	144.11	144.01	143.94	143.80	143.86	
14	144.09	143.97	144.04	144.28	144.46	147.33	144.55	144.11	144.01	143.93	143.80	143.87	
15	144.07	143.98	144.02	144.24	144.41	146.26	144.51	144.10	144.01	143.93	143.84	143.86	
16	144.05	144.03	144.00	144.22	144.37	145.92	144.49	144.09	144.02	143.92	143.85	143.85	
17	144.06	144.06	143.99	144.19	144.34	146.19	144.47	144.08	144.01	143.92	143.86	143.84	
18	144.09	144.17	143.96	144.17	144.39	146.35	144.50	144.07	144.01	143.90	143.87	143.84	
19	144.14	144.18	143.95	144.13	144.89	146.07	145.00	144.08	144.01	143.90	143.88	143.84	
20	144.13	144.27	143.95	144.12	145.37	146.27	144.94	144.11	144.01	143.91	143.81	143.85	
21	144.13	144.22	143.94	144.13	145.89	146.70	144.78	144.07	144.01	143.90	143.79	143.85	
22	144.15	144.24	143.93	144.14	145.76	146.40	144.70	144.08	144.00	143.90	143.87	143.85	
23	144.13	144.25	143.93	144.15	145.46	145.67	144.63	144.11	143.99	143.89	143.88	143.84	
24	144.20	144.21	143.91	144.15	145.16	145.40	144.55	144.11	143.98	143.86	143.90	143.85	
25	144.14	144.18	143.91	144.14	145.10	145.29	144.48	144.13	143.96	143.86	143.90	143.85	
26	144.10	144.16	143.91	144.13	145.00	145.17	144.43	144.22	143.95	143.80	143.86	143.85	
27	144.07	144.15	143.90	144.15	145.06	145.09	144.44	144.24	143.95	143.86	143.87	143.86	
28	144.05	144.15	143.93	144.17	145.15	145.02	144.48	144.24	143.95	143.96	143.86	143.87	
29	144.03	144.13	143.95	144.19	144.97	144.95	144.41	144.21	143.91	144.04		143.88	
30	144.02	144.10	143.98	144.18	144.75	144.91	144.38	144.20	143.92	143.92		143.87	
31		144.10		144.18	144.72		144.31		143.92	143.91		144.10	
Mean	144.09	144.09	144.10	144.26	144.67	146.47	144.58	144.16	144.03	143.92	143.86	143.87	
Max	144.40	144.27	144.66	144.76	145.89	150.44	145.00	144.27	144.20	144.04	143.93	144.10	150.44
Min	143.96	143.97	143.90	143.98	144.15	144.70	144.31	144.07	143.91	143.80	143.75	143.84	143.75

Annual Max Momentary Gage Height 150.63 M (MSL), at 21.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 143.50 M (MSL), River Bed 141.61 M (MSL)
Left Bank Elevation 152.70 M (MSL)
Right Bank Elevation 152.90 M (MSL), Drainage Area 7624 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.30	4.35	7.85	3.60	12.40	30.50	37.10	13.45	11.00	2.60	2.40	1.60	
2	1.30	4.00	14.15	7.15	13.45	42.70	33.72	12.40	11.00	2.60	2.60	1.80	
3	1.20	3.80	21.03	8.55	12.40	71.27	30.07	12.05	10.65	2.60	2.20	1.70	
4	1.20	3.60	28.35	9.25	11.70	75.58	27.92	11.70	8.90	2.60	2.20	1.70	
5	1.10	3.80	19.86	16.78	12.05	60.67	26.20	12.05	8.20	2.40	2.00	1.60	
6	1.40	5.40	15.26	20.25	11.35	60.67	24.20	11.70	7.50	2.40	1.90	1.70	
7	4.50	5.05	8.90	26.63	10.30	161.60	23.00	11.35	8.20	2.60	0.90	1.70	
8	4.20	5.05	5.40	33.26	9.25	347.90	23.40	11.35	5.75	3.60	0.50	1.60	
9	8.20	4.00	28.78	26.63	11.70	397.10	25.80	10.65	5.05	2.60	1.70	1.50	
10	14.70	5.05	17.54	23.80	14.50	382.75	24.60	9.25	5.40	2.40	1.80	1.50	
11	12.40	4.70	9.25	25.00	16.78	582.40	23.00	8.55	5.05	2.40	2.20	1.50	
12	8.90	4.00	6.45	21.81	22.20	561.00	23.40	8.55	4.70	2.00	2.00	1.50	
13	7.50	3.60	6.10	17.54	22.60	337.55	25.80	7.85	4.35	2.80	1.00	1.60	
14	7.15	3.40	5.40	13.80	20.64	198.40	24.20	7.85	4.35	2.60	1.00	1.70	
15	6.45	3.60	4.70	12.40	18.69	115.60	22.60	7.50	4.35	2.60	1.40	1.60	
16	5.75	5.05	4.00	11.70	17.16	95.16	21.81	7.15	4.70	2.40	1.50	1.50	
17	6.10	6.10	3.80	10.65	16.02	111.10	21.03	6.80	4.35	2.40	1.60	1.40	
18	7.15	9.95	3.20	9.95	17.92	121.45	22.20	6.45	4.35	2.00	1.70	1.40	
19	8.90	10.30	3.00	8.55	39.60	103.93	45.30	6.80	4.35	2.00	1.80	1.40	
20	8.55	13.45	3.00	8.20	64.91	116.25	42.18	7.85	4.35	2.20	1.10	1.50	
21	8.55	11.70	2.80	8.55	93.43	148.00	34.18	6.45	4.35	2.00	0.90	1.50	
22	9.25	12.40	2.60	8.90	86.06	124.70	30.50	6.80	4.00	2.00	1.70	1.50	
23	8.55	12.75	2.60	9.25	69.68	81.05	27.49	7.85	3.80	1.90	1.80	1.40	
24	11.00	11.35	2.20	9.25	53.78	66.50	24.20	7.85	3.60	1.60	2.00	1.50	
25	8.90	10.30	2.20	8.90	50.60	60.67	21.42	8.55	3.20	1.60	2.00	1.50	
26	7.50	9.60	2.20	8.55	45.30	54.31	19.47	11.70	3.00	1.00	1.60	1.50	
27	6.45	9.25	2.00	9.25	48.48	50.07	19.86	12.40	3.00	1.60	1.70	1.60	
28	5.75	9.25	2.60	9.95	53.25	46.36	21.42	12.40	3.00	3.20	1.60	1.70	
29	5.05	8.55	3.00	10.65	43.74	42.70	18.69	11.35	2.20	5.40		1.80	
30	4.70	7.50	3.60	10.30	32.80	40.62	17.54	11.00	2.40	2.40		1.70	
31		7.50		10.30	31.42		14.88		2.40	2.20		7.50	
Total	193.65	218.40	241.82	419.35	984.16	4688.56	797.18	287.65	161.50	74.70	46.80	54.70	8168.47 CMSDAY
Mean	6.46	7.05	8.06	13.53	31.75	156.29	25.72	9.59	5.21	2.41	1.67	1.76	22.38 CMS
Max	14.70	13.45	28.78	33.26	93.43	582.40	45.30	13.45	11.00	5.40	2.60	7.50	582.40 CMS
Min	1.10	3.40	2.00	3.60	9.25	30.50	14.88	6.45	2.20	1.00	0.50	1.40	0.50 CMS
Runoff	16.731	18.870	20.893	36.232	85.031	405.092	68.876	24.853	13.954	6.454	4.044	4.726	705.756 MCM

Momentary Peak 617.85 CMS, at 150.63 M (MSL), at 21.00 Hours, on Sep 11, 1998

Runoff Yield 2.94 Liters/Second/Square KM, Momentary Peak Yield 81.040 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

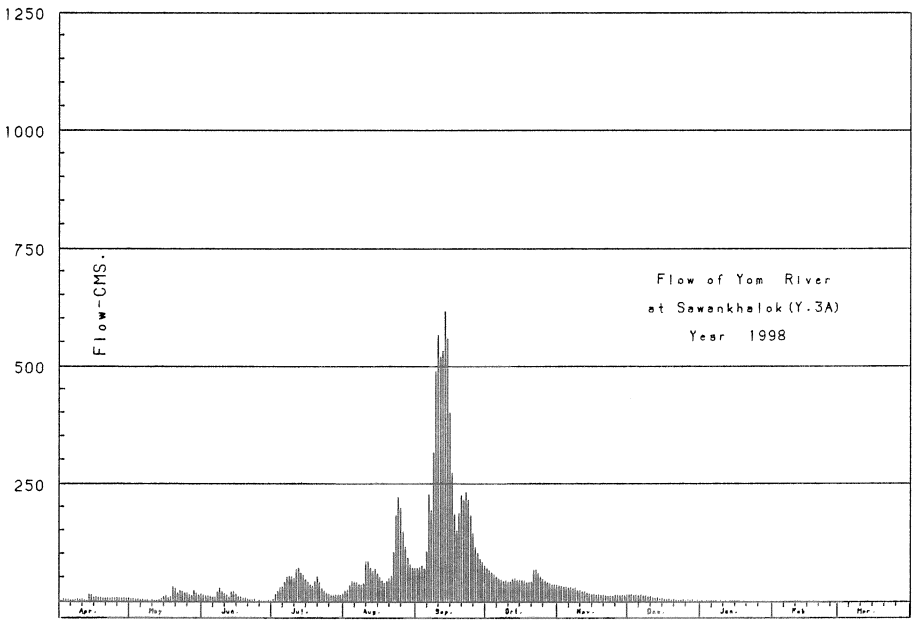
Yom River at Sawankhalok, Sukhothai (Y.3A)

Location	Lat. 17°-18'-29" N., Long. 99°-49'-43" E., on right bank about 100 meters downstream from the bridge on highway, Amphoe Sawankhalok, Sukhothai.
Drainage Area	13,583 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+51.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of automatic gage building.
Elevation	+60.559 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967 to date.
Rated by Float	-
Rated by Current Meter	1967 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 28 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	50.97	51.13	51.34	51.07	51.52	52.43	52.41	51.65	51.39	50.97	50.75	50.68	
2	51.10	51.12	51.30	51.38	51.52	52.44	52.32	51.62	51.39	50.97	50.75	50.67	
3	51.08	51.09	51.28	51.52	51.73	52.50	52.23	51.60	51.37	50.97	50.75	50.67	
4	51.06	51.06	51.29	51.63	51.85	52.41	52.13	51.59	51.35	50.97	50.74	50.66	
5	51.05	51.04	51.23	51.68	51.82	53.05	52.06	51.56	51.34	50.97	50.74	50.63	
6	51.05	51.04	51.26	51.84	51.80	54.69	51.97	51.55	51.34	50.97	50.73	50.63	
7	51.05	51.03	51.49	52.05	51.72	54.27	51.90	51.52	51.32	50.96	50.73	50.63	
8	51.07	51.01	51.60	52.10	51.67	55.68	51.87	51.52	51.30	50.96	50.80	50.62	
9	51.06	51.01	51.49	52.06	51.77	57.40	51.85	51.54	51.28	50.96	50.83	50.62	
10	51.06	51.01	51.41	51.99	52.67	58.13	51.81	51.53	51.24	50.95	50.87	50.62	
11	51.06	51.02	51.33	52.35	52.68	57.70	51.85	51.51	51.22	50.95	50.87	50.62	
12	51.02	51.04	51.25	52.44	52.44	57.81	51.95	51.50	51.20	50.95	50.86	50.62	
13	51.40	51.04	51.48	52.24	52.29	58.60	51.96	51.46	51.18	50.95	50.86	50.62	
14	51.35	51.11	51.47	52.13	52.39	58.07	51.89	51.43	51.14	50.93	50.85	50.62	
15	51.24	51.29	51.40	51.96	52.21	56.53	51.89	51.41	51.12	50.91	50.85	50.61	
16	51.23	51.31	51.26	51.81	52.03	55.19	51.90	51.39	51.09	50.91	50.85	50.61	
17	51.22	51.21	51.22	51.69	51.90	54.17	51.85	51.38	51.09	50.91	50.86	50.61	
18	51.17	51.25	51.18	51.61	51.77	53.69	51.81	51.37	51.08	50.89	50.86	50.61	
19	51.17	51.68	51.14	51.87	51.88	54.19	51.79	51.36	51.06	50.86	50.82	50.61	
20	51.17	51.59	51.12	52.08	51.98	54.65	51.85	51.35	51.06	50.84	50.80	50.60	
21	51.18	51.44	51.10	51.77	52.08	54.54	52.31	51.34	51.06	50.80	50.75	50.60	
22	51.19	51.53	51.08	51.61	53.03	54.74	52.36	51.32	51.06	50.77	50.76	50.60	
23	51.20	51.49	51.05	51.49	54.15	54.54	52.20	51.30	51.05	50.77	50.76	50.60	
24	51.20	51.45	51.03	51.44	54.61	54.15	52.05	51.32	51.04	50.77	50.75	50.59	
25	51.18	51.44	51.00	51.39	54.34	53.61	51.94	51.35	51.04	50.76	50.75	50.59	
26	51.16	51.36	50.98	51.35	53.66	53.17	51.87	51.34	51.03	50.76	50.75	50.59	
27	51.18	51.35	50.97	51.34	53.19	52.99	51.81	51.34	51.03	50.76	50.71	50.58	
28	51.18	51.53	50.96	51.35	52.83	52.78	51.74	51.33	51.02	50.76	50.70	50.56	
29	51.18	51.43	50.98	51.35	52.55	52.64	51.69	51.33	50.98	50.76		50.56	
30	51.15	51.37	51.03	51.35	52.44	52.50	51.67	51.36	50.98	50.75		50.55	
31		51.40		51.40	52.41		51.68		50.97	50.75		50.55	
Mean	51.15	51.25	51.22	51.72	52.42	54.64	51.96	51.44	51.16	50.88	50.79	50.61	
Max	51.40	51.68	51.60	52.44	54.61	58.60	52.41	51.65	51.39	50.97	50.87	50.68	58.60
Min	50.97	51.01	50.96	51.07	51.52	52.41	51.67	51.30	50.97	50.75	50.70	50.55	50.55

Annual Max Momentary Gage Height 58.68 M (MSL), at 14.00 Hours, on Sep 13, 1998
Zero Gage at Bottom Elevation 51.00 M (MSL), River Bed 50.30 M (MSL)
Left Bank Elevation 61.24 M (MSL)
Right Bank Elevation 61.68 M (MSL), Drainage Area 13583 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.93	6.23	13.19	4.87	22.82	71.65	70.55	34.00	15.11	2.93	0.60	0.32	
2	5.55	6.00	11.65	14.73	22.82	72.20	65.80	32.80	15.11	2.93	0.60	0.28	
3	5.10	5.32	10.88	22.82	34.89	75.50	61.07	32.00	14.34	2.93	0.60	0.28	
4	4.65	4.65	11.26	29.36	42.37	70.55	56.00	31.60	13.57	2.93	0.56	0.24	
5	4.42	4.20	8.95	32.13	40.95	107.25	52.50	30.40	13.19	2.93	0.56	0.12	
6	4.42	4.20	10.11	41.90	40.00	228.65	48.08	30.00	13.19	2.93	0.52	0.12	
7	4.42	3.97	20.99	52.00	36.80	193.60	44.75	28.80	12.42	2.80	0.52	0.12	
8	4.87	3.52	27.70	54.50	34.80	318.00	43.32	28.80	11.65	2.80	0.80	0.08	
9	4.65	3.52	20.99	52.50	38.80	490.00	42.37	24.04	10.88	2.80	1.18	0.08	
10	4.65	3.52	16.11	49.03	84.85	566.65	40.48	23.43	9.34	2.68	1.67	0.08	
11	4.65	3.75	12.81	67.37	85.40	521.50	42.37	22.21	8.57	2.68	1.67	0.08	
12	3.75	4.20	9.72	72.20	72.20	533.05	47.13	21.60	7.80	2.68	1.55	0.08	
13	15.50	4.20	20.38	61.60	64.22	618.00	47.60	19.16	7.35	2.68	1.55	0.08	
14	13.57	5.78	19.77	56.00	69.47	560.35	44.27	17.33	6.45	2.43	1.42	0.08	
15	9.34	11.26	15.50	47.60	60.02	403.00	44.27	16.11	6.00	2.18	1.42	0.04	
16	8.95	12.04	10.11	40.48	51.00	273.10	44.75	15.11	5.32	2.18	1.42	0.04	
17	8.57	8.18	8.57	35.60	44.75	185.75	42.37	14.73	5.32	2.18	1.55	0.04	
18	7.12	9.72	7.35	32.40	38.80	150.30	40.48	14.34	5.10	1.92	1.55	0.04	
19	7.12	32.13	6.45	43.32	43.80	187.25	39.60	13.96	4.65	1.55	1.05	0.04	
20	7.12	27.09	6.00	53.50	48.55	225.25	42.37	13.57	4.65	1.30	0.80	0.00	
21	7.35	17.94	5.55	38.80	53.50	215.90	65.28	13.19	4.65	0.80	0.60	0.00	
22	7.57	23.43	5.10	28.25	105.95	232.90	67.90	12.42	4.65	0.68	0.64	0.00	
23	7.80	20.99	4.42	20.99	184.25	215.90	59.50	11.65	4.42	0.68	0.64	0.00	
24	7.80	18.55	3.97	17.94	221.85	184.25	52.00	12.42	4.20	0.68	0.60	0.00	
25	7.35	17.94	3.30	15.11	199.20	144.70	46.65	13.57	4.20	0.64	0.60	0.00	
26	6.90	13.96	3.05	13.57	148.20	115.05	43.32	13.19	3.97	0.64	0.60	0.00	
27	7.35	13.57	2.93	13.19	116.35	103.40	40.48	13.19	3.97	0.64	0.44	0.00	
28	7.35	23.43	2.80	13.57	93.80	90.90	37.60	12.81	3.75	0.64	0.40	0.00	
29	7.35	17.33	3.05	13.57	78.25	83.20	35.60	12.81	3.05	0.64		0.00	
30	6.68	14.34	3.97	13.57	72.20	75.50	34.80	13.96	3.05	0.60		0.00	
31		15.50		15.50	70.55		35.20		2.93	0.60		0.00	
Total	204.85	360.46	306.63	1067.97	2321.41	7313.30	1478.46	593.20	232.85	57.68	26.11	2.24	13965.16 CMSDAY
Mean	6.83	11.63	10.22	34.45	74.88	243.78	47.69	19.77	7.51	1.86	0.93	0.07	38.26 CMS
Max	15.50	32.13	27.70	72.20	221.85	618.00	70.55	34.00	15.11	2.93	1.67	0.32	618.00 CMS
Min	2.93	3.52	2.80	4.87	22.82	70.55	34.80	11.65	2.93	0.60	0.40	0.00	0.00 CMS
Runoff	17.699	31.144	26.493	92.273	200.570	631.869	127.739	51.252	20.118	4.984	2.256	0.194	1206.590 MCM

Momentary Peak 626.80 CMS, at 58.68 M (MSL), at 14.00 Hours, on Sep 13, 1998

Runoff Yield 2.82 Liters/Second/Square KM, Momentary Peak Yield 46.146 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

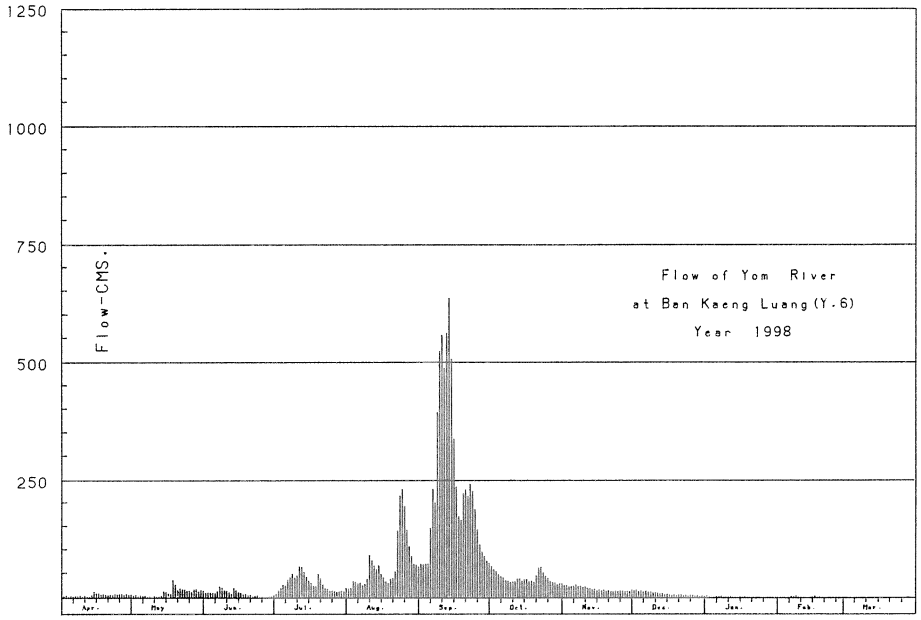
Yom River at Ban Kaeng Luang, Sukhothai (Y.6)

Location	Lat. 17°-26'-03" N., Long. 99°-47'-32" E., on left bank about 150 meters upstream from Kaeng Luang, Amphoe Si Satchanalai, Sukhothai.
Drainage Area	12,658 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+59.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the automatic gage building.
Elevation	+68.928 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1952 to date.
Rating Operation	
Period of Rating	1952 to date.
Rated by Float	-
Rated by Current Meter	1952 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Stage-discharge relation defined by 51 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	59.35	59.41	59.70	59.59	59.98	60.95	60.86	60.19	59.87	59.33	58.90	58.82	
2	59.32	59.38	59.65	59.82	60.04	60.91	60.79	60.15	59.84	59.28	58.85	58.81	
3	59.31	59.34	59.70	60.04	60.40	60.95	60.71	60.11	59.81	59.26	58.81	58.81	
4	59.28	59.30	59.62	60.17	60.33	60.93	60.65	60.08	59.80	59.25	58.82	58.81	
5	59.26	59.27	59.61	60.17	60.28	61.71	60.58	60.13	59.78	59.25	59.07	58.81	
6	59.25	59.24	59.77	60.43	60.28	62.33	60.50	60.19	59.77	59.24	59.11	58.81	
7	59.37	59.24	60.12	60.55	60.19	62.12	60.43	60.12	59.76	59.21	59.29	58.81	
8	59.31	59.23	60.01	60.64	60.22	63.22	60.37	60.10	59.71	59.23	59.29	58.81	
9	59.29	59.22	59.88	60.53	60.48	63.78	60.35	60.08	59.68	59.21	59.25	58.81	
10	59.30	59.25	59.80	60.59	61.16	63.93	60.33	60.07	59.64	59.21	59.21	58.81	
11	59.27	59.30	59.67	60.86	61.05	63.63	60.39	60.03	59.63	59.20	59.19	58.81	
12	59.27	59.29	59.60	60.87	60.88	63.94	60.49	59.96	59.60	59.21	59.15	58.81	
13	59.47	59.38	60.04	60.69	60.78	64.25	60.46	59.94	59.54	59.20	59.21	58.80	
14	59.72	59.82	59.85	60.57	60.91	63.72	60.40	59.92	59.51	59.18	59.24	58.80	
15	59.65	59.69	59.73	60.40	60.66	62.93	60.44	59.88	59.49	59.16	59.21	58.80	
16	59.57	59.62	59.62	60.27	60.51	62.35	60.44	59.87	59.47	59.11	59.20	58.80	
17	59.52	59.49	59.54	60.15	60.39	61.91	60.39	59.87	59.44	59.08	59.15	58.79	
18	59.48	60.45	59.49	60.09	60.26	61.83	60.37	59.85	59.43	59.07	59.14	58.79	
19	59.49	60.19	59.44	60.66	60.49	62.27	60.36	59.83	59.43	59.04	59.04	58.80	
20	59.45	59.90	59.41	60.48	60.48	62.31	60.58	59.81	59.43	59.02	58.96	58.80	
21	59.40	59.97	59.37	60.18	60.73	62.22	60.84	59.77	59.42	58.99	58.90	58.80	
22	59.45	59.96	59.34	60.03	61.66	62.40	60.84	59.77	59.41	58.97	58.89	58.80	
23	59.52	59.89	59.31	59.92	62.23	62.29	60.70	59.77	59.37	58.94	58.88	58.80	
24	59.53	59.86	59.24	59.84	62.33	62.03	60.56	59.83	59.37	58.95	58.88	58.80	
25	59.49	59.81	59.21	59.81	62.08	61.66	60.48	59.80	59.37	58.93	58.89	58.80	
26	59.49	59.76	59.19	59.78	61.66	61.41	60.40	59.79	59.37	58.91	58.94	58.80	
27	59.48	59.94	59.16	59.76	61.37	61.25	60.34	59.80	59.36	58.94	58.89	58.79	
28	59.51	59.91	59.15	59.79	61.13	61.13	60.28	59.76	59.34	58.94	58.84	58.79	
29	59.50	59.81	59.18	59.79	60.95	61.03	60.23	59.80	59.32	58.94		58.79	
30	59.45	59.85	59.29	59.80	60.90	60.95	60.24	59.85	59.25	58.93		58.79	
31		59.80		59.99	60.85		60.24		59.28	58.92		58.79	
Mean	59.42	59.63	59.56	60.20	60.83	62.21	60.49	59.94	59.53	59.10	59.04	58.80	
Max	59.72	60.45	60.12	60.87	62.33	64.25	60.86	60.19	59.87	59.33	59.29	58.82	64.25
Min	59.25	59.22	59.15	59.59	59.98	60.91	60.23	59.76	59.25	58.91	58.81	58.79	58.79

Annual Max Momentary Gage Height 64.29 M (MSL), at 15.00 Hours, on Sep 13, 1998
Zero Gage at Bottom Elevation 59.00 M (MSL), River Bed 57.82 M (MSL)
Left Bank Elevation 68.99 M (MSL)
Right Bank Elevation 70.28 M (MSL), Drainage Area 12658 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.27	5.09	11.25	8.61	19.01	72.25	65.50	26.63	15.76	4.03	0.20	0.04	
2	3.90	4.65	10.03	14.29	21.08	69.25	60.30	25.15	14.88	3.40	0.10	0.02	
3	3.78	4.15	11.25	21.08	35.60	72.25	54.70	23.67	14.00	3.15	0.02	0.02	
4	3.40	3.65	9.29	25.89	32.59	70.75	50.50	22.56	13.70	3.02	0.04	0.02	
5	3.15	3.27	9.05	25.89	30.44	149.42	45.86	24.41	13.21	3.02	1.29	0.02	
6	3.02	2.90	12.97	37.31	30.44	232.15	41.30	26.63	12.97	2.90	1.64	0.02	
7	4.52	2.90	24.04	44.15	26.63	201.20	37.31	24.04	12.72	2.52	3.52	0.02	
8	3.78	2.77	19.97	49.80	27.86	395.20	34.31	23.30	11.50	2.77	3.52	0.02	
9	3.52	2.65	16.06	43.01	40.16	523.20	33.45	22.56	10.76	2.52	3.02	0.02	
10	3.65	3.02	13.70	46.43	89.60	559.20	32.59	22.19	9.78	2.52	2.52	0.02	
11	3.27	3.65	10.51	65.50	80.25	487.20	35.17	20.71	9.54	2.40	2.31	0.02	
12	3.27	3.52	8.80	66.25	67.00	561.60	40.73	18.42	8.80	2.52	1.98	0.02	
13	6.27	4.65	21.08	53.30	59.60	637.50	39.02	17.83	7.63	2.40	2.52	0.00	
14	11.74	14.29	15.17	45.29	69.25	508.80	35.60	17.24	7.04	2.23	2.90	0.00	
15	10.03	11.00	11.99	35.60	51.20	337.05	37.88	16.06	6.66	2.06	2.52	0.00	
16	8.22	9.29	9.29	30.01	41.87	235.25	37.88	15.76	6.27	1.64	2.40	0.00	
17	7.24	6.66	7.63	25.15	35.17	173.75	35.17	15.76	5.68	1.38	1.98	0.00	
18	6.46	38.45	6.66	22.93	29.58	163.75	34.31	15.17	5.48	1.29	1.89	0.00	
19	6.66	26.63	5.68	51.20	40.73	222.85	33.88	14.59	5.48	1.04	1.04	0.00	
20	5.88	16.65	5.09	40.16	40.16	229.05	45.86	14.00	5.48	0.87	0.50	0.00	
21	4.90	18.72	4.52	26.26	56.10	215.10	64.00	12.97	5.29	0.65	0.20	0.00	
22	5.88	18.42	4.15	20.71	143.55	243.00	64.00	12.97	5.09	0.55	0.18	0.00	
23	7.24	16.35	3.78	17.24	216.65	225.95	54.00	12.97	4.52	0.40	0.16	0.00	
24	7.43	15.47	2.90	14.88	232.15	189.05	44.72	14.59	4.52	0.45	0.16	0.00	
25	6.66	14.00	2.52	14.00	195.80	143.55	40.16	13.70	4.52	0.35	0.18	0.00	
26	6.66	12.72	2.31	13.21	143.55	114.17	35.60	13.46	4.52	0.25	0.40	0.00	
27	6.46	17.83	2.06	12.72	110.00	98.00	33.02	13.70	4.40	0.40	0.18	0.00	
28	7.04	16.95	1.98	13.46	87.05	87.05	30.44	12.72	4.15	0.40	0.08	0.00	
29	6.85	14.00	2.23	13.46	72.25	78.55	28.29	13.70	3.90	0.40		0.00	
30	5.88	15.17	3.52	13.70	68.50	72.25	28.72	15.17	3.02	0.35		0.00	
31		13.70		19.31	64.75		28.72		3.40	0.30		0.00	
Total	171.03	343.17	269.48	930.80	2258.57	7368.34	1282.99	542.63	244.67	52.18	37.45	0.26	13501.57 CMSDAY
Mean	5.70	11.07	8.98	30.03	72.86	245.61	41.39	18.09	7.89	1.68	1.34	0.01	36.99 CMS
Max	11.74	38.45	24.04	66.25	232.15	637.50	65.50	26.63	15.76	4.03	3.52	0.04	637.50 CMS
Min	3.02	2.65	1.98	8.61	19.01	69.25	28.29	12.72	3.02	0.25	0.02	0.00	0.00 CMS
Runoff	14.777	29.650	23.283	80.421	195.140	636.625	110.850	46.883	21.139	4.508	3.236	0.022	1166.536 MCM

Momentary Peak 647.50 CMS, at 64.29 M (MSL), at 15.00 Hours, on Sep 13, 1998
Runoff Yield 2.92 Liters/Second/Square KM, Momentary Peak Yield 51.153 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

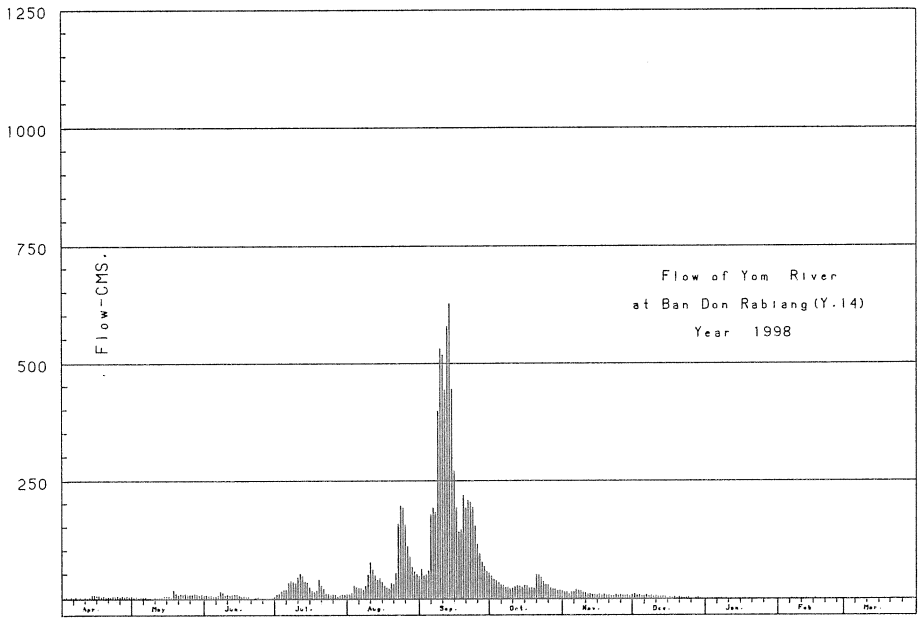
Yom River at Ban Don Rabiang, Sukhothai (Y.14)

Location	Lat. 17-35-42 N., Long. 99-43-08 E., on left bank about 50 meters from Si Satchanalai-Den Chai Highway No. 101 at guidepost 44 th., Amphoe Si Satchanalai, Sukhothai.
Drainage Area	12,131 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+65.10 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of gage observer's house.
Elevation	+78.363 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1964 to date.
Rating Operation	
Period of Rating	1964 to date.
Rated by Float	-
Rated by Current Meter	1964 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 30 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	65.86	65.90	66.03	66.15	66.16	67.10	66.89	66.29	66.13	65.83	65.72	65.59	
2	65.85	65.89	66.03	66.14	66.21	66.92	66.82	66.27	66.10	65.83	65.71	65.59	
3	65.87	65.86	66.01	66.32	66.55	66.93	66.73	66.22	66.08	65.83	65.70	65.58	
4	65.84	65.85	65.96	66.33	66.45	67.07	66.69	66.26	66.07	65.82	65.69	65.57	
5	65.83	65.84	65.97	66.38	66.45	68.45	66.59	66.30	66.06	65.81	65.70	65.56	
6	65.86	65.83	66.03	66.67	66.40	68.59	66.53	66.35	66.06	65.79	65.72	65.55	
7	65.86	65.82	66.31	66.71	66.38	68.48	66.48	66.34	66.05	65.79	65.75	65.55	
8	65.85	65.81	66.20	66.70	66.50	70.14	66.44	66.30	66.02	65.80	65.76	65.55	
9	65.86	65.81	66.08	66.61	66.96	70.83	66.41	66.26	66.00	65.81	65.77	65.54	
10	65.85	65.81	66.06	66.85	67.33	70.76	66.41	66.21	65.99	65.80	65.78	65.53	
11	65.84	65.85	66.09	66.99	67.09	70.38	66.50	66.18	65.99	65.80	65.79	65.54	
12	65.91	65.84	66.04	66.89	66.91	71.04	66.55	66.15	65.97	65.80	65.79	65.53	
13	66.07	65.87	66.15	66.72	66.79	71.26	66.49	66.15	65.95	65.80	65.78	65.53	
14	66.05	65.97	66.11	66.65	66.82	70.40	66.48	66.12	65.92	65.79	65.77	65.52	
15	66.06	66.02	66.06	66.48	66.70	69.28	66.53	66.11	65.91	65.78	65.75	65.51	
16	65.98	65.95	65.96	66.30	66.55	68.57	66.51	66.11	65.90	65.75	65.73	65.50	
17	65.95	65.92	65.93	66.28	66.43	68.08	66.45	66.10	65.90	65.76	65.71	65.50	
18	65.94	66.36	65.91	66.31	66.43	68.11	66.44	66.10	65.90	65.75	65.70	65.49	
19	65.93	66.15	65.88	66.80	66.62	68.82	66.44	66.09	65.90	65.74	65.69	65.48	
20	65.91	66.09	65.88	66.55	66.58	68.58	66.94	66.06	65.90	65.73	65.68	65.48	
21	65.92	66.19	65.86	66.38	67.00	68.72	66.95	66.04	65.90	65.72	65.67	65.47	
22	65.93	66.15	65.85	66.21	68.25	68.70	66.85	66.04	65.89	65.71	65.66	65.47	
23	65.96	66.13	65.84	66.13	68.63	68.58	66.68	66.08	65.88	65.70	65.65	65.46	
24	65.95	66.11	65.81	66.10	68.57	68.21	66.59	66.08	65.88	65.69	65.63	65.48	
25	65.95	66.06	65.79	66.09	68.21	67.77	66.55	66.07	65.88	65.68	65.62	65.48	
26	65.95	66.05	65.79	66.08	67.72	67.56	66.46	66.06	65.88	65.67	65.60	65.48	
27	65.95	66.21	65.78	65.96	67.48	67.34	66.41	66.07	65.87	65.67	65.60	65.48	
28	65.95	66.09	65.79	66.08	67.19	67.18	66.37	66.05	65.86	65.67	65.60	65.47	
29	65.95	66.08	65.80	66.09	67.02	67.05	66.35	66.04	65.86	65.68		65.46	
30	65.94	66.08	65.85	66.12	66.97	66.98	66.32	66.07	65.85	65.69		65.45	
31		66.07		66.12	66.87		66.30		65.83	65.70		65.45	
Mean	65.92	65.99	65.96	66.39	66.97	68.60	66.55	66.15	65.95	65.75	65.70	65.51	
Max	66.07	66.36	66.31	66.99	68.63	71.26	66.95	66.35	66.13	65.83	65.79	65.59	71.26
Min	65.83	65.81	65.78	65.96	66.16	66.92	66.30	66.04	65.83	65.67	65.60	65.45	65.45

Annual Max Momentary Gage Height 71.30 M (MSL), at 6.00 Hours, on Sep 13, 1998
Zero Gage at Bottom Elevation 65.10 M (MSL), River Bed 63.36 M (MSL)
Left Bank Elevation 78.96 M (MSL)
Right Bank Elevation 75.87 M (MSL), Drainage Area 12131 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.20	4.00	6.75	9.75	10.00	62.00	47.57	15.50	9.25	2.60	1.20	0.00	
2	3.00	3.80	6.75	9.50	11.50	49.60	42.85	14.50	8.50	2.60	1.10	0.00	
3	3.40	3.20	6.25	17.00	28.65	50.27	37.90	12.00	8.00	2.60	1.00	0.00	
4	2.80	3.00	5.20	17.50	23.55	59.90	35.84	14.00	7.75	2.40	0.90	0.00	
5	2.60	2.80	5.40	20.00	23.55	180.25	30.69	16.00	7.50	2.20	1.00	0.00	
6	3.20	2.60	6.75	34.80	21.00	194.95	27.63	18.50	7.50	1.90	1.20	0.00	
7	3.20	2.40	16.50	36.86	20.00	183.40	25.08	18.00	7.25	1.90	1.50	0.00	
8	3.00	2.20	11.00	36.35	26.10	400.10	23.04	16.00	6.50	2.00	1.60	0.00	
9	3.20	2.20	8.00	31.72	52.30	533.45	21.51	14.00	6.00	2.20	1.70	0.00	
10	3.00	2.20	7.50	44.87	78.10	518.40	21.51	11.50	5.80	2.00	1.80	0.00	
11	2.80	3.00	8.25	54.32	61.30	443.30	26.10	10.50	5.80	2.00	1.90	0.00	
12	4.20	2.80	7.00	47.57	48.93	578.80	28.65	9.75	5.40	2.00	1.90	0.00	
13	7.75	3.40	9.75	37.38	40.98	629.30	25.59	9.75	5.00	2.00	1.80	0.00	
14	7.25	5.40	8.75	33.78	42.85	447.00	25.08	9.00	4.40	1.90	1.70	0.00	
15	7.50	6.50	7.50	25.08	36.35	273.03	27.63	8.75	4.20	1.80	1.50	0.00	
16	5.60	5.00	5.20	16.00	28.65	192.85	26.61	8.75	4.00	1.50	1.30	0.00	
17	5.00	4.40	4.60	15.00	22.53	143.00	23.55	8.50	4.00	1.60	1.10	0.00	
18	4.80	19.00	4.20	16.50	22.53	146.00	23.04	8.50	4.00	1.50	1.00	0.00	
19	4.60	9.75	3.60	41.50	32.23	219.11	23.04	8.25	4.00	1.40	0.90	0.00	
20	4.20	8.25	3.60	28.65	30.18	193.90	50.95	7.50	4.00	1.30	0.80	0.00	
21	4.40	10.75	3.20	20.00	55.00	208.60	51.62	7.00	4.00	1.20	0.70	0.00	
22	4.60	9.75	3.00	11.50	160.00	206.50	44.87	7.00	3.80	1.10	0.60	0.00	
23	5.20	9.25	2.80	9.25	199.15	193.90	35.32	8.00	3.60	1.00	0.50	0.00	
24	5.00	8.75	2.20	8.50	192.85	156.00	30.69	8.00	3.60	0.90	0.30	0.00	
25	5.00	7.50	1.90	8.25	156.00	115.00	28.65	7.75	3.60	0.80	0.20	0.00	
26	5.00	7.25	1.90	8.00	110.68	96.84	24.06	7.50	3.60	0.70	0.00	0.00	
27	5.00	11.50	1.80	5.20	89.92	78.80	21.51	7.75	3.40	0.70	0.00	0.00	
28	5.00	8.25	1.90	8.00	68.30	67.60	19.50	7.25	3.20	0.70	0.00	0.00	
29	5.00	8.00	2.00	8.25	56.40	58.50	18.50	7.00	3.20	0.80		0.00	
30	4.80	8.00	3.00	9.00	52.98	53.65	17.00	7.75	3.00	0.90		0.00	
31		7.75		9.00	46.23		16.00		2.60	1.00		0.00	
Total	133.30	192.65	166.25	679.08	1848.79	6734.00	901.58	314.25	156.45	49.20	29.20	0.00	11204.75 CMSDAY
Mean	4.44	6.21	5.54	21.91	59.64	224.47	29.08	10.48	5.05	1.59	1.04	0.00	30.70 CMS
Max	7.75	19.00	16.50	54.32	199.15	629.30	51.62	18.50	9.25	2.60	1.90	0.00	629.30 CMS
Min	2.60	2.20	1.80	5.20	10.00	49.60	16.00	7.00	2.60	0.70	0.00	0.00	0.00 CMS
Runoff	11.517	16.645	14.364	58.673	159.735	581.818	77.897	27.151	13.517	4.251	2.523	0.000	968.091 MCM

Momentary Peak 639.50 CMS, at 71.30 M (MSL), at 6.00 Hours, on Sep 13, 1998
Runoff Yield 2.53 Liters/Second/Square KM, Momentary Peak Yield 52.716 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

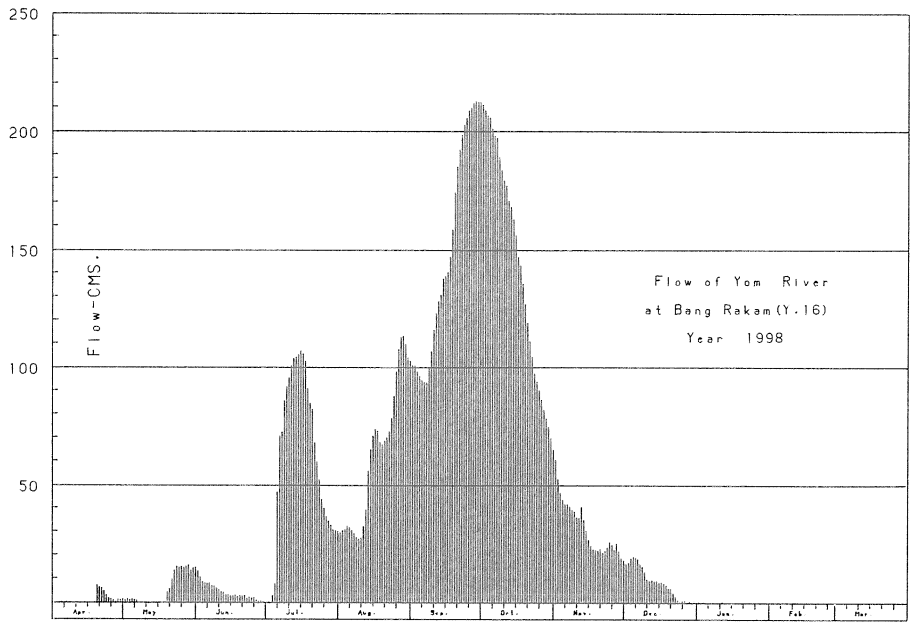
Yom River at Bang Rakam, Phitsanulok (Y.16)

Location	Lat.16°-45'-35" N., Long. 100°-07'-40" E., on right bank about 58 meters upstream from the old staff gage, Amphoe Bang Rakam, Phitsanulok.
Drainage Area	20,841 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+31.63 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 13 meters from the top staff gage.
Elevation	+41.630 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967, 1995 to date.
Rated by Float	-
Rated by Current Meter	1967, 1995 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 25 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	31.90	32.08	32.96	31.86	33.71	35.91	38.26	34.79	33.10	31.97	31.83	31.78	
2	31.90	32.09	32.82	31.83	33.73	35.90	38.22	34.52	33.11	31.97	31.82	31.77	
3	31.90	32.09	32.71	32.24	33.76	35.84	38.17	34.34	33.22	31.95	31.85	31.77	
4	31.90	32.09	32.64	32.64	33.81	35.78	38.16	34.23	33.23	31.92	31.83	31.75	
5	31.90	32.09	32.65	34.35	33.80	35.74	38.07	34.17	33.23	31.92	31.83	31.75	
6	31.90	32.01	32.63	35.09	33.75	35.71	38.00	34.16	33.19	31.92	31.83	31.75	
7	31.89	31.91	32.58	35.13	33.68	35.71	37.99	34.13	33.10	31.91	31.83	31.74	
8	31.89	31.85	32.53	35.51	33.63	35.87	37.82	34.07	33.03	31.91	31.83	31.74	
9	31.89	31.83	32.50	35.66	33.58	36.06	37.72	34.04	32.94	31.91	31.83	31.74	
10	31.89	31.81	32.42	35.77	33.62	36.26	37.63	33.96	32.76	31.91	31.82	31.73	
11	31.88	31.79	32.39	35.90	33.80	36.43	37.58	33.94	32.74	31.91	31.81	31.73	
12	31.88	31.76	32.34	35.99	34.08	36.54	37.46	34.13	32.74	31.91	31.81	31.73	
13	31.88	31.76	32.29	36.00	34.63	36.61	37.40	33.92	32.73	31.90	31.79	31.72	
14	31.87	31.76	32.27	36.03	34.92	36.76	37.30	33.73	32.71	31.89	31.79	31.72	
15	31.87	31.76	32.26	36.06	35.09	36.79	37.15	33.59	32.68	31.88	31.79	31.72	
16	31.87	31.75	32.26	36.03	35.16	36.82	36.96	33.45	32.67	31.89	31.78	31.72	
17	31.87	31.75	32.26	35.96	35.14	36.97	36.89	33.40	32.65	31.91	31.78	31.71	
18	31.87	31.75	32.24	35.64	35.01	37.20	36.71	33.37	32.57	31.89	31.78	31.71	
19	32.60	32.38	32.24	35.48	34.97	37.53	36.52	33.37	32.50	31.86	31.78	31.71	
20	32.54	32.45	32.25	35.40	35.03	37.74	36.33	33.39	32.47	31.86	31.78	31.71	
21	32.48	32.76	32.25	35.01	35.06	37.89	36.16	33.33	32.35	31.86	31.78	31.71	
22	32.41	32.97	32.16	34.75	35.14	38.01	36.00	33.35	32.22	31.85	31.78	31.70	
23	32.26	33.03	32.18	34.52	35.29	38.10	35.82	33.44	32.09	31.85	31.78	31.70	
24	32.18	33.03	32.18	34.23	35.56	38.15	35.72	33.53	32.07	31.85	31.78	31.75	
25	32.09	33.03	32.16	34.11	35.84	38.21	35.63	33.49	32.03	31.84	31.78	31.75	
26	32.03	33.03	32.07	33.96	36.07	38.24	35.51	33.39	32.02	31.84	31.78	31.74	
27	32.01	33.05	32.02	33.90	36.19	38.28	35.40	33.50	32.00	31.84	31.78	31.74	
28	32.07	33.06	32.03	33.82	36.21	38.29	35.29	33.34	31.98	31.84	31.78	31.74	
29	32.08	32.97	31.91	33.76	36.13	38.29	35.20	33.22	31.99	31.84		31.73	
30	32.08	33.00	31.88	33.73	35.99	38.28	35.05	33.16	31.99	31.84		31.72	
31		33.02		33.72	35.95		34.91		31.97	31.84		31.71	
Mean	32.03	32.31	32.34	34.65	34.78	37.00	36.81	33.75	32.58	31.89	31.80	31.73	
Max	32.60	33.06	32.96	36.06	36.21	38.29	38.26	34.79	33.23	31.97	31.85	31.78	38.29
Min	31.87	31.75	31.88	31.83	33.58	35.71	34.91	33.16	31.97	31.84	31.78	31.70	31.70

Annual Max Momentary Gage Height 38.29 M (MSL), at 18.00 Hours, on Sep 29, 1998
Zero Gage at Bottom Elevation 31.63 M (MSL), River Bed 31.08 M (MSL)
Left Bank Elevation 43.35 M (MSL)
Right Bank Elevation 42.58 M (MSL), Drainage Area 20841 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.40	1.44	13.83	0.24	30.05	101.13	211.16	61.08	16.75	0.68	0.12	0.00	
2	0.40	1.52	10.92	0.12	30.55	100.75	209.12	52.48	16.96	0.68	0.08	0.00	
3	0.40	1.52	9.28	2.94	31.30	98.50	206.58	46.96	19.25	0.60	0.20	0.00	
4	0.40	1.52	8.34	8.34	32.57	96.25	206.08	43.77	19.46	0.48	0.12	0.00	
5	0.40	1.52	8.48	47.25	32.30	94.75	201.53	42.10	19.46	0.48	0.12	0.00	
6	0.40	0.88	8.21	71.15	31.05	93.63	198.00	41.84	18.62	0.48	0.12	0.00	
7	0.36	0.44	7.53	72.55	29.30	93.63	197.50	41.05	16.75	0.44	0.12	0.00	
8	0.36	0.20	6.85	86.21	28.05	99.62	189.00	39.45	15.29	0.44	0.12	0.00	
9	0.36	0.12	6.45	91.75	26.87	107.13	184.00	38.66	13.42	0.44	0.12	0.00	
10	0.36	0.04	5.37	95.88	27.80	115.87	179.50	36.54	9.96	0.44	0.08	0.00	
11	0.32	0.00	4.96	100.75	32.30	123.31	177.00	36.01	9.69	0.44	0.04	0.00	
12	0.32	0.00	4.29	104.13	39.72	128.13	171.00	41.05	9.69	0.44	0.04	0.00	
13	0.32	0.00	3.62	104.50	55.96	131.19	168.00	35.48	9.56	0.40	0.00	0.00	
14	0.28	0.00	3.34	105.81	65.36	137.75	163.17	30.55	9.28	0.36	0.00	0.00	
15	0.28	0.00	3.21	107.13	71.15	139.06	155.94	27.09	8.88	0.32	0.00	0.00	
16	0.28	0.00	3.21	105.81	73.60	140.42	146.86	24.07	8.74	0.36	0.00	0.00	
17	0.28	0.00	3.21	103.00	72.90	147.32	143.64	23.00	8.48	0.44	0.00	0.00	
18	0.28	0.00	2.94	91.00	68.35	158.35	135.56	22.37	7.39	0.36	0.00	0.00	
19	7.80	4.83	2.94	85.12	67.01	174.50	127.25	22.37	6.45	0.24	0.00	0.00	
20	6.99	5.78	3.07	82.20	69.05	185.00	118.94	22.79	6.05	0.24	0.00	0.00	
21	6.18	9.96	3.07	68.35	70.10	192.50	111.50	21.54	4.42	0.24	0.00	0.00	
22	5.23	14.04	2.08	59.80	72.90	198.50	104.50	21.96	2.67	0.20	0.00	0.00	
23	3.21	15.29	2.24	52.48	78.24	203.05	97.75	23.86	1.52	0.20	0.00	0.00	
24	2.24	15.29	2.24	43.77	88.04	205.58	94.00	25.79	1.36	0.20	0.00	0.00	
25	1.52	15.29	2.08	40.52	98.50	208.61	90.63	24.94	1.04	0.16	0.00	0.00	
26	1.04	15.29	1.36	36.54	107.56	210.14	86.21	22.79	0.96	0.16	0.00	0.00	
27	0.88	15.71	0.96	34.95	112.81	212.18	82.20	25.15	0.80	0.16	0.00	0.00	
28	1.36	15.92	1.04	32.83	113.69	212.69	78.24	21.75	0.72	0.16	0.00	0.00	
29	1.44	14.04	0.44	31.30	110.19	212.69	75.00	19.25	0.76	0.16		0.00	
30	1.44	14.67	0.32	30.55	104.13	212.18	69.75	18.00	0.76	0.16		0.00	
31		15.08		30.30	102.63		65.03		0.68	0.16		0.00	
Total	45.53	180.39	135.88	1927.27	1974.03	4534.41	4444.64	953.74	265.82	10.72	1.28	0.00	14473.71 CMSDAY
Mean	1.52	5.82	4.53	62.17	63.68	151.15	143.38	31.79	8.57	0.35	0.05	0.00	39.65 CMS
Max	7.80	15.92	13.83	107.13	113.69	212.69	211.16	61.08	19.46	0.68	0.20	0.00	212.69 CMS
Min	0.28	0.00	0.32	0.12	26.87	93.63	65.03	18.00	0.68	0.16	0.00	0.00	0.00 CMS
Runoff	3.934	15.586	11.740	166.516	170.556	391.773	384.017	82.403	22.967	0.926	0.111	0.000	1250.529 MCM

Momentary Peak 212.69 CMS, at 38.29 M (MSL), at 18.00 Hours, on Sep 29, 1998

Runoff Yield 1.90 Liters/Second/Square KM, Momentary Peak Yield 10.205 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

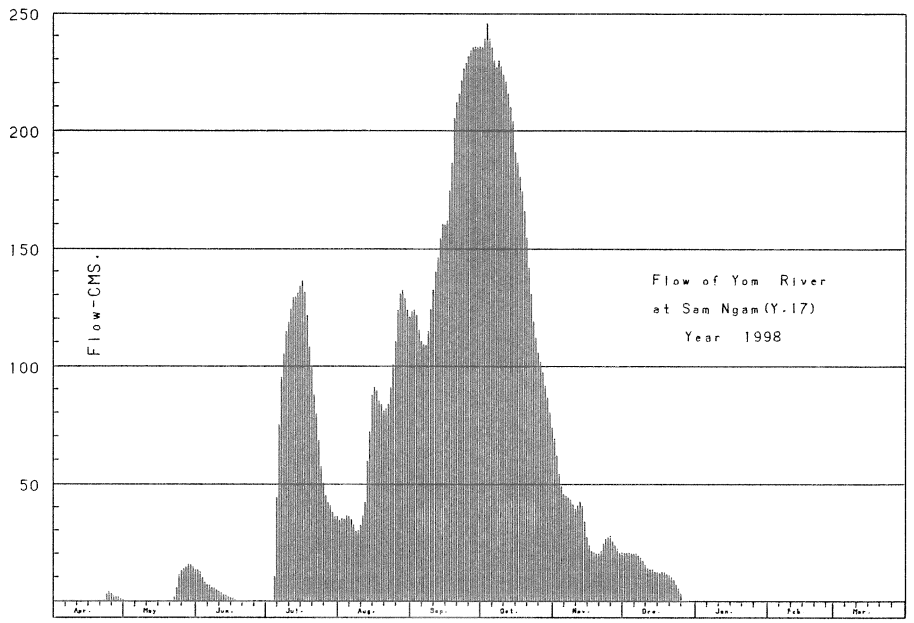
Yom River at Sam Ngam, Phichit (Y.17)

Location	Lat. 16°-30'-50" N., Long. 100°-12'-40" E., on left bank at the bridge on highway, infront of Amphoe Sam Ngam Office, Amphoe Sam Ngam, Phichit.
Drainage Area	21,415 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+31.49 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 50 meters from Amphoe Sam Ngam Office.
Elevation	+37.490 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967, 1990 to date.
Rated by Float	-
Rated by Current Meter	1967-1980, 1990 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 19 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	30.52	31.62	32.30	30.85	32.96	34.59	36.09	33.68	32.58	31.15	30.93	31.07	
2	30.54	31.59	32.26	30.71	32.97	34.60	36.13	33.55	32.59	31.10	30.98	31.06	
3	30.58	31.54	32.17	31.29	32.97	34.57	36.21	33.39	32.59	31.05	31.03	31.05	
4	30.63	31.44	32.08	32.19	33.00	34.47	36.13	33.29	32.58	30.99	31.08	31.04	
5	30.69	31.41	32.05	33.19	33.00	34.40	36.09	33.22	32.58	30.97	31.13	31.03	
6	30.76	31.37	32.03	33.79	32.97	34.37	36.02	33.20	32.57	30.95	31.20	31.02	
7	30.95	31.34	32.00	34.14	32.91	34.37	35.99	33.19	32.55	30.93	31.27	31.01	
8	31.15	31.32	31.97	34.31	32.85	34.46	36.02	33.16	32.50	30.91	31.26	31.01	
9	31.24	31.29	31.94	34.46	32.85	34.61	35.99	33.12	32.46	30.89	31.24	31.00	
10	31.29	31.27	31.89	34.52	32.91	34.73	35.95	33.07	32.38	30.89	31.21	30.99	
11	31.34	31.24	31.85	34.61	33.00	34.85	35.91	33.10	32.32	30.89	31.19	30.98	
12	31.32	31.21	31.81	34.68	33.13	34.93	35.85	33.15	32.31	30.89	31.13	30.97	
13	31.29	31.19	31.78	34.69	33.50	35.05	35.78	33.10	32.30	30.89	31.07	30.96	
14	31.27	31.17	31.75	34.71	33.73	35.13	35.70	32.95	32.27	30.89	31.03	30.95	
15	31.25	31.15	31.72	34.76	34.02	35.13	35.54	32.79	32.25	30.89	31.02	30.95	
16	31.24	31.13	31.69	34.79	34.07	35.15	35.48	32.68	32.25	30.89	31.07	30.94	
17	31.27	31.11	31.65	34.72	34.05	35.33	35.41	32.62	32.27	30.89	31.11	30.93	
18	31.30	31.09	31.62	34.57	33.97	35.48	35.32	32.59	32.25	30.89	31.15	30.92	
19	31.33	31.19	31.59	34.36	33.95	35.72	35.21	32.58	32.23	30.89	31.15	30.91	
20	31.36	31.29	31.57	34.22	33.89	35.80	35.05	32.57	32.20	30.89	31.14	30.90	
21	31.39	31.39	31.55	34.02	33.91	35.85	34.87	32.61	32.17	30.89	31.13	30.89	
22	31.63	31.74	31.53	33.87	33.95	35.92	34.71	32.71	32.13	30.89	31.12	30.89	
23	31.83	31.99	31.51	33.67	34.07	35.98	34.53	32.76	32.05	30.89	31.11	30.89	
24	31.88	32.21	31.47	33.45	34.23	36.01	34.42	32.79	31.96	30.89	31.10	30.89	
25	31.84	32.29	31.44	33.31	34.40	36.04	34.32	32.80	31.85	30.89	31.10	30.89	
26	31.79	32.31	31.40	33.21	34.60	36.07	34.25	32.74	31.65	30.89	31.09	30.89	
27	31.75	32.35	31.37	33.14	34.71	36.09	34.18	32.69	31.55	30.89	31.09	30.89	
28	31.72	32.39	31.33	33.10	34.73	36.09	34.08	32.64	31.37	30.89	31.08	30.89	
29	31.69	32.39	31.24	33.04	34.68	36.09	34.00	32.59	31.25	30.94		30.89	
30	31.64	32.34	31.04	32.99	34.60	36.09	33.88	32.59	31.25	30.94		30.89	
31		32.29		32.99	34.56		33.77		31.20	30.94		30.89	
Mean	31.28	31.60	31.72	33.62	33.71	35.27	35.25	32.93	32.14	30.92	31.11	30.95	
Max	31.88	32.39	32.30	34.79	34.73	36.09	36.21	33.68	32.59	31.15	31.27	31.07	36.21
Min	30.52	31.09	31.04	30.71	32.85	34.37	33.77	32.57	31.20	30.89	30.93	30.89	30.52

Annual Max Momentary Gage Height 36.23 M (MSL), at 6.00 Hours, on Oct 3, 1998
Zero Gage at Bottom Elevation 31.49 M (MSL), River Bed 30.16 M (MSL)
Left Bank Elevation 41.56 M (MSL)
Right Bank Elevation 41.55 M (MSL), Drainage Area 21415 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.27	13.50	0.00	34.80	123.35	235.65	69.40	20.50	0.00	0.00	0.00	
2	0.00	0.00	12.50	0.00	35.23	124.00	239.05	62.50	20.75	0.00	0.00	0.00	
3	0.00	0.00	10.25	0.00	35.23	122.05	245.85	54.50	20.75	0.00	0.00	0.00	
4	0.00	0.00	8.00	10.75	36.50	115.55	239.05	49.50	20.50	0.00	0.00	0.00	
5	0.00	0.00	7.25	44.57	36.50	111.00	235.65	46.00	20.50	0.00	0.00	0.00	
6	0.00	0.00	6.75	75.45	35.23	109.20	229.70	45.00	20.25	0.00	0.00	0.00	
7	0.00	0.00	6.00	95.40	32.68	109.20	227.20	44.57	19.75	0.00	0.00	0.00	
8	0.00	0.00	5.50	105.60	30.12	114.90	229.70	43.30	18.50	0.00	0.00	0.00	
9	0.00	0.00	5.01	114.90	30.12	124.65	227.20	41.60	17.50	0.00	0.00	0.00	
10	0.00	0.00	4.18	118.80	32.68	132.45	224.00	39.47	15.50	0.00	0.00	0.00	
11	0.00	0.00	3.53	124.65	36.50	140.50	220.80	40.75	14.00	0.00	0.00	0.00	
12	0.00	0.00	2.87	129.20	42.03	146.10	216.00	42.88	13.75	0.00	0.00	0.00	
13	0.00	0.00	2.43	129.85	60.00	154.62	210.40	40.75	13.50	0.00	0.00	0.00	
14	0.00	0.00	2.03	131.15	72.15	160.43	204.00	34.38	12.75	0.00	0.00	0.00	
15	0.00	0.00	1.62	134.40	88.20	160.43	191.20	27.65	12.25	0.00	0.00	0.00	
16	0.00	0.00	1.22	136.35	91.20	161.88	186.40	23.80	12.25	0.00	0.00	0.00	
17	0.00	0.00	0.67	131.80	90.00	174.93	180.80	21.70	12.75	0.00	0.00	0.00	
18	0.00	0.00	0.27	122.05	85.35	186.40	174.20	20.75	12.25	0.00	0.00	0.00	
19	0.00	0.00	0.00	108.60	84.25	205.60	166.22	20.50	11.75	0.00	0.00	0.00	
20	0.00	0.00	0.00	100.20	80.95	212.00	154.62	20.25	11.00	0.00	0.00	0.00	
21	0.00	0.00	0.00	88.20	82.05	216.00	141.90	21.35	10.25	0.00	0.00	0.00	
22	0.40	1.89	0.00	79.85	84.25	221.60	131.15	24.85	9.25	0.00	0.00	0.00	
23	3.20	5.83	0.00	68.85	91.20	226.40	119.45	26.60	7.25	0.00	0.00	0.00	
24	4.02	11.25	0.00	57.50	100.80	228.85	112.30	27.65	5.34	0.00	0.00	0.00	
25	3.36	13.25	0.00	50.50	111.00	231.40	106.20	28.00	3.53	0.00	0.00	0.00	
26	2.57	13.75	0.00	45.50	124.00	233.95	102.00	25.90	0.67	0.00	0.00	0.00	
27	2.03	14.75	0.00	42.45	131.15	235.65	97.80	24.15	0.00	0.00	0.00	0.00	
28	1.62	15.75	0.00	40.75	132.45	235.65	91.80	22.40	0.00	0.00	0.00	0.00	
29	1.22	15.75	0.00	38.20	129.20	235.65	87.00	20.75	0.00	0.00		0.00	
30	0.54	14.50	0.00	36.08	124.00	235.65	80.40	20.75	0.00	0.00		0.00	
31		13.25		36.08	121.40		74.35		0.00	0.00		0.00	
Total	18.96	120.24	93.58	2397.68	2301.22	5190.04	5382.04	1031.65	357.04	0.00	0.00	0.00	16892.45 CMSDAY
Mean	0.63	3.88	3.12	77.34	74.23	173.00	173.61	34.39	11.52	0.00	0.00	0.00	46.28 CMS
Max	4.02	15.75	13.50	136.35	132.45	235.65	245.85	69.40	20.75	0.00	0.00	0.00	245.85 CMS
Min	0.00	0.00	0.00	0.00	30.12	109.20	74.35	20.25	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	1.638	10.389	8.085	207.160	198.825	448.419	465.008	89.135	30.848	0.000	0.000	0.000	1459.508 MCM

Momentary Peak 247.55 CMS, at 36.23 M (MSL), at 6.00 Hours, on Oct 3, 1998

Runoff Yield 2.16 Liters/Second/Square KM, Momentary Peak Yield 11.560 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

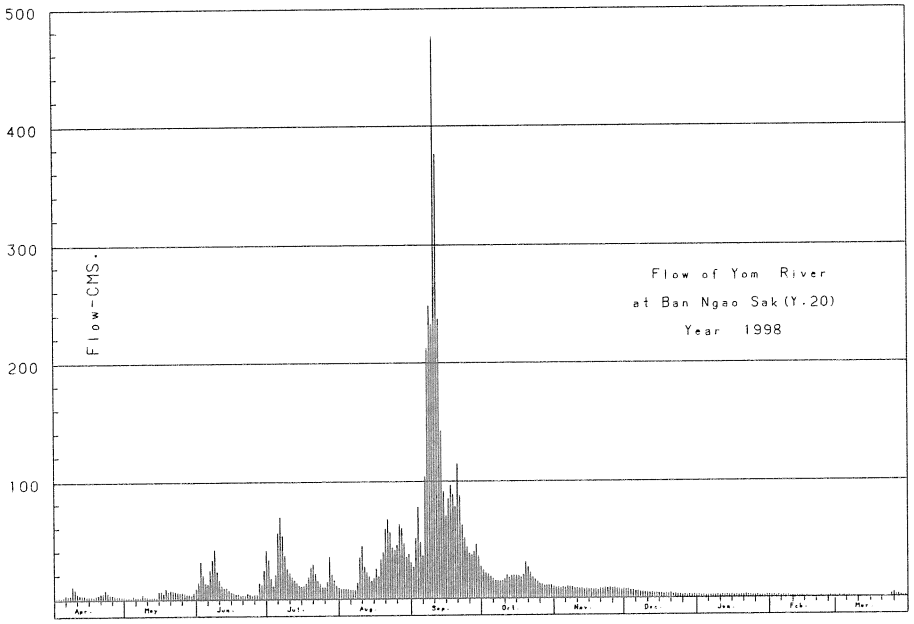
Yom River at Ban Ngao Sak, Phrae (Y.20)

Location	Lat. 18°-35'-03" N., Long. 100°-09'-17" E., on left bank about 1 kilometer downstream from Sop Ngao, Ban Ngao Sak, Amphoe Song, Phrae.
Drainage Area	5,410 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+181.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the automatic gage building.
Elevation	+193.552 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1971 to date.
Rating Operation	
Period of Rating	1972 to date.
Rated by Float	-
Rated by Current Meter	1972 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Mae Yom weir situated about 15 kilometers above gage site. Stage-discharge relation defined by 100 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	182.01	182.03	182.54	182.98	182.36	182.85	182.78	182.38	182.32	182.08	182.06	182.00	
2	182.03	182.02	182.95	182.61	182.34	183.31	182.73	182.38	182.31	182.07	182.06	182.00	
3	182.03	182.03	182.70	182.45	182.36	183.70	182.69	182.37	182.29	182.07	182.05	182.00	
4	182.03	182.10	182.51	182.69	182.34	183.26	182.65	182.38	182.27	182.06	182.05	182.00	
5	182.16	182.05	182.51	183.39	182.33	183.04	182.60	182.38	182.26	182.06	182.04	182.00	
6	182.10	182.02	182.80	183.59	182.31	184.05	182.57	182.40	182.24	182.06	182.04	182.00	
7	182.15	182.05	182.98	183.36	182.31	185.12	182.55	182.40	182.23	182.06	182.04	182.00	
8	182.44	182.16	183.15	183.04	182.52	185.40	182.55	182.38	182.21	182.07	182.04	181.99	
9	182.37	182.09	182.78	182.83	183.01	185.28	182.55	182.36	182.20	182.08	182.02	181.97	
10	182.20	182.04	182.58	182.73	183.21	186.78	182.60	182.35	182.20	182.07	182.02	181.95	
11	182.16	182.04	182.45	182.64	182.86	186.27	182.67	182.35	182.19	182.06	182.01	181.95	
12	182.14	182.04	182.40	182.59	182.74	185.32	182.63	182.34	182.19	182.07	182.00	181.95	
13	182.12	182.04	182.39	182.52	182.65	184.49	182.67	182.32	182.18	182.08	182.02	181.95	
14	182.09	182.04	182.33	182.47	182.57	183.88	182.66	182.32	182.17	182.08	182.01	181.94	
15	182.08	182.29	182.26	182.44	182.61	183.59	182.66	182.32	182.17	182.08	182.01	181.94	
16	182.07	182.27	182.21	182.43	182.82	183.80	182.67	182.31	182.15	182.07	182.01	181.94	
17	182.08	182.22	182.19	182.52	182.66	183.96	182.62	182.31	182.15	182.07	182.00	181.94	
18	182.11	182.38	182.18	182.64	182.97	183.85	182.69	182.30	182.15	182.07	182.00	181.94	
19	182.17	182.27	182.14	182.85	183.10	183.71	182.92	182.29	182.15	182.07	182.00	181.94	
20	182.22	182.31	182.12	182.89	183.44	184.17	182.84	182.32	182.16	182.08	182.00	181.94	
21	182.21	182.31	182.11	182.71	183.56	183.84	182.73	182.33	182.14	182.10	182.00	181.93	
22	182.33	182.28	182.22	182.58	183.40	183.49	182.64	182.35	182.12	182.09	182.00	181.93	
23	182.22	182.24	182.15	182.50	183.17	183.32	182.58	182.36	182.12	182.07	182.00	181.93	
24	182.17	182.25	182.13	182.42	183.13	183.18	182.54	182.36	182.10	182.06	182.00	182.08	
25	182.14	182.23	182.15	182.39	183.22	183.08	182.50	182.36	182.10	182.06	182.00	182.18	
26	182.12	182.21	182.18	182.55	183.49	183.04	182.46	182.35	182.09	182.06	182.00	182.06	
27	182.10	182.18	182.53	183.02	183.45	183.11	182.44	182.33	182.09	182.05	182.00	182.06	
28	182.08	182.16	182.47	182.71	183.23	183.22	182.43	182.31	182.09	182.04	182.00	182.03	
29	182.06	182.14	182.80	182.57	183.02	183.02	182.45	182.30	182.09	182.04		182.01	
30	182.05	182.23	183.13	182.46	183.06	182.86	182.44	182.31	182.09	182.06		182.00	
31		182.38		182.38	182.92		182.40		182.08	182.06		182.00	
Mean	182.14	182.16	182.47	182.71	182.88	183.93	182.61	182.34	182.17	182.07	182.02	181.99	
Max	182.44	182.38	183.15	183.59	183.56	186.78	182.92	182.40	182.32	182.10	182.06	182.18	186.78
Min	182.01	182.02	182.11	182.38	182.31	182.85	182.40	182.29	182.08	182.04	182.00	181.93	181.93

Annual Max Momentary Gage Height 187.21 M (MSL), at 21.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 181.00 M (MSL), River Bed 179.47 M (MSL)
Left Bank Elevation 193.51 M (MSL)
Right Bank Elevation 195.00 M (MSL), Drainage Area 5410 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.65	1.95	14.60	34.00	9.00	27.50	24.20	9.50	8.00	2.70	2.40	1.50	
2	1.95	1.80	32.50	17.40	8.50	51.60	22.20	9.50	7.75	2.55	2.40	1.50	
3	1.95	1.95	21.00	11.50	9.00	78.00	20.60	9.25	7.25	2.55	2.25	1.50	
4	1.95	3.00	13.40	20.60	8.50	48.60	19.00	9.50	6.75	2.40	2.25	1.50	
5	4.20	2.25	13.40	56.40	8.25	37.00	17.00	9.50	6.50	2.40	2.10	1.50	
6	3.00	1.80	25.00	70.30	7.75	104.25	15.80	10.00	6.00	2.40	2.10	1.50	
7	4.00	2.25	34.00	54.60	7.75	212.40	15.00	10.00	5.75	2.40	2.10	1.50	
8	11.20	4.20	42.50	37.00	13.80	249.00	15.00	9.50	5.25	2.55	2.10	1.40	
9	9.25	2.85	24.20	26.50	35.50	232.40	15.00	9.00	5.00	2.70	1.80	1.20	
10	5.00	2.10	16.20	22.20	45.60	476.00	17.00	8.75	5.00	2.55	1.80	1.00	
11	4.20	2.10	11.50	18.60	28.00	376.90	19.80	8.75	4.80	2.40	1.65	1.00	
12	3.80	2.10	10.00	16.60	22.60	237.80	18.20	8.50	4.80	2.55	1.50	1.00	
13	3.40	2.10	9.75	13.80	19.00	143.10	19.80	8.00	4.60	2.70	1.80	1.00	
14	2.85	2.10	8.25	12.10	15.80	91.00	19.40	8.00	4.40	2.70	1.65	0.90	
15	2.70	7.25	6.50	11.20	17.40	70.30	19.40	8.00	4.40	2.70	1.65	0.90	
16	2.55	6.75	5.25	10.90	26.00	85.00	19.80	7.75	4.00	2.55	1.65	0.90	
17	2.70	5.50	4.80	13.80	19.40	97.00	17.80	7.75	4.00	2.55	1.50	0.90	
18	3.20	9.50	4.60	18.60	33.50	88.75	20.60	7.50	4.00	2.55	1.50	0.90	
19	4.40	6.75	3.80	27.50	40.00	78.70	31.00	7.25	4.00	2.55	1.50	0.90	
20	5.50	7.75	3.40	29.50	59.80	114.45	27.00	8.00	4.20	2.70	1.50	0.90	
21	5.25	7.75	3.20	21.40	68.20	88.00	22.20	8.25	3.80	3.00	1.50	0.80	
22	8.25	7.00	5.50	16.20	57.00	63.30	18.60	8.75	3.40	2.85	1.50	0.80	
23	5.50	6.00	4.00	13.00	43.50	52.20	16.20	9.00	3.40	2.55	1.50	0.80	
24	4.40	6.25	3.60	10.60	41.50	44.00	14.60	9.00	3.00	2.40	1.50	2.70	
25	3.80	5.75	4.00	9.75	46.20	39.00	13.00	9.00	3.00	2.40	1.50	4.60	
26	3.40	5.25	4.60	15.00	63.30	37.00	11.80	8.75	2.85	2.40	1.50	2.40	
27	3.00	4.60	14.20	36.00	60.50	40.50	11.20	8.25	2.85	2.25	1.50	2.40	
28	2.70	4.20	12.10	21.40	46.80	46.20	10.90	7.75	2.85	2.10	1.50	1.95	
29	2.40	3.80	25.00	15.80	36.00	36.00	11.50	7.50	2.85	2.10		1.65	
30	2.25	5.75	41.50	11.80	38.00	28.00	11.20	7.75	2.85	2.40		1.50	
31		9.50		9.50	31.00		10.00		2.70	2.40		1.50	
Total	120.40	141.90	422.35	703.55	967.15	3373.95	544.80	258.00	140.00	78.00	49.20	44.50	6843.80 CMSDAY
Mean	4.01	4.58	14.08	22.70	31.20	112.46	17.57	8.60	4.52	2.52	1.76	1.44	18.75 CMS
Max	11.20	9.50	42.50	70.30	68.20	476.00	31.00	10.00	8.00	3.00	2.40	4.60	476.00 CMS
Min	1.65	1.80	3.20	9.50	7.75	27.50	10.00	7.25	2.70	2.10	1.50	0.80	0.80 CMS
Runoff	10.403	12.260	36.491	60.787	83.562	291.509	47.071	22.291	12.096	6.739	4.251	3.845	591.304 MCM

Momentary Peak 562.00 CMS, at 187.21 M (MSL), at 21.00 Hours, on Sep 10, 1998
Runoff Yield 3.47 Liters/Second/Square KM, Momentary Peak Yield 103.882 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

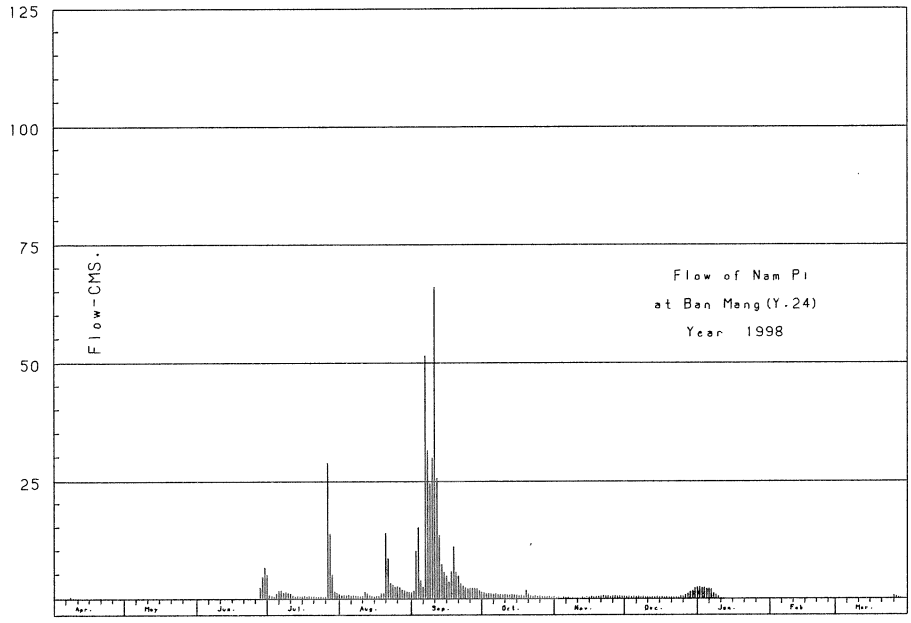
Nam Pi at Ban Mang, Phayao (Y.24)

Location	Lat. 18°-53'-04" N., Long. 100°-17'-24" E., on right bank upstream of the bridge of Pong Sanuk-Chiang Muan road, Ban Mang, Amphoe Chiang Muan, Phayao.
Drainage Area	597 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+7.035 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1977 to date.
Rating Operation	
Period of Rating	1979 - 1986, 1996 to date.
Rated by Float	-
Rated by Current Meter	1979 - 1986, 1996 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The weir situated about 5 kilometers above gage site. Stage-discharge relation defined by 22 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.33	1.27	1.39	1.42	1.43	1.55	1.48	1.35	1.38	1.63	0.81	0.86	
2	1.33	1.27	1.39	1.40	1.43	2.17	1.47	1.35	1.38	1.62	0.81	0.86	
3	1.33	1.33	1.41	1.40	1.43	2.40	1.47	1.35	1.38	1.61	0.81	0.86	
4	1.33	1.33	1.43	1.46	1.43	1.76	1.47	1.35	1.38	1.60	0.83	0.86	
5	1.33	1.33	1.41	1.55	1.42	1.64	1.46	1.35	1.38	1.60	0.83	0.86	
6	1.33	1.33	1.38	1.54	1.42	3.37	1.46	1.34	1.38	1.57	0.83	0.85	
7	1.64	1.33	1.35	1.50	1.42	2.91	1.45	1.34	1.38	1.48	0.84	0.85	
8	1.44	1.32	1.35	1.50	1.40	2.71	1.44	1.34	1.38	1.43	0.86	0.85	
9	1.38	1.32	1.35	1.49	1.40	2.87	1.44	1.34	1.37	1.38	0.86	0.84	
10	1.34	1.32	1.34	1.46	1.40	3.64	1.44	1.34	1.37	1.32	0.88	0.84	
11	1.34	1.31	1.34	1.42	1.52	2.75	1.44	1.34	1.37	1.27	0.88	0.84	
12	1.34	1.31	1.34	1.40	1.47	2.32	1.44	1.35	1.37	1.23	0.90	0.83	
13	1.37	1.31	1.34	1.40	1.43	2.02	1.44	1.35	1.37	1.18	0.90	0.83	
14	1.37	1.31	1.33	1.40	1.41	1.90	1.44	1.37	1.37	1.15	0.90	0.83	
15	1.35	1.31	1.33	1.40	1.40	1.84	1.42	1.37	1.37	1.11	0.90	0.81	
16	1.44	1.31	1.33	1.40	1.40	1.74	1.42	1.38	1.37	1.07	0.90	0.81	
17	1.42	1.31	1.33	1.40	1.41	1.92	1.42	1.38	1.36	1.05	0.90	0.81	
18	1.41	1.38	1.33	1.40	1.47	2.22	1.41	1.38	1.36	1.02	0.90	0.80	
19	1.40	1.37	1.31	1.40	1.48	1.90	1.56	1.40	1.36	0.78	0.90	0.79	
20	1.39	1.36	1.30	1.38	2.34	1.85	1.45	1.40	1.36	0.63	0.90	0.77	
21	1.39	1.36	1.28	1.38	2.09	1.70	1.40	1.42	1.36	0.55	0.90	0.76	
22	1.37	1.36	1.28	1.38	1.72	1.66	1.40	1.41	1.36	0.52	0.90	0.75	
23	1.35	1.36	1.26	1.38	1.67	1.61	1.40	1.40	1.36	0.54	0.90	0.74	
24	1.34	1.35	1.25	1.37	1.64	1.60	1.40	1.40	1.40	0.57	0.90	0.73	
25	1.31	1.35	1.26	1.37	1.64	1.60	1.40	1.40	1.40	0.60	0.90	1.42	
26	1.30	1.35	1.26	2.84	1.62	1.61	1.39	1.40	1.43	0.61	0.90	1.37	
27	1.30	1.35	1.63	2.34	1.57	1.61	1.39	1.40	1.47	0.63	0.89	1.36	
28	1.29	1.35	1.83	1.86	1.54	1.59	1.39	1.40	1.51	0.66	0.85	1.31	
29	1.27	1.35	1.98	1.53	1.52	1.55	1.38	1.40	1.55	0.69		1.29	
30	1.27	1.35	1.86	1.48	1.50	1.50	1.37	1.39	1.60	0.74		1.26	
31		1.35		1.45	1.49		1.37		1.63	0.78		1.25	
Mean	1.36	1.33	1.40	1.52	1.53	2.05	1.43	1.37	1.40	1.05	0.87	0.93	
Max	1.64	1.38	1.98	2.84	2.34	3.64	1.56	1.42	1.63	1.63	0.90	1.42	3.64
Min	1.27	1.27	1.25	1.37	1.40	1.50	1.37	1.34	1.36	0.52	0.81	0.73	0.52

Annual Max Momentary Gage Height 3.98 M (A.D), at 14.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -1.75 M (A.D)
Left Bank Elevation 7.61 M (A.D)
Right Bank Elevation 6.22 M (A.D), Drainage Area 597 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.07	0.03	0.10	0.69	0.78	1.76	1.19	0.31	0.44	2.47	0.02	0.03	
2	0.07	0.03	0.10	0.53	0.78	10.13	1.10	0.31	0.44	2.38	0.02	0.03	
3	0.07	0.07	0.11	0.53	0.78	15.30	1.10	0.31	0.44	2.28	0.02	0.03	
4	0.07	0.07	0.14	1.02	0.78	3.83	1.10	0.31	0.44	2.18	0.02	0.03	
5	0.07	0.07	0.11	1.76	0.69	2.57	1.02	0.31	0.44	2.18	0.02	0.03	
6	0.07	0.07	0.09	1.68	0.69	51.70	1.02	0.26	0.44	1.93	0.02	0.03	
7	0.41	0.07	0.08	1.35	0.69	31.58	0.94	0.26	0.44	1.19	0.02	0.03	
8	0.15	0.06	0.08	1.35	0.53	24.44	0.86	0.26	0.44	0.78	0.03	0.03	
9	0.09	0.06	0.08	1.27	0.53	30.09	0.86	0.26	0.40	0.44	0.03	0.02	
10	0.07	0.06	0.07	1.02	0.53	66.04	0.86	0.26	0.40	0.17	0.03	0.02	
11	0.07	0.05	0.07	0.69	1.52	25.80	0.86	0.26	0.40	0.07	0.03	0.02	
12	0.07	0.05	0.07	0.53	1.10	13.46	0.86	0.31	0.40	0.07	0.03	0.02	
13	0.09	0.05	0.07	0.53	0.78	7.36	0.86	0.31	0.40	0.06	0.03	0.02	
14	0.09	0.05	0.07	0.53	0.61	5.58	0.86	0.40	0.40	0.05	0.03	0.02	
15	0.08	0.05	0.07	0.53	0.53	4.80	0.69	0.40	0.40	0.05	0.03	0.02	
16	0.15	0.05	0.07	0.53	0.53	3.61	0.69	0.44	0.40	0.05	0.03	0.02	
17	0.12	0.05	0.07	0.53	0.61	5.86	0.69	0.44	0.35	0.04	0.03	0.02	
18	0.11	0.09	0.07	0.53	1.10	11.16	0.61	0.44	0.35	0.04	0.03	0.02	
19	0.10	0.09	0.05	0.53	1.19	5.58	1.85	0.53	0.35	0.02	0.03	0.02	
20	0.10	0.08	0.05	0.44	13.92	4.93	0.94	0.53	0.35	0.01	0.03	0.02	
21	0.10	0.08	0.04	0.44	8.62	3.16	0.53	0.69	0.35	0.00	0.03	0.02	
22	0.09	0.08	0.04	0.44	3.38	2.77	0.53	0.61	0.35	0.00	0.03	0.02	
23	0.08	0.08	0.03	0.44	2.87	2.28	0.53	0.53	0.35	0.00	0.03	0.01	
24	0.07	0.08	0.02	0.40	2.57	2.18	0.53	0.53	0.53	0.00	0.03	0.01	
25	0.05	0.08	0.03	0.40	2.57	2.18	0.53	0.53	0.53	0.01	0.03	0.69	
26	0.05	0.08	0.03	28.98	2.38	2.28	0.49	0.53	0.78	0.01	0.03	0.40	
27	0.05	0.08	2.47	13.92	1.93	2.28	0.49	0.53	1.10	0.01	0.03	0.35	
28	0.04	0.08	4.67	5.06	1.68	2.10	0.49	0.53	1.43	0.01	0.03	0.12	
29	0.03	0.08	6.72	1.60	1.52	1.76	0.44	0.53	1.76	0.01		0.08	
30	0.03	0.08	5.06	1.19	1.35	1.35	0.40	0.49	2.18	0.01		0.07	
31		0.08		0.94	1.27		0.40		2.47	0.02		0.07	
Total	2.71	2.08	20.73	70.38	58.81	347.92	24.32	12.41	19.95	16.54	0.77	2.32	578.94 CMSDAY
Mean	0.09	0.07	0.69	2.27	1.90	11.60	0.78	0.41	0.64	0.53	0.03	0.07	1.59 CMS
Max	0.41	0.09	6.72	28.98	13.92	66.04	1.85	0.69	2.47	2.47	0.03	0.69	66.04 CMS
Min	0.03	0.03	0.02	0.40	0.53	1.35	0.40	0.26	0.35	0.00	0.02	0.01	0.00 CMS
Runoff	0.234	0.180	1.791	6.081	5.081	30.060	2.101	1.072	1.724	1.429	0.067	0.200	50.020 MCM

Momentary Peak 86.36 CMS, at 3.98 M (A.D), at 14.00 Hours, on Sep 10, 1998

Runoff Yield 2.66 Liters/Second/Square KM, Momentary Peak Yield 144.657 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

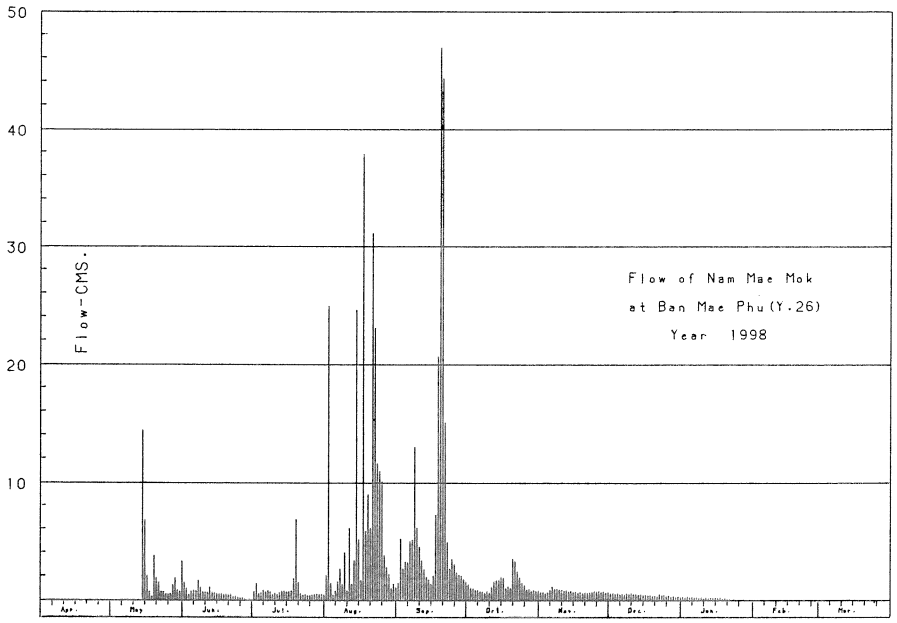
Nam Mae Mok at Ban Mae Phu, Lampang (Y.26)

Location	Lat. 17°-19'-45" N., Long. 99°-27'-42" E., on left bank downstream from Ban Mae Phu, Tambon Wiang Mok, Amphoe Thoen, Lampang.
Drainage Area	785 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank along the gage line.
Elevation	+8.00 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 18 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.03	-0.11	0.88	0.73	0.95	0.86	0.84	0.72	0.69	0.60	0.51	0.40	
2	0.03	-0.12	0.80	0.86	2.17	1.22	0.81	0.71	0.68	0.59	0.49	0.39	
3	0.03	-0.12	0.67	0.69	0.87	1.02	0.79	0.70	0.68	0.60	0.49	0.40	
4	0.02	-0.12	0.73	0.70	0.64	1.06	0.78	0.70	0.68	0.60	0.49	0.40	
5	0.02	-0.13	0.75	0.76	0.76	1.06	0.76	0.77	0.67	0.59	0.49	0.40	
6	-0.01	-0.13	0.76	0.74	0.88	1.20	0.74	0.82	0.67	0.59	0.48	0.39	
7	-0.01	-0.13	0.90	0.77	1.02	1.21	0.72	0.80	0.66	0.58	0.48	0.38	
8	-0.02	-0.14	0.81	0.72	0.85	1.68	0.70	0.79	0.68	0.58	0.48	0.37	
9	-0.02	-0.14	0.73	0.67	1.13	1.28	0.72	0.78	0.68	0.58	0.48	0.36	
10	-0.03	-0.15	0.71	0.69	0.77	1.17	0.71	0.77	0.67	0.57	0.47	0.35	
11	-0.03	-0.15	0.72	0.68	1.28	1.07	0.82	0.76	0.67	0.57	0.47	0.35	
12	-0.03	-0.16	0.81	0.70	0.85	1.01	0.87	0.75	0.66	0.57	0.47	0.34	
13	-0.04	-0.14	0.71	0.75	1.07	0.94	0.89	0.74	0.66	0.57	0.46	0.34	
14	-0.04	1.75	0.68	0.74	2.16	0.90	0.89	0.74	0.65	0.58	0.46	0.33	
15	-0.05	1.32	0.68	0.73	1.21	0.86	0.92	0.73	0.65	0.57	0.45	0.33	
16	-0.05	0.95	0.67	0.72	0.90	0.95	0.92	0.72	0.64	0.58	0.45	0.32	
17	-0.05	0.72	0.67	0.76	2.61	1.35	0.81	0.71	0.64	0.57	0.45	0.32	
18	-0.06	0.62	0.66	0.91	1.26	2.01	0.82	0.71	0.63	0.57	0.44	0.31	
19	-0.06	1.11	0.65	1.33	1.46	2.86	0.81	0.70	0.63	0.56	0.44	0.30	
20	-0.06	0.92	0.65	0.88	1.28	2.79	1.08	0.70	0.62	0.56	0.43	0.29	
21	-0.07	0.87	0.64	0.68	2.39	1.78	1.07	0.70	0.62	0.55	0.43	0.28	
22	-0.07	0.74	0.62	0.66	2.10	1.20	0.99	0.70	0.66	0.55	0.42	0.27	
23	-0.08	0.72	0.61	0.66	1.61	1.02	0.93	0.73	0.65	0.54	0.42	0.26	
24	-0.08	0.69	0.60	0.65	1.57	1.08	0.86	0.73	0.64	0.54	0.41	0.25	
25	-0.09	0.66	0.59	0.65	1.52	1.05	0.84	0.73	0.63	0.53	0.41	0.24	
26	-0.09	0.70	0.57	0.65	1.11	0.98	0.78	0.73	0.62	0.53	0.41	0.24	
27	-0.10	0.85	0.54	0.67	1.03	0.96	0.77	0.72	0.61	0.52	0.40	0.23	
28	-0.10	0.92	0.54	0.67	0.96	0.94	0.74	0.72	0.61	0.52	0.40	0.23	
29	-0.11	0.76	0.56	0.67	0.81	0.91	0.75	0.70	0.60	0.52		0.22	
30	-0.11	0.74	0.54	0.66	0.85	0.87	0.74	0.70	0.60	0.52		0.22	
31		1.07		0.66	0.82		0.73		0.60	0.51		0.21	
Mean	-0.04	0.46	0.68	0.74	1.25	1.24	0.83	0.73	0.65	0.56	0.45	0.31	
Max	0.03	1.75	0.90	1.33	2.61	2.86	1.08	0.82	0.69	0.60	0.51	0.40	2.86
Min	-0.11	-0.16	0.54	0.65	0.64	0.86	0.70	0.70	0.60	0.51	0.40	0.21	-0.16

Annual Max Momentary Gage Height 3.63 M (A.D), at 6.00 Hours, on Sep 20, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.12 M (A.D)
Left Bank Elevation 7.75 M (A.D)
Right Bank Elevation 7.81 M (A.D), Drainage Area 785 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	1.60	0.76	2.13	1.45	1.30	0.72	0.61	0.30	0.03	0.00	
2	0.00	0.00	1.00	1.45	24.96	5.30	1.07	0.68	0.58	0.27	0.00	0.00	
3	0.00	0.00	0.55	0.61	1.52	2.75	0.97	0.65	0.58	0.30	0.00	0.00	
4	0.00	0.00	0.76	0.65	0.44	3.25	0.93	0.65	0.58	0.30	0.00	0.00	
5	0.00	0.00	0.83	0.86	0.86	3.25	0.86	0.89	0.55	0.27	0.00	0.00	
6	0.00	0.00	0.86	0.79	1.60	5.00	0.79	1.15	0.55	0.27	0.00	0.00	
7	0.00	0.00	1.75	0.89	2.75	5.15	0.72	1.00	0.51	0.24	0.00	0.00	
8	0.00	0.00	1.07	0.72	1.38	13.10	0.65	0.97	0.58	0.24	0.00	0.00	
9	0.00	0.00	0.76	0.55	4.12	6.20	0.72	0.93	0.58	0.24	0.00	0.00	
10	0.00	0.00	0.68	0.61	0.89	4.62	0.68	0.89	0.55	0.21	0.00	0.00	
11	0.00	0.00	0.72	0.58	6.20	3.38	1.15	0.86	0.55	0.21	0.00	0.00	
12	0.00	0.00	1.07	0.65	1.38	2.62	1.52	0.83	0.51	0.21	0.00	0.00	
13	0.00	0.00	0.68	0.83	3.38	2.05	1.67	0.79	0.51	0.21	0.00	0.00	
14	0.00	14.50	0.58	0.79	24.70	1.75	1.67	0.79	0.47	0.24	0.00	0.00	
15	0.00	6.80	0.58	0.76	5.15	1.45	1.90	0.76	0.47	0.21	0.00	0.00	
16	0.00	2.13	0.55	0.72	1.75	2.13	1.90	0.72	0.44	0.24	0.00	0.00	
17	0.00	0.72	0.55	0.86	37.86	7.25	1.07	0.68	0.44	0.21	0.00	0.00	
18	0.00	0.37	0.51	1.83	5.90	20.76	1.15	0.68	0.40	0.21	0.00	0.00	
19	0.00	3.88	0.47	6.95	9.05	46.93	1.07	0.65	0.40	0.18	0.00	0.00	
20	0.00	1.90	0.47	1.60	6.20	44.39	3.50	0.65	0.37	0.18	0.00	0.00	
21	0.00	1.52	0.44	0.58	31.21	15.10	3.38	0.65	0.37	0.15	0.00	0.00	
22	0.00	0.79	0.37	0.51	23.12	5.00	2.43	0.65	0.51	0.15	0.00	0.00	
23	0.00	0.72	0.33	0.51	11.70	2.75	1.98	0.76	0.47	0.12	0.00	0.00	
24	0.00	0.61	0.30	0.47	10.98	3.50	1.45	0.76	0.44	0.12	0.00	0.00	
25	0.00	0.51	0.27	0.47	10.10	3.12	1.30	0.76	0.40	0.09	0.00	0.00	
26	0.00	0.65	0.21	0.47	3.88	2.35	0.93	0.76	0.37	0.09	0.00	0.00	
27	0.00	1.38	0.12	0.55	2.87	2.20	0.89	0.72	0.33	0.06	0.00	0.00	
28	0.00	1.90	0.12	0.55	2.20	2.05	0.79	0.72	0.33	0.06	0.00	0.00	
29	0.00	0.86	0.18	0.55	1.07	1.83	0.83	0.65	0.30	0.06		0.00	
30	0.00	0.79	0.12	0.51	1.38	1.52	0.79	0.65	0.30	0.06		0.00	
31		3.38		0.51	1.15		0.76		0.30	0.03		0.00	
Total	0.00	43.41	18.50	29.14	241.88	222.20	40.82	23.02	14.35	5.73	0.03	0.00	639.08 CMSDAY
Mean	0.00	1.40	0.62	0.94	7.80	7.41	1.32	0.77	0.46	0.18	0.00	0.00	1.75 CMS
Max	0.00	14.50	1.75	6.95	37.86	46.93	3.50	1.15	0.61	0.30	0.03	0.00	46.93 CMS
Min	0.00	0.00	0.12	0.47	0.44	1.45	0.65	0.65	0.30	0.03	0.00	0.00	0.00 CMS
Runoff	0.000	3.751	1.598	2.518	20.898	19.198	3.527	1.989	1.240	0.495	0.003	0.000	55.217 MCM

Momentary Peak 80.21 CMS, at 3.63 M (A.D), at 6.00 Hours, on Sep 20, 1998
Runoff Yield 2.23 Liters/Second/Square KM, Momentary Peak Yield 102.178 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

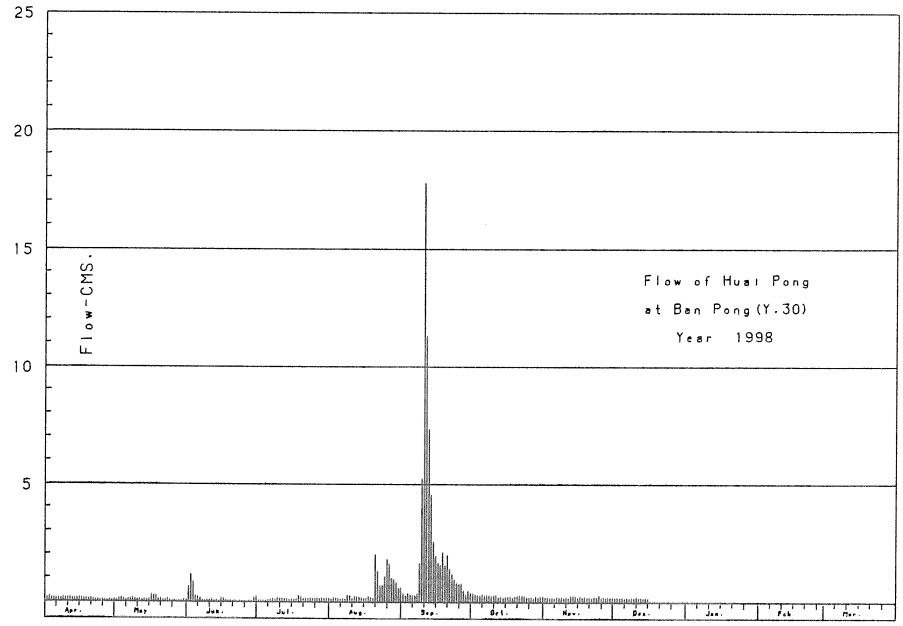
Huai Pong at Ban Pong, Lampang (Y.30)

Location	Lat. 18°-42'-59" N., Long. 99°-57'-40" E., on right bank at the bridge on highway, Ban Pong, Amphoe Ngao, Lampang.
Drainage Area	96 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 25 meters from the top staff gage.
Elevation	+6.620 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1983 to date.
Rated by Float	-
Rated by Current Meter	1983 to date.
Stability of Channel Regimes	Rather unstable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the new bridge construction near the gage site. Stage-discharge relation defined by 30 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.55	0.50	0.69	0.50	0.53	0.62	0.62	1.31	1.28	0.98	0.96	0.65	
2	0.57	0.52	0.81	0.50	0.55	0.60	0.61	1.28	1.25	0.95	0.91	0.68	
3	0.55	0.55	0.74	0.48	0.55	0.62	0.60	1.28	1.26	0.96	0.90	0.66	
4	0.54	0.52	0.59	0.50	0.54	0.61	0.60	1.27	1.25	0.98	0.90	0.66	
5	0.54	0.50	0.56	0.50	0.53	0.60	0.61	1.26	1.24	0.99	0.91	0.66	
6	0.53	0.51	0.54	0.52	0.53	0.60	0.60	1.30	1.23	0.98	0.91	0.67	
7	0.53	0.54	0.50	0.53	0.53	0.62	0.60	1.29	1.24	0.99	0.90	0.70	
8	0.55	0.54	0.50	0.52	0.60	0.90	0.60	1.29	1.24	0.97	0.90	0.70	
9	0.54	0.53	0.50	0.55	0.60	1.34	0.58	1.29	1.24	0.97	0.83	0.68	
10	0.54	0.51	0.50	0.54	0.53	2.19	0.60	1.28	1.26	0.96	0.77	0.68	
11	0.55	0.51	0.50	0.53	0.59	1.82	0.60	1.28	1.25	0.95	0.77	0.68	
12	0.53	0.51	0.49	0.53	0.58	1.53	1.30	1.36	1.25	0.95	0.75	0.71	
13	0.53	0.51	0.48	0.52	0.57	1.27	1.30	1.38	1.25	0.98	0.75	0.72	
14	0.54	0.51	0.48	0.52	0.55	1.05	1.29	1.34	1.24	0.98	0.75	0.69	
15	0.54	0.51	0.54	0.52	0.55	0.96	1.29	1.30	1.24	0.97	0.75	0.64	
16	0.53	0.60	0.53	0.52	0.54	0.91	1.34	1.33	1.02	0.96	0.74	0.68	
17	0.53	0.60	0.49	0.52	0.59	0.89	1.30	1.30	1.01	0.95	0.74	0.70	
18	0.53	0.58	0.49	0.60	0.55	0.99	1.26	1.29	1.01	0.96	0.72	0.69	
19	0.53	0.53	0.48	0.57	0.55	0.89	1.31	1.30	1.02	0.93	0.70	0.75	
20	0.53	0.53	0.48	0.54	0.97	0.97	1.36	1.26	1.01	0.93	0.69	0.73	
21	0.52	0.51	0.48	0.54	0.84	0.86	1.35	1.26	1.00	0.93	0.70	0.71	
22	0.51	0.51	0.47	0.54	0.70	0.82	1.39	1.26	1.00	0.93	0.70	0.72	
23	0.51	0.53	0.48	0.54	0.71	0.76	1.34	1.31	0.98	0.93	0.71	0.71	
24	0.50	0.50	0.48	0.54	0.79	0.73	1.31	1.39	0.97	0.92	0.72	0.71	
25	0.51	0.49	0.47	0.54	0.94	0.72	1.29	1.27	0.97	0.92	0.69	0.75	
26	0.50	0.49	0.47	0.54	0.90	0.72	1.28	1.27	0.96	0.93	0.69	0.72	
27	0.50	0.48	0.48	0.54	0.78	0.65	1.23	1.26	0.96	0.92	0.67	0.71	
28	0.50	0.48	0.48	0.54	0.76	0.60	1.31	1.28	0.97	0.93	0.68	0.71	
29	0.49	0.48	0.56	0.54	0.74	0.64	1.29	1.28	1.00	0.94		0.71	
30	0.50	0.51	0.58	0.54	0.68	0.63	1.33	1.25	1.00	0.95		0.71	
31		0.51		0.53	0.68		1.34		0.98	0.97		0.68	
Mean	0.53	0.52	0.53	0.53	0.65	0.90	1.06	1.29	1.12	0.95	0.78	0.70	
Max	0.57	0.60	0.81	0.60	0.97	2.19	1.39	1.39	1.28	0.99	0.96	0.75	2.19
Min	0.49	0.48	0.47	0.48	0.53	0.60	0.58	1.25	0.96	0.92	0.67	0.64	0.47

Annual Max Momentary Gage Height 2.51 M (A.D), at 18.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.20 M (A.D)
Left Bank Elevation 8.16 M (A.D)
Right Bank Elevation 9.20 M (A.D), Drainage Area 96 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.20	0.10	0.66	0.10	0.16	0.38	0.38	0.24	0.22	0.07	0.06	0.03	
2	0.24	0.14	1.18	0.10	0.20	0.30	0.34	0.22	0.20	0.06	0.05	0.03	
3	0.20	0.20	0.87	0.08	0.20	0.38	0.30	0.22	0.21	0.06	0.05	0.03	
4	0.18	0.14	0.28	0.10	0.18	0.34	0.30	0.21	0.20	0.07	0.05	0.03	
5	0.18	0.10	0.22	0.10	0.16	0.30	0.34	0.21	0.19	0.07	0.05	0.03	
6	0.16	0.12	0.18	0.14	0.16	0.30	0.30	0.23	0.19	0.07	0.05	0.03	
7	0.16	0.18	0.10	0.16	0.16	0.38	0.30	0.22	0.19	0.07	0.05	0.03	
8	0.20	0.18	0.10	0.14	0.30	1.63	0.30	0.22	0.19	0.06	0.05	0.03	
9	0.18	0.16	0.10	0.20	0.30	5.27	0.26	0.22	0.19	0.06	0.04	0.03	
10	0.18	0.12	0.10	0.18	0.16	17.81	0.30	0.22	0.21	0.06	0.04	0.03	
11	0.20	0.12	0.10	0.16	0.28	11.33	0.30	0.22	0.20	0.06	0.04	0.03	
12	0.16	0.12	0.09	0.16	0.26	7.39	0.23	0.27	0.20	0.06	0.04	0.03	
13	0.16	0.12	0.08	0.14	0.24	4.56	0.23	0.29	0.20	0.07	0.04	0.03	
14	0.18	0.12	0.08	0.14	0.20	2.60	0.22	0.26	0.19	0.07	0.04	0.03	
15	0.18	0.12	0.18	0.14	0.20	1.96	0.22	0.23	0.19	0.06	0.04	0.02	
16	0.16	0.30	0.16	0.14	0.18	1.69	0.26	0.25	0.08	0.06	0.03	0.03	
17	0.16	0.30	0.09	0.14	0.28	1.58	0.23	0.23	0.07	0.06	0.03	0.03	
18	0.16	0.26	0.09	0.30	0.20	2.13	0.21	0.22	0.07	0.06	0.03	0.03	
19	0.16	0.16	0.08	0.24	0.20	1.58	0.24	0.23	0.08	0.06	0.03	0.04	
20	0.16	0.16	0.08	0.18	2.02	2.02	0.27	0.21	0.07	0.06	0.03	0.03	
21	0.14	0.12	0.08	0.18	1.33	1.43	0.27	0.21	0.07	0.06	0.03	0.03	
22	0.12	0.12	0.07	0.18	0.70	1.23	0.29	0.21	0.07	0.06	0.03	0.03	
23	0.12	0.16	0.08	0.18	0.74	0.96	0.26	0.24	0.07	0.06	0.03	0.03	
24	0.10	0.10	0.08	0.18	1.09	0.83	0.24	0.29	0.06	0.05	0.03	0.03	
25	0.12	0.09	0.07	0.18	1.85	0.79	0.22	0.21	0.06	0.05	0.03	0.04	
26	0.10	0.09	0.07	0.18	1.63	0.79	0.22	0.21	0.06	0.06	0.03	0.03	
27	0.10	0.08	0.08	0.18	1.04	0.50	0.19	0.21	0.06	0.05	0.03	0.03	
28	0.10	0.08	0.08	0.18	0.96	0.30	0.24	0.22	0.06	0.06	0.03	0.03	
29	0.09	0.08	0.22	0.18	0.87	0.46	0.22	0.22	0.07	0.06		0.03	
30	0.10	0.12	0.26	0.18	0.62	0.42	0.25	0.20	0.07	0.06		0.03	
31		0.12		0.16	0.62		0.26		0.07	0.06		0.03	
Total	4.65	4.38	5.91	5.00	17.49	71.64	8.19	6.84	4.06	1.90	1.08	0.94	132.08 CMSDAY
Mean	0.16	0.14	0.20	0.16	0.56	2.39	0.26	0.23	0.13	0.06	0.04	0.03	0.36 CMS
Max	0.24	0.30	1.18	0.30	2.02	17.81	0.38	0.29	0.22	0.07	0.06	0.04	17.81 CMS
Min	0.09	0.08	0.07	0.08	0.16	0.30	0.19	0.20	0.06	0.05	0.03	0.02	0.02 CMS
Runoff	0.402	0.378	0.511	0.432	1.511	6.190	0.708	0.591	0.351	0.164	0.093	0.081	11.412 MCM

Momentary Peak 24.93 CMS, at 2.51 M (A.D), at 18.00 Hours, on Sep 10, 1998

Runoff Yield 3.77 Liters/Second/Square KM, Momentary Peak Yield 259.688 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

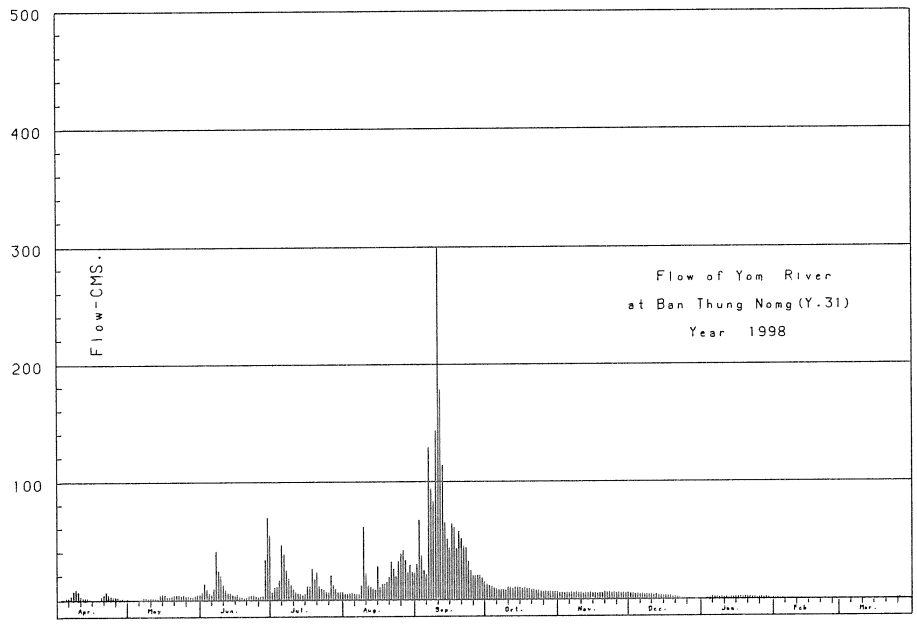
Yom River at Ban Thung Nong,Phayao (Y.31)

Location	Lat. 18°-57'-27" N., Long. 100°-16'-08" E., on left bank downstream of the bridge of Pong-Chiang Muan road, Amphoe Chiang Muan, Phayao.
Drainage Area	1,976 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 5 meters from the top staff gage.
Elevation	+8.255 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the islet about 200 meters downstream from the gage site. Stage-discharge relation defined by 28 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.85	0.88	1.17	1.20	1.12	2.01	1.45	1.15	1.13	0.85	0.90	0.85	
2	0.84	0.87	1.49	1.35	1.10	2.86	1.42	1.15	1.12	0.85	0.90	0.85	
3	0.89	0.86	1.31	1.40	1.15	2.18	1.38	1.15	1.10	0.87	0.90	0.84	
4	0.95	0.85	1.15	1.57	1.15	1.86	1.34	1.15	1.10	0.91	0.90	0.84	
5	0.95	0.84	1.10	2.42	1.13	1.74	1.30	1.15	1.09	0.95	0.89	0.84	
6	1.03	0.84	1.31	2.24	1.10	3.73	1.28	1.16	1.09	0.95	0.88	0.82	
7	1.25	0.97	2.29	1.87	1.11	3.30	1.26	1.16	1.09	0.94	0.87	0.82	
8	1.29	0.94	1.85	1.63	1.43	3.12	1.28	1.16	1.08	0.93	0.87	0.82	
9	1.22	0.93	1.70	1.45	2.75	3.89	1.24	1.16	1.08	0.93	0.87	0.81	
10	1.00	0.93	1.45	1.31	1.76	5.23	1.38	1.15	1.08	0.92	0.87	0.80	
11	0.96	0.90	1.27	1.18	1.41	4.23	1.34	1.13	1.06	0.92	0.86	0.80	
12	0.95	0.91	1.18	1.15	1.38	3.56	1.33	1.13	1.06	0.92	0.86	0.80	
13	0.92	0.92	1.15	1.12	1.30	2.81	1.35	1.15	1.05	0.93	0.86	0.79	
14	0.87	1.08	1.10	1.08	1.28	2.54	1.36	1.15	1.04	0.94	0.86	0.79	
15	0.81	1.10	1.05	1.11	1.97	2.35	1.34	1.14	1.03	0.94	0.86	0.79	
16	0.80	1.08	1.10	1.39	1.35	2.79	1.33	1.13	1.02	0.95	0.86	0.79	
17	0.81	1.00	1.00	1.39	1.47	2.74	1.34	1.13	1.02	0.95	0.86	0.79	
18	0.83	0.98	0.96	1.91	1.46	2.35	1.32	1.12	1.00	0.95	0.86	0.78	
19	0.98	1.03	0.95	1.61	1.53	2.66	1.30	1.15	0.97	0.96	0.85	0.78	
20	1.08	1.05	0.95	1.80	1.65	2.55	1.28	1.18	0.96	0.96	0.85	0.78	
21	1.22	1.08	1.02	1.40	2.06	2.39	1.28	1.17	0.95	0.95	0.86	0.78	
22	1.09	1.08	1.08	1.33	1.90	2.37	1.26	1.17	0.93	0.94	0.86	0.78	
23	1.04	1.05	1.06	1.27	1.69	2.07	1.24	1.16	0.91	0.93	0.86	0.78	
24	1.01	1.05	1.03	1.20	2.07	1.86	1.22	1.16	0.89	0.93	0.85	0.78	
25	1.00	1.02	0.99	1.16	2.24	1.71	1.20	1.15	0.86	0.93	0.85	0.90	
26	0.95	1.02	0.99	1.73	2.30	1.69	1.20	1.15	0.85	0.93	0.85	0.90	
27	0.90	1.00	1.04	1.45	2.10	1.72	1.20	1.14	0.84	0.93	0.85	0.90	
28	0.91	0.98	2.12	1.30	1.80	1.70	1.20	1.14	0.83	0.92	0.85	0.87	
29	0.89	1.05	2.90	1.20	1.98	1.64	1.20	1.14	0.82	0.91		0.86	
30	0.88	1.08	2.60	1.18	1.81	1.52	1.18	1.14	0.81	0.91		0.85	
31		1.10		1.18	1.77		1.18		0.80	0.90		0.82	
Mean	0.97	0.98	1.35	1.44	1.62	2.57	1.29	1.15	0.99	0.93	0.87	0.82	
Max	1.29	1.10	2.90	2.42	2.75	5.23	1.45	1.18	1.13	0.96	0.90	0.90	5.23
Min	0.80	0.84	0.95	1.08	1.10	1.52	1.18	1.12	0.80	0.85	0.85	0.78	0.78

Annual Max Momentary Gage Height 5.40 M (A.D), at 6.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -3.69 M (A.D)
Left Bank Elevation 10.64 M (A.D)
Right Bank Elevation 10.25 M (A.D), Drainage Area 1976 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.95	1.34	6.48	7.10	5.46	30.40	13.28	6.07	5.66	0.95	1.60	0.95	
2	0.82	1.21	14.46	10.63	5.05	68.24	12.39	6.07	5.46	0.95	1.60	0.95	
3	1.47	1.08	9.68	11.80	6.07	37.20	11.33	6.07	5.05	1.21	1.60	0.82	
4	2.40	0.95	6.07	16.82	6.07	25.46	10.39	6.07	5.05	1.76	1.60	0.82	
5	2.40	0.82	5.05	46.84	5.66	21.83	9.45	6.07	4.87	2.40	1.47	0.82	
6	3.75	0.82	9.68	39.60	5.05	129.43	8.98	6.28	4.87	2.40	1.34	0.56	
7	8.27	2.72	41.60	25.77	5.26	94.80	8.51	6.28	4.87	2.24	1.21	0.56	
8	9.21	2.24	25.15	18.59	12.68	83.20	8.98	6.28	4.68	2.08	1.21	0.56	
9	7.57	2.08	20.65	13.28	62.50	143.99	8.04	6.28	4.68	2.08	1.21	0.43	
10	3.20	2.08	13.28	9.68	22.42	298.90	11.33	6.07	4.68	1.92	1.21	0.30	
11	2.56	1.60	8.74	6.69	12.10	178.30	10.39	5.66	4.31	1.92	1.08	0.30	
12	2.40	1.76	6.69	6.07	11.33	114.80	10.16	5.66	4.31	1.92	1.08	0.30	
13	1.92	1.92	6.07	5.46	9.45	65.54	10.63	6.07	4.12	2.08	1.08	0.27	
14	1.21	4.68	5.05	4.68	8.98	52.12	10.86	6.07	3.94	2.24	1.08	0.27	
15	0.43	5.05	4.12	5.26	29.01	44.00	10.39	5.87	3.75	2.24	1.08	0.27	
16	0.30	4.68	5.05	11.57	10.63	64.50	10.16	5.66	3.57	2.40	1.08	0.27	
17	0.43	3.20	3.20	11.57	13.87	62.00	10.39	5.66	3.57	2.40	1.08	0.27	
18	0.69	2.88	2.56	27.03	13.57	44.00	9.92	5.46	3.20	2.40	1.08	0.24	
19	2.88	3.75	2.40	18.00	15.64	58.00	9.45	6.07	2.72	2.56	0.95	0.24	
20	4.68	4.12	2.40	23.60	19.18	52.60	8.98	6.69	2.56	2.56	0.95	0.24	
21	7.57	4.68	3.57	11.80	32.40	45.60	8.98	6.48	2.40	2.40	1.08	0.24	
22	4.87	4.68	4.68	10.16	26.70	44.80	8.51	6.48	2.08	2.24	1.08	0.24	
23	3.94	4.12	4.31	8.74	20.36	32.80	8.04	6.28	1.76	2.08	1.08	0.24	
24	3.38	4.12	3.75	7.10	32.80	25.46	7.57	6.28	1.47	2.08	0.95	0.24	
25	3.20	3.57	3.04	6.28	39.60	20.95	7.10	6.07	1.08	2.08	0.95	1.60	
26	2.40	3.57	3.04	21.54	42.00	20.36	7.10	6.07	0.95	2.08	0.95	1.60	
27	1.60	3.20	3.94	13.28	34.00	21.24	7.10	5.87	0.82	2.08	0.95	1.60	
28	1.76	2.88	34.80	9.45	23.60	20.65	7.10	5.87	0.69	1.92	0.95	1.21	
29	1.47	4.12	70.40	7.10	29.34	18.88	7.10	5.87	0.56	1.76		1.08	
30	1.34	4.68	55.00	6.69	23.91	15.34	6.69	5.87	0.43	1.76		0.95	
31		5.05		6.69	22.72		6.69		0.30	1.60		0.56	
Total	89.07	93.65	384.91	428.87	607.41	1935.39	285.99	181.55	98.46	62.79	32.58	19.00	4219.67 CMSDAY
Mean	2.97	3.02	12.83	13.83	19.59	64.51	9.23	6.05	3.18	2.03	1.16	0.61	11.56 CMS
Max	9.21	5.05	70.40	46.84	62.50	298.90	13.28	6.69	5.66	2.56	1.60	1.60	298.90 CMS
Min	0.30	0.82	2.40	4.68	5.05	15.34	6.69	5.46	0.30	0.95	0.95	0.24	0.24 CMS
Runoff	7.696	8.091	33.256	37.054	52.480	167.218	24.710	15.686	8.507	5.425	2.815	1.642	364.580 MCM

Momentary Peak 321.00 CMS, at 5.40 M (A.D), at 6.00 Hours, on Sep 10, 1998

Runoff Yield 5.85 Liters/Second/Square KM, Momentary Peak Yield 162.449 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

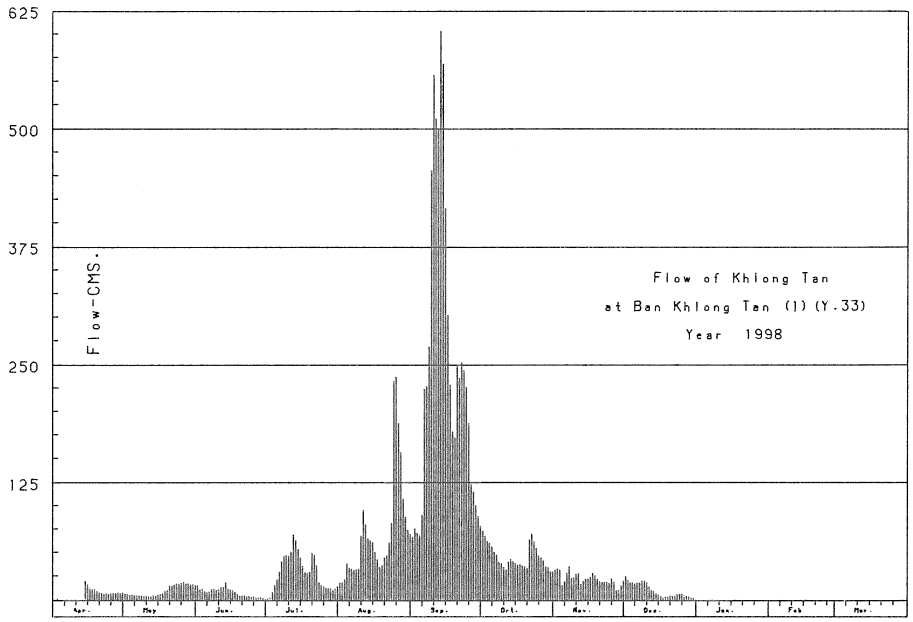
Khlong Tan at Ban Khlong Tan (1), Sukhothai (Y.33)

Location	Lat. 17°-10'-05" N., Long. 99°-51'-52" E., on left bank at the bridge on road, Tambon Khlong Tan, Amphoe Si Samrong, Sukhothai.
Drainage Area	Flood plain.
Type of Gage	Staff gage.
Zero Gage at Bottom	+45.82 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 20.30 meters from the top staff gage.
Elevation	+55.420 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1990 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the temporary weir about 500 meters downstream from the gage site. Stage-discharge relation defined by 27 measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	46.68	46.67	46.91	46.40	47.00	48.08	48.25	47.33	47.69	46.59	46.20	46.07	
2	46.84	46.63	46.81	46.49	46.99	48.28	48.12	47.34	47.62	46.55	46.20	46.07	
3	46.79	46.62	46.81	46.72	47.09	48.20	48.01	47.33	47.59	46.54	46.20	46.07	
4	46.66	46.61	46.75	46.91	47.46	48.13	47.95	47.49	47.57	46.52	46.19	46.07	
5	46.64	46.60	46.72	47.09	47.37	48.58	47.88	47.61	47.56	46.50	46.18	46.07	
6	46.64	46.60	46.72	47.26	47.33	50.81	47.75	47.73	47.56	46.48	46.17	46.07	
7	46.64	46.58	46.83	47.53	47.32	50.84	47.66	47.82	47.58	46.46	46.16	46.07	
8	46.64	46.57	46.81	47.66	47.32	51.50	47.51	47.66	47.61	46.46	46.14	46.07	
9	46.63	46.57	46.80	47.66	47.35	53.76	47.46	47.66	47.62	46.45	46.13	46.07	
10	46.63	46.56	46.80	47.64	48.12	54.62	47.38	47.71	47.57	46.45	46.12	46.07	
11	46.63	46.56	46.85	47.76	48.66	54.28	47.33	47.74	47.48	46.44	46.25	46.07	
12	46.63	46.56	46.88	48.15	48.39	54.18	47.52	47.53	47.37	46.44	46.27	46.07	
13	46.64	46.58	46.99	48.03	48.08	54.95	47.57	47.62	47.30	46.44	46.30	46.07	
14	47.05	46.60	46.83	47.81	48.01	54.71	47.53	47.64	47.23	46.44	46.30	46.07	
15	46.93	46.61	46.80	47.62	47.99	53.38	47.47	47.65	47.12	46.43	46.34	46.07	
16	46.86	46.63	46.77	47.40	47.75	51.97	47.45	47.67	47.04	46.43	46.35	46.06	
17	46.82	46.69	46.73	47.26	47.55	50.88	47.44	47.74	46.95	46.40	46.32	46.06	
18	46.79	46.74	46.64	47.22	47.39	50.07	47.43	47.69	46.99	46.37	46.26	46.06	
19	46.76	46.79	46.60	47.27	47.42	49.98	47.39	47.65	47.03	46.35	46.20	46.06	
20	46.71	46.90	46.57	47.73	47.62	51.19	47.37	47.60	47.07	46.34	46.14	46.06	
21	46.67	46.92	46.56	47.66	47.65	50.98	48.03	47.60	47.10	46.32	46.12	46.07	
22	46.66	46.95	46.56	47.42	47.97	51.25	48.18	47.60	47.09	46.28	46.09	46.07	
23	46.66	46.96	46.54	47.01	48.41	51.11	47.99	47.58	47.15	46.26	46.09	46.07	
24	46.66	46.97	46.53	46.91	50.93	50.84	47.85	47.57	47.21	46.25	46.09	46.07	
25	46.66	46.98	46.52	46.88	51.01	50.21	47.65	47.64	47.17	46.24	46.09	46.07	
26	46.66	47.00	46.50	46.86	50.23	49.15	47.60	47.59	47.12	46.24	46.09	46.07	
27	46.69	46.98	46.50	46.85	49.72	49.02	47.55	47.36	47.08	46.23	46.08	46.07	
28	46.69	46.96	46.47	46.82	48.89	48.76	47.41	47.34	47.00	46.23	46.08	46.07	
29	46.69	46.95	46.45	46.80	48.53	48.54	47.37	47.51	46.95	46.22		46.07	
30	46.69	46.94	46.41	46.82	48.27	48.34	47.28	47.61	46.87	46.21		46.07	
31		46.93		46.88	48.16		47.26		46.76	46.20		46.07	
Mean	46.71	46.75	46.69	47.24	48.13	50.89	47.63	47.59	47.26	46.38	46.18	46.07	
Max	47.05	47.00	46.99	48.15	51.01	54.95	48.25	47.82	47.69	46.59	46.35	46.07	54.95
Min	46.63	46.56	46.41	46.40	46.99	48.08	47.26	47.33	46.76	46.20	46.08	46.06	46.06

Annual Max Momentary Gage Height 55.03 M (MSL), at 18.00 Hours, on Sep 13, 1998
Zero Gage at Bottom Elevation 45.82 M (MSL), River Bed 45.66 M (MSL)
Left Bank Elevation 56.51 M (MSL)
Right Bank Elevation 55.90 M (MSL), Drainage Area Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.94	7.37	15.58	1.50	19.00	66.60	74.50	33.03	25.96	0.68	0.15	0.00	
2	1.74	6.13	11.78	3.17	18.62	76.00	68.40	33.45	21.17	0.61	0.15	0.00	
3	1.27	5.82	11.78	8.92	22.82	72.00	63.45	33.03	19.41	0.60	0.15	0.00	
4	0.88	5.51	9.85	15.58	38.70	68.85	60.75	15.51	18.63	0.56	0.13	0.00	
5	0.82	5.20	8.92	22.82	34.72	91.45	57.60	20.49	18.24	0.52	0.12	0.00	
6	0.82	5.20	8.92	30.05	33.03	225.63	51.75	28.71	18.24	0.49	0.10	0.00	
7	0.82	4.83	12.54	41.85	32.60	227.50	47.70	36.45	19.02	0.45	0.09	0.00	
8	0.82	4.65	11.78	47.70	32.60	270.00	40.95	23.91	20.49	0.45	0.06	0.00	
9	0.79	4.65	11.40	47.70	33.87	456.17	38.70	23.91	21.17	0.44	0.05	0.00	
10	0.79	4.46	11.40	46.80	68.40	556.80	35.15	27.34	18.63	0.44	0.03	0.00	
11	0.79	4.46	13.30	52.20	95.88	512.00	33.03	29.39	15.12	0.42	0.20	0.00	
12	0.79	4.46	14.44	69.75	81.50	499.92	41.40	17.07	11.25	0.42	0.22	0.00	
13	0.82	4.83	18.62	64.35	66.60	604.50	43.65	21.17	9.50	0.42	0.25	0.00	
14	21.12	5.20	12.54	54.45	63.45	569.40	41.85	22.54	7.75	0.42	0.25	0.00	
15	16.34	5.51	11.40	45.90	62.55	417.10	39.15	23.23	5.60	0.40	0.29	0.00	
16	13.68	6.13	10.47	36.00	51.75	302.90	38.25	24.59	4.20	0.40	0.30	0.00	
17	12.16	7.99	9.23	30.05	42.75	230.00	37.80	29.39	2.95	0.35	0.27	0.00	
18	11.09	9.54	6.44	28.35	35.57	179.37	37.35	25.96	3.39	0.32	0.21	0.00	
19	10.16	11.09	5.20	30.47	36.90	173.75	35.57	23.23	4.02	0.30	0.15	0.00	
20	8.61	15.20	4.65	50.85	45.90	249.61	34.72	19.80	4.72	0.29	0.06	0.00	
21	7.37	15.96	4.46	47.70	47.25	236.25	64.35	19.80	5.25	0.27	0.03	0.00	
22	7.06	17.10	4.46	36.90	61.65	253.44	71.10	19.80	5.07	0.23	0.00	0.00	
23	7.06	17.48	4.09	19.42	82.52	244.51	62.55	19.02	6.13	0.21	0.00	0.00	
24	7.06	17.86	3.90	15.58	233.13	227.50	56.25	18.63	7.25	0.20	0.00	0.00	
25	7.06	18.24	3.72	14.44	238.14	188.12	47.25	22.54	6.47	0.19	0.00	0.00	
26	7.06	19.00	3.35	13.68	189.37	123.44	45.00	19.41	5.60	0.19	0.00	0.00	
27	7.99	18.24	3.35	13.30	157.50	116.13	42.75	11.00	4.90	0.18	0.00	0.00	
28	7.99	17.48	2.80	12.16	108.81	101.50	36.45	10.50	3.50	0.18	0.00	0.00	
29	7.99	17.10	2.43	11.40	88.82	89.35	34.72	16.29	2.95	0.17		0.00	
30	7.99	16.72	1.68	12.16	75.50	79.00	30.90	20.49	2.07	0.16		0.00	
31		16.34		14.44	70.20		30.05		1.18	0.15		0.00	
Total	179.88	319.75	254.48	939.64	2270.10	7508.79	1443.09	689.68	319.83	11.11	3.26	0.00	13939.61 CMSDAY
Mean	6.00	10.31	8.48	30.31	73.23	250.29	46.55	22.99	10.32	0.36	0.12	0.00	38.19 CMS
Max	21.12	19.00	18.62	69.75	238.14	604.50	74.50	36.45	25.96	0.68	0.30	0.00	604.50 CMS
Min	0.79	4.46	1.68	1.50	18.62	66.60	30.05	10.50	1.18	0.15	0.00	0.00	0.00 CMS
Runoff	15.542	27.626	21.987	81.185	196.137	648.759	124.683	59.588	27.633	0.960	0.282	0.000	1204.382 MCM

Momentary Peak 616.65 CMS, at 55.03 M (MSL), at 18.00 Hours, on Sep 13, 1998

Runoff Yield ********* Liters/Second/Square KM, Momentary Peak Yield ********* Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

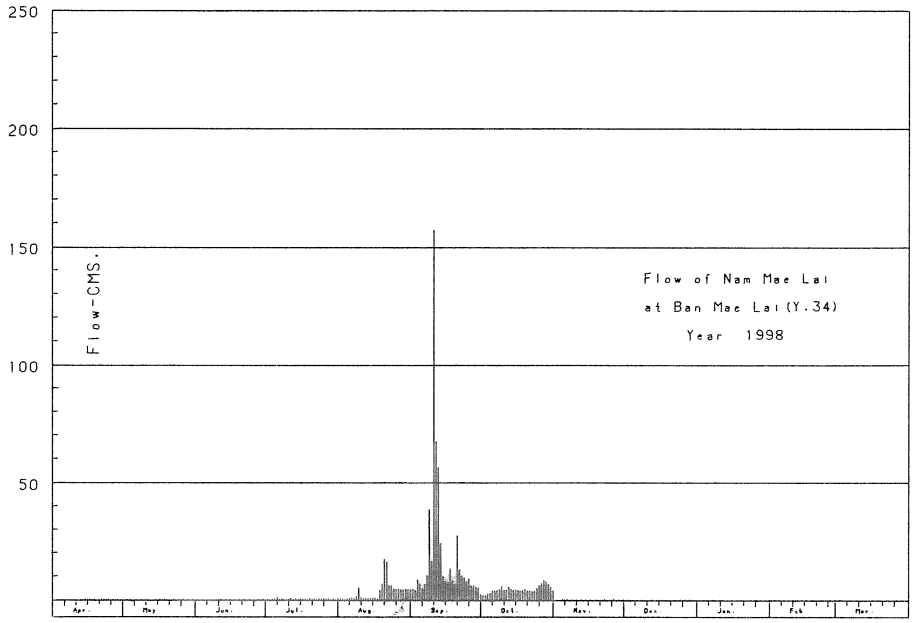
Nam Mae Lai at Ban Mae Lai, Phrae (Y.34)

Location	Lat. 18°-13'-07" N., Long. 100°-12'-35" E., on left bank at the bridge on highway, Ban Mae Lai, Amphoe Muang, Phrae.
Drainage Area	331 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 10 meters from the top staff gage.
Elevation	+4.464 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetics mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Unstable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the temporary weir about 300 meters downstream from the gage site. Stage-discharge relation defined by 15 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.83	0.95	0.91	0.96	0.50	0.78	0.60	0.86	1.03	0.91	0.96	0.92	
2	0.87	0.95	0.90	0.98	0.44	0.76	0.62	0.88	1.03	0.91	0.97	0.92	
3	0.82	0.94	0.91	0.95	0.44	0.93	0.66	0.93	0.90	0.91	0.95	0.92	
4	0.80	0.90	0.91	0.94	0.44	0.87	0.69	0.98	0.87	0.92	0.94	0.92	
5	0.79	0.85	0.90	0.54	0.49	0.80	0.74	1.07	0.89	0.95	0.94	0.91	
6	0.79	0.85	0.90	0.45	0.49	0.86	0.75	1.06	0.89	0.95	0.89	0.90	
7	0.76	0.84	0.92	0.44	0.51	0.99	0.75	1.06	0.86	0.95	0.90	0.90	
8	0.78	0.84	0.92	0.45	0.56	1.50	0.79	0.98	0.94	0.93	0.91	0.90	
9	0.77	0.84	0.96	0.45	0.82	1.13	0.83	0.98	0.94	0.92	0.91	0.90	
10	0.81	0.86	0.97	0.45	0.53	2.81	0.77	0.98	0.94	0.92	0.91	0.90	
11	0.89	0.88	0.97	0.46	0.50	1.89	0.77	0.98	0.95	0.92	0.91	0.90	
12	1.00	0.87	0.95	0.45	0.49	1.75	0.83	0.98	0.95	0.92	0.91	0.90	
13	1.00	0.86	0.94	0.45	0.49	1.27	0.78	0.96	0.95	0.92	0.91	0.90	
14	1.02	0.89	0.96	0.46	0.49	0.98	0.77	0.96	0.95	0.92	0.92	0.90	
15	1.02	0.97	0.96	0.45	0.50	0.91	0.77	0.95	0.95	0.92	0.95	0.90	
16	1.02	0.98	0.96	0.45	0.50	0.90	0.77	0.95	0.95	0.92	0.95	0.90	
17	1.00	0.99	0.96	0.44	0.47	1.06	0.74	0.94	0.95	0.92	0.96	0.90	
18	0.99	0.98	0.97	0.44	0.77	0.92	0.76	0.94	0.94	0.91	0.96	0.90	
19	0.98	0.97	0.97	0.45	0.87	0.86	0.78	1.07	0.94	0.90	0.98	0.90	
20	0.99	0.99	0.97	0.45	1.15	1.33	0.75	1.07	0.95	0.88	1.02	0.90	
21	1.02	1.00	0.95	0.45	1.13	1.06	0.75	1.07	0.95	0.87	1.02	0.90	
22	1.02	0.97	0.95	0.44	0.85	0.98	0.74	1.09	0.95	0.87	1.02	0.90	
23	1.02	0.98	0.94	0.44	0.84	0.97	0.74	1.07	0.95	0.87	1.01	0.90	
24	0.97	0.97	0.94	0.47	0.80	0.91	0.81	1.07	0.95	0.87	1.00	0.90	
25	0.96	0.96	0.93	0.46	0.77	0.95	0.85	1.06	0.94	0.87	0.97	0.90	
26	0.96	0.95	0.94	0.46	0.78	0.85	0.88	1.06	0.92	0.87	0.92	0.90	
27	0.95	0.95	0.94	0.45	0.78	0.84	0.93	1.06	0.91	0.88	0.91	0.90	
28	0.95	0.95	0.96	0.45	0.77	0.83	0.90	1.06	0.91	0.88	0.91	0.90	
29	0.94	0.92	0.95	0.44	0.79	0.81	0.87	1.06	0.91	0.89		0.90	
30	0.95	0.91	0.95	0.44	0.77	0.66	0.82	1.02	0.91	0.91		0.90	
31		0.91		0.44	0.77		0.76		0.91	0.93		0.90	
Mean	0.92	0.92	0.94	0.52	0.66	1.07	0.77	1.01	0.93	0.91	0.95	0.90	
Max	1.02	1.00	0.97	0.98	1.15	2.81	0.93	1.09	1.03	0.95	1.02	0.92	2.81
Min	0.76	0.84	0.90	0.44	0.44	0.66	0.60	0.86	0.86	0.87	0.89	0.90	0.44

Annual Max Momentary Gage Height 3.24 M (A.D), at 10.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.75 M (A.D)
Left Bank Elevation 3.88 M (A.D)
Right Bank Elevation 3.43 M (A.D), Drainage Area 331 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.52	0.66	0.61	0.67	1.26	4.88	2.16	0.55	0.76	0.61	0.67	0.62	
2	0.56	0.66	0.60	0.70	0.86	4.51	2.41	0.58	0.76	0.61	0.68	0.62	
3	0.50	0.65	0.61	0.66	0.86	8.93	2.90	0.64	0.60	0.61	0.66	0.62	
4	0.48	0.60	0.61	0.65	0.86	7.18	3.28	0.70	0.56	0.62	0.65	0.62	
5	0.47	0.54	0.60	1.62	1.19	5.25	4.14	0.80	0.59	0.66	0.65	0.61	
6	0.47	0.54	0.60	0.92	1.19	6.90	4.33	0.79	0.59	0.66	0.59	0.60	
7	0.43	0.53	0.62	0.86	1.35	10.79	4.33	0.79	0.55	0.66	0.60	0.60	
8	0.46	0.53	0.62	0.92	1.80	39.00	5.07	0.70	0.65	0.64	0.61	0.60	
9	0.44	0.53	0.67	0.92	5.80	16.70	6.07	0.70	0.65	0.62	0.61	0.60	
10	0.49	0.55	0.68	0.92	1.53	157.56	4.69	0.70	0.65	0.62	0.61	0.60	
11	0.59	0.58	0.68	0.99	1.26	67.73	4.69	0.70	0.66	0.62	0.61	0.60	
12	0.72	0.56	0.66	0.92	1.19	57.00	6.07	0.70	0.66	0.62	0.61	0.60	
13	0.72	0.55	0.65	0.92	1.19	24.33	4.88	0.67	0.66	0.62	0.61	0.60	
14	0.74	0.59	0.67	0.99	1.19	10.48	4.69	0.67	0.66	0.62	0.62	0.60	
15	0.74	0.68	0.67	0.92	1.26	8.31	4.69	0.66	0.66	0.62	0.66	0.60	
16	0.74	0.70	0.67	0.92	1.26	8.00	4.69	0.66	0.66	0.62	0.66	0.60	
17	0.72	0.71	0.67	0.86	1.06	13.56	4.14	0.65	0.66	0.62	0.67	0.60	
18	0.71	0.70	0.68	0.86	4.69	8.62	4.51	0.65	0.65	0.61	0.67	0.60	
19	0.70	0.68	0.68	0.92	7.18	6.90	4.88	0.80	0.65	0.60	0.70	0.60	
20	0.71	0.71	0.68	0.92	17.70	27.93	4.33	0.80	0.66	0.58	0.74	0.60	
21	0.74	0.72	0.66	0.92	16.70	13.56	4.33	0.80	0.66	0.56	0.74	0.60	
22	0.74	0.68	0.66	0.86	6.63	10.48	4.14	0.83	0.66	0.56	0.74	0.60	
23	0.74	0.70	0.65	0.86	6.35	10.17	4.14	0.80	0.66	0.56	0.73	0.60	
24	0.68	0.68	0.65	1.06	5.25	8.31	5.52	0.80	0.66	0.56	0.72	0.60	
25	0.67	0.67	0.64	0.99	4.69	9.55	6.63	0.79	0.65	0.56	0.68	0.60	
26	0.67	0.66	0.65	0.99	4.88	6.63	7.45	0.79	0.62	0.56	0.62	0.60	
27	0.66	0.66	0.65	0.92	4.88	6.35	8.93	0.79	0.61	0.58	0.61	0.60	
28	0.66	0.66	0.67	0.92	4.69	6.07	8.00	0.79	0.61	0.58	0.61	0.60	
29	0.65	0.62	0.66	0.86	5.07	5.52	7.18	0.79	0.61	0.59		0.60	
30	0.66	0.61	0.66	0.86	4.69	2.90	5.80	0.74	0.61	0.61		0.60	
31		0.61		0.86	4.69		4.51		0.61	0.64		0.60	
Total	18.78	19.52	19.48	28.16	123.20	574.10	153.58	21.83	19.90	18.80	18.33	18.69	1034.37 CMSDAY
Mean	0.63	0.63	0.65	0.91	3.97	19.14	4.95	0.73	0.64	0.61	0.65	0.60	2.83 CMS
Max	0.74	0.72	0.68	1.62	17.70	157.56	8.93	0.83	0.76	0.66	0.74	0.62	157.56 CMS
Min	0.43	0.53	0.60	0.65	0.86	2.90	2.16	0.55	0.55	0.56	0.59	0.60	0.43 CMS
Runoff	1.623	1.687	1.683	2.433	10.644	49.602	13.269	1.886	1.719	1.624	1.584	1.615	89.370 MCM

Momentary Peak 208.80 CMS, at 3.24 M (A.D), at 10.00 Hours, on Sep 10, 1998
Runoff Yield 8.56 Liters/Second/Square KM, Momentary Peak Yield 630.340 Liters/Second/Square KM

WATER YEAR 1998

YOM RIVER BASIN

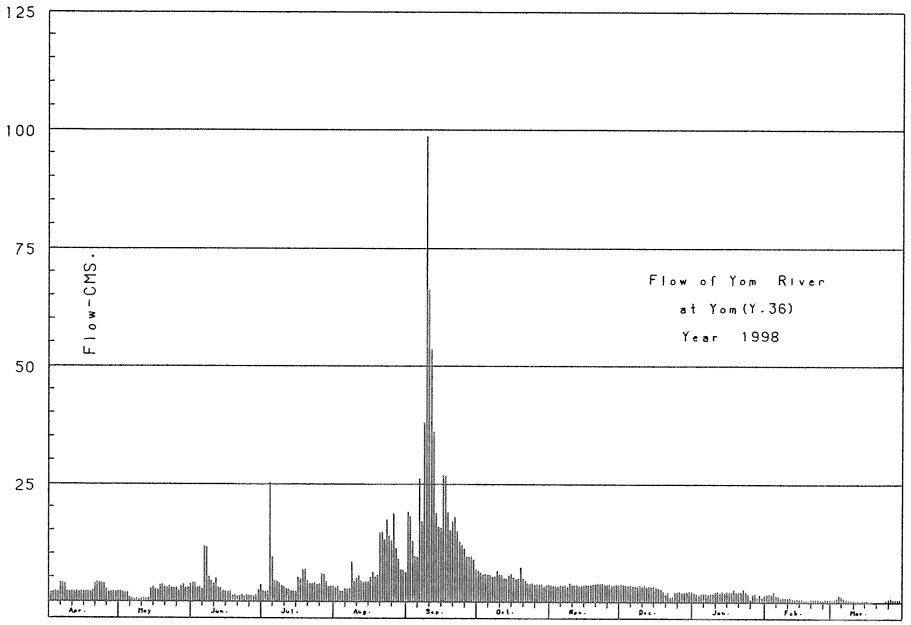
Nam Mae Khuan at Ban Pa Kha, Phayao (Y.36)

Location	Lat. 19°-09'-25" N., Long. 100°-19'-37" E., on left bank at the bridge, Ban Pa Kha, Amphoe Pong, Phayao.
Drainage Area	822 ssq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 20 meters from the abutment of the bridge.
Elevation	+9.178 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1998 to date.
Rating Operation	
Period of Rating	1998 to date.
Rated by Float	-
Rated by Current Meter	1998 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the islet at the gage site. Stage-discharge relation defined by 58 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.68	1.70	1.79	1.70	1.74	2.29	1.89	1.76	1.77	1.69	1.67	1.48	
2	1.70	1.70	1.78	1.70	1.75	2.26	1.87	1.76	1.77	1.67	1.67	1.49	
3	1.70	1.68	1.74	1.70	1.71	2.11	1.86	1.75	1.76	1.66	1.67	1.55	
4	1.70	1.69	1.74	2.45	1.70	2.00	1.86	1.75	1.76	1.67	1.70	1.66	
5	1.79	1.58	1.73	2.00	1.73	2.00	1.86	1.76	1.76	1.68	1.65	1.64	
6	1.78	1.50	2.07	1.80	1.72	2.47	1.85	1.76	1.76	1.67	1.63	1.55	
7	1.78	1.48	2.07	1.80	1.73	2.23	1.84	1.76	1.75	1.67	1.58	1.51	
8	1.70	1.52	1.84	1.78	1.96	2.74	1.84	1.75	1.75	1.67	1.57	1.46	
9	1.70	1.50	1.80	1.76	1.80	3.76	1.89	1.78	1.76	1.68	1.59	1.48	
10	1.70	1.50	1.78	1.74	1.82	3.26	1.86	1.77	1.75	1.70	1.57	1.46	
11	1.70	1.52	1.82	1.73	1.85	3.04	1.85	1.76	1.76	1.70	1.58	1.44	
12	1.70	1.52	1.74	1.72	1.80	2.70	1.83	1.77	1.75	1.69	1.54	1.42	
13	1.70	1.55	1.73	1.71	1.79	2.28	1.82	1.75	1.75	1.70	1.49	1.44	
14	1.70	1.73	1.71	1.70	1.79	2.20	1.85	1.76	1.75	1.69	1.54	1.44	
15	1.70	1.74	1.70	1.70	1.80	2.19	1.86	1.76	1.75	1.70	1.49	1.43	
16	1.70	1.72	1.70	1.83	1.83	2.49	1.83	1.77	1.74	1.69	1.52	1.43	
17	1.70	1.72	1.70	1.82	1.88	2.49	1.82	1.76	1.73	1.70	1.50	1.42	
18	1.70	1.76	1.65	1.90	1.84	2.29	1.82	1.77	1.73	1.72	1.46	1.40	
19	1.71	1.77	1.65	1.90	1.85	2.18	1.92	1.77	1.70	1.70	1.44	1.39	
20	1.78	1.74	1.64	1.80	2.16	2.23	1.82	1.78	1.67	1.69	1.50	1.42	
21	1.79	1.74	1.64	1.78	2.17	2.26	1.81	1.78	1.69	1.70	1.52	1.43	
22	1.79	1.75	1.66	1.78	2.12	2.17	1.78	1.78	1.63	1.72	1.50	1.44	
23	1.78	1.74	1.63	1.78	2.24	2.11	1.78	1.78	1.63	1.70	1.52	1.43	
24	1.78	1.73	1.66	1.77	2.14	2.08	1.78	1.77	1.69	1.67	1.45	1.43	
25	1.72	1.74	1.65	1.77	2.11	2.06	1.77	1.77	1.70	1.60	1.45	1.54	
26	1.70	1.71	1.64	1.86	2.28	2.00	1.77	1.77	1.70	1.67	1.50	1.56	
27	1.70	1.75	1.64	1.86	2.06	2.00	1.77	1.76	1.69	1.67	1.49	1.51	
28	1.70	1.77	1.65	1.80	1.98	2.00	1.77	1.76	1.69	1.63	1.49	1.50	
29	1.70	1.73	1.72	1.75	1.90	1.98	1.75	1.77	1.70	1.66		1.52	
30	1.70	1.74	1.76	1.75	1.89	1.90	1.76	1.76	1.70	1.63		1.49	
31		1.77		1.75	1.88		1.77		1.70	1.65		1.46	
Mean	1.72	1.67	1.73	1.80	1.90	2.33	1.82	1.76	1.72	1.68	1.55	1.48	
Max	1.79	1.77	2.07	2.45	2.28	3.76	1.92	1.78	1.77	1.72	1.70	1.66	3.76
Min	1.68	1.48	1.63	1.70	1.70	1.90	1.75	1.75	1.63	1.60	1.44	1.39	1.39

Annual Max Momentary Gage Height 3.90 M (A.D), at 24.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.34 M (A.D)
Left Bank Elevation 8.79 M (A.D)
Right Bank Elevation 8.90 M (A.D), Drainage Area 822 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.88	2.20	4.18	2.20	3.08	19.15	6.65	3.52	3.74	2.04	1.72	0.54	
2	2.20	2.20	3.96	2.20	3.30	18.10	6.15	3.52	3.74	1.72	1.72	0.57	
3	2.20	1.88	3.08	2.20	2.42	12.94	5.90	3.30	3.52	1.56	1.72	0.85	
4	2.20	2.04	3.08	25.30	2.20	9.60	5.90	3.30	3.52	1.72	2.20	1.46	
5	4.18	1.00	2.86	9.60	2.86	9.60	5.90	3.52	3.52	1.88	1.40	1.34	
6	3.96	0.60	11.70	4.40	2.64	26.10	5.65	3.52	3.52	1.72	1.28	0.85	
7	3.96	0.54	11.70	4.40	2.86	17.05	5.40	3.52	3.30	1.72	1.00	0.65	
8	2.20	0.70	5.40	3.96	8.52	38.10	5.40	3.30	3.30	1.72	0.95	0.48	
9	2.20	0.60	4.40	3.52	4.40	98.78	6.65	3.96	3.52	1.88	1.05	0.54	
10	2.20	0.60	3.96	3.08	4.90	66.30	5.90	3.74	3.30	2.20	0.95	0.48	
11	2.20	0.70	4.90	2.86	5.65	53.74	5.65	3.52	3.52	2.20	1.00	0.42	
12	2.20	0.70	3.08	2.64	4.40	36.10	5.15	3.74	3.30	2.04	0.80	0.36	
13	2.20	0.85	2.86	2.42	4.18	18.80	4.90	3.30	3.30	2.20	0.57	0.42	
14	2.20	2.86	2.42	2.20	4.18	16.00	5.65	3.52	3.30	2.04	0.80	0.42	
15	2.20	3.08	2.20	2.20	4.40	15.66	5.90	3.52	3.30	2.20	0.57	0.39	
16	2.20	2.64	2.20	5.15	5.15	26.90	5.15	3.74	3.08	2.04	0.70	0.39	
17	2.20	2.64	2.20	4.90	6.40	26.90	4.90	3.52	2.86	2.20	0.60	0.36	
18	2.20	3.52	1.40	6.90	5.40	19.15	4.90	3.74	2.86	2.64	0.48	0.30	
19	2.42	3.74	1.40	6.90	5.65	15.32	7.44	3.74	2.20	2.20	0.42	0.27	
20	3.96	3.08	1.24	4.40	14.64	17.05	4.90	3.96	1.72	2.04	0.60	0.36	
21	4.18	3.08	1.24	3.96	14.98	18.10	4.65	3.96	2.04	2.20	0.70	0.39	
22	4.18	3.30	1.56	3.96	13.28	14.98	3.96	3.96	1.08	2.64	0.60	0.42	
23	3.96	3.08	1.08	3.96	17.40	12.94	3.96	3.96	1.08	2.20	0.70	0.39	
24	3.96	2.86	1.56	3.74	13.96	12.00	3.96	3.74	2.04	1.72	0.45	0.39	
25	2.64	3.08	1.40	3.74	12.94	11.40	3.74	3.74	2.20	0.60	0.45	0.80	
26	2.20	2.42	1.24	5.90	18.80	9.60	3.74	3.74	2.20	1.72	0.60	0.90	
27	2.20	3.30	1.24	5.90	11.40	9.60	3.74	3.52	2.04	1.72	0.57	0.65	
28	2.20	3.74	1.40	4.40	9.06	9.60	3.74	3.52	2.04	1.08	0.57	0.60	
29	2.20	2.86	2.64	3.30	6.90	9.06	3.30	3.74	2.20	1.56		0.70	
30	2.20	3.08	3.52	3.30	6.65	6.90	3.52	3.52	2.20	1.08		0.57	
31		3.74		3.30	6.40		3.74		2.20	1.40		0.48	
Total	81.08	70.71	95.10	146.89	229.00	675.52	156.09	108.90	85.74	57.88	25.17	17.74	1749.82 CMSDAY
Mean	2.70	2.28	3.17	4.74	7.39	22.52	5.04	3.63	2.77	1.87	0.90	0.57	4.79 CMS
Max	4.18	3.74	11.70	25.30	18.80	98.78	7.44	3.96	3.74	2.64	2.20	1.46	98.78 CMS
Min	1.88	0.54	1.08	2.20	2.20	6.90	3.30	3.30	1.08	0.60	0.42	0.27	0.27 CMS
Runoff	7.005	6.109	8.217	12.691	19.786	58.365	13.486	9.409	7.408	5.001	2.175	1.533	151.184 MCM

Momentary Peak 108.40 CMS, at 3.90 M (A.D), at 24.00 Hours, on Sep 9, 1998

Runoff Yield 5.83 Liters/Second/Square KM, Momentary Peak Yield 131.873 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

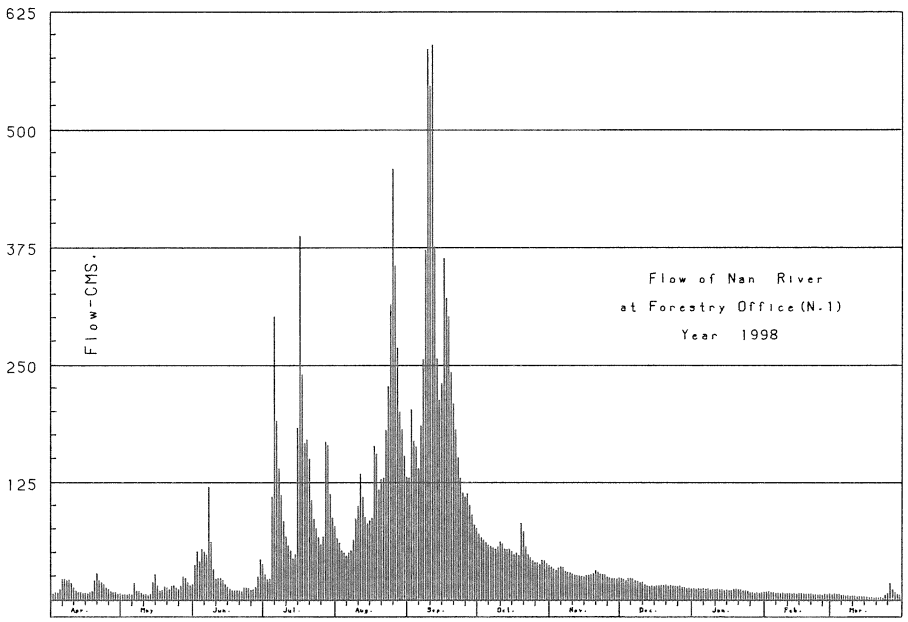
Nan River at Forestry Office, Nan (N.1)

Location	Lat. 18°-46'-23" N., Long. 100°-46'-51" E., on right bank infront of Forestry Office, Amphoe Muang, Nan.
Drainage Area	4,609 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+192.20 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On west side of automatic gage building.
Elevation	+199.868 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1922-1956, 1962 to date.
Rating Operation	
Period of Rating	1954-1956, 1979 to date.
Rated by Float	-
Rated by Current Meter	1954-1956, 1979 to date.
Stability of Channel Regimes	Stable with variable surface slope.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 91 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	192.71	192.69	193.16	193.05	193.46	193.94	193.50	193.15	193.01	192.84	192.77	192.70	
2	192.73	192.68	193.32	192.99	193.41	194.42	193.47	193.12	192.99	192.84	192.78	192.71	
3	192.75	192.69	193.21	192.99	193.33	194.20	193.44	193.11	192.98	192.84	192.76	192.71	
4	192.82	192.69	193.34	193.81	193.30	194.16	193.42	193.13	193.00	192.84	192.75	192.70	
5	193.00	192.69	193.32	195.02	193.27	194.01	193.39	193.15	193.01	192.84	192.74	192.68	
6	192.99	192.93	193.28	194.34	193.30	194.31	193.38	193.14	193.00	192.84	192.73	192.67	
7	192.98	192.80	193.88	194.01	193.33	194.75	193.36	193.10	192.98	192.84	192.73	192.66	
8	192.98	192.78	193.42	193.82	193.44	195.44	193.35	193.08	192.96	192.82	192.73	192.66	
9	192.94	192.74	193.12	193.62	193.64	196.61	193.37	193.08	192.95	192.82	192.72	192.65	
10	192.85	192.70	193.00	193.48	193.74	196.40	193.43	193.06	192.95	192.83	192.73	192.65	
11	192.80	192.68	193.00	193.38	193.97	196.64	193.40	193.05	192.92	192.83	192.72	192.64	
12	192.76	192.67	193.01	193.33	193.81	195.46	193.35	193.04	192.89	192.83	192.72	192.63	
13	192.74	192.69	192.97	193.24	193.65	194.76	193.34	193.04	192.89	192.82	192.72	192.63	
14	192.73	192.95	192.92	193.28	193.60	194.48	193.35	193.03	192.89	192.81	192.72	192.63	
15	192.72	193.05	192.86	194.29	193.62	194.59	193.32	193.03	192.89	192.81	192.72	192.62	
16	192.72	192.89	192.83	195.53	193.65	195.39	193.29	193.04	192.89	192.81	192.72	192.61	
17	192.74	192.80	192.81	194.65	194.17	195.14	193.30	193.05	192.90	192.80	192.72	192.60	
18	192.79	192.80	192.79	194.19	194.11	195.02	193.28	193.05	192.90	192.84	192.71	192.60	
19	192.97	192.88	192.81	194.21	193.86	194.67	193.60	193.07	192.91	192.83	192.71	192.59	
20	193.07	192.85	192.79	194.08	193.93	194.46	193.53	193.10	192.91	192.83	192.71	192.59	
21	192.97	192.83	192.78	193.78	193.94	194.28	193.37	193.09	192.90	192.82	192.70	192.60	
22	192.95	192.88	192.85	193.64	194.28	194.09	193.29	193.06	192.90	192.81	192.68	192.60	
23	192.91	192.90	192.86	193.55	194.57	193.94	193.25	193.06	192.90	192.80	192.69	192.59	
24	192.86	192.85	192.84	193.47	195.10	193.84	193.22	193.05	192.89	192.79	192.68	192.66	
25	192.82	192.83	192.82	193.39	195.93	193.81	193.20	193.03	192.89	192.76	192.68	192.72	
26	192.79	192.89	192.81	193.47	195.34	193.83	193.19	193.01	192.89	192.74	192.70	192.94	
27	192.76	193.02	192.87	194.20	194.83	193.75	193.18	193.01	192.87	192.74	192.70	192.83	
28	192.74	193.01	193.02	194.17	194.40	193.67	193.22	193.00	192.86	192.74	192.71	192.75	
29	192.71	192.94	193.23	193.83	194.28	193.59	193.22	193.00	192.85	192.74		192.71	
30	192.70	192.90	193.17	193.65	194.10	193.55	193.18	193.01	192.85	192.74		192.68	
31		192.91		193.57	193.95		193.16		192.84	192.76		192.67	
Mean	192.83	192.83	193.04	193.81	193.98	194.57	193.33	193.06	192.92	192.81	192.72	192.67	
Max	193.07	193.05	193.88	195.53	195.93	196.64	193.60	193.15	193.01	192.84	192.78	192.94	196.64
Min	192.70	192.67	192.78	192.99	193.27	193.55	193.16	193.00	192.84	192.74	192.68	192.59	192.59

Annual Max Momentary Gage Height 196.94 M (MSL), at 5.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 192.20 M (MSL), River Bed 189.26 M (MSL)
Left Bank Elevation 199.64 M (MSL)
Right Bank Elevation 199.42 M (MSL), Drainage Area 4609 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.26	6.56	37.28	27.45	66.30	130.00	70.50	36.35	24.05	12.70	9.42	6.90	
2	7.98	6.22	52.24	22.48	61.05	203.20	67.35	33.56	22.48	12.70	9.78	7.26	
3	8.70	6.56	41.93	22.48	53.21	169.00	64.20	32.63	21.76	12.70	9.06	7.26	
4	11.60	6.56	54.18	110.50	50.30	163.00	62.10	34.49	23.20	12.70	8.70	6.90	
5	23.20	6.56	52.24	301.40	47.51	140.50	59.03	36.35	24.05	12.70	8.34	6.22	
6	22.48	18.16	48.44	190.70	50.30	186.05	58.06	35.42	23.20	12.70	7.98	5.88	
7	21.76	10.50	121.00	140.50	53.21	256.00	56.12	31.70	21.76	12.70	7.98	5.54	
8	21.76	9.78	62.10	112.00	64.20	372.80	55.15	30.00	20.32	11.60	7.98	5.54	
9	18.88	8.34	33.56	84.48	86.96	584.85	57.09	30.00	19.60	11.60	7.62	5.20	
10	13.25	6.90	23.20	68.40	100.24	546.00	63.15	28.30	19.60	12.15	7.98	5.20	
11	10.50	6.22	23.20	58.06	134.50	590.40	60.00	27.45	17.44	12.15	7.62	4.86	
12	9.06	5.88	24.05	53.21	110.50	376.20	55.15	26.60	15.45	12.15	7.62	4.52	
13	8.34	6.56	21.04	44.72	88.20	257.60	54.18	26.60	15.45	11.60	7.62	4.52	
14	7.98	19.60	17.44	48.44	82.00	212.80	55.15	25.75	15.45	11.05	7.62	4.52	
15	7.62	27.45	13.80	182.95	84.48	230.40	52.24	25.75	15.45	11.05	7.62	4.18	
16	7.62	15.45	12.15	388.10	88.20	364.30	49.37	26.60	15.45	11.05	7.62	3.84	
17	8.34	10.50	11.05	240.00	164.50	321.80	50.30	27.45	16.00	10.50	7.62	3.50	
18	10.14	10.50	10.14	167.50	155.50	301.40	48.44	27.45	16.00	12.70	7.26	3.50	
19	21.04	14.90	11.05	170.55	118.00	243.20	82.00	29.15	16.72	12.15	7.26	3.28	
20	29.15	13.25	10.14	151.00	128.50	209.60	73.95	31.70	16.72	12.15	7.26	3.28	
21	21.04	12.15	9.78	106.08	130.00	181.40	57.09	30.85	16.00	11.60	6.90	3.50	
22	19.60	14.90	13.25	86.96	181.40	152.50	49.37	28.30	16.00	11.05	6.22	3.50	
23	16.72	16.00	13.80	76.25	227.20	130.00	45.65	28.30	16.00	10.50	6.56	3.28	
24	13.80	13.25	12.70	67.35	315.00	115.00	42.86	27.45	15.45	10.14	6.22	5.54	
25	11.60	12.15	11.60	59.03	459.40	110.50	41.00	25.75	15.45	9.06	6.22	7.62	
26	10.14	15.45	11.05	67.35	355.80	113.50	40.07	24.05	15.45	8.34	6.90	18.88	
27	9.06	24.90	14.35	169.00	269.10	101.70	39.14	24.05	14.35	8.34	6.90	12.15	
28	8.34	24.05	24.90	164.50	200.00	90.68	42.86	23.20	13.80	8.34	7.26	8.70	
29	7.26	18.88	43.79	113.50	181.40	80.85	42.86	23.20	13.25	8.34		7.26	
30	6.90	16.00	38.21	88.20	154.00	76.25	39.14	24.05	13.25	8.34		6.22	
31		16.72		78.55	131.50		37.28		12.70	9.06		5.88	
Total	401.12	400.90	873.66	3661.69	4392.46	7011.48	1670.85	862.50	541.85	343.91	213.14	184.43	20557.99 CMSDAY
Mean	13.37	12.93	29.12	118.12	141.69	233.72	53.90	28.75	17.48	11.09	7.61	5.95	56.32 CMS
Max	29.15	27.45	121.00	388.10	459.40	590.40	82.00	36.35	24.05	12.70	9.78	18.88	590.40 CMS
Min	6.90	5.88	9.78	22.48	47.51	76.25	37.28	23.20	12.70	8.34	6.22	3.28	3.28 CMS
Runoff	34.657	34.638	75.484	316.370	379.509	605.792	144.361	74.520	46.816	29.714	18.415	15.935	1776.210 MCM

Momentary Peak 645.90 CMS, at 196.94 M (MSL), at 5.00 Hours, on Sep 11, 1998

Runoff Yield 12.22 Liters/Second/Square KM, Momentary Peak Yield 140.139 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

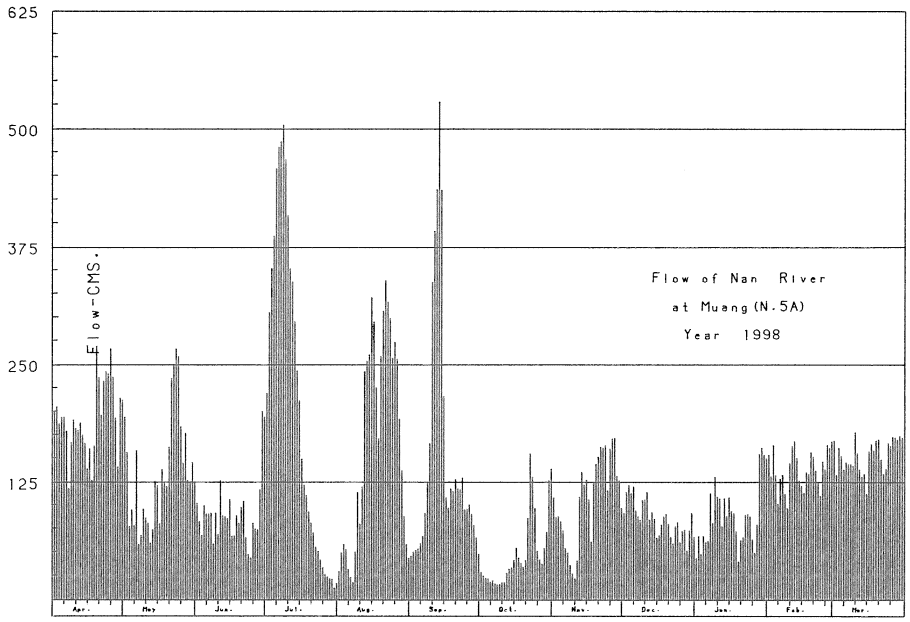
Nan River at Muang, Phitsanulok (N.5A)

Location	Lat. 16°-49'-15" N., Long. 100°-15'-49" E., on left bank near the post office and about 1 kilometer upstream from gaging station N.5, Amphoe Muang, Phitsanulok.
Drainage Area	25,286 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+34.50 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near automatic gage building.
Elevation	+45.379 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1963 to date.
Rating Operation	
Period of Rating	1966 to date.
Rated by Float	-
Rated by Current Meter	1966 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Flow effected by Naresuan Dam. Stage-discharge relation defined by 34 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	28.59	28.72	28.03	28.37	26.71	27.67	28.42	28.44	28.07	27.94	28.02	28.12	
2	28.63	28.60	27.78	28.49	26.94	27.64	27.99	28.23	27.86	27.95	28.06	28.05	
3	28.57	27.99	27.61	30.01	27.22	27.77	27.89	27.92	28.04	28.17	27.91	27.87	
4	28.54	27.37	27.47	30.49	27.40	28.37	27.84	27.82	28.15	28.00	28.16	28.07	
5	28.47	27.36	27.72	31.24	27.27	28.64	27.65	27.71	28.15	28.19	27.75	28.07	
6	28.44	27.26	27.63	31.77	26.93	29.32	27.50	27.71	27.95	27.98	27.53	27.98	
7	28.33	27.98	27.62	32.22	26.75	29.52	27.46	27.44	27.78	28.19	27.65	27.96	
8	27.80	27.28	27.50	32.35	26.85	29.74	27.35	27.25	27.67	28.19	27.82	27.94	
9	28.03	27.28	27.30	32.89	27.14	30.02	26.98	27.16	27.57	27.88	27.56	27.97	
10	28.18	27.40	27.22	33.19	28.66	30.51	26.99	27.05	27.75	27.74	27.44	27.89	
11	28.37	27.32	27.44	32.05	28.70	31.00	27.18	27.17	27.78	27.61	27.57	28.15	
12	28.45	27.21	27.74	31.69	28.19	31.53	27.65	27.43	27.77	27.54	28.11	28.06	
13	28.34	27.00	27.44	31.35	29.47	32.17	27.80	27.91	27.62	27.44	28.24	27.98	
14	28.29	26.81	27.31	30.20	30.02	32.19	27.76	28.13	27.49	27.41	28.04	27.94	
15	28.00	27.64	27.35	30.45	30.13	31.65	27.92	28.02	27.40	27.36	27.80	27.76	
16	27.95	27.40	27.36	30.28	30.29	31.05	28.10	28.07	27.31	27.36	27.69	27.65	
17	27.88	27.39	27.06	29.77	30.58	30.73	28.26	27.80	27.25	27.40	27.61	28.04	
18	27.71	27.88	26.98	29.35	30.05	30.25	28.13	27.55	27.33	27.42	27.77	28.17	
19	28.70	27.77	27.27	29.19	29.76	29.53	27.95	27.97	27.39	27.23	27.83	28.09	
20	29.20	27.98	27.22	29.15	30.14	29.27	27.95	28.19	27.40	26.79	28.01	28.32	
21	29.22	28.80	27.34	28.87	30.70	29.38	28.00	28.38	27.36	26.81	28.04	28.37	
22	29.22	29.39	27.49	28.38	30.97	29.32	28.13	28.55	27.23	27.18	27.90	28.39	
23	29.22	29.42	27.05	27.77	31.11	29.19	28.25	28.52	26.99	27.32	27.76	27.90	
24	29.22	29.46	26.75	27.58	31.14	29.11	28.15	28.44	27.13	27.40	27.64	27.80	
25	29.23	28.79	26.72	27.40	31.04	28.85	27.99	28.34	27.34	27.29	27.89	28.15	
26	29.25	28.68	27.13	27.29	31.16	28.85	27.76	28.51	27.65	27.41	27.85	28.10	
27	29.00	28.58	27.18	27.18	30.65	29.04	27.49	28.61	28.09	26.84	27.94	28.00	
28	28.59	28.46	27.19	26.98	29.62	28.90	27.33	28.50	28.14	27.04	28.06	28.21	
29	28.72	28.33	27.57	26.94	29.28	28.78	27.49	28.21	27.96	27.97		28.25	
30	29.07	28.24	28.03	26.81	28.90	28.55	27.81	28.13	28.10	28.11		28.24	
31		28.17		26.77	27.84		28.23		28.17	28.07		28.35	
Mean	28.57	28.00	27.38	29.56	29.08	29.62	27.79	27.97	27.67	27.59	27.84	28.06	
Max	29.25	29.46	28.03	33.19	31.16	32.19	28.42	28.61	28.17	28.19	28.24	28.39	33.19
Min	27.71	26.81	26.72	26.77	26.71	27.64	26.98	27.05	26.99	26.79	27.44	27.65	26.71

Annual Max Momentary Gage Height 33.26 M (MSL), at 6.00 Hours, on Jul 10, 1998
Zero Gage at Bottom Elevation 26.00 M (MSL), River Bed 24.46 M (MSL)
Left Bank Elevation 36.85 M (MSL)
Right Bank Elevation 37.30 M (MSL), Drainage Area 29153 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	200.25	194.19	102.75	220.45	30.00	47.05	30.00	108.45	91.87	43.80	153.73	169.20	
2	205.30	157.60	84.00	305.70	50.40	50.40	25.20	87.50	115.10	67.37	131.50	133.43	
3	188.13	77.87	68.25	353.00	59.50	53.20	23.50	89.25	121.83	49.00	165.33	162.43	
4	194.19	96.25	100.85	386.80	53.20	53.90	22.50	84.00	113.20	68.25	132.47	152.77	
5	195.20	79.62	91.87	458.87	33.00	59.50	19.50	73.50	120.87	60.90	101.80	139.23	
6	180.05	158.57	91.00	481.67	23.50	68.25	20.00	55.30	95.38	63.00	128.60	146.97	
7	118.93	59.50	92.75	486.73	19.00	92.75	17.50	49.70	88.37	113.20	133.43	144.07	
8	167.27	68.25	60.20	504.90	50.40	125.70	15.50	37.30	84.88	81.38	113.20	145.03	
9	191.16	97.13	91.87	467.73	115.10	167.27	17.00	27.60	106.55	131.50	98.00	142.13	
10	183.08	86.62	69.13	408.40	81.38	338.70	18.00	23.00	106.55	110.35	146.00	178.03	
11	180.05	82.25	127.63	351.90	119.90	391.60	19.00	41.20	115.10	107.50	163.40	156.63	
12	189.14	60.90	89.25	338.70	242.67	436.07	28.80	109.40	85.75	78.75	169.20	139.23	
13	175.00	74.37	89.25	296.90	254.79	529.60	32.40	136.33	93.63	107.50	150.83	130.53	
14	167.27	126.67	86.62	243.68	260.85	436.07	34.80	122.80	85.75	89.25	126.67	133.43	
15	139.23	120.87	107.50	212.37	322.20	216.41	41.85	127.63	66.50	108.45	120.87	113.20	
16	160.50	80.50	67.37	149.87	295.80	108.45	56.00	106.55	68.25	94.50	114.15	157.60	
17	127.63	139.23	68.25	122.80	226.51	98.00	44.45	62.30	79.62	92.75	136.33	166.30	
18	164.37	124.73	89.25	111.30	171.13	118.93	38.60	124.73	89.25	72.62	133.43	158.57	
19	269.94	120.87	82.25	94.50	259.84	115.10	35.40	144.07	91.00	41.20	157.60	169.20	
20	236.61	162.43	98.00	82.25	306.80	128.60	42.50	152.77	81.38	63.00	151.80	171.13	
21	197.22	235.60	105.60	70.88	339.80	117.97	86.62	162.43	67.37	66.50	138.27	148.90	
22	233.58	251.76	66.50	56.70	317.80	117.97	156.63	162.43	59.50	91.00	124.73	134.40	
23	243.68	267.92	47.70	51.10	299.10	129.57	130.53	164.37	78.75	91.00	111.30	139.23	
24	240.65	258.83	45.10	43.15	257.82	96.25	98.00	117.00	82.25	89.25	146.97	167.27	
25	267.92	184.09	81.38	33.60	274.99	96.25	52.50	161.47	61.60	64.75	139.23	163.40	
26	237.62	146.00	75.25	27.60	255.80	100.85	42.50	171.13	73.50	50.40	164.37	174.03	
27	193.18	178.03	75.25	24.00	193.18	91.87	38.60	173.07	74.37	79.62	162.43	172.10	
28	141.17	126.67	117.00	23.00	137.30	79.62	54.60	131.50	52.50	155.67	168.23	171.13	
29	215.40	125.70	201.26	21.50	88.37	65.62	71.75	126.67	73.50	161.47		174.03	
30	212.37	146.00	194.19	13.20	59.50	48.35	127.63	98.00	92.75	153.73		173.07	
31		123.77		17.00	43.80		139.23		66.50	150.83		185.10	
Total	5816.09	4212.79	2767.27	6460.25	5243.43	4579.87	1581.09	3231.45	2683.42	2798.49	3883.87	4811.77	48069.79 CMSDAY
Mean	193.87	135.90	92.24	208.40	169.14	152.66	51.00	107.72	86.56	90.27	138.71	155.22	131.70 CMS
Max	269.94	267.92	201.26	504.90	339.80	529.60	156.63	173.07	121.83	161.47	169.20	185.10	529.60 CMS
Min	118.93	59.50	45.10	13.20	19.00	47.05	15.50	23.00	52.50	41.20	98.00	113.20	13.20 CMS
Runoff	502.510	363.985	239.092	558.166	453.032	395.701	136.606	279.197	231.848	241.790	335.566	415.737	4153.230 MCM

Momentary Peak 579.00 CMS, at 40.10 M (MSL), at 6.00 Hours, on Sep 13, 1998

Runoff Yield 5.21 Liters/Second/Square KM, Momentary Peak Yield 22.898 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

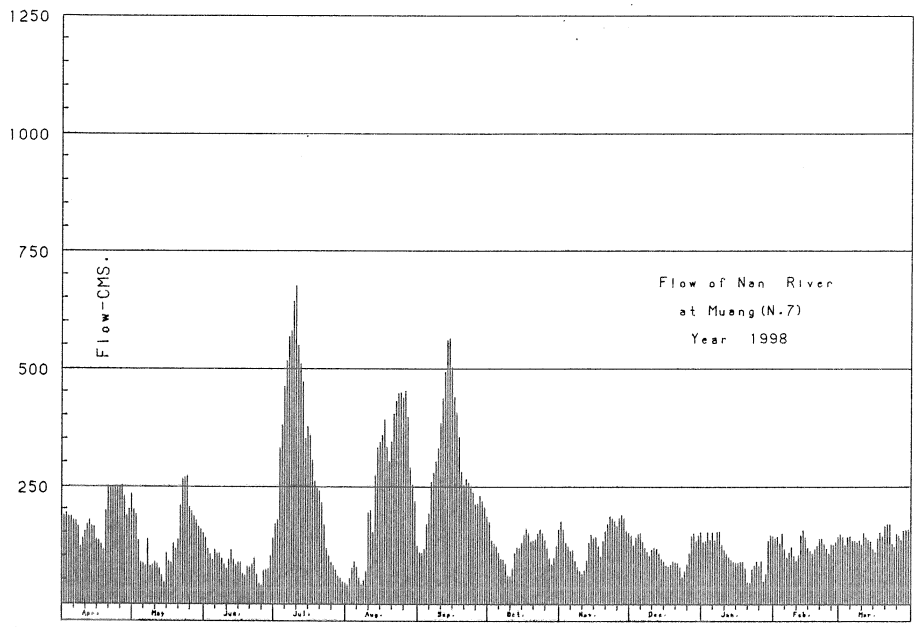
Nan River at Muang, Phichit (N.7)

Location	Lat. 16°-26'-31" N., Long. 100°-21'-11" E., on right bank infront of Phichit Phithaya Khom School, Amphoe Muang, Phichit.
Drainage Area	29,153 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+26.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of Phichit Phitthaya Khom School.
Elevation	+37.228 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1934 to date.
Rating Operation	
Period of Rating	1965-1967, 1973 to date.
Rated by Float	-
Rated by Current Meter	1965-1967, 1973 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by Naresuan Dam. Stage-discharge relation defined by 34 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	28.59	28.72	28.03	28.37	26.71	27.67	28.42	28.44	28.07	27.94	28.02	28.12	
2	28.63	28.60	27.78	28.49	26.94	27.64	27.99	28.23	27.86	27.95	28.06	28.05	
3	28.57	27.99	27.61	30.01	27.22	27.77	27.89	27.92	28.04	28.17	27.91	27.87	
4	28.54	27.37	27.47	30.49	27.40	28.37	27.84	27.82	28.15	28.00	28.16	28.07	
5	28.47	27.36	27.72	31.24	27.27	28.64	27.65	27.71	28.15	28.19	27.75	28.07	
6	28.44	27.26	27.63	31.77	26.93	29.32	27.50	27.71	27.95	27.98	27.53	27.98	
7	28.33	27.98	27.62	32.22	26.75	29.52	27.46	27.44	27.78	28.19	27.65	27.96	
8	27.80	27.28	27.50	32.35	26.85	29.74	27.35	27.25	27.67	28.19	27.82	27.94	
9	28.03	27.28	27.30	32.89	27.14	30.02	26.98	27.16	27.57	27.88	27.56	27.97	
10	28.18	27.40	27.22	33.19	28.66	30.51	26.99	27.05	27.75	27.74	27.44	27.89	
11	28.37	27.32	27.44	32.05	28.70	31.00	27.18	27.17	27.78	27.61	27.57	28.15	
12	28.45	27.21	27.74	31.69	28.19	31.53	27.65	27.43	27.77	27.54	28.11	28.06	
13	28.34	27.00	27.44	31.35	29.47	32.17	27.80	27.91	27.62	27.44	28.24	27.98	
14	28.29	26.81	27.31	30.20	30.02	32.19	27.76	28.13	27.49	27.41	28.04	27.94	
15	28.00	27.64	27.35	30.45	30.13	31.65	27.92	28.02	27.40	27.36	27.80	27.76	
16	27.95	27.40	27.36	30.28	30.29	31.05	28.10	28.07	27.31	27.36	27.69	27.65	
17	27.88	27.39	27.06	29.77	30.58	30.73	28.26	27.80	27.25	27.40	27.61	28.04	
18	27.71	27.88	26.98	29.35	30.05	30.25	28.13	27.55	27.33	27.42	27.77	28.17	
19	28.70	27.77	27.27	29.19	29.76	29.53	27.95	27.97	27.39	27.23	27.83	28.09	
20	29.20	27.98	27.22	29.15	30.14	29.27	27.95	28.19	27.40	26.79	28.01	28.32	
21	29.22	28.80	27.34	28.87	30.70	29.38	28.00	28.38	27.36	26.81	28.04	28.37	
22	29.22	29.39	27.49	28.38	30.97	29.32	28.13	28.55	27.23	27.18	27.90	28.39	
23	29.22	29.42	27.05	27.77	31.11	29.19	28.25	28.52	26.99	27.32	27.76	27.90	
24	29.22	29.46	26.75	27.58	31.14	29.11	28.15	28.44	27.13	27.40	27.64	27.80	
25	29.23	28.79	26.72	27.40	31.04	28.85	27.99	28.34	27.34	27.29	27.89	28.15	
26	29.25	28.68	27.13	27.29	31.16	28.85	27.76	28.51	27.65	27.41	27.85	28.10	
27	29.00	28.58	27.18	27.18	30.65	29.04	27.49	28.61	28.09	26.84	27.94	28.00	
28	28.59	28.46	27.19	26.98	29.62	28.90	27.33	28.50	28.14	27.04	28.06	28.21	
29	28.72	28.33	27.57	26.94	29.28	28.78	27.49	28.21	27.96	27.97		28.25	
30	29.07	28.24	28.03	26.81	28.90	28.55	27.81	28.13	28.10	28.11		28.24	
31		28.17		26.77	27.84		28.23		28.17	28.07		28.35	
Mean	28.57	28.00	27.38	29.56	29.08	29.62	27.79	27.97	27.67	27.59	27.84	28.06	
Max	29.25	29.46	28.03	33.19	31.16	32.19	28.42	28.61	28.17	28.19	28.24	28.39	33.19
Min	27.71	26.81	26.72	26.77	26.71	27.64	26.98	27.05	26.99	26.79	27.44	27.65	26.71

Annual Max Momentary Gage Height 33.26 M (MSL), at 6.00 Hours, on Jul 10, 1998
Zero Gage at Bottom Elevation 26.00 M (MSL), River Bed 24.46 M (MSL)
Left Bank Elevation 36.85 M (MSL)
Right Bank Elevation 37.30 M (MSL), Drainage Area 29153 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	189.12	201.40	140.55	169.88	40.15	110.93	174.25	176.00	143.95	132.90	139.70	148.20	
2	192.85	190.00	119.45	180.37	55.80	108.60	137.15	157.62	126.10	133.75	143.10	142.25	
3	187.37	137.15	106.28	331.46	76.50	118.68	128.65	131.20	141.40	152.45	130.35	126.95	
4	184.75	87.75	95.42	382.34	90.00	169.88	124.40	122.70	150.75	138.00	151.60	143.95	
5	178.62	87.00	114.80	461.84	80.25	193.80	109.38	114.02	150.75	154.15	117.13	143.95	
6	176.00	79.50	107.82	518.70	55.10	259.30	97.75	114.02	133.75	136.30	100.08	136.30	
7	166.37	136.30	107.05	568.20	42.75	279.80	94.65	93.10	119.45	154.15	109.38	134.60	
8	121.00	81.00	97.75	582.50	49.50	302.84	86.25	78.75	110.93	154.15	122.70	132.90	
9	140.55	81.00	82.50	643.35	70.50	332.52	58.60	72.00	103.18	127.80	102.40	135.45	
10	153.30	90.00	76.50	677.94	195.70	384.46	59.30	63.75	117.13	116.35	93.10	128.65	
11	169.88	84.00	93.10	549.50	199.50	436.40	73.50	72.75	119.45	106.28	103.18	150.75	
12	176.88	75.75	116.35	509.90	154.15	492.58	109.38	92.33	118.68	100.85	147.35	143.10	
13	167.25	60.00	93.10	473.50	274.67	562.70	121.00	130.35	107.05	93.10	158.50	136.30	
14	162.88	46.70	83.25	351.60	332.52	564.90	117.90	149.05	96.98	90.78	141.40	132.90	
15	138.00	108.60	86.25	378.10	344.18	505.50	131.20	139.70	90.00	87.00	121.00	117.90	
16	133.75	90.00	87.00	360.08	361.14	441.70	146.50	143.95	83.25	87.00	112.48	109.38	
17	127.80	89.25	64.50	306.02	391.88	407.78	160.25	121.00	78.75	90.00	106.28	141.40	
18	114.02	127.80	58.60	262.37	335.70	356.90	149.05	101.62	84.75	91.55	118.68	152.45	
19	199.50	118.68	80.25	246.05	304.96	280.83	133.75	135.45	89.25	77.25	123.55	145.65	
20	247.00	136.30	76.50	242.25	345.24	254.17	133.75	154.15	90.00	45.35	138.85	165.50	
21	249.05	209.00	85.50	215.65	404.60	265.45	138.00	170.75	87.00	46.70	141.40	169.88	
22	249.05	266.47	96.98	170.75	433.22	259.30	149.05	185.62	77.25	73.50	129.50	171.62	
23	249.05	269.55	63.75	118.68	448.06	246.05	159.37	183.00	59.30	84.00	117.90	129.50	
24	249.05	273.65	42.75	103.95	451.24	238.45	150.75	176.00	69.75	90.00	108.60	121.00	
25	250.07	208.05	40.80	90.00	440.64	213.75	137.15	167.25	85.50	81.75	128.65	150.75	
26	252.12	197.60	69.75	81.75	453.36	213.75	117.90	182.12	109.38	90.78	125.25	146.50	
27	228.00	188.25	73.50	73.50	399.30	231.80	96.98	190.95	145.65	48.80	132.90	138.00	
28	189.12	177.75	74.25	58.60	290.12	218.50	84.75	181.25	149.90	63.00	143.10	155.87	
29	201.40	166.37	103.18	55.80	255.20	207.10	96.98	155.87	134.60	135.45		159.37	
30	234.65	158.50	140.55	46.70	218.50	185.62	121.85	149.05	146.50	147.35		158.50	
31		152.45		44.05	124.40		157.62		152.45	143.95		168.12	
Total	5678.45	4375.82	2678.03	9255.38	7718.83	8844.04	3757.06	4105.37	3472.83	3274.44	3508.11	4437.64	61106.00 CMSDAY
Mean	189.28	141.16	89.27	298.56	248.99	294.80	121.20	136.85	112.03	105.63	125.29	143.15	167.41 CMS
Max	252.12	273.65	140.55	677.94	453.36	564.90	174.25	190.95	152.45	154.15	158.50	171.62	677.94 CMS
Min	114.02	46.70	40.80	44.05	40.15	108.60	58.60	63.75	59.30	45.35	93.10	109.38	40.15 CMS
Runoff	490.618	378.071	231.382	799.665	666.907	764.125	324.610	354.704	300.053	282.912	303.101	383.412	5279.559 MCM

Momentary Peak 686.27 CMS, at 33.26 M (MSL), at 6.00 Hours, on Jul 10, 1998

Runoff Yield 5.74 Liters/Second/Square KM, Momentary Peak Yield 23.540 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

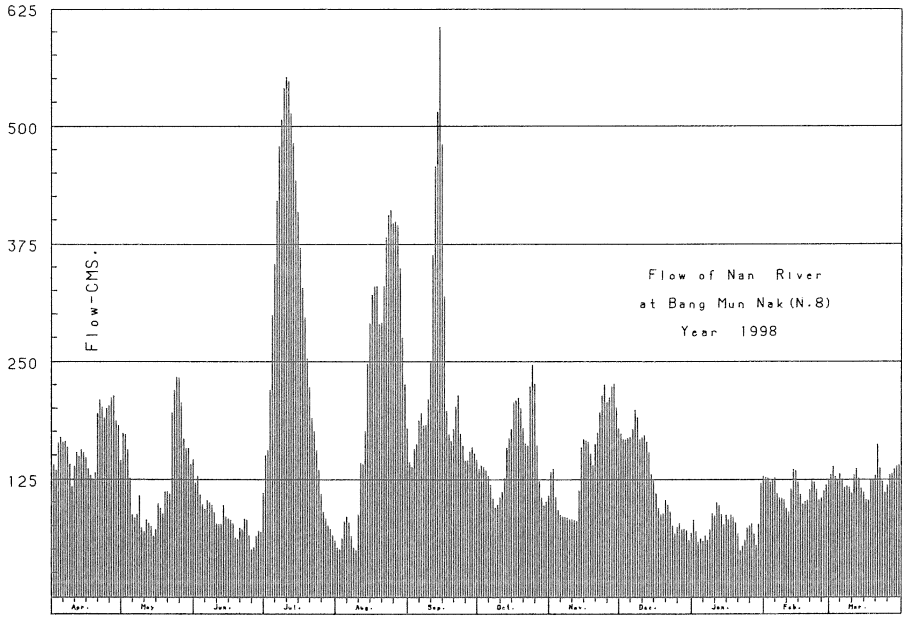
Nan River at Bang Mun Nak, Phichit (N.8)

Location	Lat. 16°-01'-50" N., Long. 100°-22'-53" E., on left bank opposite to Wat Bang Mun Nak, Amphoe Bang Mun Nak, Phichit.
Drainage Area	32,878 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+19.80 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 89 meters upstream from the top staff gage.
Elevation	+30.741 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1951 to date.
Rating Operation	
Period of Rating	1965 - 1967, 1973 - 1979, 1991 to date.
Rated by Float	-
Rated by Current Meter	1951 - 1980, 1991 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by Naresuan Dam. Stage-discharge relation defined by 36 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	22.42	22.89	22.12	22.55	20.84	22.45	23.83	23.80	22.87	21.43	22.21	22.25	
2	22.32	22.86	22.24	22.64	20.81	22.39	23.89	23.83	22.80	21.22	22.21	22.40	
3	22.75	22.64	21.93	23.50	21.06	22.65	23.86	23.28	22.78	20.97	22.13	22.22	
4	22.82	22.21	21.74	24.46	21.40	22.73	23.82	22.82	22.82	21.06	22.17	22.16	
5	22.76	21.55	21.66	25.04	21.51	23.07	23.71	22.62	22.82	20.99	22.20	22.28	
6	22.76	21.47	21.82	25.72	21.38	23.17	23.54	22.54	22.95	21.10	21.95	22.17	
7	22.69	21.56	21.79	26.27	21.10	22.99	23.24	22.50	23.22	21.03	21.86	22.04	
8	22.42	21.91	21.73	26.51	20.85	23.00	22.93	22.29	23.12	21.25	21.87	22.08	
9	22.07	21.27	21.60	26.79	20.77	23.38	23.00	22.12	22.79	21.56	21.83	22.05	
10	22.40	21.21	21.37	26.88	21.55	23.90	23.27	21.95	22.83	21.53	21.68	21.96	
11	22.60	21.43	21.34	26.85	22.44	25.14	23.40	21.79	22.85	21.79	21.59	22.25	
12	22.55	21.38	21.36	26.56	22.43	26.07	23.68	21.77	22.77	21.72	22.03	22.35	
13	22.64	21.30	21.72	26.29	22.91	26.58	24.12	22.00	22.60	21.56	22.34	22.21	
14	22.60	21.11	21.50	25.94	23.86	27.32	24.26	22.67	22.27	21.34	22.33	22.04	
15	22.53	21.23	21.47	25.61	24.36	26.99	24.37	22.80	22.15	21.53	22.13	21.96	
16	22.36	21.75	21.43	25.22	24.69	25.80	24.70	22.77	21.95	21.45	21.92	21.83	
17	22.24	21.67	21.37	24.77	24.80	24.60	24.73	22.75	21.67	21.55	21.76	21.83	
18	22.19	21.55	21.06	24.43	24.79	24.30	24.75	22.59	21.54	21.49	21.79	22.16	
19	22.28	21.98	21.05	23.92	24.35	24.22	24.64	22.40	21.57	21.39	21.83	22.17	
20	23.18	21.97	21.27	23.55	24.36	24.38	24.38	22.73	21.82	21.15	22.02	22.24	
21	23.36	21.94	21.25	23.10	24.80	24.65	24.18	22.90	21.73	20.78	22.18	22.73	
22	23.26	23.19	21.45	22.92	25.33	24.79	24.16	23.18	21.61	20.87	22.14	22.37	
23	23.11	23.51	21.45	22.63	25.57	24.31	24.88	23.42	21.33	21.03	22.01	22.14	
24	23.24	23.68	21.11	22.34	25.63	24.16	25.12	23.59	21.15	21.27	21.84	21.97	
25	23.29	23.68	20.81	21.93	25.49	23.96	24.92	23.34	21.30	21.33	21.86	22.08	
26	23.39	23.32	20.84	21.61	25.50	23.95	24.16	23.39	21.36	21.35	22.00	22.26	
27	23.43	22.81	21.12	21.46	25.47	24.08	23.60	23.56	21.25	21.16	22.08	22.27	
28	23.07	22.66	21.21	21.33	25.00	24.13	23.26	23.59	21.24	20.89	22.19	22.36	
29	22.99	22.66	21.20	21.24	24.18	24.06	23.01	23.26	21.23	21.36		22.39	
30	22.48	22.43	21.94	21.13	23.58	23.96	23.11	22.96	21.02	22.11		22.42	
31		22.49		21.00	22.96		23.30		21.16	22.24		22.41	
Mean	22.74	22.17	21.47	24.01	23.35	24.24	23.93	22.84	22.08	21.34	22.01	22.20	
Max	23.43	23.68	22.24	26.88	25.63	27.32	25.12	23.83	23.22	22.24	22.34	22.73	27.32
Min	22.07	21.11	20.81	21.00	20.77	22.39	22.93	21.77	21.02	20.78	21.59	21.83	20.77

Annual Max Momentary Gage Height 27.37 M (MSL), at 18.00 Hours, on Sep 14, 1998
Zero Gage at Bottom Elevation 19.80 M (MSL), River Bed 18.75 M (MSL)
Left Bank Elevation 31.24 M (MSL)
Right Bank Elevation 30.70 M (MSL), Drainage Area 32878 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	141.40	175.02	121.80	150.50	52.80	143.50	136.25	134.00	173.58	82.07	127.65	130.25	
2	134.80	172.85	129.60	156.90	51.45	139.35	140.75	136.25	168.50	71.05	127.65	140.00	
3	164.87	156.90	109.80	220.00	63.00	157.62	138.50	107.20	167.05	58.65	122.45	128.30	
4	169.95	127.65	98.70	300.40	80.50	163.42	135.50	92.60	169.95	63.00	125.05	124.40	
5	165.60	88.37	94.30	353.80	86.27	188.07	129.05	87.50	169.95	59.55	127.00	132.20	
6	165.60	84.17	103.20	421.00	79.45	195.32	119.70	86.40	179.38	65.00	111.00	125.05	
7	160.53	88.90	101.45	480.05	65.00	182.27	105.60	86.00	199.00	61.50	105.60	116.60	
8	141.40	108.60	98.15	508.20	53.25	183.00	95.90	84.40	191.70	72.62	106.20	119.20	
9	118.55	73.67	91.00	541.80	49.73	211.00	98.00	83.48	167.78	88.90	103.80	117.25	
10	140.00	70.52	78.93	552.60	88.37	251.75	106.80	82.55	170.67	87.33	95.40	111.60	
11	154.00	82.07	77.35	549.00	142.80	363.30	112.00	81.68	172.12	101.45	90.47	130.25	
12	150.50	79.45	78.40	514.20	142.10	457.70	127.40	81.58	166.33	97.60	115.95	136.75	
13	156.90	75.25	97.60	482.35	176.47	516.60	158.60	114.00	154.00	88.90	136.10	127.65	
14	154.00	65.50	85.75	443.70	248.45	605.40	169.80	159.07	131.55	77.35	135.45	116.60	
15	149.10	71.57	84.17	410.00	291.40	482.20	178.60	168.50	123.75	87.33	122.45	111.60	
16	137.40	99.25	82.07	371.00	321.10	320.00	207.00	166.33	111.00	83.13	109.20	103.80	
17	129.60	94.85	78.93	328.30	331.00	198.00	209.70	164.87	94.85	88.37	99.80	103.80	
18	126.35	88.37	63.00	297.70	330.10	173.00	211.50	153.30	87.85	85.22	101.45	124.40	
19	132.20	112.80	62.50	253.40	290.50	166.60	201.60	140.00	89.42	79.97	103.80	125.05	
20	196.05	112.20	73.67	223.75	291.40	179.40	179.40	163.42	103.20	67.50	115.30	129.60	
21	209.50	110.40	72.62	190.25	331.00	202.50	163.40	175.75	98.15	50.15	125.70	163.42	
22	202.00	196.77	83.13	177.20	382.00	215.10	161.80	196.05	91.55	54.15	123.10	138.05	
23	190.97	220.75	83.13	156.17	406.00	173.80	223.60	214.00	76.82	61.50	114.65	123.10	
24	200.50	233.90	65.50	136.10	412.00	161.80	247.60	226.75	67.50	73.67	104.40	112.20	
25	204.25	233.90	51.45	109.80	398.00	146.00	227.40	208.00	75.25	76.82	105.60	119.20	
26	211.75	206.50	52.80	91.55	399.00	145.25	161.80	211.75	78.40	77.87	114.00	130.90	
27	214.75	169.22	66.00	83.65	396.00	155.40	123.00	224.50	72.62	68.00	119.20	131.55	
28	188.07	158.35	70.52	76.82	350.00	159.40	106.40	226.75	72.10	55.05	126.35	137.40	
29	182.27	158.35	70.00	72.10	275.30	153.80	98.30	202.00	71.57	78.40		139.35	
30	145.60	142.10	110.40	66.50	226.00	146.00	101.30	180.10	61.00	121.15		141.40	
31		146.30		60.00	180.10		108.00		68.00	129.60		140.70	
Total	4938.46	4004.50	2535.92	8778.79	6990.54	6936.55	4684.25	4438.78	3824.59	2412.85	3214.77	3931.62	56691.63 CMSDAY
Mean	164.62	129.18	84.53	283.19	225.50	231.22	151.10	147.96	123.37	77.83	114.81	126.83	155.32 CMS
Max	214.75	233.90	129.60	552.60	412.00	605.40	247.60	226.75	199.00	129.60	136.10	163.42	605.40 CMS
Min	118.55	65.50	51.45	60.00	49.73	139.35	95.90	81.58	61.00	50.15	90.47	103.80	49.73 CMS
Runoff	426.683	345.989	219.103	758.488	603.983	599.318	404.719	383.511	330.445	208.470	277.756	339.692	4898.157 MCM

Momentary Peak 611.40 CMS, at 27.37 M (MSL), at 18.00 Hours, on Sep 14, 1998
Runoff Yield 4.72 Liters/Second/Square KM, Momentary Peak Yield 18.596 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

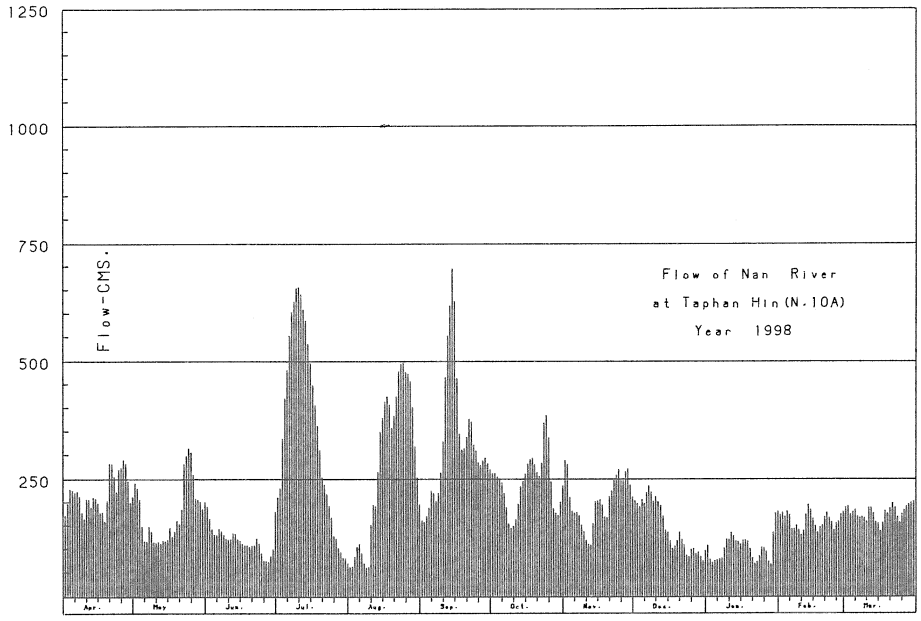
Nan River at Taphan Hin, Phichit (N.10A)

Location	Lat. 16°-12'-42" N., Long. 100°-25'-01" E., on left bank near Amphoe Taphan Hin Office about 250 meters from station N.10, Amphoe Taphan Hin, Phichit.
Drainage Area	30,765 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+22.28 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank near automatic gage buiding.
Elevation	+33.300 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1969 to date.
Rating Operation	
Period of Rating	1974 - 1979, 1991 to date.
Rated by Float	-
Rated by Current Meter	1974 - 1982, 1987, 1991 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Naresuan Dam. Stage-discharge relation defined by 34 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	23.78	24.53	24.02	24.21	22.51	23.67	24.74	25.03	24.15	23.09	23.80	23.98	
2	24.08	24.43	23.71	24.43	22.51	23.64	24.76	24.93	24.07	22.73	23.87	24.03	
3	24.41	24.16	23.48	25.48	22.78	23.76	24.67	24.23	24.01	22.62	23.76	23.81	
4	24.37	23.54	23.33	26.34	23.05	23.98	24.65	23.89	24.16	22.70	23.90	23.87	
5	24.32	23.17	23.34	26.90	23.10	24.36	24.54	23.86	24.09	22.69	23.80	23.94	
6	24.36	23.18	23.47	27.61	22.89	24.32	24.32	23.86	24.32	22.74	23.48	23.78	
7	24.25	23.52	23.43	28.07	22.62	24.12	23.97	23.80	24.49	22.74	23.47	23.73	
8	23.85	23.42	23.32	28.30	22.48	24.31	23.61	23.56	24.33	23.02	23.55	23.77	
9	23.72	23.15	23.25	28.55	22.52	24.77	23.48	23.40	24.14	23.22	23.46	23.73	
10	24.17	23.15	23.23	28.59	23.58	25.43	23.55	23.21	24.23	23.23	23.34	23.66	
11	24.18	23.16	23.22	28.43	24.03	26.76	23.69	23.10	24.13	23.38	23.42	23.97	
12	24.00	23.13	23.38	28.14	24.00	27.59	24.07	23.10	24.02	23.32	23.82	23.99	
13	24.21	23.19	23.35	27.90	24.79	28.20	24.47	23.61	23.79	23.17	24.04	23.84	
14	24.20	23.19	23.24	27.44	25.64	28.92	24.57	24.11	23.44	23.18	23.94	23.65	
15	24.08	23.21	23.18	27.04	25.92	28.31	24.73	24.15	23.41	23.10	23.71	23.60	
16	23.86	23.49	23.11	26.61	26.26	26.75	24.96	24.16	23.18	23.19	23.54	23.43	
17	23.86	23.30	23.09	26.19	26.38	25.58	25.04	24.05	23.01	23.22	23.40	23.61	
18	23.66	23.40	23.07	25.77	26.20	25.26	25.07	23.75	23.05	23.17	23.53	23.89	
19	24.13	23.66	23.05	25.24	25.72	25.27	24.95	23.75	23.18	23.01	23.55	23.85	
20	24.95	23.60	23.06	24.67	25.96	25.53	24.76	24.23	23.41	22.75	23.75	23.97	
21	24.96	23.95	23.09	24.50	26.38	25.90	24.68	24.37	23.23	22.61	23.87	24.08	
22	24.69	24.94	23.24	24.30	26.88	25.86	24.98	24.59	23.08	22.64	23.75	23.99	
23	24.35	25.13	23.13	24.01	27.04	25.35	25.82	24.71	22.84	22.82	23.63	23.75	
24	24.82	25.28	22.87	23.75	27.04	25.24	25.99	24.84	22.78	23.02	23.46	23.63	
25	24.88	25.21	22.70	23.31	26.88	24.99	25.52	24.60	22.99	23.03	23.60	23.82	
26	25.03	24.73	22.66	23.23	26.82	24.91	24.58	24.64	22.99	22.94	23.66	23.93	
27	24.97	24.18	22.66	23.02	26.69	25.03	23.97	24.80	22.88	22.65	23.81	24.00	
28	24.57	24.17	22.79	22.90	26.16	25.07	23.84	24.84	22.90	22.59	23.89	24.07	
29	24.09	24.11	22.99	22.77	25.31	24.97	23.80	24.51	22.81	23.38		24.09	
30	24.24	23.95	23.87	22.73	24.67	24.82	24.10	24.22	22.66	23.86		24.12	
31		24.11		22.60	24.04		24.47		22.94	23.88		24.11	
Mean	24.30	23.85	23.21	25.58	24.87	25.42	24.53	24.13	23.51	23.02	23.67	23.86	
Max	25.03	25.28	24.02	28.59	27.04	28.92	25.99	25.03	24.49	23.88	24.04	24.12	28.92
Min	23.66	23.13	22.66	22.60	22.48	23.64	23.48	23.10	22.66	22.59	23.34	23.43	22.48

Annual Max Momentary Gage Height 28.92 M (MSL), at 18.00 Hours, on Sep 14, 1998
Zero Gage at Bottom Elevation 22.28 M (MSL), River Bed 18.86 M (MSL)
Left Bank Elevation 33.12 M (MSL)
Right Bank Elevation 33.19 M (MSL), Drainage Area 30765 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	172.2	241.4	193.8	210.9	63.5	162.3	262.0	291.0	205.5	110.4	174.0	190.2	
2	199.2	231.8	165.9	231.8	63.5	159.6	264.0	281.0	198.3	80.6	180.3	194.7	
3	229.9	206.4	145.2	336.0	84.5	170.4	255.0	212.8	192.9	72.1	170.4	174.9	
4	226.2	150.6	131.7	422.7	106.9	190.2	253.0	182.1	206.4	78.3	183.0	180.3	
5	221.4	117.4	132.6	481.5	111.3	225.2	242.3	179.4	200.1	77.5	174.0	186.6	
6	225.2	118.2	144.3	556.1	93.4	221.4	221.4	179.4	221.4	81.4	145.2	172.2	
7	214.7	148.8	140.7	604.4	72.1	202.8	189.3	174.0	237.5	81.4	144.3	167.7	
8	178.5	139.8	130.8	628.5	61.2	220.4	156.9	152.4	222.3	104.3	151.5	171.3	
9	166.8	115.6	124.5	654.7	64.3	265.0	145.2	138.0	204.6	121.8	143.4	167.7	
10	207.3	115.6	122.7	659.0	154.2	331.0	151.5	120.9	212.8	122.7	132.6	161.4	
11	208.2	116.5	121.8	642.2	194.7	466.8	164.1	111.3	203.7	136.2	139.8	189.3	
12	192.0	113.9	136.2	611.7	192.0	554.0	198.3	111.3	193.8	130.8	175.8	191.1	
13	210.9	119.1	133.5	586.5	267.0	618.0	235.6	156.9	173.1	117.4	195.6	177.6	
14	210.0	119.1	123.6	538.2	352.0	698.4	245.1	201.9	141.6	118.2	186.6	160.5	
15	199.2	120.9	118.2	496.2	380.0	629.5	261.0	205.5	138.9	111.3	165.9	156.0	
16	179.4	146.1	112.1	451.1	414.3	465.7	284.0	206.4	118.2	119.1	150.6	140.7	
17	179.4	129.0	110.4	407.0	426.9	346.0	292.0	196.5	103.4	121.8	138.0	156.9	
18	161.4	138.0	108.6	365.0	408.0	314.0	295.0	169.5	106.9	117.4	149.7	182.1	
19	203.7	161.4	106.9	312.0	360.0	315.0	283.0	169.5	118.2	103.4	151.5	178.5	
20	283.0	156.0	107.7	255.0	384.0	341.0	264.0	212.8	138.9	82.1	169.5	189.3	
21	284.0	187.5	110.4	238.5	426.9	378.0	256.0	226.2	122.7	71.3	180.3	199.2	
22	257.0	282.0	123.6	219.5	479.4	374.0	286.0	247.0	109.5	73.6	169.5	191.1	
23	224.2	301.0	113.9	192.9	496.2	323.0	370.0	259.0	89.3	87.7	158.7	169.5	
24	270.0	316.0	91.8	169.5	496.2	312.0	387.0	272.0	84.5	104.3	143.4	158.7	
25	276.0	309.0	78.3	129.9	479.4	287.0	340.0	248.0	101.7	105.1	156.0	175.8	
26	291.0	261.0	75.2	122.7	473.1	279.0	246.1	252.0	101.7	97.6	161.4	185.7	
27	285.0	208.2	75.2	104.3	459.5	291.0	189.3	268.0	92.6	74.4	174.9	192.0	
28	245.1	207.3	85.2	94.3	404.0	295.0	177.6	272.0	94.3	69.7	182.1	198.3	
29	200.1	201.9	101.7	83.7	319.0	285.0	174.0	239.4	86.8	136.2		200.1	
30	213.8	187.5	180.3	80.6	255.0	270.0	201.0	211.9	75.2	179.4		202.8	
31		201.9		70.5	195.6		235.6		97.6	181.2		201.9	
Total	6614.8	5568.9	3646.8	10956.9	8738.1	9990.7	7525.3	6148.1	4594.4	3268.7	4548.0	5564.1	77164.8 CMSDAY
Mean	220.5	179.6	121.6	353.4	281.9	333.0	242.8	204.9	148.2	105.4	162.4	179.5	211.4 CMS
Max	291.0	316.0	193.8	659.0	496.2	698.4	387.0	291.0	237.5	181.2	195.6	202.8	698.4 CMS
Min	161.4	113.9	75.2	70.5	61.2	159.6	145.2	111.3	75.2	69.7	132.6	140.7	61.2 CMS
Runoff	571.52	481.15	315.08	946.68	754.97	863.20	650.19	531.20	396.96	282.42	392.95	480.74	6667.04 MCM

Momentary Peak 698.40 CMS, at 28.92 M (MSL), at 18.00 Hours, on Sep 14, 1998
Runoff Yield 6.87 Liters/Second/Square KM, Momentary Peak Yield 22.701 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

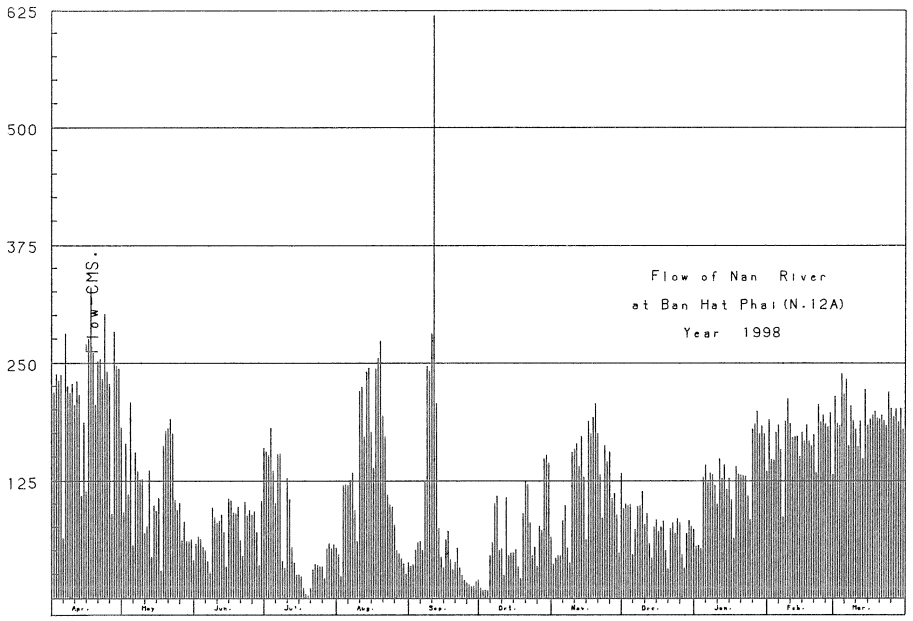
Nan River at Ban Hat Phai, Uttaradit (N.12A)

Location	Lat. 17°-44'-10" N., Long. 100°-32'-28" E., on right bank about 4 kilometers downstream from Sirikit Dam Site, along Phasom-Silot road at Ban Hat Phai, Amphoe Tha Pla, Uttaradit.
Drainage Area	15,718 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+69.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank infront of gage observer's house.
Elevation	+84.000 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1966 to date.
Rating Operation	
Period of Rating	1966 to date.
Rated by Float	-
Rated by Current Meter	1966 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Sirikit Dam reservoir. Stage-discharge relation defined by 42 measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	71.58	70.69	70.40	71.18	70.27	70.12	69.73	70.15	70.73	70.37	71.40	71.55	
2	71.69	71.23	70.47	71.15	69.98	70.15	69.68	70.24	70.77	70.39	71.12	71.38	
3	71.65	70.85	70.45	71.35	70.93	70.33	69.68	70.26	70.75	70.34	71.12	71.36	
4	71.69	71.51	70.37	71.04	70.93	70.41	69.67	70.26	70.76	71.00	71.31	71.70	
5	70.46	70.39	70.32	70.77	70.93	70.43	70.26	70.62	70.28	71.08	71.37	71.57	
6	71.93	71.17	70.20	71.16	70.97	70.32	70.42	70.76	70.54	70.96	71.19	71.66	
7	71.62	71.04	70.05	71.16	71.03	70.97	70.77	70.36	70.75	71.03	70.66	71.22	
8	71.57	70.97	70.74	70.20	70.71	71.74	70.84	70.18	70.75	71.01	71.39	71.49	
9	71.63	70.98	70.65	70.09	70.43	71.71	70.32	71.17	70.88	70.93	71.54	71.40	
10	71.50	70.51	70.61	70.99	71.59	71.93	70.35	71.20	70.59	70.77	71.38	71.34	
11	71.65	70.57	70.62	70.81	71.61	73.52	70.00	71.23	70.69	71.13	71.28	71.21	
12	71.56	71.04	70.68	70.36	71.28	71.51	70.82	71.07	70.41	70.98	71.28	71.39	
13	70.84	70.25	70.51	70.18	71.71	70.55	70.27	71.29	70.23	71.08	71.29	71.13	
14	71.38	70.75	70.12	69.99	71.73	70.25	70.29	71.00	70.57	70.89	71.14	71.60	
15	70.87	70.71	70.81	70.01	71.32	70.10	70.29	70.44	70.63	70.99	71.31	71.36	
16	71.90	70.82	70.80	69.96	71.06	70.44	70.34	71.39	70.52	70.80	71.25	71.41	
17	72.18	70.05	70.69	69.74	71.73	70.53	70.11	71.30	70.57	70.46	71.37	71.43	
18	71.82	71.22	70.69	69.55	71.79	70.21	69.94	71.42	70.62	71.07	71.25	71.46	
19	71.50	71.32	70.74	69.51	71.89	70.08	70.69	71.51	70.33	71.02	71.22	71.41	
20	71.77	71.34	70.43	69.73	71.43	70.18	70.95	71.31	70.09	71.01	71.30	71.41	
21	71.79	71.41	70.25	70.07	71.28	70.36	70.93	71.01	70.55	71.01	71.03	71.43	
22	71.66	71.31	70.79	70.16	70.85	70.11	70.61	70.65	70.61	71.00	71.50	71.40	
23	72.03	70.80	70.67	70.13	70.76	69.99	70.26	71.22	70.51	70.84	71.39	71.36	
24	71.71	70.72	70.71	70.12	70.74	69.91	70.37	71.11	70.64	70.63	71.43	71.58	
25	71.63	70.78	70.68	70.11	70.59	69.86	70.13	71.18	70.61	71.34	71.37	71.48	
26	70.68	70.43	70.70	69.94	70.32	69.81	70.57	70.81	70.27	71.37	71.35	71.42	
27	71.94	70.61	70.52	70.35	70.29	69.78	70.53	70.86	70.10	71.46	71.45	71.47	
28	71.74	70.43	70.14	70.40	70.23	69.77	71.13	70.67	70.50	71.30	71.01	71.39	
29	71.73	70.42	70.79	70.35	70.15	69.88	71.15	70.29	70.63	71.36		71.48	
30	71.35	70.45	71.20	70.39	70.02	69.90	71.10	71.02	70.57	71.30		71.34	
31		70.20		70.36	70.17		70.47		70.55	71.04		71.49	
Mean	71.57	70.81	70.56	70.36	70.93	70.50	70.41	70.87	70.55	70.97	71.28	71.43	
Max	72.18	71.51	71.20	71.35	71.89	73.52	71.15	71.51	70.88	71.46	71.54	71.70	73.52
Min	70.46	70.05	70.05	69.51	69.98	69.77	69.67	70.15	70.09	70.34	70.66	71.13	69.51

Annual Max Momentary Gage Height 74.52 M (MSL), at 15.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 69.00 M (MSL), River Bed 67.37 M (MSL)
Left Bank Elevation 85.27 M (MSL)
Right Bank Elevation 84.86 M (MSL), Drainage Area 15718 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	219.70	91.25	58.00	157.00	46.30	34.00	11.03	36.25	96.25	55.30	190.00	214.75	
2	238.30	164.50	65.70	152.50	23.90	36.25	8.90	43.60	101.25	57.10	148.00	187.00	
3	231.50	111.25	63.50	182.50	121.25	51.70	8.90	45.40	98.75	52.60	148.00	184.00	
4	238.30	208.15	55.30	136.00	121.25	59.10	8.47	45.40	100.00	130.00	176.50	240.00	
5	64.60	57.10	50.80	101.25	121.25	61.30	45.40	82.50	47.20	142.00	185.50	218.05	
6	282.35	155.50	40.00	154.00	126.25	50.80	60.20	100.00	73.40	125.00	158.50	233.20	
7	226.40	136.00	28.75	154.00	134.50	126.25	101.25	54.40	98.75	134.50	87.50	163.00	
8	218.05	126.25	97.50	40.00	93.75	246.80	110.00	38.50	98.75	131.50	188.50	204.85	
9	228.10	127.50	86.25	31.75	61.30	241.70	50.80	155.50	115.00	121.25	213.10	190.00	
10	206.50	70.10	81.25	128.75	221.35	282.35	53.50	160.00	78.90	101.25	187.00	181.00	
11	231.50	76.70	82.50	106.25	224.70	620.00	25.00	164.50	91.25	149.50	172.00	161.50	
12	216.40	136.00	90.00	54.40	172.00	208.15	107.50	140.50	59.10	127.50	172.00	188.50	
13	110.00	44.50	70.10	38.50	241.70	74.50	46.30	173.50	42.70	142.00	173.50	149.50	
14	187.00	98.75	34.00	24.45	245.10	44.50	48.10	130.00	76.70	116.25	151.00	223.00	
15	113.75	93.75	106.25	25.75	178.00	32.50	48.10	62.40	83.75	128.75	176.50	184.00	
16	276.50	107.50	105.00	22.80	139.00	62.40	52.60	188.50	71.20	105.00	167.50	191.65	
17	331.10	28.75	91.25	11.45	245.10	72.30	33.25	175.00	76.70	64.60	185.50	194.95	
18	260.90	163.00	91.25	4.25	255.30	40.90	21.70	193.30	82.50	140.50	167.50	199.90	
19	206.50	178.00	97.50	3.25	274.55	31.00	91.25	208.15	51.70	133.00	163.00	191.65	
20	251.90	181.00	61.30	11.03	194.95	38.50	123.75	176.50	31.75	131.50	175.00	191.65	
21	255.30	191.65	44.50	30.25	172.00	54.40	121.25	131.50	74.50	131.50	134.50	194.95	
22	233.20	176.50	103.75	37.00	111.25	33.25	81.25	86.25	81.25	130.00	206.50	190.00	
23	301.85	105.00	88.75	34.75	100.00	24.45	45.40	163.00	70.10	110.00	188.50	184.00	
24	241.70	95.00	93.75	34.00	97.50	20.05	55.30	146.50	85.00	83.75	194.95	219.70	
25	228.10	102.50	90.00	33.25	78.90	17.30	34.75	157.00	81.25	181.00	185.50	203.20	
26	90.00	61.30	92.50	21.70	50.80	14.55	76.70	106.25	46.30	185.50	182.50	193.30	
27	284.30	81.25	71.20	53.50	48.10	13.15	72.30	112.50	32.50	199.90	198.25	201.55	
28	246.80	61.30	35.50	58.00	42.70	12.72	149.50	88.75	69.00	175.00	131.50	188.50	
29	245.10	60.20	103.75	53.50	36.25	18.40	152.50	48.10	83.75	184.00		203.20	
30	182.50	63.50	160.00	57.10	26.50	19.50	145.00	133.00	76.70	175.00		181.00	
31		40.00		54.40	37.75		65.70		74.50	136.00		204.85	
Total	6648.20	3393.75	2339.90	2007.33	4043.25	2642.77	2055.65	3546.75	2350.45	3980.75	4808.30	6056.40	43873.50 CMSDAY
Mean	221.61	109.48	78.00	64.75	130.43	88.09	66.31	118.23	75.82	128.41	171.73	195.37	120.20 CMS
Max	331.10	208.15	160.00	182.50	274.55	620.00	152.50	208.15	115.00	199.90	213.10	240.00	620.00 CMS
Min	64.60	28.75	28.75	3.25	23.90	12.72	8.47	36.25	31.75	52.60	87.50	149.50	3.25 CMS
Runoff	574.405	293.220	202.167	173.433	349.337	228.335	177.608	306.439	203.079	343.937	415.437	523.273	3790.670 MCM

Momentary Peak 876.80 CMS, at 74.52 M (MSL), at 15.00 Hours, on Sep 11, 1998

Runoff Yield 7.65 Liters/Second/Square KM, Momentary Peak Yield 55.783 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

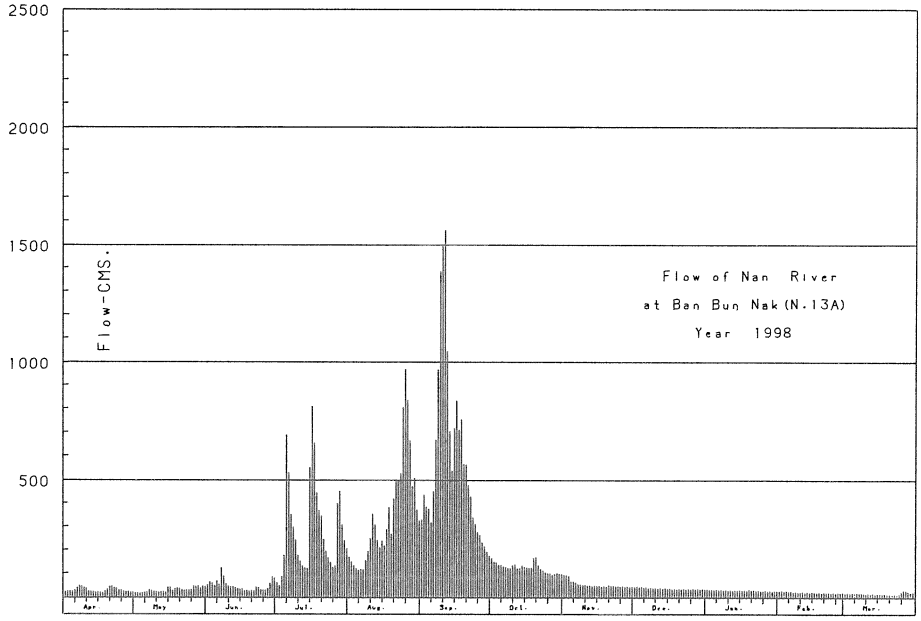
Nan River at Ban Bun Nak, Nan (N.13A)

Location	Lat. 18°-33'-12" N., Long. 100°-46'-08" E., on right bank about 2 kilometers upstream from station N.13, Ban Bun Nak, Amphoe Sa, Nan.
Drainage Area	8,784 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+177.40 m.(M.S.L)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+192.690 m.(M.S.L)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 101 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	178.25	178.21	178.50	178.58	178.90	179.42	178.87	178.54	178.43	178.33	178.27	178.19	
2	178.25	178.19	178.63	178.49	178.81	179.75	178.82	178.52	178.44	178.33	178.28	178.19	
3	178.28	178.19	178.57	178.51	178.75	179.59	178.80	178.52	178.43	178.32	178.27	178.19	
4	178.25	178.19	178.49	178.92	178.68	179.57	178.76	178.63	178.43	178.32	178.27	178.19	
5	178.32	178.21	178.65	180.52	178.65	179.39	178.75	178.65	178.41	178.32	178.26	178.19	
6	178.39	178.22	178.52	180.03	178.66	179.79	178.73	178.59	178.41	178.32	178.25	178.19	
7	178.49	178.31	179.12	179.50	178.66	180.46	178.71	178.54	178.39	178.31	178.24	178.19	
8	178.44	178.28	178.83	179.32	178.84	181.31	178.70	178.52	178.39	178.31	178.24	178.18	
9	178.41	178.26	178.56	179.15	178.98	182.43	178.68	178.51	178.39	178.30	178.23	178.18	
10	178.36	178.23	178.45	178.93	179.17	182.70	178.75	178.50	178.38	178.30	178.23	178.17	
11	178.28	178.23	178.43	178.82	179.50	182.88	178.76	178.49	178.38	178.30	178.23	178.17	
12	178.25	178.23	178.46	178.74	179.36	181.52	178.69	178.48	178.38	178.29	178.22	178.16	
13	178.24	178.24	178.40	178.69	179.14	180.56	178.68	178.47	178.37	178.29	178.22	178.16	
14	178.23	178.23	178.38	178.68	179.04	180.06	178.75	178.47	178.37	178.30	178.22	178.15	
15	178.22	178.40	178.35	180.10	179.13	180.60	178.71	178.47	178.36	178.30	178.22	178.15	
16	178.21	178.40	178.35	180.88	179.07	180.95	178.71	178.46	178.36	178.30	178.21	178.15	
17	178.21	178.30	178.29	180.41	179.29	180.59	178.69	178.45	178.35	178.30	178.21	178.15	
18	178.26	178.35	178.28	179.78	179.58	180.72	178.70	178.45	178.35	178.29	178.21	178.14	
19	178.35	178.40	178.27	179.54	179.23	180.14	178.87	178.45	178.35	178.32	178.21	178.14	
20	178.44	178.35	178.28	179.47	179.70	180.14	178.90	178.49	178.35	178.31	178.21	178.13	
21	178.45	178.33	178.27	179.16	179.94	179.87	178.74	178.48	178.35	178.30	178.20	178.13	
22	178.41	178.30	178.43	178.99	179.93	179.73	178.68	178.47	178.35	178.29	178.20	178.13	
23	178.36	178.30	178.39	178.88	180.02	179.45	178.63	178.46	178.35	178.29	178.20	178.13	
24	178.32	178.32	178.33	178.81	180.87	179.37	178.60	178.45	178.35	178.28	178.20	178.14	
25	178.29	178.31	178.29	178.71	181.32	179.26	178.58	178.45	178.35	178.28	178.20	178.24	
26	178.25	178.46	178.29	178.73	180.95	179.21	178.56	178.45	178.35	178.28	178.20	178.29	
27	178.25	178.45	178.38	179.64	180.44	179.11	178.54	178.44	178.35	178.27	178.20	178.29	
28	178.24	178.45	178.58	179.79	179.86	179.05	178.55	178.43	178.35	178.27	178.20	178.23	
29	178.23	178.39	178.82	179.36	179.96	178.98	178.58	178.43	178.34	178.26		178.21	
30	178.21	178.45	178.77	179.13	179.56	178.91	178.55	178.43	178.34	178.26		178.20	
31		178.45		179.02	179.41		178.55		178.34	178.26		178.19	
Mean	178.30	178.31	178.48	179.27	179.46	180.18	178.70	178.49	178.37	178.30	178.23	178.18	
Max	178.49	178.46	179.12	180.88	181.32	182.88	178.90	178.65	178.44	178.33	178.28	178.29	182.88
Min	178.21	178.19	178.27	178.49	178.65	178.91	178.54	178.43	178.34	178.26	178.20	178.13	178.13

Annual Max Momentary Gage Height 183.06 M (MSL), at 6.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 177.40 M (MSL), River Bed 176.09 M (MSL)
Left Bank Elevation 187.80 M (MSL)
Right Bank Elevation 192.62 M (MSL), Drainage Area 8784 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	27.0	22.6	54.5	63.3	175.0	331.4	167.5	98.6	46.8	35.8	29.2	20.4	
2	27.0	20.4	68.8	53.4	152.5	439.5	155.0	94.8	47.9	35.8	30.3	20.4	
3	30.3	20.4	62.2	92.9	139.0	386.7	150.0	94.8	46.8	34.7	29.2	20.4	
4	27.0	20.4	53.4	180.6	124.4	380.1	141.2	68.8	46.8	34.7	29.2	20.4	
5	34.7	22.6	71.0	693.6	119.0	321.9	139.0	71.0	44.6	34.7	28.1	20.4	
6	42.4	23.7	56.7	531.9	120.8	452.7	134.6	64.4	44.6	34.7	27.0	20.4	
7	53.4	33.6	129.2	357.0	120.8	673.8	130.2	58.9	42.4	33.6	25.9	20.4	
8	47.9	30.3	91.1	300.2	160.0	968.7	128.0	56.7	42.4	33.6	25.9	19.3	
9	44.6	28.1	61.1	248.0	197.4	1388.7	124.4	55.6	42.4	32.5	24.8	19.3	
10	39.1	24.8	49.0	183.4	254.0	1494.0	139.0	54.5	41.3	32.5	24.8	18.2	
11	30.3	24.8	46.8	155.0	357.0	1564.2	141.2	53.4	41.3	32.5	24.8	18.2	
12	27.0	24.8	50.1	136.8	312.6	1046.4	126.2	52.3	41.3	31.4	23.7	17.1	
13	25.9	25.9	43.5	126.2	245.0	706.8	124.4	51.2	40.2	31.4	23.7	17.1	
14	24.8	24.8	41.3	124.4	215.0	541.8	139.0	51.2	40.2	32.5	23.7	16.0	
15	23.7	43.5	38.0	555.0	242.0	720.0	130.2	51.2	39.1	32.5	23.7	16.0	
16	22.6	43.5	38.0	815.2	224.0	839.5	130.2	50.1	39.1	32.5	22.6	16.0	
17	22.6	32.5	31.4	657.3	290.9	716.7	126.2	49.0	38.0	32.5	22.6	16.0	
18	28.1	38.0	30.3	449.4	383.4	760.8	128.0	49.0	38.0	31.4	22.6	14.9	
19	38.0	43.5	29.2	370.2	272.3	568.2	167.5	49.0	38.0	34.7	22.6	14.9	
20	47.9	38.0	30.3	347.4	423.0	568.2	175.0	53.4	38.0	33.6	22.6	13.8	
21	49.0	35.8	29.2	251.0	502.2	479.1	136.8	52.3	38.0	32.5	21.5	13.8	
22	44.6	32.5	46.8	200.2	498.9	432.9	124.4	51.2	38.0	31.4	21.5	13.8	
23	39.1	32.5	42.4	170.0	528.6	341.0	115.4	50.1	38.0	31.4	21.5	13.8	
24	34.7	34.7	35.8	152.5	811.8	315.7	110.0	49.0	38.0	30.3	21.5	14.9	
25	31.4	33.6	31.4	130.2	972.4	281.6	106.2	49.0	38.0	30.3	21.5	25.9	
26	27.0	50.1	31.4	134.6	839.5	266.1	102.4	49.0	38.0	30.3	21.5	31.4	
27	27.0	49.0	41.3	403.2	667.2	236.0	98.6	47.9	38.0	29.2	21.5	31.4	
28	25.9	49.0	63.3	452.7	475.8	218.0	100.5	46.8	38.0	29.2	21.5	24.8	
29	24.8	42.4	89.9	312.6	508.8	197.4	106.2	46.8	36.9	28.1		22.6	
30	22.6	49.0	84.2	242.0	376.8	177.8	100.5	46.8	36.9	28.1		21.5	
31		49.0		209.0	328.2		100.5		36.9	28.1		20.4	
Total	990.4	1043.8	1571.6	9099.2	11038.3	17815.7	3998.3	1716.8	1253.9	996.5	679.0	593.9	50797.4 CMSDAY
Mean	33.0	33.7	52.4	293.5	356.1	593.9	129.0	57.2	40.4	32.1	24.3	19.2	139.2 CMS
Max	53.4	50.1	129.2	815.2	972.4	1564.2	175.0	98.6	47.9	35.8	30.3	31.4	1564.2 CMS
Min	22.6	20.4	29.2	53.4	119.0	177.8	98.6	46.8	36.9	28.1	21.5	13.8	13.8 CMS
Runoff	85.57	90.18	135.79	786.17	953.71	1539.28	345.45	148.33	108.34	86.10	58.67	51.31	4388.90 MCM

Momentary Peak 1634.40 CMS, at 183.06 M (MSL), at 6.00 Hours, on Sep 11, 1998

Runoff Yield 15.84 Liters/Second/Square KM, Momentary Peak Yield 186.066 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

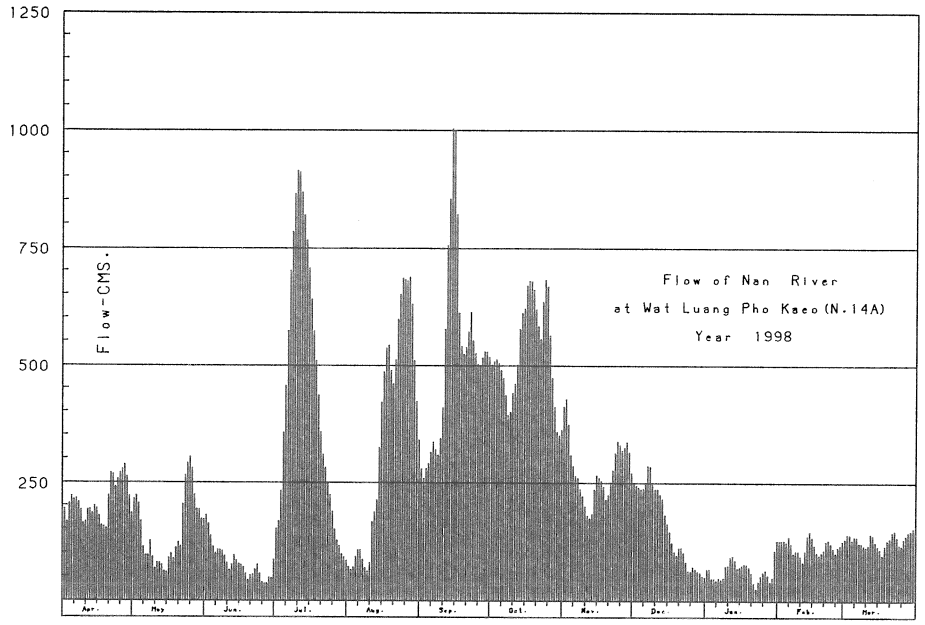
Nan River at Wat Luang Pho Kaeo, Nakhon Sawan (N.14A)

Location	Lat. 15°-53'-56" N., Long. 100°-18'-34" E., on right bank in front of Wat Luang Pho Kaeo about 1 km. upstream from station N.14, Amphoe Chum Saeng, Nakhon Sawan.
Drainage Area	33,182 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+19.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank in front of automatic gage building.
Elevation	+27.842 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1971 to date.
Rating Operation	
Period of Rating	1973 - 1979, 1991 to date.
Rated by Float	-
Rated by Current Meter	1972 - 1980, 1991 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Naresuan Dam. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	20.70	20.89	20.58	20.32	19.47	21.38	22.79	22.27	21.16	19.41	20.07	20.12	
2	20.47	20.96	20.43	20.48	19.37	21.23	22.82	22.36	21.12	19.40	20.07	20.21	
3	20.82	20.82	20.17	21.03	19.46	21.40	22.85	22.04	21.10	19.14	20.09	20.21	
4	20.94	20.47	19.94	21.93	19.70	21.47	22.80	21.61	21.06	19.12	20.03	20.09	
5	20.89	19.94	19.79	22.54	19.87	21.65	22.73	21.44	21.07	19.07	20.17	20.17	
6	20.90	19.73	19.86	23.17	19.86	21.79	22.63	21.27	21.15	19.13	20.00	20.15	
7	20.84	19.75	19.87	23.80	19.65	21.68	22.42	21.25	21.43	19.10	19.79	20.03	
8	20.68	20.07	19.83	24.18	19.44	21.61	22.15	21.06	21.43	19.14	19.83	20.01	
9	20.44	19.71	19.73	24.53	19.33	21.85	22.20	20.95	21.17	19.49	19.84	19.97	
10	20.46	19.43	19.55	24.75	19.55	22.25	22.44	20.75	21.06	19.49	19.71	19.92	
11	20.70	19.56	19.39	24.73	20.47	23.19	22.56	20.58	21.07	19.71	19.59	19.98	
12	20.70	19.57	19.51	24.55	20.64	24.04	22.79	20.54	20.98	19.72	19.83	20.23	
13	20.63	19.50	19.75	24.34	20.88	24.49	23.19	20.61	20.89	19.64	20.17	20.18	
14	20.76	19.34	19.62	24.09	21.72	25.13	23.36	21.07	20.60	19.42	20.27	20.05	
15	20.71	19.30	19.54	23.82	22.33	25.12	23.42	21.29	20.42	19.46	20.15	19.94	
16	20.58	19.67	19.50	23.52	22.71	24.34	23.66	21.24	20.27	19.49	19.96	19.87	
17	20.40	19.78	19.46	23.16	22.97	23.37	23.70	21.20	20.04	19.54	19.81	19.75	
18	20.36	19.65	19.26	22.83	23.01	22.99	23.70	21.10	19.82	19.51	19.73	19.95	
19	20.34	19.92	19.09	22.42	22.72	22.91	23.61	20.89	19.75	19.46	19.80	20.09	
20	20.95	20.03	19.22	21.93	22.56	22.98	23.40	20.96	19.90	19.28	19.85	20.12	
21	21.33	19.94	19.24	21.61	22.84	23.16	23.22	21.17	19.91	18.99	20.05	20.25	
22	21.30	20.80	19.40	21.41	23.30	23.37	23.07	21.37	19.81	18.83	20.10	20.29	
23	21.11	21.28	19.51	21.16	23.57	23.06	23.49	21.64	19.59	19.04	20.02	20.16	
24	21.23	21.48	19.28	20.96	23.73	22.91	23.71	21.81	19.35	19.19	19.89	19.98	
25	21.32	21.58	19.03	20.65	23.71	22.79	23.65	21.75	19.35	19.32	19.80	19.97	
26	21.38	21.39	18.96	20.32	23.70	22.77	23.11	21.67	19.45	19.36	19.93	20.11	
27	21.46	20.96	19.00	20.09	23.74	22.87	22.64	21.72	19.41	19.23	19.96	20.19	
28	21.27	20.71	19.14	19.95	23.46	22.94	22.26	21.79	19.32	19.03	20.06	20.25	
29	20.94	20.69	19.15	19.78	22.84	22.93	21.94	21.65	19.31	19.14		20.29	
30	20.62	20.52	19.63	19.69	22.33	22.87	21.89	21.32	19.18	19.86		20.33	
31		20.50		19.61	21.83		21.96		19.16	20.09		20.36	
Mean	20.84	20.26	19.55	22.17	21.64	22.82	22.91	21.35	20.30	19.35	19.95	20.10	
Max	21.46	21.58	20.58	24.75	23.74	25.13	23.71	22.36	21.43	20.09	20.27	20.36	25.13
Min	20.34	19.30	18.96	19.61	19.33	21.23	21.89	20.54	19.16	18.83	19.59	19.75	18.83

Annual Max Momentary Gage Height 25.19 M (MSL), at 6.00 Hours, on Sep 15, 1998
Zero Gage at Bottom Elevation 19.00 M (MSL), River Bed 15.89 M (MSL)
Left Bank Elevation 28.41 M (MSL)
Right Bank Elevation 27.72 M (MSL), Drainage Area 33182 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	194.6	215.9	181.2	152.7	72.9	279.5	502.2	413.3	250.0	67.9	127.2	132.1	
2	168.8	224.5	164.4	170.0	64.9	259.4	507.8	427.9	244.7	67.0	127.2	141.4	
3	208.0	208.0	137.2	233.3	72.1	282.2	513.6	375.8	242.0	48.4	129.1	141.4	
4	222.0	168.8	115.3	357.9	93.2	291.6	504.0	310.5	237.0	46.9	123.6	129.1	
5	215.9	115.3	101.5	457.2	108.8	316.3	491.0	287.6	238.2	43.4	137.2	137.2	
6	217.0	96.0	107.9	574.8	107.9	336.9	472.5	264.8	248.7	47.6	120.8	135.2	
7	210.3	97.8	108.8	702.1	88.6	320.7	437.7	262.1	286.2	45.5	101.5	123.6	
8	192.4	127.2	105.2	786.3	70.4	310.5	393.7	237.0	286.2	48.4	105.2	121.7	
9	165.5	94.1	96.0	865.1	62.0	345.7	401.9	223.3	251.4	74.6	106.1	118.0	
10	167.7	69.6	79.7	915.9	79.7	410.0	440.9	200.2	237.0	74.6	94.1	113.4	
11	194.6	80.6	66.3	911.3	168.8	578.7	460.5	181.2	238.2	94.1	83.1	119.0	
12	194.6	81.4	76.4	869.7	187.9	755.3	502.2	176.7	227.0	95.0	105.2	143.4	
13	186.8	75.5	97.8	821.7	214.8	855.8	578.7	184.5	215.9	87.7	137.2	138.3	
14	201.3	62.7	85.8	766.4	326.6	1003.8	611.2	238.2	183.4	68.7	147.6	125.4	
15	195.7	59.8	78.9	706.6	423.0	1001.5	622.7	267.5	163.2	72.1	135.2	115.3	
16	181.2	90.4	75.5	642.2	487.3	821.7	671.6	260.8	147.6	74.6	117.1	108.8	
17	161.0	100.6	72.1	572.9	536.5	613.1	680.0	255.4	124.5	78.9	103.3	97.8	
18	156.9	88.6	57.0	509.7	544.2	540.4	680.0	242.0	104.2	76.4	96.0	116.2	
19	154.8	113.4	44.8	437.7	489.2	525.1	661.1	215.9	97.8	72.1	102.4	129.1	
20	223.3	123.6	54.1	357.9	460.5	538.5	618.9	224.5	111.6	58.4	107.0	132.1	
21	272.8	115.3	55.5	310.5	511.7	572.9	584.4	251.4	112.5	37.6	125.4	145.5	
22	268.8	205.8	67.0	283.5	599.7	613.1	555.7	278.2	103.3	26.2	130.0	149.6	
23	243.3	266.1	76.4	250.0	652.7	553.8	636.1	314.9	83.1	41.2	122.6	136.2	
24	259.4	292.9	58.4	224.5	686.6	525.1	682.2	339.8	63.4	52.0	110.7	119.0	
25	271.5	306.3	40.5	189.0	682.2	502.2	669.5	331.0	63.4	61.3	102.4	118.0	
26	279.5	280.9	35.5	152.7	680.0	498.5	563.3	319.3	71.3	64.1	114.4	131.0	
27	290.2	224.5	38.3	129.1	688.9	517.4	474.4	326.6	67.9	54.8	117.1	139.3	
28	264.8	195.7	48.4	116.2	630.3	530.8	411.6	336.9	61.3	40.5	126.3	145.5	
29	222.0	193.5	49.1	100.6	511.7	528.9	359.5	316.3	60.5	48.4		149.6	
30	185.6	174.4	86.8	92.3	423.0	517.4	351.5	271.5	51.2	107.9		153.8	
31		172.2		84.9	342.7		362.8		49.8	129.1		156.9	
Total	6370.3	4721.4	2461.8	13744.7	11068.8	15746.8	16403.2	8335.1	4922.5	2005.4	3255.0	4062.9	93097.9 CMSDAY
Mean	212.3	152.3	82.1	443.4	357.1	524.9	529.1	277.8	158.8	64.7	116.2	131.1	255.1 CMS
Max	290.2	306.3	181.2	915.9	688.9	1003.8	682.2	427.9	286.2	129.1	147.6	156.9	1003.8 CMS
Min	154.8	59.8	35.5	84.9	62.0	259.4	351.5	176.7	49.8	26.2	83.1	97.8	26.2 CMS
Runoff	550.39	407.93	212.70	1187.54	956.34	1360.52	1417.24	720.15	425.30	173.27	281.23	351.03	8043.66 MCM

Momentary Peak 1017.69 CMS, at 25.19 M (MSL), at 6.00 Hours, on Sep 15, 1998

Runoff Yield 7.69 Liters/Second/Square KM, Momentary Peak Yield 30.670 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

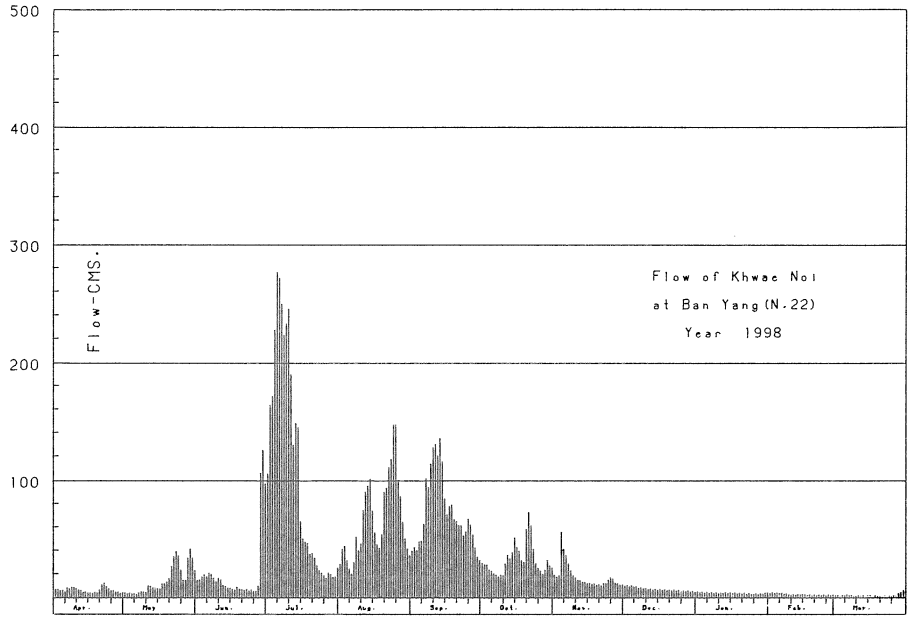
Khawe Noi at Ban Yang, Phitsanulok (N.22)

Location	Lat. 17°-01'-57" N., Long. 100°-22'-23" E., on left bank about 1 kilometer downstream from District Forestry Office, Amphoe Wat Bot, Phitsanulok.
Drainage Area	4,841 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+42.67 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of the Meteorological station.
Elevation	+51.975 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1963 to date.
Rating Operation	
Period of Rating	1963-1974, 1996 to date.
Rated by Float	-
Rated by Current Meter	1963-1974, 1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	42.96	42.75	43.30	45.41	43.75	44.02	43.77	43.47	43.11	42.81	42.76	42.62	
2	42.93	42.74	43.29	46.35	44.06	44.10	43.76	43.39	43.10	42.81	42.77	42.59	
3	42.91	42.73	43.42	46.47	44.14	44.05	43.73	43.46	43.09	42.81	42.78	42.58	
4	42.88	42.72	43.46	47.24	43.83	44.21	43.62	44.42	43.09	42.80	42.76	42.58	
5	42.84	42.70	43.43	47.84	43.62	44.24	43.57	44.08	43.08	42.79	42.76	42.61	
6	43.01	42.70	43.51	47.79	43.51	44.58	43.52	43.94	43.06	42.78	42.74	42.62	
7	43.00	42.75	43.49	47.52	43.81	45.34	43.46	43.78	43.04	42.78	42.72	42.61	
8	43.03	42.87	43.36	47.19	44.31	45.19	43.43	43.58	43.02	42.77	42.70	42.61	
9	43.05	42.80	43.26	47.31	44.05	45.55	43.45	43.46	43.01	42.76	42.68	42.59	
10	42.98	42.83	43.39	47.48	44.17	45.80	43.46	43.38	42.99	42.76	42.66	42.58	
11	42.94	43.11	43.29	46.73	44.82	45.83	43.77	43.32	42.97	42.76	42.65	42.57	
12	42.89	43.07	43.13	45.82	45.13	45.67	43.94	43.28	42.96	42.76	42.65	42.58	
13	42.83	43.04	43.06	46.13	45.21	45.93	43.88	43.25	42.95	42.77	42.65	42.58	
14	42.81	43.02	43.03	46.06	45.32	45.60	43.99	43.21	42.95	42.77	42.65	42.60	
15	42.79	42.97	42.99	44.63	44.82	45.03	44.29	43.20	42.94	42.77	42.64	42.58	
16	42.73	42.99	42.95	44.27	44.41	44.74	44.11	43.18	42.94	42.76	42.63	42.57	
17	42.76	43.15	42.94	44.22	44.17	44.90	44.02	43.17	42.94	42.75	42.63	42.56	
18	42.78	43.19	43.04	44.18	44.08	44.91	43.85	43.16	42.93	42.74	42.63	42.55	
19	42.80	43.22	42.99	43.98	44.36	44.67	43.80	43.14	42.92	42.73	42.62	42.55	
20	42.91	43.37	42.93	43.98	45.13	44.62	44.48	43.13	42.91	42.73	42.62	42.54	
21	43.15	43.69	42.92	43.90	45.18	44.54	44.80	43.12	42.91	42.73	42.61	42.53	
22	43.18	43.93	42.94	43.71	45.51	44.55	44.53	43.17	42.91	42.72	42.62	42.54	
23	43.09	44.03	42.90	43.60	45.62	44.35	44.06	43.20	42.91	42.72	42.62	42.54	
24	42.97	43.93	42.91	43.51	46.11	44.41	43.79	43.29	42.90	42.71	42.62	42.54	
25	42.91	43.61	42.87	43.46	46.10	44.68	43.67	43.41	42.89	42.71	42.63	42.53	
26	42.88	43.28	42.83	43.35	45.30	44.55	43.57	43.33	42.88	42.70	42.63	42.55	
27	42.84	43.31	43.10	43.53	45.06	44.37	43.50	43.22	42.87	42.69	42.62	42.55	
28	42.79	43.88	45.41	43.47	44.62	44.08	43.59	43.16	42.86	42.68	42.61	42.74	
29	42.76	44.08	45.76	43.41	44.27	43.92	43.84	43.14	42.85	42.71		42.78	
30	42.76	43.88	45.24	43.39	44.08	43.83	43.73	43.12	42.84	42.74		42.92	
31		43.58		43.67	43.95		43.64		42.83	42.75		43.55	
Mean	42.91	43.22	43.37	45.15	44.60	44.74	43.83	43.37	42.96	42.75	42.67	42.63	
Max	43.18	44.08	45.76	47.84	46.11	45.93	44.80	44.42	43.11	42.81	42.78	43.55	47.84
Min	42.73	42.70	42.83	43.35	43.51	43.83	43.43	43.12	42.83	42.68	42.61	42.53	42.53

Annual Max Momentary Gage Height 48.03 M (MSL), at 18.00 Hours, on Jul 5, 1998
Zero Gage at Bottom Elevation 42.67 M (MSL), River Bed 42.18 M (MSL)
Left Bank Elevation 51.98 M (MSL)
Right Bank Elevation 51.08 M (MSL), Drainage Area 4841 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.72	4.38	15.55	106.55	28.88	39.85	29.53	20.10	10.99	5.17	4.50	2.75	
2	7.21	4.25	15.30	164.12	41.55	43.25	29.20	17.75	10.75	5.17	4.63	2.42	
3	6.87	4.13	18.60	172.40	44.95	41.13	28.23	19.80	10.51	5.17	4.75	2.33	
4	6.36	4.00	19.80	228.00	31.78	47.93	24.65	56.85	10.51	5.00	4.50	2.33	
5	5.68	3.75	18.90	276.90	24.65	49.20	23.10	42.40	10.28	4.88	4.50	2.63	
6	8.63	3.75	21.30	272.65	21.30	63.65	21.60	36.45	9.81	4.75	4.25	2.75	
7	8.40	4.38	20.70	249.90	30.93	102.70	19.80	29.85	9.34	4.75	4.00	2.63	
8	9.10	6.19	17.02	224.25	52.18	94.45	18.90	23.40	8.87	4.63	3.75	2.63	
9	9.57	5.00	14.57	233.25	41.13	114.25	19.50	19.80	8.63	4.50	3.50	2.42	
10	8.06	5.51	17.75	246.60	46.22	129.00	19.80	17.51	8.23	4.50	3.25	2.33	
11	7.38	10.99	15.30	190.60	75.00	130.80	29.53	16.04	7.89	4.50	3.13	2.25	
12	6.53	10.04	11.46	130.20	91.15	121.20	36.45	15.06	7.72	4.50	3.13	2.33	
13	5.51	9.34	9.81	149.45	95.55	136.80	33.90	14.32	7.55	4.63	3.13	2.33	
14	5.17	8.87	9.10	144.90	101.60	117.00	38.58	13.34	7.55	4.63	3.13	2.50	
15	4.88	7.89	8.23	65.93	75.00	85.65	51.33	13.10	7.38	4.63	3.00	2.33	
16	4.13	8.23	7.55	50.48	56.43	71.15	43.68	12.63	7.38	4.50	2.88	2.25	
17	4.50	11.93	7.38	48.35	46.22	79.00	39.85	12.39	7.38	4.38	2.88	2.16	
18	4.75	12.86	9.34	46.65	42.40	79.50	32.62	12.16	7.21	4.25	2.88	2.08	
19	5.00	13.59	8.23	38.15	54.30	67.82	30.50	11.69	7.04	4.13	2.75	2.08	
20	6.87	17.26	7.21	38.15	91.15	65.45	59.40	11.46	6.87	4.13	2.75	1.99	
21	11.93	26.92	7.04	34.75	93.90	61.95	74.00	11.22	6.87	4.13	2.63	1.90	
22	12.63	36.03	7.38	27.58	112.05	62.38	61.53	12.39	6.87	4.00	2.75	1.99	
23	10.51	40.27	6.70	24.00	118.20	53.87	41.55	13.10	6.87	4.00	2.75	1.99	
24	7.89	36.03	6.87	21.30	148.15	56.43	30.18	15.30	6.70	3.88	2.75	1.99	
25	6.87	24.33	6.19	19.80	147.50	68.30	26.27	18.30	6.53	3.88	2.88	1.90	
26	6.36	15.06	5.51	16.77	100.50	62.38	23.10	16.29	6.36	3.75	2.88	2.08	
27	5.68	15.80	10.75	21.90	87.30	54.73	21.00	13.59	6.19	3.62	2.75	2.08	
28	4.88	33.90	106.55	20.10	65.45	42.40	23.70	12.16	6.02	3.50	2.63	4.25	
29	4.50	42.40	126.60	18.30	50.48	35.60	32.20	11.69	5.85	3.88		4.75	
30	4.50	33.90	97.20	17.75	42.40	31.78	28.23	11.22	5.68	4.25		7.04	
31		23.40		26.27	36.88		25.30		5.51	4.38		22.50	
Total	208.07	484.38	653.89	3326.00	2095.18	2209.60	1017.21	551.36	241.34	136.07	93.31	99.99	11116.40 CMSDAY
Mean	6.94	15.63	21.80	107.29	67.59	73.65	32.81	18.38	7.79	4.39	3.33	3.23	30.46 CMS
Max	12.63	42.40	126.60	276.90	148.15	136.80	74.00	56.85	10.99	5.17	4.75	22.50	276.90 CMS
Min	4.13	3.75	5.51	16.77	21.30	31.78	18.90	11.22	5.51	3.50	2.63	1.90	1.90 CMS
Runoff	17.977	41.850	56.496	287.366	181.024	190.909	87.887	47.638	20.852	11.756	8.062	8.639	960.457 MCM

Momentary Peak 293.20 CMS, at 48.03 M (MSL), at 18.00 Hours, on Jul 5, 1998
Runoff Yield 6.29 Liters/Second/Square KM, Momentary Peak Yield 60.566 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

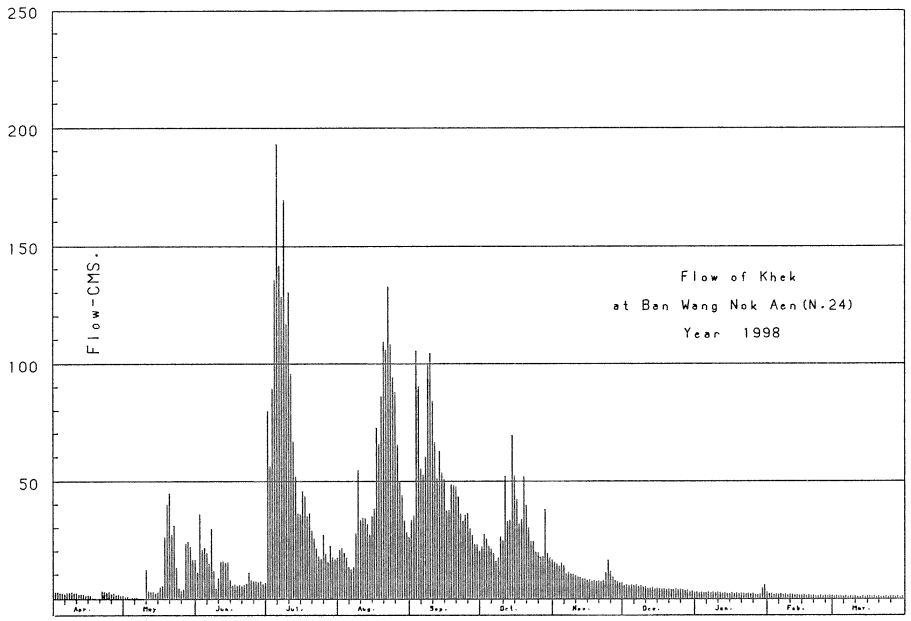
Khek River at Ban Wang Nok Aen, Phitsanulok (N.24)

Location	Lat. 16°-50'-35" N., Long. 100°-31'-20" E., on right bank about 2 kilometers downstream from Sakunothayan Fall, Amphoe Wang Thong, Phitsanulok.
Drainage Area	1,861 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	Near the gage site.
Elevation	+14.536 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1965 to date.
Rating Operation	
Period of Rating	1965-1974, 1980 to date.
Rated by Float	-
Rated by Current Meter	1965-1974, 1980 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 26 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.03	0.74	1.70	4.74	2.25	2.87	2.31	1.96	1.30	1.00	0.95	0.80	
2	1.00	0.69	2.99	3.86	2.28	2.96	2.58	1.90	1.30	1.00	0.93	0.80	
3	1.00	0.67	2.24	5.08	2.18	5.63	2.50	1.87	1.30	1.00	0.90	0.80	
4	0.93	0.65	2.30	6.55	2.05	5.10	2.34	1.92	1.30	1.00	0.90	0.79	
5	0.93	0.63	2.18	8.16	1.84	3.83	2.26	1.88	1.30	1.00	0.90	0.78	
6	0.96	0.64	1.91	6.74	1.76	3.71	2.17	1.67	1.29	1.00	0.89	0.77	
7	1.00	0.59	2.71	6.34	1.84	4.03	1.97	1.69	1.27	1.00	0.88	0.77	
8	1.00	0.58	1.74	7.52	2.60	5.43	2.07	1.67	1.26	0.99	0.88	0.77	
9	0.97	0.56	1.15	5.99	3.79	5.60	2.53	1.63	1.24	0.99	0.87	0.77	
10	0.93	1.78	1.51	6.41	2.89	4.89	2.46	1.60	1.22	0.98	0.87	0.76	
11	0.90	1.07	1.97	5.29	2.92	4.24	3.69	1.59	1.20	0.97	0.87	0.75	
12	0.89	1.03	1.96	4.27	2.92	3.65	2.84	1.55	1.19	0.97	0.86	0.75	
13	0.86	1.00	1.94	3.70	2.79	4.12	2.89	1.53	1.19	0.97	0.85	0.75	
14	0.84	0.97	1.94	3.00	2.58	3.75	4.37	1.50	1.16	0.96	0.85	0.75	
15	0.81	0.97	1.48	3.00	2.96	3.65	3.70	1.48	1.16	0.95	0.85	0.76	
16	0.78	1.22	1.30	3.42	3.10	3.07	3.28	1.47	1.15	0.95	0.84	0.76	
17	0.67	1.25	1.30	3.35	4.48	3.07	2.79	1.45	1.15	0.95	0.84	0.76	
18	0.60	2.53	1.28	2.95	4.21	3.54	2.90	1.45	1.13	0.95	0.83	0.76	
19	0.59	3.20	1.28	3.00	4.96	3.54	3.70	1.45	1.13	0.94	0.82	0.75	
20	0.56	3.39	1.28	2.67	5.74	3.50	3.19	1.43	1.13	0.93	0.82	0.75	
21	1.07	2.57	1.28	2.49	5.63	3.34	2.72	1.41	1.13	0.92	0.81	0.75	
22	1.00	2.78	1.37	2.28	6.48	3.01	2.43	1.47	1.13	0.92	0.81	0.75	
23	1.00	1.83	1.68	2.08	5.72	2.85	2.45	1.70	1.13	0.92	0.81	0.75	
24	0.99	1.20	1.46	2.04	5.23	2.97	2.20	2.02	1.12	0.92	0.81	0.75	
25	0.94	1.03	1.45	2.58	5.01	3.02	2.17	1.71	1.11	0.91	0.81	0.75	
26	0.91	1.14	1.42	2.14	4.22	2.70	2.09	1.56	1.10	0.90	0.80	0.75	
27	0.86	2.38	1.42	1.96	3.60	2.57	2.08	1.47	1.09	0.89	0.80	0.75	
28	0.83	2.42	1.42	2.33	3.35	2.38	3.08	1.42	1.07	0.87	0.80	0.76	
29	0.81	2.33	1.34	2.06	2.87	2.36	2.18	1.40	1.03	1.20		0.75	
30	0.77	2.00	1.37	2.03	2.62	2.23	2.05	1.37	1.03	1.29		0.75	
31		2.00		2.05	2.53		2.00		1.02	1.01		0.75	
Mean	0.88	1.48	1.68	3.87	3.46	3.59	2.64	1.61	1.17	0.98	0.85	0.76	
Max	1.07	3.39	2.99	8.16	6.48	5.63	4.37	2.02	1.30	1.29	0.95	0.80	8.16
Min	0.56	0.56	1.15	1.96	1.76	2.23	1.97	1.37	1.02	0.87	0.80	0.75	0.56

Annual Max Momentary Gage Height 8.40 M (A.D), at 6.00 Hours, on Jul 5, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.22 M (A.D)
Left Bank Elevation 13.77 M (A.D)
Right Bank Elevation 15.47 M (A.D), Drainage Area 1861 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.10	1.00	11.40	80.42	21.06	33.49	22.16	15.80	5.90	2.80	2.43	1.30	
2	2.80	0.75	36.04	56.50	21.61	35.40	27.49	14.75	5.90	2.80	2.28	1.30	
3	2.80	0.65	20.88	89.94	19.78	105.93	25.85	14.23	5.90	2.80	2.05	1.30	
4	2.28	0.55	21.97	135.56	17.41	90.50	22.70	15.10	5.90	2.80	2.05	1.25	
5	2.28	0.45	19.78	193.50	13.70	55.75	21.24	14.40	5.90	2.80	2.05	1.20	
6	2.50	0.50	14.93	141.97	12.36	52.75	19.60	10.92	5.79	2.80	1.97	1.15	
7	2.80	0.27	30.15	128.55	13.70	60.83	15.98	11.24	5.57	2.80	1.90	1.15	
8	2.80	0.24	12.04	169.50	27.90	100.03	17.78	10.92	5.46	2.73	1.90	1.15	
9	2.58	0.18	4.30	117.18	54.75	105.00	26.46	10.28	5.24	2.73	1.82	1.15	
10	2.28	12.68	8.54	130.84	33.91	84.62	25.03	9.80	5.02	2.65	1.82	1.10	
11	2.05	3.50	15.98	95.93	34.55	66.60	52.25	9.66	4.80	2.58	1.82	1.05	
12	1.97	3.10	15.80	67.43	34.55	51.25	32.85	9.10	4.70	2.58	1.75	1.05	
13	1.75	2.80	15.45	52.50	31.79	63.30	33.91	8.82	4.70	2.58	1.68	1.05	
14	1.60	2.58	15.45	36.25	27.49	53.75	70.17	8.40	4.40	2.50	1.68	1.05	
15	1.37	2.58	8.12	36.25	35.40	51.25	52.50	8.12	4.40	2.43	1.68	1.10	
16	1.20	5.02	5.90	45.72	38.37	37.74	42.40	7.98	4.30	2.43	1.60	1.10	
17	0.65	5.35	5.90	44.06	73.20	37.74	31.79	7.70	4.30	2.43	1.60	1.10	
18	0.30	26.46	5.68	35.19	65.77	48.58	34.13	7.70	4.10	2.43	1.52	1.10	
19	0.27	40.50	5.68	36.25	86.58	48.58	52.50	7.70	4.10	2.35	1.45	1.05	
20	0.18	45.01	5.68	29.34	109.34	47.63	40.29	7.42	4.10	2.28	1.45	1.05	
21	3.50	27.28	5.68	25.64	105.93	43.82	30.36	7.14	4.10	2.20	1.37	1.05	
22	2.80	31.59	6.67	21.61	133.20	36.46	24.41	7.98	4.10	2.20	1.37	1.05	
23	2.80	13.53	11.08	17.96	108.72	33.06	24.82	11.40	4.10	2.20	1.37	1.05	
24	2.73	4.80	7.84	17.23	94.18	35.61	20.15	16.86	4.00	2.20	1.37	1.05	
25	2.35	3.10	7.70	27.49	87.98	36.68	19.60	11.56	3.90	2.13	1.37	1.05	
26	2.13	4.20	7.28	19.05	66.05	29.95	18.14	9.24	3.80	2.05	1.30	1.05	
27	1.75	23.43	7.28	15.80	50.00	27.28	17.96	7.98	3.70	1.97	1.30	1.05	
28	1.52	24.21	7.28	22.52	44.06	23.43	37.95	7.28	3.50	1.82	1.30	1.10	
29	1.37	22.52	6.34	17.59	33.49	23.07	19.78	7.00	3.10	4.80		1.05	
30	1.15	16.50	6.67	17.05	28.31	20.70	17.41	6.67	3.10	5.79		1.05	
31		16.50		17.41	26.46		16.50		3.00	2.90		1.05	
Total	59.66	341.83	353.49	1942.23	1551.60	1540.78	914.16	303.15	140.88	82.56	47.25	34.35	7311.94 CMSDAY
Mean	1.99	11.03	11.78	62.65	50.05	51.36	29.49	10.10	4.54	2.66	1.69	1.11	20.03 CMS
Max	3.50	45.01	36.04	193.50	133.20	105.93	70.17	16.86	5.90	5.79	2.43	1.30	193.50 CMS
Min	0.18	0.18	4.30	15.80	12.36	20.70	15.98	6.67	3.00	1.82	1.30	1.05	0.18 CMS
Runoff	5.155	29.534	30.542	167.809	134.058	133.123	78.983	26.192	12.172	7.133	4.082	2.968	631.752 MCM

Momentary Peak 202.50 CMS, at 8.40 M (A.D), at 6.00 Hours, on Jul 5, 1998
Runoff Yield 10.76 Liters/Second/Square KM, Momentary Peak Yield 108.812 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

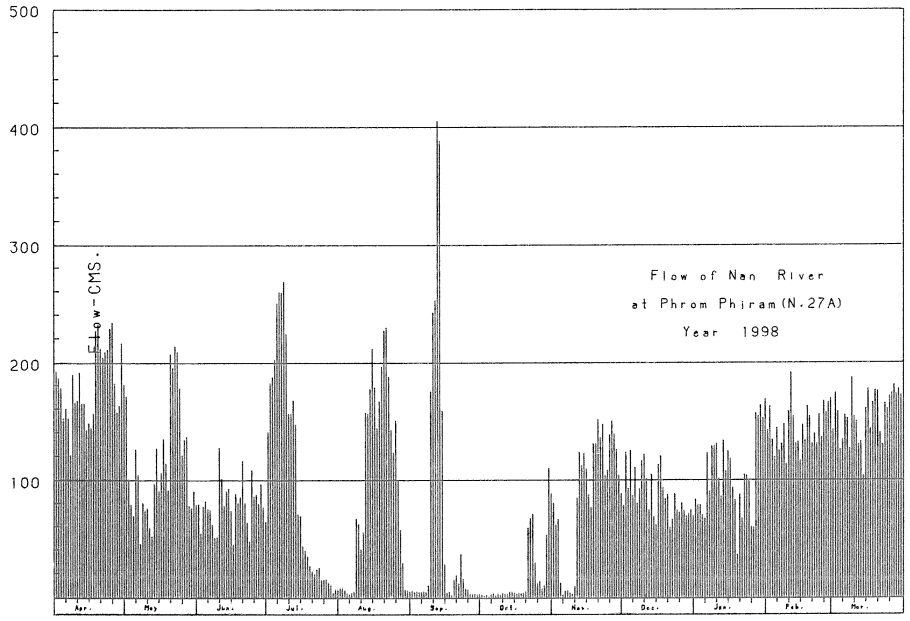
Nan River at Phrom Phiram, Phitsanulok (N.27A)

Location	Lat. 17°-01'-54" N., Long. 100°-11'-05" E., on right bank about 1,800 meters downstream from Phrom Phiram Dam, Amphoe Phrom Phiram, Phitsanulok.
Drainage Area	19,540 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+38.43 m.(M.S.L)
Bench Mark	B.M.-H.D.
Location	About 10 meters from the top staff gage.
Elevation	+48.572 m.(M.S.L)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1980 to date.
Rating Operation	
Period of Rating	1980 to date.
Rated by Float	-
Rated by Current Meter	1980 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Naresuan Dam. Stage-discharge relation defined by 26 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	40.78	40.53	39.39	40.18	38.12	38.04	37.91	39.41	39.38	39.45	40.19	40.19	
2	40.71	39.67	39.02	40.66	38.10	38.03	37.91	39.15	39.96	39.38	40.43	40.57	
3	40.62	39.38	39.37	40.72	38.07	38.03	37.90	39.21	39.57	39.39	40.10	40.38	
4	40.31	39.26	39.42	40.89	37.97	38.03	37.88	38.24	39.99	39.26	39.91	40.00	
5	40.41	40.00	39.33	41.39	37.96	38.03	37.94	37.95	39.49	39.23	40.21	40.09	
6	40.32	39.72	39.33	41.48	37.99	38.03	37.95	38.04	39.81	39.96	39.99	40.35	
7	39.94	38.89	39.15	41.48	38.04	38.03	37.91	38.07	39.41	39.54	40.05	40.31	
8	40.74	39.41	38.97	41.58	39.22	38.17	37.94	38.00	39.58	40.03	40.26	40.00	
9	40.48	39.31	38.97	41.12	39.15	40.58	37.94	37.98	39.87	40.03	39.84	40.72	
10	40.49	39.34	40.01	40.37	38.82	41.31	37.97	38.14	39.95	40.05	40.39	40.34	
11	40.77	39.09	39.69	40.36	39.05	41.41	37.97	39.47	39.68	39.68	40.77	40.28	
12	40.47	38.98	39.37	40.50	40.37	42.95	37.96	39.97	39.32	39.49	40.33	40.05	
13	40.46	39.63	39.55	40.25	40.36	42.78	38.01	39.82	39.73	40.09	40.06	40.07	
14	40.19	40.01	39.57	39.28	40.61	40.40	38.02	39.95	39.24	39.77	40.07	39.72	
15	40.27	39.54	39.32	39.25	40.98	38.60	37.99	39.79	39.15	39.98	39.87	40.41	
16	40.21	39.74	38.88	38.86	40.62	38.02	37.99	39.50	39.83	39.89	40.25	40.60	
17	40.37	40.10	39.51	38.79	40.22	38.02	37.98	39.36	39.93	39.59	40.08	40.21	
18	41.14	39.85	39.41	38.72	40.49	37.93	37.99	40.06	39.58	39.44	40.44	40.48	
19	41.20	39.56	39.47	38.55	40.82	38.30	37.99	40.05	39.46	38.74	40.33	40.59	
20	40.99	40.94	39.87	38.46	41.15	38.37	38.03	40.30	39.50	39.50	40.06	40.59	
21	40.91	40.81	39.41	38.40	41.17	38.21	39.11	40.12	39.10	39.22	40.16	40.16	
22	40.95	41.01	39.18	38.50	40.73	38.75	39.22	40.26	39.22	39.73	40.05	40.05	
23	40.98	40.95	38.91	38.52	40.20	38.30	39.28	39.71	39.52	39.71	40.35	40.46	
24	41.16	40.62	39.78	38.29	39.96	38.11	38.62	39.78	39.32	39.66	40.12	40.41	
25	41.22	39.94	39.48	38.30	40.29	38.07	38.21	40.14	39.29	39.12	40.49	40.54	
26	40.66	40.09	39.50	38.29	39.67	37.97	38.27	40.28	39.41	39.10	40.38	40.56	
27	40.38	40.12	39.40	38.24	39.08	37.95	38.09	40.16	39.32	40.37	40.47	40.64	
28	40.44	39.38	39.63	38.17	38.60	37.94	38.18	39.99	39.25	40.33	40.51	40.56	
29	41.03	39.34	39.35	38.01	38.08	37.94	39.00	39.72	39.27	40.45		40.61	
30	40.65	39.55	39.18	38.06	38.05	37.94	39.79	39.51	39.33	40.32		40.54	
31		39.38		38.05	38.04		39.51		39.25	40.50		40.30	
Mean	40.64	39.81	39.38	39.47	39.42	38.81	38.27	39.40	39.51	39.71	40.22	40.35	
Max	41.22	41.01	40.01	41.58	41.17	42.95	39.79	40.30	39.99	40.50	40.77	40.72	42.95
Min	39.94	38.89	38.88	38.01	37.96	37.93	37.88	37.95	39.10	38.74	39.84	39.72	37.88

Annual Max Momentary Gage Height 43.69 M (MSL), at 24.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 38.43 M (MSL), River Bed 37.20 M (MSL)
Left Bank Elevation 49.08 M (MSL)
Right Bank Elevation 49.05 M (MSL), Drainage Area 19540 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	193.25	171.37	79.77	141.85	8.54	5.58	2.26	81.23	79.05	84.13	142.67	142.67	
2	187.12	100.60	54.53	182.75	7.80	5.21	2.26	62.81	123.80	79.05	162.62	174.87	
3	179.25	79.05	78.32	188.00	6.69	5.21	2.05	66.72	92.83	79.77	135.25	158.35	
4	152.58	70.35	81.95	203.55	3.49	5.21	1.64	13.20	126.20	70.35	119.80	127.00	
5	160.87	127.00	75.43	251.29	3.28	5.21	2.87	3.08	87.03	68.17	144.32	134.42	
6	153.40	104.60	75.43	259.95	3.90	5.21	3.08	5.58	111.80	123.80	126.20	155.87	
7	122.20	46.24	62.81	259.95	5.58	5.21	2.26	6.69	81.23	90.65	131.12	152.58	
8	189.75	81.23	51.34	269.58	67.45	10.39	2.87	4.10	93.55	129.47	148.45	127.00	
9	167.00	73.98	51.34	225.40	62.81	175.75	2.87	3.69	116.60	129.47	114.20	188.00	
10	167.88	76.15	127.82	157.52	41.78	243.59	3.49	9.28	123.00	131.12	159.17	155.05	
11	192.38	58.99	102.20	156.70	56.44	253.21	3.49	85.58	101.40	101.40	192.38	150.10	
12	166.13	51.97	78.32	168.75	157.52	405.75	3.28	124.60	74.70	87.03	154.23	131.12	
13	165.25	97.40	91.38	147.62	156.70	388.00	4.47	112.60	105.40	134.42	131.95	132.77	
14	142.67	127.82	92.83	71.80	178.38	160.00	4.84	123.00	68.90	108.60	132.77	104.60	
15	149.27	90.65	74.70	69.62	212.10	29.00	3.90	110.20	62.81	125.40	116.60	160.87	
16	144.32	106.20	45.60	44.33	179.25	4.84	3.90	87.75	113.40	118.20	147.62	177.50	
17	157.52	135.25	88.47	39.93	145.15	4.84	3.69	77.60	121.40	94.28	133.60	144.32	
18	227.30	115.00	81.23	35.90	167.88	2.67	3.90	131.95	93.55	83.40	163.50	167.00	
19	233.00	92.10	85.58	26.75	196.90	15.75	3.90	131.12	84.85	37.05	154.23	176.62	
20	213.05	208.30	116.60	22.70	228.25	18.72	5.21	151.75	87.75	87.75	131.95	176.62	
21	205.45	195.95	81.23	20.00	230.15	11.92	60.26	136.90	59.62	67.45	140.20	140.20	
22	209.25	214.95	64.72	24.50	188.88	37.63	67.45	148.45	67.45	105.40	131.12	131.12	
23	212.10	209.25	47.51	25.40	143.50	15.75	71.80	103.80	89.20	103.80	155.87	165.25	
24	229.20	179.25	109.40	15.32	123.80	8.17	30.15	109.40	74.70	99.80	136.90	160.87	
25	234.93	122.20	86.30	15.75	150.92	6.69	11.92	138.55	72.53	60.90	167.88	172.25	
26	182.75	134.42	87.75	15.32	100.60	3.49	14.47	150.10	81.23	59.62	158.35	174.00	
27	158.35	136.90	80.50	13.20	58.35	3.08	7.43	140.20	74.70	157.52	166.13	181.00	
28	163.50	79.05	97.40	10.39	29.00	2.87	10.76	126.20	69.62	154.23	169.62	174.00	
29	216.85	76.15	76.87	4.47	7.06	2.87	53.25	104.60	71.08	164.37		178.38	
30	181.88	91.38	64.72	6.32	5.95	2.87	110.20	88.47	75.43	153.40		172.25	
31		79.05		5.95	5.58		88.47		69.62	168.75		151.75	
Total	5458.45	3532.80	2392.05	3080.56	2933.68	1844.69	592.39	2639.20	2754.43	3258.75	4068.70	4838.40	37394.11 CMSDAY
Mean	181.95	113.96	79.74	99.37	94.63	61.49	19.11	87.97	88.85	105.12	145.31	156.08	102.45 CMS
Max	234.93	214.95	127.82	269.58	230.15	405.75	110.20	151.75	126.20	168.75	192.38	188.00	405.75 CMS
Min	122.20	46.24	45.60	4.47	3.28	2.67	1.64	3.08	59.62	37.05	114.20	104.60	1.64 CMS
Runoff	471.610	305.234	206.673	266.160	253.470	159.381	51.183	228.027	237.983	281.556	351.536	418.038	3230.851 MCM

Momentary Peak 484.90 CMS, at 43.69 M (MSL), at 24.00 Hours, on Sep 12, 1998
Runoff Yield 5.24 Liters/Second/Square KM, Momentary Peak Yield 24.816 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

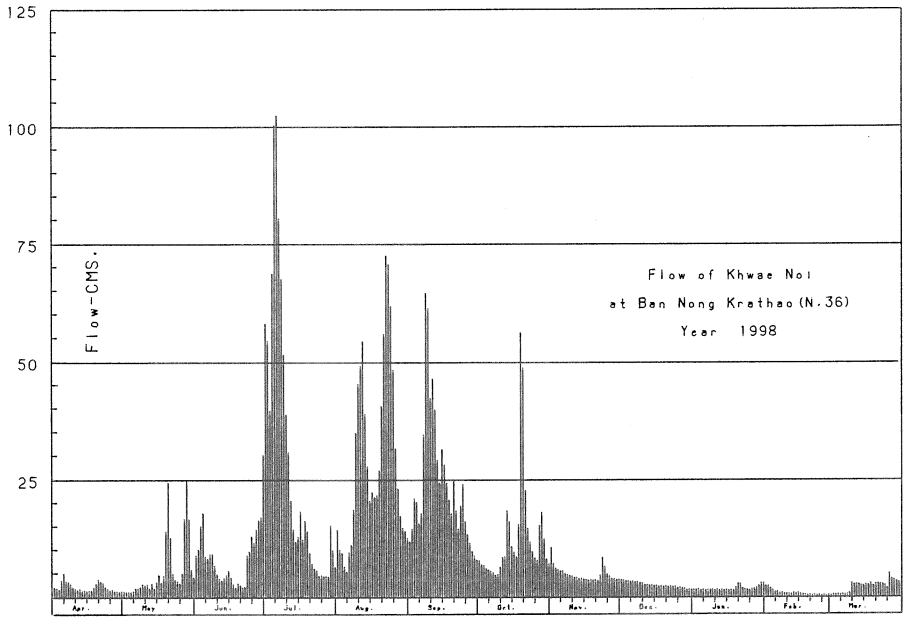
Nam Khwae Noi at Ban Nong Krathao, Phitsanulok (N.36)

Location	Lat. 17°-04'-59" N., Long. 100°-49'-55" E., on left bank about 50 meters upstream from the bridge along Lom Sak-Nakhon Thai road, Tambon Nong Krathao, Amphoe Nakhon Thai, Phitsanulok.
Drainage Area	1,651 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank along the measuring line.
Elevation	+7.481 m. (A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1971-1979, 1993 to date.
Rated by Float	-
Rated by Current Meter	1971-1979, 1993 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The local weir situated about 30 meters downstream from the gage site. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.89	0.72	1.68	4.82	2.16	1.95	1.58	1.84	1.13	0.80	1.08	0.89	
2	0.84	0.72	1.81	4.63	1.79	2.17	1.50	1.51	1.11	0.81	1.07	0.90	
3	0.81	0.70	2.22	3.87	1.74	2.67	1.48	1.42	1.10	0.82	1.05	0.91	
4	1.09	0.71	2.45	5.33	1.45	2.63	1.42	1.38	1.08	0.80	1.02	0.91	
5	1.30	0.72	1.66	6.45	1.34	2.27	1.39	1.36	1.08	0.80	1.00	0.91	
6	1.07	0.86	1.63	6.50	1.74	2.43	1.34	1.35	1.08	0.79	0.99	0.91	
7	1.07	0.84	1.70	5.82	1.89	3.58	1.30	1.29	1.07	0.79	0.96	0.91	
8	0.99	0.90	1.72	5.27	2.50	5.14	1.26	1.26	1.06	0.80	0.96	0.91	
9	0.89	0.98	1.47	4.49	3.61	4.97	1.26	1.25	1.05	0.79	0.95	0.96	
10	0.84	0.97	1.28	3.83	4.17	4.02	1.45	1.22	1.02	0.79	0.94	1.11	
11	0.80	0.98	1.15	3.33	4.36	4.23	1.65	1.20	0.98	0.79	0.92	1.10	
12	0.82	0.86	1.11	2.65	4.63	3.89	1.65	1.19	0.96	0.79	0.93	1.10	
13	0.76	1.01	1.16	2.16	3.83	3.22	2.48	1.16	0.96	0.79	0.95	1.10	
14	0.76	0.86	1.25	1.95	3.13	2.90	2.31	1.16	0.96	0.79	0.95	1.08	
15	0.75	1.05	1.36	2.03	2.64	3.38	1.86	1.15	0.95	0.78	0.95	1.08	
16	0.75	1.26	1.20	2.47	2.77	3.16	1.74	1.13	0.94	0.78	0.93	1.09	
17	0.78	1.05	0.99	1.98	2.70	2.89	1.66	1.12	0.93	0.78	0.92	1.09	
18	0.86	1.23	0.88	2.32	2.72	2.66	2.24	1.12	0.92	0.78	0.90	1.11	
19	1.02	2.13	1.01	2.14	3.08	2.43	4.72	1.12	0.92	0.87	0.89	1.08	
20	1.13	2.91	0.96	1.74	3.93	2.95	4.34	1.12	0.92	1.11	0.89	1.10	
21	1.08	2.03	0.86	1.51	4.70	2.48	2.80	1.10	0.92	1.10	0.89	1.11	
22	1.03	1.28	0.91	1.42	5.50	2.17	2.18	1.24	0.92	1.05	0.89	1.10	
23	0.91	1.14	1.68	1.36	5.41	2.57	1.93	1.65	0.92	1.03	0.89	1.10	
24	0.84	1.08	1.77	1.24	5.00	2.87	1.76	1.45	0.91	1.03	0.88	1.08	
25	0.80	1.03	2.05	1.24	4.32	2.31	1.64	1.28	0.88	1.02	0.88	1.05	
26	0.80	1.30	1.92	1.23	3.39	2.08	1.57	1.21	0.88	1.03	0.88	1.28	
27	0.76	2.34	2.16	1.22	2.82	1.91	2.24	1.16	0.87	1.04	0.88	1.16	
28	0.73	2.93	2.33	1.22	2.40	1.77	2.45	1.14	0.84	1.05	0.88	1.12	
29	0.73	2.35	2.37	2.23	2.19	1.67	1.99	1.14	0.81	1.08		1.09	
30	0.73	1.38	3.30	1.78	2.14	1.60	1.62	1.13	0.81	1.11		1.05	
31		1.20		1.45	2.01		1.50		0.81	1.11		1.03	
Mean	0.89	1.27	1.60	2.89	3.10	2.83	1.95	1.26	0.96	0.90	0.94	1.05	
Max	1.30	2.93	3.30	6.50	5.50	5.14	4.72	1.84	1.13	1.11	1.08	1.28	6.50
Min	0.73	0.70	0.86	1.22	1.34	1.60	1.26	1.10	0.81	0.78	0.88	0.89	0.70

Annual Max Momentary Gage Height 6.64 M (A.D), at 6.00 Hours, on Jul 6, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.68 M (A.D)
Left Bank Elevation 7.14 M (A.D)
Right Bank Elevation 7.28 M (A.D), Drainage Area 1651 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.24	1.30	8.98	58.40	14.52	12.03	7.90	10.76	3.87	1.70	2.58	0.58	
2	1.94	1.30	10.42	54.60	10.19	14.64	7.10	7.20	3.73	1.76	2.42	0.65	
3	1.76	1.20	15.25	39.72	9.64	21.05	6.90	6.30	3.65	1.82	2.10	0.72	
4	3.58	1.25	18.13	68.93	6.60	20.45	6.30	5.93	3.50	1.70	1.62	0.72	
5	5.25	1.30	8.76	100.25	5.59	15.88	6.01	5.76	3.50	1.70	1.30	0.72	
6	3.43	2.06	8.43	102.50	9.64	17.88	5.59	5.68	3.50	1.65	1.24	0.72	
7	3.43	1.94	9.20	80.50	11.34	34.70	5.25	5.16	3.43	1.65	1.04	0.72	
8	2.84	2.30	9.42	67.58	18.75	64.80	4.91	4.91	3.35	1.70	1.04	0.72	
9	2.24	2.78	6.80	51.80	35.18	61.40	4.91	4.82	3.27	1.65	0.97	1.04	
10	1.94	2.72	5.08	39.03	45.40	42.40	6.60	4.57	3.05	1.65	0.91	3.06	
11	1.70	2.78	4.02	30.95	49.20	46.60	8.65	4.40	2.78	1.65	0.78	2.90	
12	1.82	2.06	3.73	20.75	54.60	40.08	8.65	4.33	2.66	1.65	0.85	2.90	
13	1.50	2.98	4.10	14.52	39.03	29.30	18.50	4.10	2.66	1.65	0.97	2.90	
14	1.50	2.06	4.82	12.03	27.95	24.50	16.37	4.10	2.66	1.65	0.97	2.58	
15	1.45	3.27	5.76	12.96	20.60	31.70	10.99	4.02	2.60	1.60	0.97	2.58	
16	1.45	4.91	4.40	18.38	22.55	28.40	9.64	3.87	2.54	1.60	0.85	2.74	
17	1.60	3.27	2.84	12.37	21.50	24.35	8.76	3.80	2.48	1.60	0.78	2.74	
18	2.06	4.65	2.18	16.50	21.80	20.90	15.50	3.80	2.42	1.60	0.65	3.06	
19	3.05	14.16	2.98	14.28	27.20	17.88	56.40	3.80	2.42	2.12	0.58	2.58	
20	3.87	24.65	2.66	9.64	40.78	25.25	48.80	3.80	2.42	3.06	0.58	2.90	
21	3.50	12.96	2.06	7.20	56.00	18.50	23.00	3.65	2.42	2.90	0.58	3.06	
22	3.12	5.08	2.36	6.30	72.75	14.64	14.76	4.74	2.42	2.10	0.58	2.90	
23	2.36	3.95	8.98	5.76	70.72	19.62	11.80	8.65	2.42	1.78	0.58	2.90	
24	1.94	3.50	9.97	4.74	62.00	24.05	9.86	6.60	2.36	1.78	0.52	2.58	
25	1.70	3.12	13.20	4.74	48.40	16.37	8.54	5.08	2.18	1.62	0.52	2.10	
26	1.70	5.25	11.68	4.65	31.85	13.56	7.80	4.49	2.18	1.78	0.52	5.08	
27	1.50	16.75	14.52	4.57	23.30	11.57	15.50	4.10	2.12	1.94	0.52	4.10	
28	1.35	24.95	16.62	4.57	17.50	9.97	18.13	3.95	1.94	2.10	0.52	3.80	
29	1.35	16.87	17.12	15.38	14.88	8.87	12.49	3.95	1.76	2.58		3.58	
30	1.35	5.93	30.50	10.08	14.28	8.10	8.32	3.87	1.76	3.06		3.27	
31		4.40		6.60	12.72		7.10		1.76	3.06		3.12	
Total	68.52	185.70	264.97	900.28	916.46	739.44	401.03	150.19	83.81	59.86	27.54	74.02	3871.82 CMSDAY
Mean	2.28	5.99	8.83	29.04	29.56	24.65	12.94	5.01	2.70	1.93	0.98	2.39	10.61 CMS
Max	5.25	24.95	30.50	102.50	72.75	64.80	56.40	10.76	3.87	3.06	2.58	5.08	102.50 CMS
Min	1.35	1.20	2.06	4.57	5.59	8.10	4.91	3.65	1.76	1.60	0.52	0.58	0.52 CMS
Runoff	5.920	16.044	22.893	77.784	79.182	63.888	34.649	12.976	7.241	5.172	2.379	6.395	334.525 MCM

Momentary Peak 110.60 CMS, at 6.64 M (A.D), at 6.00 Hours, on Jul 6, 1998

Runoff Yield 6.43 Liters/Second/Square KM, Momentary Peak Yield 66.990 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

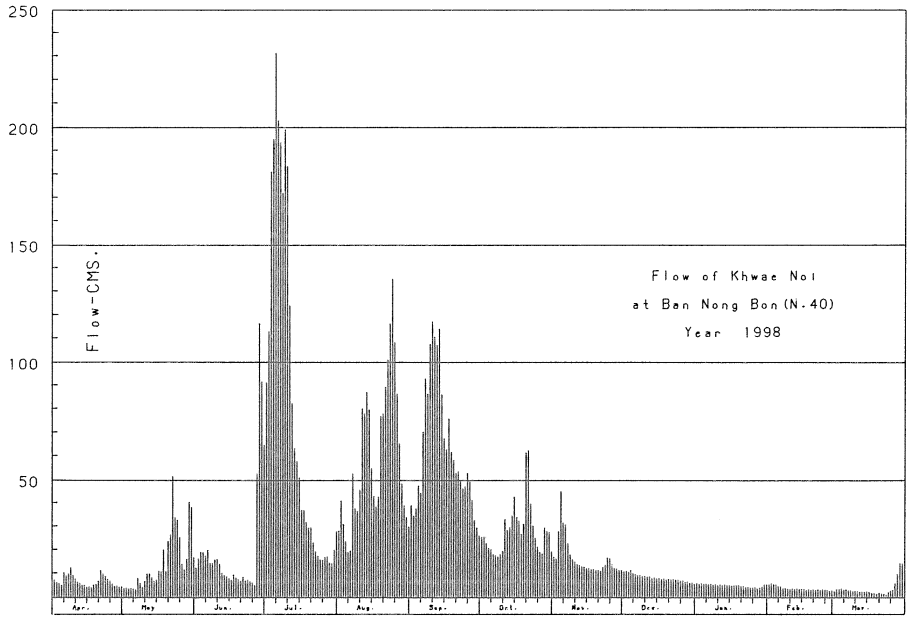
Nam Khwae Noi at Ban Nong Bon, Phitsanulok (N.40)

Location	Lat. 17°-13'-14" N., Long. 100°-21'-10" E., on left bank about 2 kilometers upstream from Ban Nong Bon, Amphoe Wat Bot, Phitsanulok.
Drainage Area	4,340 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	Near the gage site.
Elevation	+14.030 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 - 1968, 1972 to date.
Rating Operation	
Period of Rating	1977 to date.
Rated by Float	-
Rated by Current Meter	1977 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 82 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.75	0.58	1.01	3.71	1.68	2.11	1.57	1.21	0.94	0.68	0.67	0.51	
2	0.71	0.57	1.19	4.28	2.19	1.95	1.59	1.19	0.93	0.68	0.68	0.54	
3	0.67	0.57	1.30	5.92	1.81	2.07	1.47	1.67	0.93	0.68	0.67	0.56	
4	0.65	0.56	1.31	6.23	1.51	2.42	1.40	2.35	0.95	0.68	0.65	0.56	
5	0.92	0.55	1.23	7.01	1.32	2.32	1.36	1.83	0.90	0.67	0.63	0.55	
6	0.83	0.55	1.34	6.39	1.33	3.11	1.28	1.78	0.87	0.67	0.61	0.54	
7	0.89	0.80	1.10	6.19	2.59	3.76	1.24	1.48	0.86	0.67	0.58	0.53	
8	1.00	0.68	1.08	5.73	2.07	3.57	1.23	1.26	0.85	0.66	0.57	0.52	
9	0.86	0.61	1.17	6.31	2.01	4.14	1.26	1.18	0.84	0.66	0.57	0.51	
10	0.77	0.72	1.16	5.98	2.37	4.39	1.34	1.12	0.83	0.65	0.56	0.51	
11	0.72	0.87	1.08	4.58	3.39	4.22	1.87	1.09	0.83	0.65	0.56	0.50	
12	0.68	0.89	0.89	3.46	3.33	4.14	1.70	1.05	0.82	0.65	0.56	0.50	
13	0.65	0.81	0.86	2.91	3.60	4.32	1.74	1.04	0.80	0.65	0.56	0.48	
14	0.63	0.72	0.82	2.76	3.39	3.57	1.95	1.02	0.80	0.65	0.56	0.50	
15	0.61	0.76	0.80	2.53	2.67	3.03	2.26	1.00	0.79	0.64	0.55	0.49	
16	0.60	0.93	0.76	2.03	2.26	2.90	1.91	0.99	0.79	0.64	0.55	0.48	
17	0.60	0.92	0.86	2.04	2.10	3.28	1.85	0.98	0.78	0.63	0.54	0.47	
18	0.64	1.36	0.81	1.84	2.25	2.88	1.64	0.97	0.78	0.65	0.54	0.45	
19	0.67	0.94	0.76	1.73	3.31	2.77	1.80	0.96	0.77	0.64	0.54	0.45	
20	0.72	1.50	0.74	1.75	3.33	2.61	2.86	0.95	0.77	0.63	0.54	0.46	
21	0.96	1.61	0.81	1.48	3.65	2.62	2.90	0.95	0.77	0.62	0.54	0.45	
22	0.87	2.56	0.75	1.33	3.97	2.50	2.14	1.01	0.77	0.61	0.54	0.43	
23	0.84	1.92	0.75	1.23	4.38	2.39	1.78	1.07	0.77	0.60	0.54	0.43	
24	0.76	1.86	0.73	1.17	4.88	2.41	1.57	1.20	0.75	0.60	0.54	0.47	
25	0.74	1.58	0.69	1.15	4.16	2.61	1.41	1.20	0.75	0.60	0.54	0.53	
26	0.66	1.07	0.65	1.22	3.57	2.49	1.32	1.07	0.73	0.59	0.53	0.53	
27	0.63	0.97	2.59	1.22	2.98	2.20	1.27	1.00	0.72	0.58	0.52	0.69	
28	0.62	1.17	4.38	1.11	2.46	1.87	1.73	0.97	0.71	0.58	0.51	0.87	
29	0.61	2.16	3.71	1.08	2.11	1.73	1.68	0.96	0.70	0.62		1.10	
30	0.60	2.09	2.95	1.36	1.91	1.61	1.65	0.95	0.69	0.65		1.08	
31		1.20		1.67	1.76		1.33		0.68	0.65		0.82	
Mean	0.73	1.10	1.28	3.14	2.72	2.87	1.68	1.18	0.80	0.64	0.57	0.56	
Max	1.00	2.56	4.38	7.01	4.88	4.39	2.90	2.35	0.95	0.68	0.68	1.10	7.01
Min	0.60	0.55	0.65	1.08	1.32	1.61	1.23	0.95	0.68	0.58	0.51	0.43	0.43

Annual Max Momentary Gage Height 7.08 M (A.D), at 9.00 Hours, on Jul 5, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.57 M (A.D)
Left Bank Elevation 14.50 M (A.D)
Right Bank Elevation 14.81 M (A.D), Drainage Area 4340 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.50	4.15	12.92	91.69	28.40	39.20	25.65	17.22	11.44	6.10	5.90	2.92	
2	6.70	3.97	16.78	113.04	41.25	35.15	26.15	16.78	11.23	6.10	6.10	3.45	
3	5.90	3.97	19.20	181.12	31.65	38.18	23.15	28.15	11.23	6.10	5.90	3.80	
4	5.50	3.80	19.42	195.39	24.15	47.60	21.40	45.62	11.65	6.10	5.50	3.80	
5	11.02	3.62	17.66	231.86	19.64	44.80	20.52	32.15	10.60	5.90	5.10	3.62	
6	9.13	3.62	20.08	202.79	19.86	70.38	18.76	30.90	9.97	5.90	4.70	3.45	
7	10.39	8.50	14.85	193.54	52.70	93.53	17.88	23.40	9.76	5.90	4.15	3.27	
8	12.70	6.10	14.42	172.38	38.18	86.59	17.66	18.32	9.55	5.70	3.97	3.10	
9	9.76	4.70	16.35	199.09	36.66	107.75	18.32	16.57	9.34	5.70	3.97	2.92	
10	7.90	6.90	16.14	183.88	46.17	117.22	20.08	15.28	9.13	5.50	3.80	2.92	
11	6.90	9.97	14.42	124.44	80.25	110.76	33.15	14.64	9.13	5.50	3.80	2.75	
12	6.10	10.39	10.39	82.72	78.13	107.75	28.90	13.77	8.92	5.50	3.80	2.75	
13	5.50	8.71	9.76	63.35	87.65	114.56	29.90	13.56	8.50	5.50	3.80	2.40	
14	5.10	6.90	8.92	58.20	80.25	86.59	35.15	13.13	8.50	5.50	3.80	2.75	
15	4.70	7.70	8.50	50.90	55.28	67.56	43.15	12.70	8.30	5.30	3.62	2.58	
16	4.50	11.23	7.70	37.17	43.15	63.00	34.15	12.49	8.30	5.30	3.62	2.40	
17	4.50	11.02	9.76	37.42	38.95	76.37	32.65	12.28	8.10	5.10	3.45	2.23	
18	5.30	20.52	8.71	32.40	42.88	62.30	27.40	12.07	8.10	5.50	3.45	1.87	
19	5.90	11.44	7.70	29.65	77.43	58.53	31.40	11.86	7.90	5.30	3.45	1.87	
20	6.90	23.90	7.30	30.15	78.13	53.33	61.60	11.65	7.90	5.10	3.45	2.05	
21	11.86	26.65	8.71	23.40	89.49	53.65	63.00	11.65	7.90	4.90	3.45	1.87	
22	9.97	51.80	7.50	19.86	101.38	50.00	39.97	12.92	7.90	4.70	3.45	1.52	
23	9.34	34.40	7.50	17.66	116.84	46.73	30.90	14.21	7.90	4.50	3.45	1.52	
24	7.70	32.90	7.10	16.35	135.84	47.30	25.65	17.00	7.50	4.50	3.45	2.23	
25	7.30	25.90	6.30	15.92	108.50	53.33	21.65	17.00	7.50	4.50	3.45	3.27	
26	5.70	14.21	5.50	17.44	86.59	49.70	19.64	14.21	7.10	4.32	3.27	3.27	
27	5.10	12.07	52.70	17.44	65.80	41.50	18.54	12.70	6.90	4.15	3.10	6.30	
28	4.90	16.35	116.84	15.06	48.80	33.15	29.65	12.07	6.70	4.15	2.92	9.97	
29	4.70	40.48	91.69	14.42	39.20	29.65	28.40	11.86	6.50	4.90		14.85	
30	4.50	38.70	64.75	20.52	34.15	26.65	27.65	11.65	6.30	5.50		14.42	
31		17.00		28.15	30.40		19.86		6.10	5.50		8.92	
Total	212.97	481.57	629.57	2517.40	1857.75	1912.81	891.93	507.81	265.85	164.22	111.87	125.04	9678.79 CMSDAY
Mean	7.10	15.53	20.99	81.21	59.93	63.76	28.77	16.93	8.58	5.30	4.00	4.03	26.52 CMS
Max	12.70	51.80	116.84	231.86	135.84	117.22	63.00	45.62	11.65	6.10	6.10	14.85	231.86 CMS
Min	4.50	3.62	5.50	14.42	19.64	26.65	17.66	11.65	6.10	4.15	2.92	1.52	1.52 CMS
Runoff	18.401	41.608	54.395	217.503	160.510	165.267	77.063	43.875	22.969	14.189	9.666	10.803	836.247 MCM

Momentary Peak 235.23 CMS, at 7.08 M (A.D), at 9.00 Hours, on Jul 5, 1998

Runoff Yield 6.11 Liters/Second/Square KM, Momentary Peak Yield 54.200 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

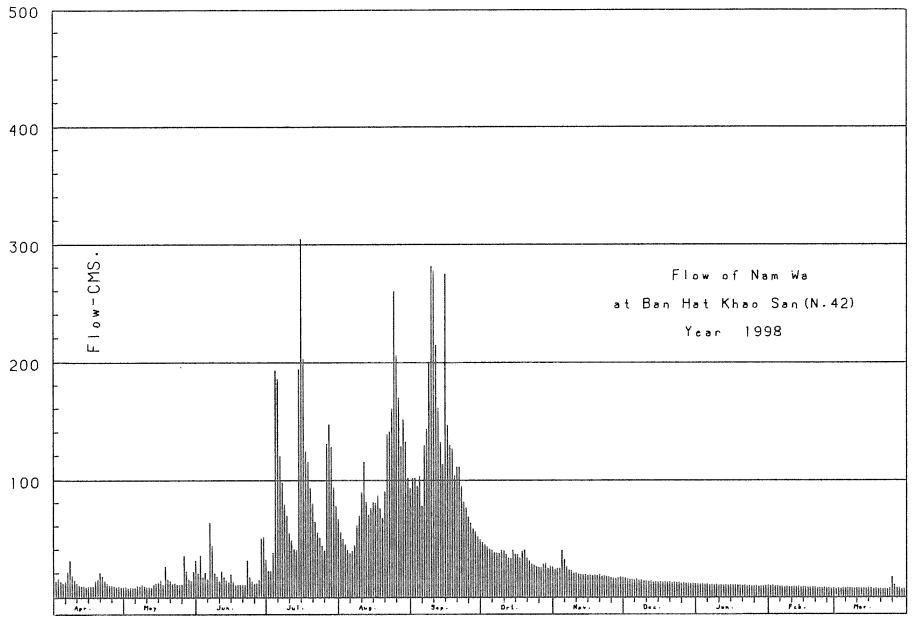
Nam Wa at Ban Hat Khao San, Nan (N.42)

Location	Lat. 18°-34'-08" N., Long. 100°-52'-28" E., on right bank at Ban Hat Khao San, Tambon Lai Nan, Amphoe Sa, Nan.
Drainage Area	2,107 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank near the gage site.
Elevation	+11.892 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1972 to date.
Rating Operation	
Period of Rating	1977 to date.
Rated by Float	-
Rated by Current Meter	1977 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Stage-discharge relation defined by 161 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.66	1.54	1.77	1.81	2.25	2.85	2.13	1.83	1.72	1.61	1.58	1.51	
2	1.70	1.52	1.98	1.80	2.17	2.86	2.11	1.83	1.70	1.61	1.58	1.51	
3	1.66	1.52	1.73	2.01	2.11	2.77	2.08	1.84	1.70	1.61	1.57	1.51	
4	1.62	1.52	1.78	3.88	2.04	2.87	2.06	2.04	1.69	1.61	1.56	1.52	
5	1.66	1.53	1.70	3.80	2.01	2.55	2.04	1.94	1.69	1.61	1.56	1.52	
6	1.79	1.57	2.36	3.09	2.03	3.19	2.02	1.85	1.70	1.60	1.55	1.52	
7	1.93	1.57	2.09	2.81	2.10	3.34	2.01	1.82	1.68	1.60	1.55	1.52	
8	1.74	1.59	1.78	2.56	2.32	3.95	2.01	1.81	1.68	1.60	1.55	1.51	
9	1.69	1.57	1.73	2.44	2.43	4.73	2.04	1.78	1.67	1.60	1.55	1.51	
10	1.62	1.53	1.67	2.24	2.70	4.69	2.04	1.78	1.66	1.59	1.55	1.51	
11	1.59	1.53	1.80	2.15	3.03	4.09	2.00	1.77	1.66	1.59	1.55	1.51	
12	1.57	1.53	1.73	2.06	2.59	3.54	1.95	1.76	1.66	1.59	1.55	1.51	
13	1.56	1.61	1.67	2.04	2.45	3.22	1.95	1.76	1.65	1.59	1.55	1.51	
14	1.55	1.62	1.65	3.89	2.52	3.00	2.04	1.76	1.65	1.59	1.54	1.51	
15	1.55	1.64	1.76	4.94	2.59	4.67	2.00	1.75	1.65	1.59	1.54	1.51	
16	1.55	1.67	1.64	3.97	2.58	3.38	1.99	1.75	1.65	1.59	1.54	1.51	
17	1.57	1.59	1.59	3.13	2.66	3.19	1.95	1.75	1.65	1.59	1.54	1.50	
18	1.66	1.86	1.59	3.03	2.52	3.16	2.03	1.75	1.65	1.59	1.53	1.50	
19	1.70	1.70	1.60	2.75	2.41	2.88	2.05	1.75	1.65	1.58	1.53	1.50	
20	1.79	1.66	1.59	2.57	2.71	2.97	1.96	1.76	1.65	1.58	1.53	1.49	
21	1.73	1.62	1.58	2.37	3.29	2.98	1.92	1.74	1.64	1.58	1.52	1.49	
22	1.67	1.62	1.93	2.24	3.32	2.77	1.89	1.74	1.64	1.57	1.52	1.49	
23	1.62	1.61	1.73	2.19	3.53	2.59	1.87	1.74	1.64	1.57	1.52	1.49	
24	1.59	1.59	1.65	2.09	4.53	2.53	1.86	1.73	1.64	1.57	1.52	1.51	
25	1.57	1.61	1.62	2.04	4.00	2.43	1.85	1.72	1.63	1.57	1.52	1.73	
26	1.56	1.98	1.62	3.20	3.64	2.35	1.84	1.71	1.63	1.57	1.51	1.59	
27	1.55	1.80	1.69	3.39	3.18	2.29	1.89	1.71	1.63	1.56	1.51	1.53	
28	1.55	1.70	2.18	3.17	3.43	2.25	1.89	1.71	1.62	1.56	1.51	1.51	
29	1.54	1.66	2.19	2.75	3.22	2.20	1.84	1.73	1.62	1.57		1.49	
30	1.53	1.80	1.93	2.55	2.86	2.16	1.86	1.72	1.62	1.57		1.49	
31		1.92		2.39	2.74		1.85		1.62	1.58		1.49	
Mean	1.64	1.64	1.78	2.75	2.77	3.08	1.97	1.78	1.66	1.59	1.54	1.52	
Max	1.93	1.98	2.36	4.94	4.53	4.73	2.13	2.04	1.72	1.61	1.58	1.73	4.94
Min	1.53	1.52	1.58	1.80	2.01	2.16	1.84	1.71	1.62	1.56	1.51	1.49	1.49

Annual Max Momentary Gage Height 5.82 M (AD), at 12.00 Hours, on Sep 15, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.02 M (AD)
Left Bank Elevation 13.34 M (AD)
Right Bank Elevation 12.28 M (AD), Drainage Area 2107 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	14.08	9.16	20.48	23.15	56.15	101.60	47.15	24.65	17.28	11.68	10.52	8.14	
2	16.00	8.48	35.90	22.40	50.15	102.38	45.65	24.65	16.00	11.68	10.52	8.14	
3	14.08	8.48	17.92	38.15	45.65	95.39	43.40	25.40	16.00	11.68	10.18	8.14	
4	12.16	8.48	21.12	194.00	40.40	103.16	41.90	40.40	15.52	11.68	9.84	8.48	
5	14.08	8.82	16.00	186.00	38.15	78.65	40.40	32.90	15.52	11.68	9.84	8.48	
6	21.76	10.18	64.40	121.15	39.65	130.10	38.90	26.15	16.00	11.20	9.50	8.48	
7	32.15	10.18	44.15	98.48	44.90	143.60	38.15	23.90	15.04	11.20	9.50	8.48	
8	18.56	10.86	21.12	79.40	61.40	201.00	38.15	23.15	15.04	11.20	9.50	8.14	
9	15.52	10.18	17.92	70.40	69.65	282.30	40.40	21.12	14.56	11.20	9.50	8.14	
10	12.16	8.82	14.56	55.40	90.00	277.90	40.40	21.12	14.08	10.86	9.50	8.14	
11	10.86	8.82	22.40	48.65	116.05	215.00	37.40	20.48	14.08	10.86	9.50	8.14	
12	10.18	8.82	17.92	41.90	81.65	161.60	33.65	19.84	14.08	10.86	9.50	8.14	
13	9.84	11.68	14.56	40.40	71.15	132.80	33.65	19.84	13.60	10.86	9.50	8.14	
14	9.50	12.16	13.60	195.00	76.40	113.50	40.40	19.84	13.60	10.86	9.16	8.14	
15	9.50	13.12	19.84	305.40	81.65	275.70	37.40	19.20	13.60	10.86	9.16	8.14	
16	9.50	14.56	13.12	203.00	80.90	147.20	36.65	19.20	13.60	10.86	9.16	8.14	
17	10.18	10.86	10.86	124.70	86.96	130.10	33.65	19.20	13.60	10.86	9.16	7.80	
18	14.08	26.90	10.86	116.05	76.40	127.40	39.65	19.20	13.60	10.86	8.82	7.80	
19	16.00	16.00	11.20	93.85	68.15	103.94	41.15	19.20	13.60	10.52	8.82	7.80	
20	21.76	14.08	10.86	80.15	90.77	111.10	34.40	19.84	13.60	10.52	8.82	7.53	
21	17.92	12.16	10.52	65.15	139.10	111.90	31.40	18.56	13.12	10.52	8.48	7.53	
22	14.56	12.16	32.15	55.40	141.80	95.39	29.15	18.56	13.12	10.18	8.48	7.53	
23	12.16	11.68	17.92	51.65	160.70	81.65	27.65	18.56	13.12	10.18	8.48	7.53	
24	10.86	10.86	13.60	44.15	260.30	77.15	26.90	17.92	13.12	10.18	8.48	8.14	
25	10.18	11.68	12.16	40.40	206.00	69.65	26.15	17.28	12.64	10.18	8.48	17.92	
26	9.84	35.90	12.16	131.00	170.60	63.65	25.40	16.64	12.64	10.18	8.14	10.86	
27	9.50	22.40	15.52	148.10	129.20	59.15	29.15	16.64	12.64	9.84	8.14	8.82	
28	9.50	16.00	50.90	128.30	151.70	56.15	29.15	16.64	12.16	9.84	8.14	8.14	
29	9.16	14.08	51.65	93.85	132.80	52.40	25.40	17.92	12.16	10.18		7.53	
30	8.82	22.40	32.15	78.65	102.38	49.40	26.90	17.28	12.16	10.18		7.53	
31		31.40		66.65	93.08		26.15		12.16	10.52		7.53	
Total	404.45	431.36	667.52	3040.93	3053.84	3750.91	1085.90	635.28	431.04	333.96	256.82	261.59	14353.60 CMSDAY
Mean	13.48	13.91	22.25	98.09	98.51	125.03	35.03	21.18	13.90	10.77	9.17	8.44	39.32 CMS
Max	32.15	35.90	64.40	305.40	260.30	282.30	47.15	40.40	17.28	11.68	10.52	17.92	305.40 CMS
Min	8.82	8.48	10.52	22.40	38.15	49.40	25.40	16.64	12.16	9.84	8.14	7.53	7.53 CMS
Runoff	34.944	37.269	57.674	262.736	263.852	324.079	93.822	54.888	37.242	28.854	22.189	22.601	1240.151 MCM

Momentary Peak 418.60 CMS, at 5.82 M (AD), at 12.00 Hours, on Sep 15, 1998

Runoff Yield 18.66 Liters/Second/Square KM, Momentary Peak Yield 198.671 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

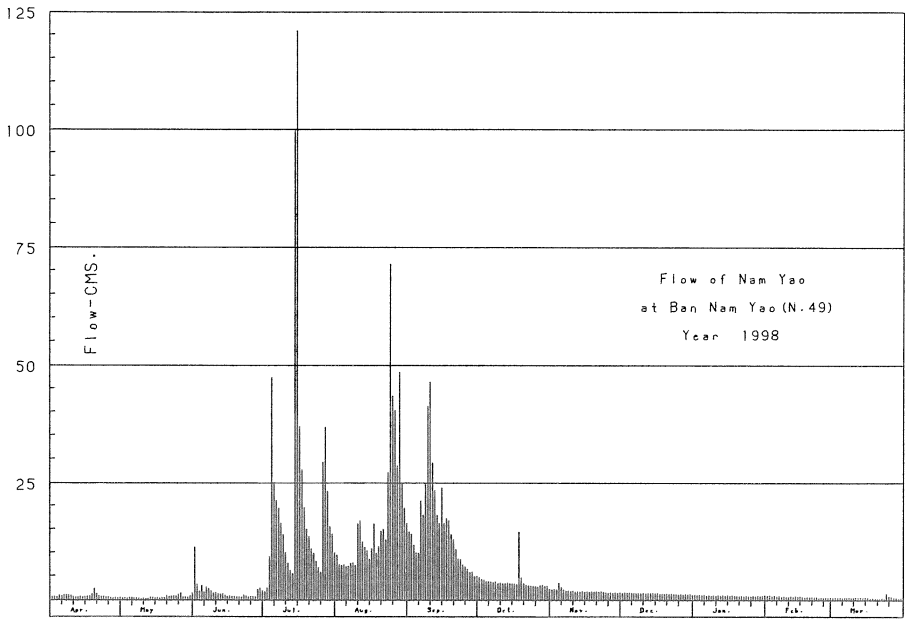
Nam Yao at Ban Nam Yao, Nan (N.49)

Location	Lat. 18°-59'-29" N., Long. 100°-56'-32" E., on right bank downstream of the bridge of Nam Yao, along Pua-Sila Phet road at Ban Nam Yao, Amphoe Pua, Nan.
Drainage Area	155 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 15 meters from the top staff gage.
Elevation	+6.052 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Fairly stable with variable water surface slope.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 41 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.37	1.35	1.79	1.46	1.75	1.85	1.61	1.50	1.44	1.40	1.39	1.35	
2	1.37	1.35	1.55	1.51	1.70	1.84	1.60	1.50	1.44	1.40	1.39	1.35	
3	1.37	1.35	1.47	1.74	1.70	1.80	1.59	1.50	1.44	1.40	1.38	1.35	
4	1.39	1.35	1.54	2.26	1.70	1.76	1.58	1.56	1.44	1.40	1.38	1.35	
5	1.39	1.35	1.46	2.00	1.69	1.76	1.58	1.52	1.44	1.40	1.38	1.35	
6	1.40	1.35	1.52	1.95	1.69	1.95	1.57	1.49	1.43	1.39	1.38	1.35	
7	1.40	1.35	1.51	1.93	1.71	1.91	1.57	1.48	1.43	1.39	1.37	1.35	
8	1.40	1.34	1.47	1.88	1.71	2.00	1.57	1.47	1.43	1.39	1.37	1.35	
9	1.40	1.34	1.44	1.84	1.70	2.20	1.56	1.47	1.43	1.39	1.37	1.35	
10	1.37	1.34	1.44	1.76	1.88	2.25	1.56	1.47	1.43	1.39	1.37	1.35	
11	1.37	1.34	1.42	1.71	1.89	2.06	1.56	1.46	1.43	1.39	1.37	1.35	
12	1.37	1.34	1.42	1.66	1.81	1.98	1.56	1.46	1.43	1.39	1.37	1.35	
13	1.37	1.36	1.42	1.64	1.79	1.91	1.56	1.46	1.43	1.39	1.37	1.35	
14	1.37	1.35	1.40	2.70	1.77	1.88	1.56	1.46	1.43	1.39	1.37	1.35	
15	1.37	1.35	1.38	2.84	1.73	1.99	1.55	1.46	1.43	1.39	1.37	1.35	
16	1.37	1.35	1.38	2.15	1.78	1.88	1.55	1.46	1.43	1.39	1.36	1.35	
17	1.39	1.35	1.38	2.04	1.88	1.90	1.55	1.46	1.42	1.39	1.36	1.34	
18	1.41	1.35	1.37	1.93	1.76	1.89	1.85	1.46	1.42	1.39	1.36	1.34	
19	1.51	1.35	1.37	1.86	1.79	1.84	1.61	1.46	1.42	1.38	1.36	1.34	
20	1.43	1.39	1.36	1.83	1.85	1.82	1.56	1.46	1.42	1.38	1.36	1.34	
21	1.38	1.38	1.36	1.78	1.86	1.78	1.54	1.46	1.42	1.38	1.36	1.34	
22	1.38	1.38	1.40	1.76	1.82	1.73	1.54	1.46	1.42	1.38	1.36	1.34	
23	1.37	1.38	1.38	1.72	2.03	1.73	1.53	1.46	1.42	1.38	1.35	1.34	
24	1.37	1.38	1.37	1.68	2.48	1.70	1.53	1.44	1.41	1.38	1.35	1.42	
25	1.36	1.41	1.37	1.65	2.22	1.69	1.53	1.44	1.41	1.38	1.35	1.38	
26	1.35	1.43	1.37	2.06	2.19	1.67	1.52	1.44	1.41	1.38	1.35	1.36	
27	1.35	1.37	1.37	2.15	2.05	1.65	1.54	1.44	1.41	1.38	1.35	1.35	
28	1.35	1.36	1.50	1.98	2.27	1.65	1.54	1.44	1.41	1.38	1.35	1.34	
29	1.35	1.36	1.51	1.87	2.00	1.62	1.53	1.44	1.41	1.38		1.34	
30	1.35	1.38	1.47	1.84	1.93	1.62	1.53	1.44	1.41	1.38		1.34	
31		1.43		1.76	1.88		1.50		1.40	1.39		1.35	
Mean	1.38	1.36	1.44	1.90	1.87	1.84	1.57	1.47	1.42	1.39	1.37	1.35	
Max	1.51	1.43	1.79	2.84	2.48	2.25	1.85	1.56	1.44	1.40	1.39	1.42	2.84
Min	1.35	1.34	1.36	1.46	1.69	1.62	1.50	1.44	1.40	1.38	1.35	1.34	1.34

Annual Max Momentary Gage Height 3.40 M (A.D), at 9.00 Hours, on Aug 24, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.17 M (A.D)
Left Bank Elevation 9.44 M (A.D)
Right Bank Elevation 11.24 M (A.D), Drainage Area 155 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.84	0.60	11.47	1.92	9.75	14.75	4.90	2.40	1.68	1.20	1.08	0.60	
2	0.84	0.60	3.50	2.62	7.60	14.18	4.60	2.40	1.68	1.20	1.08	0.60	
3	0.84	0.60	2.04	9.32	7.60	11.90	4.38	2.40	1.68	1.20	0.96	0.60	
4	1.08	0.60	3.28	47.50	7.60	10.18	4.16	3.72	1.68	1.20	0.96	0.60	
5	1.08	0.60	1.92	24.90	7.30	10.18	4.16	2.84	1.68	1.20	0.96	0.60	
6	1.20	0.60	2.84	21.25	7.30	21.25	3.94	2.28	1.56	1.08	0.96	0.60	
7	1.20	0.60	2.62	19.79	8.03	18.33	3.94	2.16	1.56	1.08	0.84	0.60	
8	1.20	0.48	2.04	16.46	8.03	24.90	3.94	2.04	1.56	1.08	0.84	0.60	
9	1.20	0.48	1.68	14.18	7.60	41.50	3.72	2.04	1.56	1.08	0.84	0.60	
10	0.84	0.48	1.68	10.18	16.46	46.50	3.72	2.04	1.56	1.08	0.84	0.60	
11	0.84	0.48	1.44	8.03	17.03	29.46	3.72	1.92	1.56	1.08	0.84	0.60	
12	0.84	0.48	1.44	6.40	12.47	23.44	3.72	1.92	1.56	1.08	0.84	0.60	
13	0.84	0.72	1.44	5.80	11.47	18.33	3.72	1.92	1.56	1.08	0.84	0.60	
14	0.84	0.60	1.20	100.00	10.61	16.46	3.72	1.92	1.56	1.08	0.84	0.60	
15	0.84	0.60	0.96	121.10	8.89	24.17	3.50	1.92	1.56	1.08	0.84	0.60	
16	0.84	0.60	0.96	37.00	11.04	16.46	3.50	1.92	1.56	1.08	0.72	0.60	
17	1.08	0.60	0.96	27.94	16.46	17.60	3.50	1.92	1.44	1.08	0.72	0.48	
18	1.32	0.60	0.84	19.79	10.18	17.03	14.75	1.92	1.44	1.08	0.72	0.48	
19	2.62	0.60	0.84	15.32	11.47	14.18	4.90	1.92	1.44	0.96	0.72	0.48	
20	1.56	1.08	0.72	13.61	14.75	13.04	3.72	1.92	1.44	0.96	0.72	0.48	
21	0.96	0.96	0.72	11.04	15.32	11.04	3.28	1.92	1.44	0.96	0.72	0.48	
22	0.96	0.96	1.20	10.18	13.04	8.89	3.28	1.92	1.44	0.96	0.72	0.48	
23	0.84	0.96	0.96	8.46	27.18	8.89	3.06	1.92	1.44	0.96	0.60	0.48	
24	0.84	0.96	0.84	7.00	71.60	7.60	3.06	1.68	1.32	0.96	0.60	1.44	
25	0.72	1.32	0.84	6.10	43.50	7.30	3.06	1.68	1.32	0.96	0.60	0.96	
26	0.60	1.56	0.84	29.46	40.60	6.70	2.84	1.68	1.32	0.96	0.60	0.72	
27	0.60	0.84	0.84	37.00	28.70	6.10	3.28	1.68	1.32	0.96	0.60	0.60	
28	0.60	0.72	2.40	23.44	48.50	6.10	3.28	1.68	1.32	0.96	0.60	0.48	
29	0.60	0.72	2.62	15.89	24.90	5.20	3.06	1.68	1.32	0.96		0.48	
30	0.60	0.96	2.04	14.18	19.79	5.20	3.06	1.68	1.32	0.96		0.48	
31		1.56		10.18	16.46		2.40		1.20	1.08		0.60	
Total	29.26	23.52	57.17	696.04	561.23	476.86	123.87	61.04	46.08	32.64	22.20	18.72	2148.63 CMSDAY
Mean	0.98	0.76	1.91	22.45	18.10	15.90	4.00	2.03	1.49	1.05	0.79	0.60	5.89 CMS
Max	2.62	1.56	11.47	121.10	71.60	46.50	14.75	3.72	1.68	1.20	1.08	1.44	121.10 CMS
Min	0.60	0.48	0.72	1.92	7.30	5.20	2.40	1.68	1.20	0.96	0.60	0.48	0.48 CMS
Runoff	2.528	2.032	4.939	60.138	48.490	41.201	10.702	5.274	3.981	2.820	1.918	1.617	185.642 MCM

Momentary Peak 227.00 CMS, at 3.40 M (A.D), at 9.00 Hours, on Aug 24, 1998
Runoff Yield 37.98 Liters/Second/Square KM, Momentary Peak Yield 1464.516 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

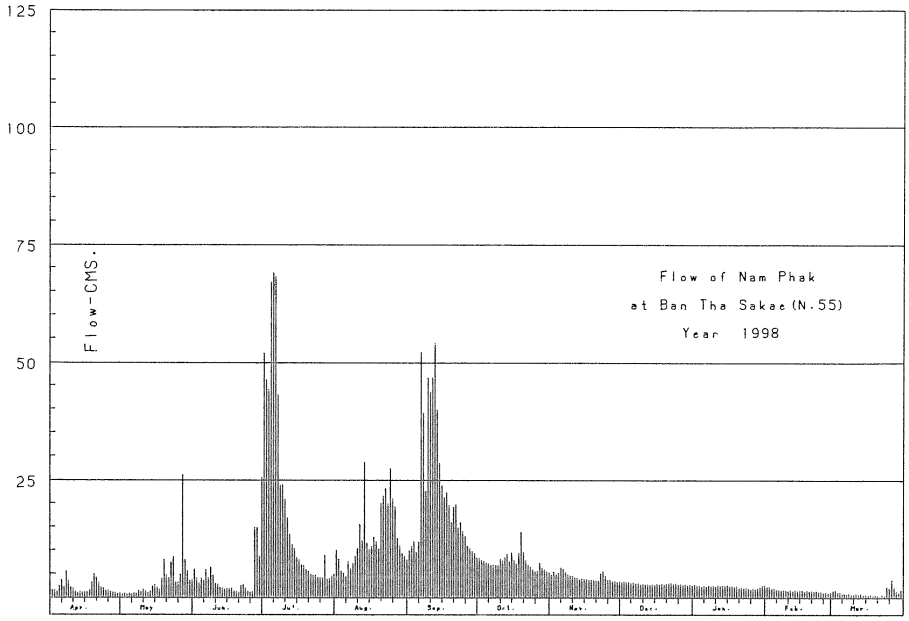
Nam Phak at Ban Tha Sakae, Phitsanulok (N.55)

Location	Lat. 17°-15'-10" N., Long. 100°-37'-51" E., on left bank at the bridge of Nakhon Thai-Chat Trakarn road, Tambon Pa Daeng, Amphoe Chat Trakarn, Phitsanulok.
Drainage Area	967 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 13 meters from the top staff gage.
Elevation	+8.587 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.68	0.59	1.13	4.00	1.49	1.50	1.35	1.01	0.85	0.78	0.75	0.66	
2	0.66	0.59	0.93	3.73	1.33	1.56	1.32	1.06	0.85	0.77	0.74	0.66	
3	0.65	0.59	0.83	3.62	1.09	1.63	1.29	1.01	0.85	0.76	0.71	0.63	
4	0.75	0.59	0.92	4.65	1.03	1.47	1.26	1.03	0.84	0.76	0.70	0.62	
5	0.90	0.59	0.89	4.73	0.97	1.64	1.23	1.16	0.83	0.76	0.69	0.60	
6	0.75	0.60	1.10	4.69	1.28	4.02	1.21	1.12	0.83	0.76	0.67	0.58	
7	1.09	0.61	0.93	3.57	1.14	3.38	1.20	1.07	0.82	0.76	0.67	0.58	
8	0.87	0.65	1.17	2.43	1.25	2.35	1.21	1.00	0.81	0.76	0.67	0.58	
9	0.74	0.64	1.00	2.45	1.39	3.74	1.19	0.99	0.80	0.76	0.67	0.56	
10	0.70	0.68	0.83	2.23	1.52	3.60	1.35	0.97	0.80	0.76	0.66	0.57	
11	0.65	0.66	0.79	1.97	1.89	3.75	1.29	0.95	0.80	0.77	0.67	0.57	
12	0.62	0.62	0.74	1.75	1.66	4.11	1.38	0.93	0.79	0.77	0.66	0.56	
13	0.63	0.64	0.71	1.59	2.76	3.40	1.43	0.91	0.79	0.76	0.67	0.56	
14	0.63	0.76	0.70	1.54	1.62	2.76	1.29	0.91	0.79	0.77	0.66	0.54	
15	0.62	0.78	0.70	1.38	1.50	2.44	1.45	0.91	0.79	0.77	0.65	0.53	
16	0.62	0.74	0.71	1.31	1.56	2.26	1.30	0.90	0.80	0.76	0.66	0.53	
17	0.68	0.68	0.71	1.22	1.71	2.34	1.24	0.90	0.80	0.75	0.65	0.53	
18	0.85	0.93	0.66	1.18	1.63	2.15	1.44	0.89	0.80	0.75	0.66	0.53	
19	1.01	1.32	0.64	1.12	1.53	1.92	1.78	0.89	0.80	0.75	0.65	0.51	
20	0.95	0.99	0.64	1.06	2.19	2.12	1.47	0.87	0.80	0.72	0.65	0.52	
21	0.83	0.95	0.76	1.02	2.28	2.17	1.30	0.88	0.82	0.72	0.65	0.50	
22	0.74	1.28	0.80	1.00	2.40	1.83	1.22	1.02	0.82	0.72	0.65	0.53	
23	0.70	1.38	0.71	0.98	2.17	1.92	1.16	1.08	0.81	0.72	0.64	0.52	
24	0.67	0.85	0.66	0.95	2.68	1.78	1.12	0.97	0.81	0.71	0.63	0.73	
25	0.67	0.83	0.64	0.93	2.24	1.72	1.08	0.90	0.80	0.70	0.62	0.72	
26	0.63	1.00	0.63	0.93	2.13	1.58	1.07	0.88	0.79	0.70	0.61	0.88	
27	0.63	2.59	1.83	1.42	1.69	1.52	1.26	0.87	0.79	0.70	0.61	0.73	
28	0.61	1.33	1.84	0.91	1.57	1.49	1.14	0.86	0.78	0.70	0.61	0.63	
29	0.60	1.07	1.40	0.91	1.45	1.44	1.12	0.85	0.78	0.74		0.62	
30	0.59	0.89	2.54	0.98	1.38	1.37	1.06	0.85	0.78	0.76		0.66	
31		0.88		1.00	1.31		1.04		0.78	0.77		0.68	
Mean	0.72	0.88	0.95	1.98	1.67	2.30	1.27	0.95	0.81	0.75	0.66	0.60	
Max	1.09	2.59	2.54	4.73	2.76	4.11	1.78	1.16	0.85	0.78	0.75	0.88	4.73
Min	0.59	0.59	0.63	0.91	0.97	1.37	1.04	0.85	0.78	0.70	0.61	0.50	0.50

Annual Max Momentary Gage Height 5.14 M (A.D), at 15.00 Hours, on Jul 5, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.06 M (A.D)
Left Bank Elevation 8.37 M (A.D)
Right Bank Elevation 8.33 M (A.D), Drainage Area 967 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.80	0.95	6.30	52.00	10.13	10.25	8.50	5.10	3.50	2.80	2.50	1.60	
2	1.60	0.95	4.30	46.60	8.30	11.00	8.20	5.60	3.50	2.70	2.40	1.60	
3	1.50	0.95	3.30	44.40	5.90	11.95	7.90	5.10	3.50	2.60	2.10	1.30	
4	2.50	0.95	4.20	67.25	5.30	9.88	7.60	5.30	3.40	2.60	2.00	1.20	
5	4.00	0.95	3.90	69.25	4.70	12.10	7.30	6.60	3.30	2.60	1.90	1.00	
6	2.50	1.00	6.00	68.25	7.80	52.40	7.10	6.20	3.30	2.60	1.70	0.90	
7	5.90	1.10	4.30	43.40	6.40	39.60	7.00	5.70	3.20	2.60	1.70	0.90	
8	3.70	1.50	6.70	23.95	7.50	22.75	7.10	5.00	3.10	2.60	1.70	0.90	
9	2.40	1.40	5.00	24.25	8.90	46.80	6.90	4.90	3.00	2.60	1.70	0.80	
10	2.00	1.80	3.30	20.95	10.50	44.00	8.50	4.70	3.00	2.60	1.60	0.85	
11	1.50	1.60	2.90	17.05	15.85	47.00	7.90	4.50	3.00	2.70	1.70	0.85	
12	1.20	1.20	2.40	13.75	12.40	54.20	8.80	4.30	2.90	2.70	1.60	0.80	
13	1.30	1.40	2.10	11.38	28.90	40.00	9.38	4.10	2.90	2.60	1.70	0.80	
14	1.30	2.60	2.00	10.75	11.80	28.90	7.90	4.10	2.90	2.70	1.60	0.70	
15	1.20	2.80	2.00	8.80	10.25	24.10	9.63	4.10	2.90	2.70	1.50	0.65	
16	1.20	2.40	2.10	8.10	11.00	21.40	8.00	4.00	3.00	2.60	1.60	0.65	
17	1.80	1.80	2.10	7.20	13.15	22.60	7.40	4.00	3.00	2.50	1.50	0.65	
18	3.50	4.30	1.60	6.80	11.95	19.75	9.50	3.90	3.00	2.50	1.60	0.65	
19	5.10	8.20	1.40	6.20	10.63	16.30	14.20	3.90	3.00	2.50	1.50	0.55	
20	4.50	4.90	1.40	5.60	20.35	19.30	9.88	3.70	3.00	2.20	1.50	0.60	
21	3.30	4.50	2.60	5.20	21.70	20.05	8.00	3.80	3.20	2.20	1.50	0.50	
22	2.40	7.80	3.00	5.00	23.50	14.95	7.20	5.20	3.20	2.20	1.50	0.65	
23	2.00	8.80	2.10	4.80	20.05	16.30	6.60	5.80	3.10	2.20	1.40	0.60	
24	1.70	3.50	1.60	4.50	27.70	14.20	6.20	4.70	3.10	2.10	1.30	2.30	
25	1.70	3.30	1.40	4.30	21.10	13.30	5.80	4.00	3.00	2.00	1.20	2.20	
26	1.30	5.00	1.30	4.30	19.45	11.25	5.70	3.80	2.90	2.00	1.10	3.80	
27	1.30	26.35	14.95	9.25	12.85	10.50	7.60	3.70	2.90	2.00	1.10	2.30	
28	1.10	8.30	15.10	4.10	11.13	10.13	6.40	3.60	2.80	2.00	1.10	1.30	
29	1.00	5.70	9.00	4.10	9.63	9.50	6.20	3.50	2.80	2.40		1.20	
30	0.95	3.90	25.60	4.80	8.80	8.70	5.60	3.50	2.80	2.60		1.60	
31		3.80		5.00	8.10		5.40		2.80	2.70		1.80	
Total	67.25	123.70	143.95	611.28	405.72	683.16	239.39	136.40	95.00	76.40	45.30	36.20	2663.75 CMSDAY
Mean	2.24	3.99	4.80	19.72	13.09	22.77	7.72	4.55	3.06	2.46	1.62	1.17	7.30 CMS
Max	5.90	26.35	25.60	69.25	28.90	54.20	14.20	6.60	3.50	2.80	2.50	3.80	69.25 CMS
Min	0.95	0.95	1.30	4.10	4.70	8.70	5.40	3.50	2.80	2.00	1.10	0.50	0.50 CMS
Runoff	5.810	10.688	12.437	52.815	35.054	59.025	20.683	11.785	8.208	6.601	3.914	3.128	230.148 MCM

Momentary Peak 80.20 CMS, at 5.14 M (A.D), at 15.00 Hours, on Jul 5, 1998

Runoff Yield 7.55 Liters/Second/Square KM, Momentary Peak Yield 82.937 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

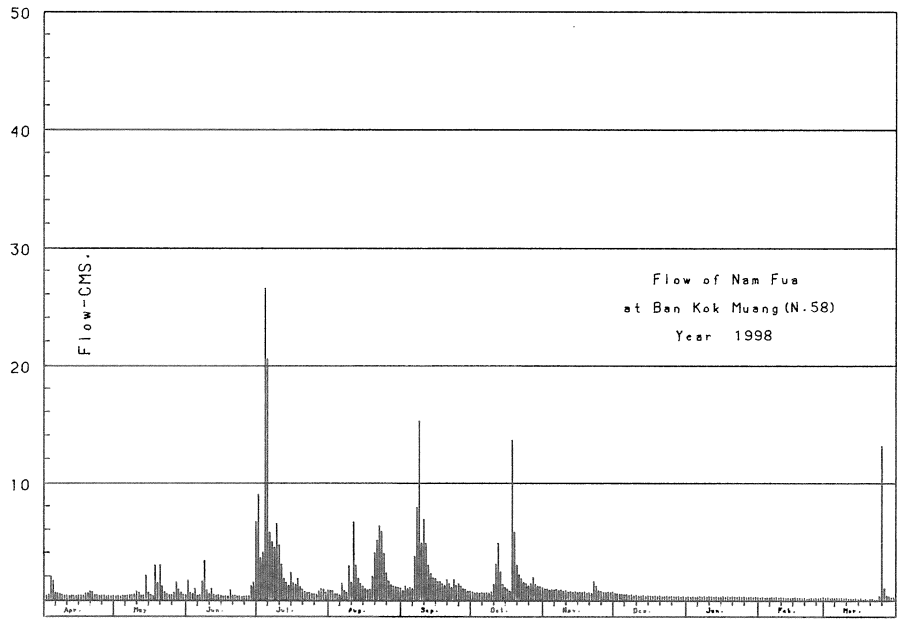
Nam Fua at Ban Kok Muang, Phitsanulok (N.58)

Location	Lat. 17°-08'-30" N., Long. 100°-56'-06" E., on left bank at the bridge of Nakhon Thai- Dan Sai road at the guidepost 11.5, Amphoe Nakhon Thai, Phisanulok.
Drainage Area	322 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 16.00 meters from the top staff gage.
Elevation	+6.691 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.39	0.36	0.62	1.29	0.47	0.47	0.44	0.50	0.43	0.34	0.32	0.31	
2	0.40	0.36	0.43	0.84	0.46	0.53	0.43	0.49	0.42	0.34	0.32	0.31	
3	0.66	0.36	0.42	0.90	0.42	0.50	0.43	0.48	0.42	0.34	0.32	0.30	
4	0.61	0.36	0.49	2.27	0.41	0.51	0.43	0.48	0.41	0.34	0.31	0.30	
5	0.44	0.36	0.39	1.98	0.40	0.50	0.43	0.48	0.41	0.34	0.31	0.30	
6	0.42	0.37	0.38	1.06	0.58	0.86	0.43	0.48	0.40	0.34	0.31	0.29	
7	0.42	0.39	0.61	1.00	0.47	1.21	0.43	0.47	0.40	0.34	0.31	0.29	
8	0.40	0.39	0.82	0.94	0.43	1.69	0.43	0.47	0.39	0.34	0.31	0.29	
9	0.38	0.41	0.47	1.11	0.77	0.99	0.44	0.46	0.38	0.34	0.31	0.29	
10	0.38	0.45	0.42	0.97	0.60	1.14	0.57	0.46	0.38	0.34	0.31	0.28	
11	0.37	0.43	0.49	0.78	1.12	0.98	0.78	0.45	0.38	0.34	0.31	0.28	
12	0.37	0.39	0.40	0.64	0.77	0.77	0.98	0.45	0.37	0.34	0.30	0.28	
13	0.37	0.37	0.39	0.59	0.64	0.69	0.71	0.45	0.37	0.34	0.30	0.28	
14	0.37	0.67	0.39	0.55	0.57	0.64	0.56	0.45	0.36	0.34	0.30	0.27	
15	0.37	0.44	0.38	0.70	0.53	0.64	0.52	0.44	0.36	0.34	0.30	0.27	
16	0.37	0.39	0.36	0.58	0.50	0.60	0.48	0.44	0.36	0.34	0.30	0.27	
17	0.38	0.37	0.35	0.57	0.48	0.61	0.46	0.44	0.36	0.34	0.30	0.26	
18	0.42	0.77	0.36	0.63	0.48	0.57	1.59	0.44	0.36	0.34	0.29	0.26	
19	0.43	0.59	0.47	0.53	0.66	0.55	1.06	0.43	0.36	0.34	0.29	0.26	
20	0.46	0.78	0.39	0.48	0.89	0.62	0.78	0.43	0.36	0.33	0.29	0.26	
21	0.44	0.53	0.37	0.45	1.01	0.57	0.68	0.43	0.36	0.33	0.29	0.26	
22	0.40	0.45	0.36	0.44	1.10	0.52	0.63	0.61	0.36	0.33	0.29	0.26	
23	0.39	0.41	0.35	0.43	1.06	0.63	0.60	0.53	0.35	0.33	0.29	0.26	
24	0.37	0.40	0.35	0.42	0.89	0.54	0.57	0.47	0.35	0.33	0.29	0.37	
25	0.37	0.39	0.34	0.41	0.69	0.58	0.54	0.45	0.35	0.33	0.29	1.56	
26	0.37	0.43	0.34	0.41	0.61	0.53	0.57	0.44	0.34	0.33	0.29	0.51	
27	0.36	0.60	0.37	0.46	0.56	0.50	0.65	0.44	0.34	0.33	0.29	0.39	
28	0.36	0.48	0.54	0.49	0.53	0.48	0.56	0.44	0.34	0.32	0.32	0.34	
29	0.36	0.44	0.59	0.49	0.53	0.46	0.54	0.44	0.34	0.32		0.32	
30	0.36	0.40	1.12	0.43	0.51	0.45	0.52	0.44	0.34	0.32		0.31	
31		0.40		0.47	0.50		0.51		0.34	0.32		0.30	
Mean	0.41	0.45	0.46	0.75	0.63	0.68	0.60	0.46	0.37	0.33	0.30	0.34	
Max	0.66	0.78	1.12	2.27	1.12	1.69	1.59	0.61	0.43	0.34	0.32	1.56	2.27
Min	0.36	0.36	0.34	0.41	0.40	0.45	0.43	0.43	0.34	0.32	0.29	0.26	0.26

Annual Max Momentary Gage Height 2.76 M (A.D), at 9.00 Hours, on Jul 4, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.34 M (A.D)
Left Bank Elevation 6.52 M (A.D)
Right Bank Elevation 6.50 M (A.D), Drainage Area 322 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.47	0.40	1.76	9.10	0.88	0.88	0.72	1.05	0.67	0.35	0.30	0.28	
2	0.50	0.40	0.67	3.61	0.83	1.21	0.67	1.00	0.61	0.35	0.30	0.28	
3	2.10	0.40	0.61	4.15	0.61	1.05	0.67	0.94	0.61	0.35	0.30	0.25	
4	1.68	0.40	1.00	26.57	0.55	1.10	0.67	0.94	0.55	0.35	0.28	0.25	
5	0.72	0.40	0.47	20.63	0.50	1.05	0.67	0.94	0.55	0.35	0.28	0.25	
6	0.61	0.43	0.45	5.87	1.49	3.79	0.67	0.94	0.50	0.35	0.28	0.22	
7	0.61	0.47	1.68	5.05	0.88	7.95	0.67	0.88	0.50	0.35	0.28	0.22	
8	0.50	0.47	3.43	4.51	0.67	15.38	0.67	0.88	0.47	0.35	0.28	0.22	
9	0.45	0.55	0.88	6.56	3.00	4.96	0.72	0.83	0.45	0.35	0.28	0.22	
10	0.45	0.77	0.61	4.78	1.60	6.97	1.43	0.83	0.45	0.35	0.28	0.20	
11	0.43	0.67	1.00	3.08	6.70	4.87	3.08	0.77	0.45	0.35	0.28	0.20	
12	0.43	0.47	0.50	1.93	3.00	3.00	4.87	0.77	0.43	0.35	0.25	0.20	
13	0.43	0.43	0.47	1.54	1.93	2.34	2.51	0.77	0.43	0.35	0.25	0.20	
14	0.43	2.18	0.47	1.33	1.43	1.93	1.38	0.77	0.40	0.35	0.25	0.18	
15	0.43	0.72	0.45	2.42	1.21	1.93	1.16	0.72	0.40	0.35	0.25	0.18	
16	0.43	0.47	0.40	1.49	1.05	1.60	0.94	0.72	0.40	0.35	0.25	0.18	
17	0.45	0.43	0.37	1.43	0.94	1.68	0.83	0.72	0.40	0.35	0.25	0.15	
18	0.61	3.00	0.40	1.85	0.94	1.43	13.65	0.72	0.40	0.35	0.22	0.15	
19	0.67	1.54	0.88	1.21	2.10	1.33	5.87	0.67	0.40	0.35	0.22	0.15	
20	0.83	3.08	0.47	0.94	4.06	1.76	3.08	0.67	0.40	0.33	0.22	0.15	
21	0.72	1.21	0.43	0.77	5.19	1.43	2.26	0.67	0.40	0.33	0.22	0.15	
22	0.50	0.77	0.40	0.72	6.43	1.16	1.85	1.68	0.40	0.33	0.22	0.15	
23	0.47	0.55	0.37	0.67	5.87	1.85	1.60	1.21	0.37	0.33	0.22	0.15	
24	0.43	0.50	0.37	0.61	4.06	1.27	1.43	0.88	0.37	0.33	0.22	0.43	
25	0.43	0.47	0.35	0.55	2.34	1.49	1.27	0.77	0.37	0.33	0.22	13.18	
26	0.43	0.67	0.35	0.55	1.68	1.21	1.43	0.72	0.35	0.33	0.22	1.10	
27	0.40	1.60	0.43	0.83	1.38	1.05	2.01	0.72	0.35	0.33	0.22	0.47	
28	0.40	0.94	1.27	1.00	1.21	0.94	1.38	0.72	0.35	0.30	0.30	0.35	
29	0.40	0.72	1.54	1.00	1.21	0.83	1.27	0.72	0.35	0.30		0.30	
30	0.40	0.50	6.70	0.67	1.10	0.77	1.16	0.72	0.35	0.30		0.28	
31		0.50		0.88	1.05		1.10		0.35	0.30		0.25	
Total	17.81	26.11	29.18	116.30	65.89	78.21	61.69	25.34	13.48	10.49	7.14	20.94	472.58 CMSDAY
Mean	0.59	0.84	0.97	3.75	2.13	2.61	1.99	0.84	0.43	0.34	0.25	0.68	1.29 CMS
Max	2.10	3.08	6.70	26.57	6.70	15.38	13.65	1.68	0.67	0.35	0.30	13.18	26.57 CMS
Min	0.40	0.40	0.35	0.55	0.50	0.77	0.67	0.67	0.35	0.30	0.22	0.15	0.15 CMS
Runoff	1.539	2.256	2.521	10.048	5.693	6.757	5.330	2.189	1.165	0.906	0.617	1.809	40.831 MCM

Momentary Peak 37.44 CMS, at 2.76 M (A.D), at 9.00 Hours, on Jul 4, 1998

Runoff Yield 4.02 Liters/Second/Square KM, Momentary Peak Yield 116.273 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

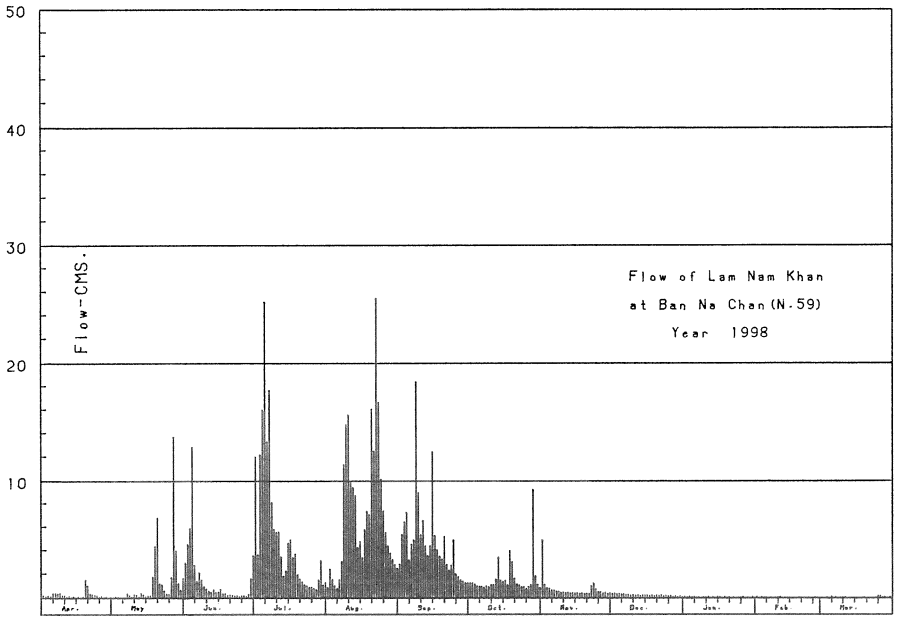
Lam Nam Khan at Ban Na Chan, Phitsanulok (N.59)

Location	Lat. 17°-01'-43" N., Long. 100°-50'-44" E., on left bank at Ban Na Chan, Amphoe Nakhon Thai, Phitsanulok.
Drainage Area	405 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 25 meters from the top staff gage.
Elevation	+6.000 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.23	1.03	2.27	4.09	1.60	2.23	1.75	2.74	1.36	1.17	1.15	1.04	
2	1.21	1.10	2.65	2.43	2.12	2.85	1.75	1.70	1.35	1.17	1.15	1.08	
3	1.21	1.08	2.96	4.13	1.88	3.08	1.73	1.59	1.34	1.16	1.12	1.07	
4	1.20	1.02	4.22	4.63	1.64	3.25	1.63	1.55	1.34	1.15	1.11	1.07	
5	1.34	1.00	2.21	5.42	1.57	2.33	1.65	1.51	1.33	1.14	1.10	1.17	
6	1.37	1.00	1.82	4.28	1.85	2.64	1.62	1.48	1.32	1.16	1.10	1.15	
7	1.35	1.35	2.05	4.79	2.30	2.74	1.61	1.46	1.30	1.15	1.09	1.15	
8	1.35	1.20	1.84	3.42	3.98	4.87	1.63	1.44	1.29	1.13	1.08	1.11	
9	1.24	1.16	1.63	2.94	4.47	3.56	1.63	1.42	1.27	1.13	1.08	1.07	
10	1.20	1.27	1.52	2.88	4.58	2.83	1.71	1.41	1.26	1.13	1.08	1.06	
11	1.17	1.25	1.46	2.90	3.74	3.11	1.68	1.41	1.26	1.13	1.08	1.04	
12	1.15	1.16	1.39	2.40	3.65	2.61	1.88	1.40	1.26	1.13	1.06	1.05	
13	1.13	1.38	1.52	1.96	3.52	2.42	2.39	1.39	1.25	1.13	1.07	1.04	
14	1.12	1.25	1.38	2.10	2.59	2.61	1.83	1.38	1.25	1.14	1.07	1.04	
15	1.12	1.20	1.42	2.68	2.70	4.17	1.82	1.38	1.27	1.13	1.05	1.04	
16	1.10	1.20	1.51	2.73	2.37	2.83	1.84	1.37	1.25	1.12	1.08	1.03	
17	1.08	1.24	1.35	2.38	2.95	2.53	1.70	1.37	1.25	1.14	1.05	1.02	
18	1.13	1.95	1.31	2.44	3.27	2.41	2.51	1.37	1.25	1.13	1.07	1.04	
19	1.87	2.60	1.26	2.01	3.20	2.34	2.28	1.36	1.24	1.12	1.07	1.05	
20	1.64	3.16	1.24	1.87	4.63	2.80	1.89	1.33	1.25	1.11	1.05	1.04	
21	1.33	1.71	1.24	1.79	4.18	2.24	1.74	1.36	1.25	1.11	1.06	1.02	
22	1.27	1.70	1.23	1.70	5.44	2.11	1.66	1.64	1.26	1.10	1.05	1.02	
23	1.27	1.45	1.21	1.63	4.69	2.21	1.63	1.77	1.24	1.10	1.06	1.02	
24	1.19	1.32	1.20	1.61	3.78	2.74	1.60	1.53	1.24	1.09	1.05	1.14	
25	1.15	1.28	1.21	1.58	3.26	2.03	1.56	1.45	1.22	1.09	1.04	1.24	
26	1.13	1.92	1.20	1.54	2.88	1.93	1.61	1.41	1.21	1.09	1.05	1.19	
27	1.12	4.34	1.21	1.52	2.62	1.87	1.70	1.39	1.20	1.09	1.04	1.15	
28	1.08	2.51	1.28	1.87	2.46	1.81	3.62	1.38	1.20	1.08	1.03	1.09	
29	1.06	1.75	1.90	2.32	2.34	1.78	1.98	1.37	1.18	1.09		1.19	
30	1.05	1.50	2.42	1.66	2.22	1.74	1.69	1.37	1.18	1.16		1.07	
31		1.89		1.77	2.15		1.59		1.17	1.15		1.16	
Mean	1.23	1.58	1.70	2.63	3.05	2.62	1.84	1.49	1.26	1.13	1.07	1.09	
Max	1.87	4.34	4.22	5.42	5.44	4.87	3.62	2.74	1.36	1.17	1.15	1.24	5.44
Min	1.05	1.00	1.20	1.52	1.57	1.74	1.56	1.33	1.17	1.08	1.03	1.02	1.00

Annual Max Momentary Gage Height 5.87 M (A.D), at 18.00 Hours, on Jul 5, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.83 M (A.D)
Left Bank Elevation 8.56 M (A.D)
Right Bank Elevation 7.88 M (A.D), Drainage Area 405 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.24	0.09	3.04	12.04	0.95	2.87	1.29	5.00	0.44	0.18	0.17	0.09	
2	0.21	0.13	4.61	3.70	2.45	5.46	1.29	1.18	0.43	0.18	0.17	0.12	
3	0.21	0.12	5.93	12.28	1.64	6.50	1.24	0.93	0.41	0.17	0.15	0.11	
4	0.20	0.08	12.85	16.10	1.04	7.35	1.02	0.84	0.41	0.17	0.14	0.11	
5	0.41	0.07	2.79	25.30	0.88	3.29	1.06	0.75	0.40	0.16	0.13	0.18	
6	0.46	0.07	1.46	13.32	1.55	4.57	1.00	0.68	0.38	0.17	0.13	0.17	
7	0.43	0.43	2.19	17.70	3.16	5.00	0.97	0.64	0.35	0.17	0.13	0.17	
8	0.43	0.20	1.52	8.21	11.38	18.50	1.02	0.59	0.33	0.15	0.12	0.14	
9	0.26	0.17	1.02	5.85	14.79	8.98	1.02	0.54	0.30	0.15	0.12	0.11	
10	0.20	0.30	0.77	5.59	15.65	5.38	1.20	0.52	0.29	0.15	0.12	0.11	
11	0.18	0.27	0.64	5.68	9.97	6.65	1.13	0.52	0.29	0.15	0.12	0.09	
12	0.17	0.17	0.49	3.58	9.48	4.44	1.64	0.50	0.29	0.15	0.11	0.10	
13	0.15	0.47	0.77	1.88	8.76	3.66	3.53	0.49	0.27	0.15	0.11	0.09	
14	0.15	0.27	0.47	2.37	4.36	4.44	1.49	0.47	0.27	0.16	0.11	0.09	
15	0.15	0.20	0.54	4.74	4.83	12.52	1.46	0.47	0.30	0.15	0.10	0.09	
16	0.13	0.20	0.75	4.95	3.45	5.38	1.52	0.46	0.27	0.15	0.12	0.09	
17	0.12	0.26	0.43	3.49	5.89	4.11	1.18	0.46	0.27	0.16	0.10	0.08	
18	0.15	1.85	0.36	3.74	7.45	3.62	4.03	0.46	0.27	0.15	0.11	0.09	
19	1.61	4.40	0.29	2.04	7.10	3.33	3.08	0.44	0.26	0.15	0.11	0.10	
20	1.04	6.90	0.26	1.61	16.10	5.25	1.67	0.40	0.27	0.14	0.10	0.09	
21	0.40	1.20	0.26	1.38	12.58	2.92	1.27	0.44	0.27	0.14	0.11	0.08	
22	0.30	1.18	0.24	1.18	25.60	2.41	1.09	1.04	0.29	0.13	0.10	0.08	
23	0.30	0.61	0.21	1.02	16.70	2.79	1.02	1.33	0.26	0.13	0.11	0.08	
24	0.19	0.38	0.20	0.97	10.19	5.00	0.95	0.79	0.26	0.13	0.10	0.16	
25	0.17	0.32	0.21	0.91	7.40	2.11	0.86	0.61	0.23	0.13	0.09	0.26	
26	0.15	1.76	0.20	0.82	5.59	1.79	0.97	0.52	0.21	0.13	0.10	0.19	
27	0.15	13.79	0.21	0.77	4.49	1.61	1.18	0.49	0.20	0.13	0.09	0.17	
28	0.12	4.03	0.32	1.61	3.82	1.43	9.31	0.47	0.20	0.12	0.09	0.13	
29	0.11	1.29	1.70	3.25	3.33	1.36	1.94	0.46	0.19	0.13		0.19	
30	0.10	0.73	3.66	1.09	2.83	1.27	1.15	0.46	0.19	0.17		0.11	
31		1.67		1.33	2.56		0.93		0.18	0.17		0.17	
Total	8.89	43.61	48.39	168.50	225.97	143.99	52.51	22.95	8.98	4.67	3.26	3.84	735.56 CMSDAY
Mean	0.30	1.41	1.61	5.44	7.29	4.80	1.69	0.77	0.29	0.15	0.12	0.12	2.02 CMS
Max	1.61	13.79	12.85	25.30	25.60	18.50	9.31	5.00	0.44	0.18	0.17	0.26	25.60 CMS
Min	0.10	0.07	0.20	0.77	0.88	1.27	0.86	0.40	0.18	0.12	0.09	0.08	0.07 CMS
Runoff	0.768	3.768	4.181	14.558	19.524	12.441	4.537	1.983	0.776	0.403	0.282	0.332	63.552 MCM

Momentary Peak 33.09 CMS, at 5.87 M (A.D), at 18.00 Hours, on Jul 5, 1998

Runoff Yield 4.98 Liters/Second/Square KM, Momentary Peak Yield 81.704 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

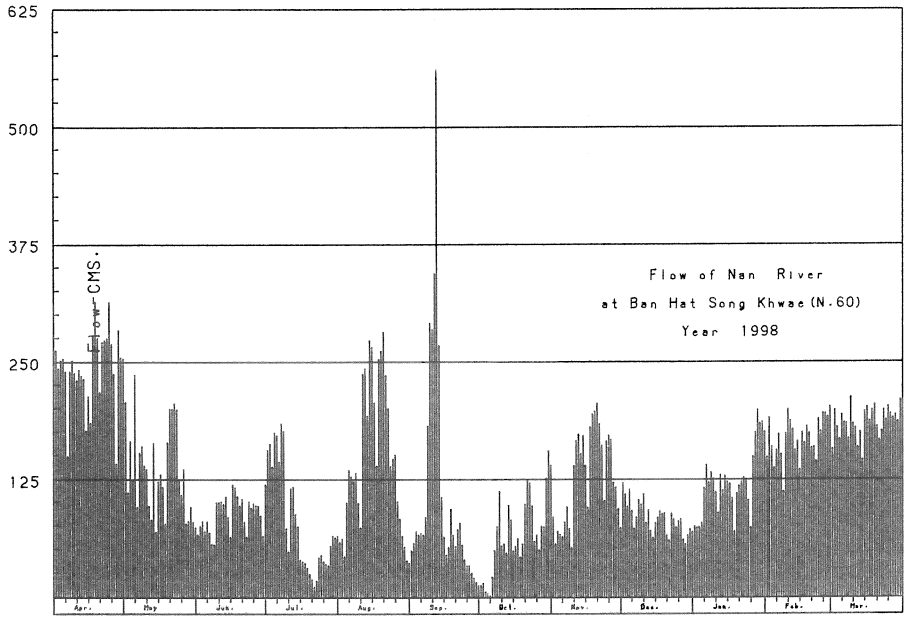
Nan River at Ban Hat Song Khwae, Uttaradit (N.60)

Location	Lat. 17°-24'-50" N., Long. 100°-07'-50" E., on right bank about 1 kilometer downstream from Wat Hat Song Khwae, Amphoe Tron, Uttaradit.
Drainage Area	18,692 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+48.50 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank near the Meteorological Station.
Elevation	+57.592 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1986 to date.
Rated by Float	-
Rated by Current Meter	1986 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Sirikit Dam reservior. Stage-discharge relation defined by 65 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	50.89	50.47	49.26	50.06	49.18	49.08	48.64	49.44	49.77	49.35	50.00	50.07	
2	50.74	49.68	49.35	50.12	49.21	49.16	48.66	49.16	49.67	49.33	50.34	50.40	
3	50.81	50.14	49.40	49.92	49.01	49.29	48.55	49.30	49.55	49.34	50.09	50.26	
4	50.82	49.80	49.29	50.21	49.59	49.26	48.51	49.26	49.71	49.38	49.91	50.16	
5	50.72	50.69	49.40	50.19	49.89	49.27	48.48	49.24	49.51	49.73	50.06	50.36	
6	50.01	49.54	49.28	49.96	49.83	49.26	48.75	49.39	49.33	49.93	50.20	50.30	
7	50.72	50.04	49.15	50.29	49.79	49.44	49.08	49.55	49.44	49.78	50.03	50.29	
8	50.81	50.09	49.15	50.22	49.86	50.27	49.34	49.32	49.62	49.87	49.70	50.16	
9	50.70	49.93	49.59	49.33	49.59	51.10	49.70	49.11	49.57	49.81	50.20	50.51	
10	50.65	49.89	49.60	49.07	49.34	51.05	49.13	49.93	49.67	49.69	50.41	50.29	
11	50.73	49.56	49.60	49.72	50.70	51.47	49.16	50.14	49.39	49.49	50.31	50.25	
12	50.68	49.42	49.58	49.74	50.74	52.75	49.05	50.20	49.52	49.84	50.24	50.09	
13	50.66	50.12	49.65	49.47	50.35	50.93	49.56	50.03	49.30	49.70	50.06	50.22	
14	50.23	49.29	49.44	49.35	50.97	49.64	49.42	50.18	49.23	49.84	50.14	49.98	
15	50.51	49.78	49.23	48.96	50.91	49.24	49.07	49.93	49.38	49.78	49.89	50.39	
16	50.29	49.85	49.76	48.94	50.46	49.02	49.12	49.54	49.44	49.77	50.21	50.43	
17	51.00	49.73	49.73	48.93	49.93	49.12	49.22	50.26	49.50	49.63	50.12	50.31	
18	51.27	49.37	49.65	48.86	50.82	49.53	49.00	50.37	49.48	49.29	50.26	50.40	
19	50.98	50.13	49.56	48.79	50.88	49.25	49.15	50.39	49.48	49.68	50.21	50.45	
20	50.55	50.41	49.62	48.71	51.03	49.12	49.57	50.46	49.25	49.75	50.08	50.26	
21	50.95	50.41	49.39	48.61	50.69	49.32	49.80	50.28	49.20	49.78	50.09	50.15	
22	50.97	50.46	49.24	48.70	50.42	49.38	49.77	50.10	49.48	49.82	49.97	50.23	
23	50.98	50.41	49.60	48.99	49.92	49.15	49.56	49.61	49.42	49.81	50.33	50.40	
24	51.26	49.81	49.54	49.03	49.99	48.97	49.18	50.14	49.34	49.61	50.22	50.32	
25	50.94	49.66	49.58	48.95	50.02	48.89	49.25	50.19	49.40	49.34	50.38	50.43	
26	50.70	49.89	49.56	48.91	49.60	48.89	49.09	50.15	49.42	50.01	50.37	50.37	
27	49.94	49.38	49.56	48.90	49.43	48.80	49.35	49.78	49.21	50.21	50.35	50.34	
28	51.05	49.40	49.46	49.13	49.25	48.73	49.34	49.73	49.15	50.40	50.43	50.36	
29	50.83	49.55	49.24	49.24	49.12	48.68	49.82	49.53	49.25	50.29		50.31	
30	50.82	49.39	49.76	49.23	48.96	48.63	50.06	49.33	49.32	50.30		50.49	
31		49.33		49.24	48.92		49.93		49.28	50.22		50.28	
Mean	50.74	49.86	49.47	49.35	49.95	49.56	49.24	49.80	49.43	49.77	50.16	50.30	
Max	51.27	50.69	49.76	50.29	51.03	52.75	50.06	50.46	49.77	50.40	50.43	50.51	52.75
Min	49.94	49.29	49.15	48.61	48.92	48.63	48.48	49.11	49.15	49.29	49.70	49.98	48.48

Annual Max Momentary Gage Height 53.03 M (MSL), at 11.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 48.50 M (MSL), River Bed 47.34 M (MSL)
Left Bank Elevation 58.46 M (MSL)
Right Bank Elevation 57.59 M (MSL), Drainage Area 18692 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	263.15	208.10	67.00	156.50	59.20	50.20	13.20	85.20	121.55	76.00	149.00	157.75	
2	243.20	111.20	76.00	164.00	62.00	57.40	14.80	57.40	110.05	74.00	191.50	199.00	
3	252.35	166.50	81.00	139.40	43.90	70.00	6.67	71.00	96.75	75.00	160.25	181.50	
4	253.70	125.00	70.00	175.25	100.95	67.00	4.00	67.00	114.65	79.00	138.20	169.00	
5	240.60	236.70	81.00	172.75	135.80	68.00	2.00	65.00	92.55	116.95	156.50	194.00	
6	150.25	95.70	69.00	144.20	128.60	67.00	22.00	80.00	74.00	140.60	174.00	186.50	
7	240.60	154.00	56.50	185.25	123.85	85.20	50.20	96.75	85.20	122.70	152.75	185.25	
8	252.35	160.25	56.50	176.50	132.20	182.75	75.00	73.00	104.30	133.40	113.50	169.00	
9	238.00	140.60	100.95	74.00	100.95	291.50	113.50	52.90	98.85	126.20	174.00	213.30	
10	231.50	135.80	102.00	49.30	75.00	284.75	54.70	140.60	110.05	112.35	200.30	185.25	
11	241.90	97.80	102.00	115.80	238.00	344.85	57.40	166.50	80.00	90.45	187.75	180.25	
12	235.40	83.10	99.90	118.10	243.20	560.50	47.50	174.00	93.60	129.80	179.00	160.25	
13	232.80	164.00	107.75	88.35	192.75	268.55	97.80	152.75	71.00	113.50	156.50	176.50	
14	177.75	70.00	85.20	76.00	273.95	106.60	83.10	171.50	64.00	129.80	166.50	146.60	
15	213.30	122.70	64.00	39.60	265.85	65.00	49.30	140.60	79.00	122.70	135.80	197.75	
16	185.25	131.00	120.40	37.90	206.80	44.80	53.80	95.70	85.20	121.55	175.25	202.90	
17	278.00	116.95	116.95	37.05	140.60	53.80	63.00	181.50	91.50	105.45	164.00	187.75	
18	315.15	78.00	107.75	31.10	253.70	94.65	43.00	195.25	89.40	70.00	181.50	199.00	
19	275.30	165.25	97.80	25.20	261.80	66.00	56.50	197.75	89.40	111.20	175.25	205.50	
20	218.50	200.30	104.30	18.80	282.05	53.80	98.85	206.80	66.00	119.25	159.00	181.50	
21	271.25	200.30	80.00	10.80	236.70	73.00	125.00	184.00	61.00	122.70	160.25	167.75	
22	273.95	206.80	65.00	18.00	201.60	79.00	121.55	161.50	89.40	127.40	145.40	177.75	
23	275.30	200.30	102.00	42.15	139.40	56.50	97.80	103.15	83.10	126.20	190.25	199.00	
24	313.70	126.20	95.70	45.70	147.80	40.45	59.20	166.50	75.00	103.15	176.50	189.00	
25	269.90	108.90	99.90	38.75	151.50	33.65	66.00	172.75	81.00	75.00	196.50	202.90	
26	238.00	135.80	97.80	35.35	102.00	33.65	51.10	167.75	83.10	150.25	195.25	195.25	
27	141.80	79.00	97.80	34.50	84.15	26.00	76.00	122.70	62.00	175.25	192.75	191.50	
28	284.75	81.00	87.30	54.70	66.00	20.40	75.00	116.95	56.50	199.00	202.90	194.00	
29	255.05	96.75	65.00	65.00	53.80	16.40	127.40	94.65	66.00	185.25		187.75	
30	253.70	80.00	120.40	64.00	39.60	12.40	156.50	74.00	73.00	186.50		210.70	
31		74.00		65.00	36.20		140.60		69.00	176.50		184.00	
Total	7316.45	4152.00	2676.90	2499.00	4579.90	3273.80	2102.47	3835.15	2616.15	3797.10	4750.35	5778.15	47377.43 CMSDAY
Mean	243.88	133.94	89.23	80.61	147.74	109.13	67.82	127.84	84.39	122.49	169.66	186.39	129.80 CMS
Max	315.15	236.70	120.40	185.25	282.05	560.50	156.50	206.80	121.55	199.00	202.90	213.30	560.50 CMS
Min	141.80	70.00	56.50	10.80	36.20	12.40	2.00	52.90	56.50	70.00	113.50	146.60	2.00 CMS
Runoff	632.141	358.733	231.284	215.914	395.703	282.856	181.653	331.357	226.035	328.069	410.430	499.232	4093.410 MCM

Momentary Peak 617.30 CMS, at 53.03 M (MSL), at 11.00 Hours, on Sep 12, 1998
Runoff Yield 6.94 Liters/Second/Square KM, Momentary Peak Yield 33.025 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

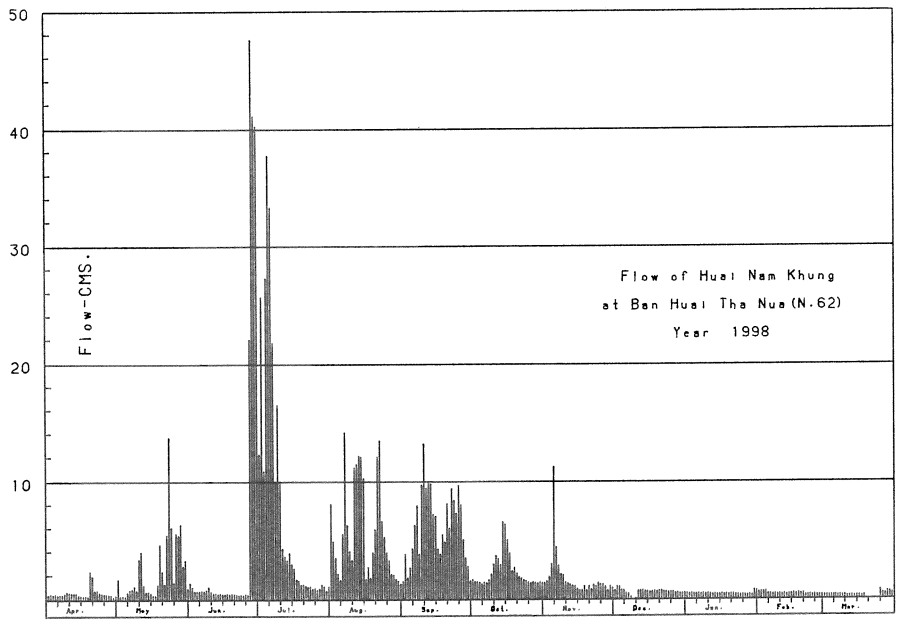
Huai Nam Khlung at Ban Huai Tha Nua, Phitsanulok (N.62)

Location	Lat. 17°-14'-25" N., Long. 100°-33'-11" E., on left bank at Ban Huai Tha Nua, Amphoe Chat Trakan, Phitsanulok.
Drainage Area	350 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 60 meters from the top staff gage.
Elevation	+10.253 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.79	1.18	1.10	2.43	2.05	1.13	1.18	1.10	0.90	0.80	0.85	0.77	
2	0.79	0.76	0.98	3.32	1.69	1.53	1.14	1.13	1.00	0.80	0.85	0.77	
3	0.79	0.76	0.88	2.30	1.49	1.22	1.12	1.23	1.00	0.80	0.86	0.77	
4	0.79	0.76	0.86	3.42	1.27	1.35	1.12	1.40	0.90	0.80	0.86	0.77	
5	0.78	0.84	0.88	3.98	1.18	1.61	1.08	2.34	0.90	0.80	0.80	0.77	
6	0.78	0.90	0.88	3.75	1.78	1.87	1.11	1.63	0.81	0.80	0.79	0.77	
7	0.79	0.94	0.88	3.08	2.57	2.04	1.11	1.38	0.80	0.80	0.79	0.77	
8	0.80	1.00	0.90	2.22	1.87	1.53	1.17	1.27	0.74	0.80	0.79	0.77	
9	0.87	0.90	1.00	2.73	1.57	2.20	1.27	1.25	0.70	0.80	0.79	0.77	
10	0.82	1.47	0.85	2.22	1.46	2.50	1.41	1.11	0.72	0.80	0.79	0.77	
11	0.83	1.56	0.82	1.61	2.33	2.17	1.52	1.09	0.89	0.79	0.79	0.76	
12	0.83	1.03	0.81	1.50	2.36	2.22	1.47	1.05	0.89	0.79	0.79	0.76	
13	0.81	0.86	0.80	1.45	2.42	2.21	1.39	1.03	0.88	0.79	0.79	0.76	
14	0.78	0.85	0.80	1.55	2.41	1.96	1.90	1.00	0.87	0.79	0.79	0.76	
15	0.76	0.83	0.80	1.41	2.25	1.95	1.87	0.94	0.85	0.79	0.80	0.76	
16	0.76	0.77	0.80	1.34	1.19	1.60	1.71	0.88	0.85	0.79	0.80	0.76	
17	0.76	0.78	0.80	1.19	1.36	1.54	1.54	0.90	0.86	0.79	0.80	0.76	
18	0.76	1.05	0.80	1.15	1.22	1.77	1.31	1.00	0.87	0.79	0.80	0.76	
19	1.30	1.66	0.80	1.06	1.56	1.69	1.35	0.90	0.87	0.79	0.80	0.70	
20	1.24	1.30	0.80	1.05	1.83	2.05	1.28	1.00	0.88	0.79	0.80	0.70	
21	0.90	1.07	0.78	1.03	2.41	1.84	1.23	0.93	0.89	0.79	0.78	0.70	
22	0.89	1.77	0.78	1.00	2.52	2.17	1.20	1.05	0.87	0.79	0.78	0.67	
23	0.84	2.54	0.78	1.00	1.90	2.08	1.18	1.00	0.85	0.78	0.78	0.67	
24	0.80	1.85	0.78	0.95	1.75	1.97	1.14	1.10	0.85	0.78	0.78	0.65	
25	0.80	1.10	0.79	0.95	1.55	2.19	1.10	1.05	0.84	0.78	0.78	0.90	
26	0.79	1.79	0.79	0.90	1.45	2.04	1.09	1.05	0.84	0.78	0.78	0.80	
27	0.79	1.77	3.10	0.95	1.27	1.72	1.12	1.00	0.83	0.78	0.77	0.80	
28	0.78	1.87	4.45	1.06	1.25	1.49	1.09	0.90	0.82	0.78	0.77	0.85	
29	0.75	1.38	4.14	1.00	1.20	1.37	1.09	1.00	0.81	0.78		0.85	
30	0.77	1.45	4.10	0.89	1.14	1.16	1.10	0.96	0.80	0.89		0.80	
31		0.96		1.00	1.08		1.08		0.82	0.88		0.80	
Mean	0.83	1.22	1.26	1.73	1.72	1.81	1.27	1.12	0.85	0.80	0.80	0.76	
Max	1.30	2.54	4.45	3.98	2.57	2.50	1.90	2.34	1.00	0.89	0.86	0.90	4.45
Min	0.75	0.76	0.78	0.89	1.08	1.13	1.08	0.88	0.70	0.78	0.77	0.65	0.65

Annual Max Momentary Gage Height 4.50 M (A.D), at 6.00 Hours, on Jun 28, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.32 M (A.D)
Left Bank Elevation 6.53 M (A.D)
Right Bank Elevation 6.62 M (A.D), Drainage Area 350 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.45	1.68	1.43	12.39	8.15	1.52	1.68	1.43	0.80	0.50	0.65	0.35	
2	0.45	0.30	1.04	25.68	4.93	3.85	1.55	1.52	1.10	0.50	0.65	0.35	
3	0.45	0.30	0.74	10.90	3.59	1.87	1.49	1.94	1.10	0.50	0.68	0.35	
4	0.45	0.30	0.68	27.36	2.19	2.69	1.49	3.00	0.80	0.50	0.68	0.35	
5	0.40	0.62	0.74	37.81	1.68	4.37	1.36	11.34	0.80	0.50	0.50	0.35	
6	0.40	0.80	0.74	33.38	5.56	6.37	1.46	4.51	0.53	0.50	0.45	0.35	
7	0.45	0.92	0.74	21.81	14.21	8.04	1.46	2.88	0.50	0.50	0.45	0.35	
8	0.50	1.10	0.80	10.02	6.37	3.85	1.65	2.19	0.20	0.50	0.45	0.35	
9	0.71	0.80	1.10	16.53	4.11	9.80	2.19	2.06	0.00	0.50	0.45	0.35	
10	0.56	3.46	0.65	10.02	3.39	13.30	3.06	1.46	0.10	0.50	0.45	0.35	
11	0.59	4.04	0.56	4.37	11.23	9.47	3.78	1.39	0.77	0.45	0.45	0.30	
12	0.59	1.20	0.53	3.65	11.56	10.02	3.46	1.26	0.77	0.45	0.45	0.30	
13	0.53	0.68	0.50	3.33	12.26	9.91	2.94	1.20	0.74	0.45	0.45	0.30	
14	0.40	0.65	0.50	3.98	12.13	7.22	6.65	1.10	0.71	0.45	0.45	0.30	
15	0.30	0.59	0.50	3.06	10.35	7.13	6.37	0.92	0.65	0.45	0.50	0.30	
16	0.30	0.35	0.50	2.63	1.72	4.30	5.07	0.74	0.65	0.45	0.50	0.30	
17	0.30	0.40	0.50	1.72	2.75	3.91	3.91	0.80	0.68	0.45	0.50	0.30	
18	0.30	1.26	0.50	1.59	1.87	5.49	2.44	1.10	0.71	0.45	0.50	0.30	
19	2.37	4.72	0.50	1.29	4.04	4.93	2.69	0.80	0.71	0.45	0.50	0.00	
20	2.00	2.37	0.50	1.26	5.99	8.15	2.25	1.10	0.74	0.45	0.50	0.00	
21	0.80	1.33	0.40	1.20	12.13	6.08	1.94	0.89	0.77	0.45	0.40	0.00	
22	0.77	5.49	0.40	1.10	13.56	9.47	1.75	1.26	0.71	0.45	0.40	0.00	
23	0.62	13.82	0.40	1.10	6.65	8.48	1.68	1.10	0.65	0.40	0.40	0.00	
24	0.50	6.18	0.40	0.95	5.35	7.32	1.55	1.43	0.65	0.40	0.40	0.00	
25	0.50	1.43	0.45	0.95	3.98	9.69	1.43	1.26	0.62	0.40	0.40	0.80	
26	0.45	5.63	0.45	0.80	3.33	8.04	1.39	1.26	0.62	0.40	0.40	0.50	
27	0.45	5.49	22.12	0.95	2.19	5.14	1.49	1.10	0.59	0.40	0.35	0.50	
28	0.40	6.37	47.62	1.29	2.06	3.59	1.39	0.80	0.56	0.40	0.35	0.65	
29	0.25	2.88	41.07	1.10	1.75	2.81	1.39	1.10	0.53	0.40		0.65	
30	0.35	3.33	40.25	0.77	1.55	1.62	1.43	0.98	0.50	0.77		0.50	
31		0.98		1.10	1.36		1.36		0.56	0.74		0.50	
Total	17.59	79.47	167.31	244.09	181.99	188.43	73.75	53.92	19.82	14.71	13.31	10.00	1064.39 CMSDAY
Mean	0.59	2.56	5.58	7.87	5.87	6.28	2.38	1.80	0.64	0.47	0.48	0.32	2.92 CMS
Max	2.37	13.82	47.62	37.81	14.21	13.30	6.65	11.34	1.10	0.77	0.68	0.80	47.62 CMS
Min	0.25	0.30	0.40	0.77	1.36	1.52	1.36	0.74	0.00	0.40	0.35	0.00	0.00 CMS
Runoff	1.520	6.866	14.456	21.089	15.724	16.280	6.372	4.659	1.712	1.271	1.150	0.864	91.963 MCM

Momentary Peak 48.75 CMS, at 4.50 M (A.D), at 6.00 Hours, on Jun 28, 1998
Runoff Yield 8.33 Liters/Second/Square KM, Momentary Peak Yield 139.286 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

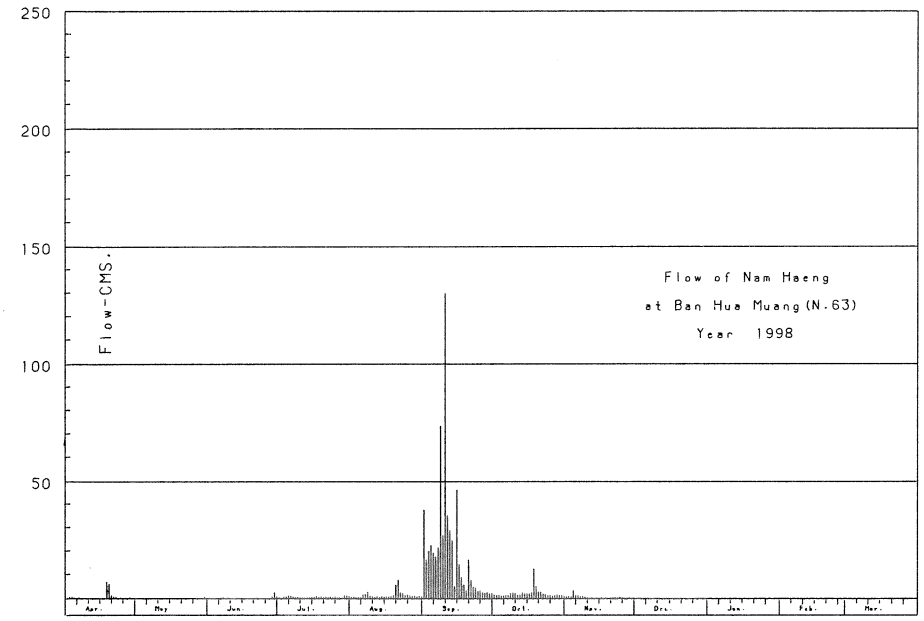
Nam Haeng at Ban Hua Muang, Nan (N.63)

Location	Lat. 18°-21'-48" N., Long. 100°-43'-41" E., on left bank at the bridge on road, Ban Hua Muang, Tambon Si Sa Ket, Amphoe Na Noi, Nan.
Drainage Area	788 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 34 meters from the first staff gage.
Elevation	+11.000 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by Nam Ngae reservoir about 6 kilometers above gage site. Stage-discharge relation defined by 50 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.20	0.87	1.00	1.00	1.08	3.46	1.20	1.10	0.98	0.90	1.00	0.97	
2	1.21	0.87	0.94	1.02	1.05	2.28	1.19	1.09	0.96	0.88	0.94	0.97	
3	1.24	0.84	0.96	1.05	1.05	2.53	1.18	1.10	0.95	0.86	0.93	0.96	
4	1.15	0.80	0.98	1.08	1.04	2.65	1.15	1.37	0.95	0.88	0.93	0.94	
5	1.16	0.78	0.98	1.15	1.04	2.48	1.15	1.17	0.94	0.88	0.96	0.97	
6	1.18	0.75	1.00	1.10	1.20	2.36	1.15	1.13	0.90	0.88	0.96	0.97	
7	1.13	0.74	1.00	1.06	1.23	2.61	1.18	1.11	0.90	0.89	0.96	0.96	
8	1.10	0.75	0.98	1.05	1.31	4.70	1.25	1.10	0.86	0.88	0.95	0.97	
9	1.08	0.75	0.95	1.03	1.15	2.88	1.29	1.07	0.85	0.86	0.90	0.94	
10	1.08	0.70	0.95	1.03	1.06	5.94	1.25	1.04	0.85	0.88	0.88	0.93	
11	1.06	0.70	0.83	1.02	1.07	3.33	1.20	1.02	0.85	0.96	0.92	0.93	
12	1.05	0.71	0.83	1.02	1.08	3.00	1.20	1.00	0.85	0.86	0.93	0.92	
13	1.05	0.72	0.80	1.03	1.07	2.78	1.28	1.00	0.84	0.86	0.95	0.89	
14	1.05	0.82	0.76	1.04	1.08	1.52	1.25	1.00	0.85	0.90	0.96	0.89	
15	1.02	0.82	0.74	1.04	1.07	3.84	1.23	0.99	0.84	0.90	1.00	0.90	
16	1.00	0.78	0.74	1.06	1.05	2.16	1.25	0.99	0.82	0.88	0.97	0.91	
17	1.00	0.78	0.74	1.08	1.08	1.79	1.28	1.00	0.80	0.90	0.97	0.91	
18	1.65	0.80	0.73	1.07	1.08	1.57	2.05	1.00	0.80	0.88	0.98	0.95	
19	1.60	0.82	0.73	1.06	1.18	1.35	1.50	1.00	0.83	0.91	0.98	0.94	
20	1.16	0.82	0.73	1.06	1.55	2.30	1.33	1.00	0.80	0.96	0.99	0.90	
21	1.05	0.82	0.72	1.06	1.73	1.71	1.30	1.05	0.79	0.98	0.96	0.90	
22	1.05	0.83	0.79	1.05	1.30	1.50	1.25	1.05	0.78	0.97	0.96	0.89	
23	1.00	0.83	0.84	1.05	1.25	1.45	1.20	1.04	0.78	0.97	0.93	0.90	
24	1.00	0.82	0.83	1.04	1.18	1.35	1.17	1.04	0.85	0.98	0.92	1.05	
25	1.00	0.82	0.81	1.04	1.17	1.34	1.15	1.02	0.85	0.98	0.92	1.00	
26	1.00	0.80	0.79	1.04	1.15	1.30	1.15	1.00	0.86	0.98	0.93	0.98	
27	1.00	0.80	0.83	1.03	1.12	1.28	1.18	1.00	0.88	0.97	0.93	0.98	
28	1.00	0.78	1.10	1.03	1.10	1.28	1.19	0.99	0.91	0.98	0.97	0.97	
29	0.95	0.98	1.30	1.16	1.10	1.25	1.18	0.99	0.91	0.98		0.97	
30	0.95	1.05	1.05	1.15	1.09	1.25	1.15	0.98	0.91	0.96		0.94	
31		1.00		1.07	1.09		1.11		0.91	0.96		0.93	
Mean	1.11	0.81	0.88	1.06	1.15	2.31	1.24	1.05	0.87	0.92	0.95	0.94	
Max	1.65	1.05	1.30	1.16	1.73	5.94	2.05	1.37	0.98	0.98	1.00	1.05	5.94
Min	0.95	0.70	0.72	1.00	1.04	1.25	1.11	0.98	0.78	0.86	0.88	0.89	0.70

Annual Max Momentary Gage Height 6.20 M (A.D), at 9.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.22 M (A.D)
Left Bank Elevation 10.00 M (A.D)
Right Bank Elevation 6.80 M (A.D), Drainage Area 788 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.65	0.21	0.60	0.60	1.04	38.09	1.80	1.15	0.53	0.25	0.60	0.50	
2	0.73	0.21	0.39	0.71	0.87	16.45	1.74	1.10	0.46	0.22	0.39	0.50	
3	0.97	0.16	0.46	0.87	0.87	20.61	1.67	1.15	0.43	0.19	0.36	0.46	
4	0.45	0.10	0.53	1.04	0.82	22.70	1.47	3.66	0.43	0.22	0.36	0.39	
5	0.49	0.09	0.53	1.47	0.82	19.76	1.47	1.60	0.39	0.22	0.46	0.50	
6	0.57	0.08	0.60	1.15	1.80	17.74	1.47	1.34	0.25	0.22	0.46	0.50	
7	0.37	0.08	0.60	0.93	2.12	21.98	1.67	1.21	0.25	0.24	0.46	0.46	
8	0.25	0.08	0.53	0.87	2.96	73.90	2.33	1.15	0.19	0.22	0.43	0.50	
9	0.21	0.08	0.43	0.76	1.47	26.88	2.75	0.99	0.18	0.19	0.25	0.39	
10	0.21	0.06	0.43	0.76	0.93	130.10	2.33	0.82	0.18	0.22	0.22	0.36	
11	0.17	0.06	0.14	0.71	0.99	35.40	1.80	0.71	0.18	0.46	0.32	0.36	
12	0.15	0.06	0.14	0.71	1.04	29.10	1.80	0.60	0.18	0.19	0.36	0.32	
13	0.15	0.07	0.10	0.76	0.99	25.04	2.64	0.60	0.16	0.19	0.43	0.24	
14	0.15	0.13	0.08	0.82	1.04	5.46	2.33	0.60	0.18	0.25	0.46	0.24	
15	0.09	0.13	0.08	0.82	0.99	46.60	2.12	0.57	0.16	0.25	0.60	0.25	
16	0.05	0.09	0.08	0.93	0.87	14.65	2.33	0.57	0.13	0.22	0.50	0.29	
17	0.60	0.09	0.08	1.04	1.04	9.11	2.64	0.60	0.10	0.25	0.50	0.29	
18	7.17	0.10	0.07	0.99	1.04	6.11	13.00	0.60	0.10	0.22	0.53	0.43	
19	6.50	0.13	0.07	0.93	1.67	3.43	5.20	0.60	0.14	0.29	0.53	0.39	
20	1.54	0.13	0.07	0.93	5.85	16.75	3.20	0.60	0.10	0.46	0.57	0.25	
21	0.87	0.13	0.07	0.93	8.27	7.99	2.85	0.87	0.10	0.53	0.46	0.25	
22	0.87	0.14	0.10	0.87	2.85	5.20	2.33	0.87	0.09	0.50	0.46	0.24	
23	0.60	0.14	0.16	0.87	2.33	4.60	1.80	0.82	0.09	0.50	0.36	0.25	
24	0.60	0.13	0.14	0.82	1.67	3.43	1.60	0.82	0.18	0.53	0.32	0.87	
25	0.60	0.13	0.12	0.82	1.60	3.31	1.47	0.71	0.18	0.53	0.32	0.60	
26	0.60	0.10	0.10	0.82	1.47	2.85	1.47	0.60	0.19	0.53	0.36	0.53	
27	0.60	0.10	0.14	0.76	1.28	2.64	1.67	0.60	0.22	0.50	0.36	0.53	
28	0.60	0.09	1.15	0.76	1.15	2.64	1.74	0.57	0.29	0.53	0.50	0.50	
29	0.43	0.53	2.85	1.54	1.15	2.33	1.67	0.57	0.29	0.53		0.50	
30	0.43	0.87	0.87	1.47	1.10	2.33	1.47	0.53	0.29	0.46		0.39	
31		0.60		0.99	1.10		1.21		0.29	0.46		0.36	
Total	27.67	5.10	11.71	28.45	53.19	617.18	75.04	27.18	6.93	10.57	11.93	12.64	887.59 CMSDAY
Mean	0.92	0.16	0.39	0.92	1.72	20.57	2.42	0.91	0.22	0.34	0.43	0.41	2.43 CMS
Max	7.17	0.87	2.85	1.54	8.27	130.10	13.00	3.66	0.53	0.53	0.60	0.87	130.10 CMS
Min	0.05	0.06	0.07	0.60	0.82	2.33	1.21	0.53	0.09	0.19	0.22	0.24	0.05 CMS
Runoff	2.391	0.441	1.012	2.458	4.596	53.324	6.483	2.348	0.599	0.913	1.031	1.092	76.688 MCM

Momentary Peak 143.10 CMS, at 6.20 M (A.D), at 9.00 Hours, on Sep 10, 1998
Runoff Yield 3.09 Liters/Second/Square KM, Momentary Peak Yield 181.599 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

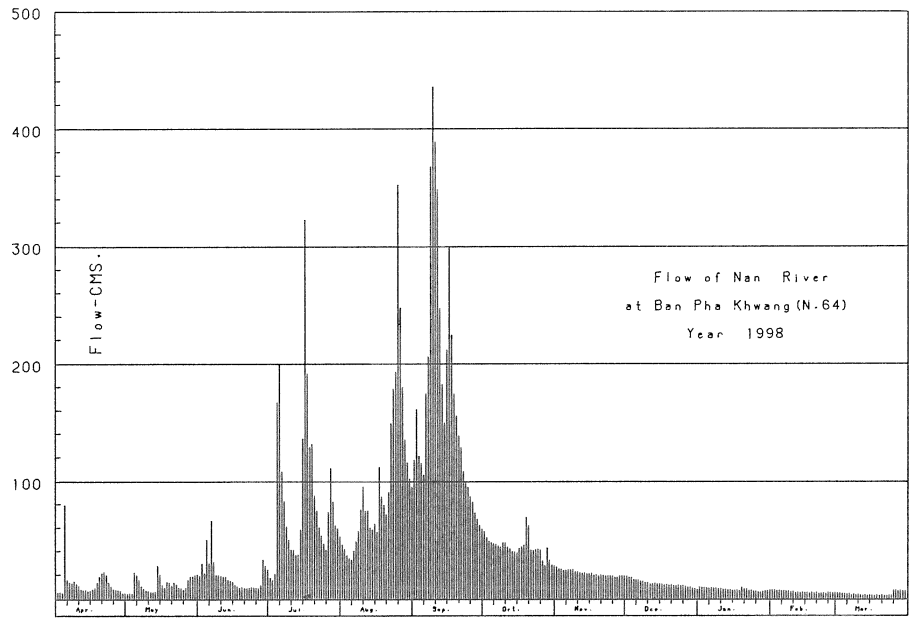
Nan River at Ban Pha Khwang, Nan (N.64)

Location	Lat. 19°-00'-31" N., Long. 100°-47'-18" E., on right bank at the bridge on highway, Tambon Bo, Amphoe Muang, Nan.
Drainage Area	3,432 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.- Temporary.
Location	On right bank at the approach of the bridge.
Elevation	+13.195 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1994 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Stable with variable water surface slope.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 46 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.95	0.92	1.23	1.21	1.61	2.37	1.73	1.36	1.23	1.06	1.01	0.94	
2	0.94	0.92	1.41	1.17	1.56	2.82	1.68	1.34	1.22	1.06	1.00	0.93	
3	0.94	0.92	1.28	1.27	1.50	2.41	1.64	1.33	1.21	1.05	1.00	0.93	
4	1.97	1.28	1.65	2.89	1.46	2.34	1.63	1.32	1.19	1.05	0.99	0.92	
5	1.18	1.25	1.41	3.22	1.45	2.24	1.62	1.32	1.18	1.04	0.99	0.92	
6	1.13	1.17	1.83	2.27	1.54	2.96	1.61	1.32	1.17	1.04	0.98	0.91	
7	1.13	1.08	1.42	2.00	1.64	3.28	1.60	1.33	1.16	1.04	0.98	0.90	
8	1.15	1.02	1.25	1.78	1.73	4.66	1.58	1.32	1.15	1.03	0.97	0.90	
9	1.12	0.99	1.24	1.65	1.93	5.23	1.63	1.30	1.14	1.03	0.97	0.90	
10	1.07	0.97	1.23	1.56	2.13	4.84	1.62	1.29	1.13	1.02	0.96	0.89	
11	1.02	0.96	1.23	1.55	1.91	4.50	1.58	1.28	1.12	1.02	0.95	0.89	
12	1.00	0.95	1.22	1.50	1.92	3.65	1.57	1.28	1.12	1.01	0.95	0.88	
13	0.99	0.96	1.18	1.50	1.76	3.05	1.54	1.28	1.12	1.01	0.95	0.88	
14	0.98	1.38	1.16	1.75	1.75	2.70	1.53	1.27	1.12	1.00	0.95	0.87	
15	0.98	1.25	1.15	2.56	1.80	3.33	1.52	1.27	1.11	1.00	0.95	0.87	
16	1.02	1.09	1.10	4.29	1.72	4.09	1.57	1.27	1.11	1.00	0.94	0.87	
17	1.03	1.05	1.06	3.14	2.31	3.45	1.59	1.25	1.10	0.99	0.94	0.87	
18	1.14	1.14	1.05	2.49	2.04	2.96	1.60	1.25	1.10	0.99	0.94	0.87	
19	1.22	1.13	1.05	2.51	1.97	2.77	1.86	1.24	1.10	1.05	0.94	0.87	
20	1.28	1.09	1.05	2.05	1.88	2.59	1.78	1.25	1.09	1.03	0.94	0.87	
21	1.29	1.13	1.03	1.92	2.08	2.48	1.55	1.24	1.09	1.02	0.93	0.87	
22	1.25	1.11	1.05	1.77	2.70	2.27	1.55	1.24	1.09	1.00	0.93	0.87	
23	1.14	1.05	1.05	1.69	3.01	2.17	1.56	1.23	1.09	0.99	0.93	0.87	
24	1.06	1.03	1.05	1.62	3.16	2.13	1.56	1.24	1.09	0.98	0.93	0.88	
25	1.02	1.01	1.04	1.55	4.53	2.04	1.55	1.23	1.08	0.97	0.94	1.00	
26	1.00	1.04	1.03	1.90	3.66	2.00	1.44	1.22	1.07	0.97	0.94	1.00	
27	1.00	1.18	1.10	2.30	3.02	1.90	1.38	1.22	1.06	0.96	0.94	0.99	
28	0.97	1.22	1.45	2.00	2.55	1.84	1.58	1.23	1.05	0.96	0.94	0.99	
29	0.93	1.23	1.37	1.78	2.35	1.79	1.44	1.24	1.04	0.99		0.98	
30	0.92	1.24	1.32	1.76	2.20	1.75	1.39	1.23	1.02	0.98		0.98	
31		1.25		1.68	2.13		1.37		1.02	1.00		0.91	
Mean	1.09	1.10	1.22	2.01	2.16	2.89	1.58	1.27	1.12	1.01	0.96	0.91	
Max	1.97	1.38	1.83	4.29	4.53	5.23	1.86	1.36	1.23	1.06	1.01	1.00	5.23
Min	0.92	0.92	1.03	1.17	1.45	1.75	1.37	1.22	1.02	0.96	0.93	0.87	0.87

Annual Max Momentary Gage Height 5.90 M (A.D), at 18.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.16 M (A.D)
Left Bank Elevation 15.80 M (A.D)
Right Bank Elevation 12.63 M (A.D), Drainage Area 3432 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.15	5.04	19.74	18.58	46.90	118.65	57.85	27.64	19.74	10.70	8.45	5.78	
2	5.78	5.04	30.96	16.35	42.72	161.40	53.20	26.36	19.16	10.70	8.00	5.41	
3	5.78	5.04	22.64	22.06	37.80	122.45	49.60	25.72	18.58	10.25	8.00	5.41	
4	80.65	22.64	50.50	168.05	34.76	115.80	48.70	25.08	17.45	10.25	7.63	5.04	
5	16.90	20.90	30.96	200.20	34.00	106.30	47.80	25.08	16.90	9.80	7.63	5.04	
6	14.15	16.35	67.35	109.15	41.08	174.70	46.90	25.08	16.35	9.80	7.26	4.67	
7	14.15	11.60	31.72	83.50	49.60	206.80	46.00	25.72	15.80	9.80	7.26	4.30	
8	15.25	8.90	20.90	62.60	57.85	368.20	44.36	25.08	15.25	9.35	6.89	4.30	
9	13.60	7.63	20.32	50.50	76.85	436.60	48.70	23.80	14.70	9.35	6.89	4.30	
10	11.15	6.89	19.74	42.72	95.85	389.80	47.80	23.22	14.15	8.90	6.52	4.05	
11	8.90	6.52	19.74	41.90	74.95	349.00	44.36	22.64	13.60	8.90	6.15	4.05	
12	8.00	6.15	19.16	37.80	75.90	247.50	43.54	22.64	13.60	8.45	6.15	3.80	
13	7.63	6.52	16.90	37.80	60.70	183.25	41.08	22.64	13.60	8.45	6.15	3.80	
14	7.26	28.92	15.80	59.75	59.75	150.00	40.26	22.06	13.60	8.00	6.15	3.55	
15	7.26	20.90	15.25	136.70	64.50	212.30	39.44	22.06	13.05	8.00	6.15	3.55	
16	8.90	12.05	12.50	323.80	56.90	299.80	43.54	22.06	13.05	8.00	5.78	3.55	
17	9.35	10.25	10.70	192.00	112.95	225.50	45.18	20.90	12.50	7.63	5.78	3.55	
18	14.70	14.70	10.25	130.05	87.30	174.70	46.00	20.90	12.50	7.63	5.78	3.55	
19	19.16	14.15	10.25	131.95	80.65	156.65	70.20	20.32	12.50	10.25	5.78	3.55	
20	22.64	12.05	10.25	88.25	72.10	139.55	62.60	20.90	12.05	9.35	5.78	3.55	
21	23.22	14.15	9.35	75.90	91.10	129.10	41.90	20.32	12.05	8.90	5.41	3.55	
22	20.90	13.05	10.25	61.65	150.00	109.15	41.90	20.32	12.05	8.00	5.41	3.55	
23	14.70	10.25	10.25	54.10	179.45	99.65	42.72	19.74	12.05	7.63	5.41	3.55	
24	10.70	9.35	10.25	47.80	194.00	95.85	42.72	20.32	12.05	7.26	5.41	3.80	
25	8.90	8.45	9.80	41.90	352.60	87.30	41.90	19.74	11.60	6.89	5.78	8.00	
26	8.00	9.80	9.35	74.00	248.60	83.50	33.24	19.16	11.15	6.89	5.78	8.00	
27	8.00	16.90	12.50	112.00	180.40	74.00	28.92	19.16	10.70	6.52	5.78	7.63	
28	6.89	19.16	34.00	83.50	135.75	68.30	44.36	19.74	10.25	6.52	5.78	7.63	
29	5.41	19.74	28.28	62.60	116.75	63.55	33.24	20.32	9.80	7.63		7.26	
30	5.04	20.32	25.08	60.70	102.50	59.75	29.56	19.74	8.90	7.26		7.26	
31		20.90		53.20	95.85		28.28		8.90	8.00		4.67	
Total	409.12	404.31	614.74	2681.06	3110.11	5209.10	1375.85	668.46	417.63	265.06	178.94	149.70	15484.08 CMSDAY
Mean	13.64	13.04	20.49	86.49	100.33	173.64	44.38	22.28	13.47	8.55	6.39	4.83	42.42 CMS
Max	80.65	28.92	67.35	323.80	352.60	436.60	70.20	27.64	19.74	10.70	8.45	8.00	436.60 CMS
Min	5.04	5.04	9.35	16.35	34.00	59.75	28.28	19.16	8.90	6.52	5.41	3.55	3.55 CMS
Runoff	35.348	34.932	53.114	231.644	268.714	450.066	118.873	57.755	36.083	22.901	15.460	12.934	1337.825 MCM

Momentary Peak 522.00 CMS, at 5.90 M (A.D), at 18.00 Hours, on Sep 8, 1998
Runoff Yield 12.36 Liters/Second/Square KM, Momentary Peak Yield 152.098 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

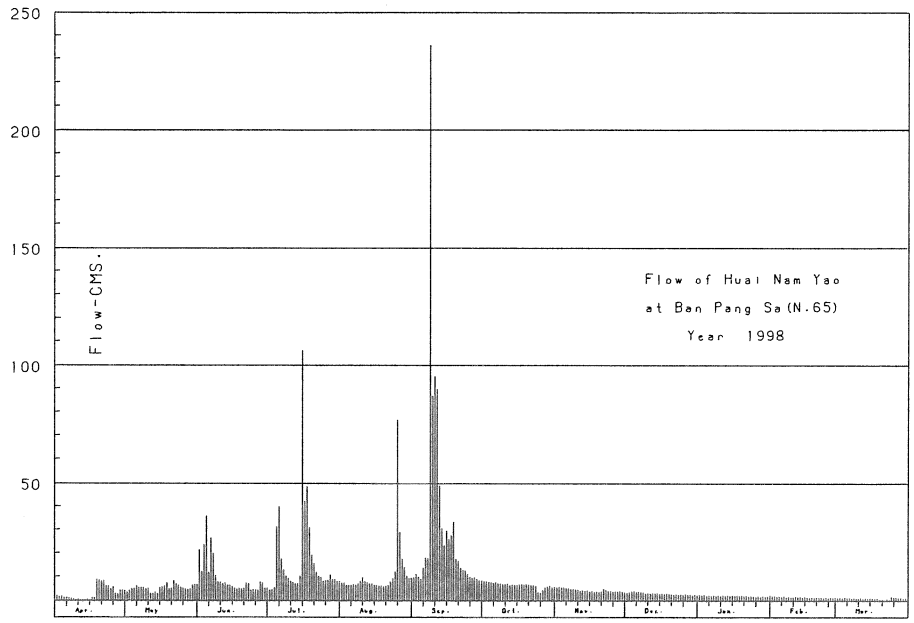
Nam Yao at Ban Pang Sa, Nan (N.65)

Location	Lat. 19°-13'-47" N., Long. 100°-45'-26" E., on right bank at the bridge on highway, Ban Pang Sa, Amphoe Tha Wang Pha, Nan.
Drainage Area	615 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 20 meters from the top staff gage.
Elevation	+8.630 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Faily stable with variable water surface slope.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 45 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.25	0.95	1.35	0.98	1.08	1.13	1.10	1.02	0.94	0.90	0.88	0.83	
2	1.23	0.97	1.19	0.98	1.07	1.16	1.09	1.02	0.94	0.90	0.87	0.83	
3	1.23	1.00	1.39	1.02	1.05	1.14	1.09	1.02	0.96	0.90	0.87	0.83	
4	1.16	1.00	1.57	1.50	1.04	1.11	1.08	1.01	0.96	0.89	0.86	0.83	
5	1.15	1.04	1.18	1.63	1.05	1.22	1.08	1.01	0.95	0.89	0.86	0.83	
6	1.09	1.01	1.43	1.29	1.05	1.30	1.08	1.00	0.95	0.89	0.86	0.82	
7	1.09	1.02	1.33	1.20	1.05	1.29	1.07	1.00	0.95	0.89	0.85	0.82	
8	1.05	1.01	1.15	1.15	1.06	3.83	1.06	0.99	0.94	0.89	0.85	0.82	
9	1.03	1.00	1.09	1.12	1.10	2.27	1.06	0.99	0.93	0.89	0.85	0.82	
10	1.00	1.00	1.08	1.10	1.13	2.37	1.06	0.98	0.93	0.89	0.85	0.82	
11	1.00	0.93	1.07	1.08	1.10	2.30	1.06	0.97	0.93	0.89	0.85	0.82	
12	0.99	0.93	1.07	1.07	1.08	1.76	1.05	0.97	0.93	0.89	0.85	0.81	
13	0.99	0.94	1.05	1.06	1.07	1.49	1.05	0.97	0.93	0.89	0.85	0.81	
14	0.99	0.93	1.04	1.15	1.06	1.38	1.05	0.97	0.93	0.89	0.85	0.81	
15	0.99	1.02	1.03	2.50	1.05	1.48	1.04	0.96	0.92	0.89	0.85	0.81	
16	1.12	1.02	1.00	1.66	1.04	1.42	1.05	0.96	0.92	0.89	0.84	0.81	
17	1.15	1.03	1.00	1.75	1.04	1.45	1.06	0.95	0.92	0.89	0.84	0.81	
18	1.11	1.08	1.00	1.50	1.03	1.53	1.05	0.95	0.92	0.89	0.84	0.81	
19	1.11	1.00	1.00	1.32	1.03	1.29	1.06	0.95	0.92	0.89	0.84	0.80	
20	1.10	1.00	1.00	1.25	1.03	1.27	1.05	0.95	0.91	0.88	0.84	0.80	
21	1.10	1.10	1.07	1.18	1.04	1.22	1.05	1.00	0.91	0.88	0.84	0.80	
22	1.04	1.06	1.07	1.15	1.09	1.20	1.04	0.98	0.91	0.87	0.83	0.80	
23	1.03	1.04	0.98	1.13	1.12	1.20	1.04	0.97	0.91	0.87	0.83	0.80	
24	1.00	1.02	0.98	1.10	1.19	1.16	0.94	0.96	0.91	0.87	0.83	0.85	
25	1.02	1.00	0.98	1.10	2.14	1.14	0.94	0.96	0.91	0.86	0.83	0.85	
26	0.92	0.99	0.98	1.11	1.47	1.13	0.98	0.95	0.91	0.86	0.83	0.84	
27	0.92	0.99	1.09	1.16	1.29	1.13	1.01	0.96	0.91	0.86	0.83	0.83	
28	0.98	0.99	1.07	1.11	1.22	1.12	1.03	0.96	0.90	0.86	0.83	0.82	
29	0.97	1.05	1.01	1.11	1.15	1.10	1.03	0.96	0.90	0.86		0.81	
30	0.97	1.05	1.00	1.10	1.12	1.10	1.02	0.94	0.90	0.86		0.81	
31		1.05		1.09	1.13		1.02		0.90	0.88		0.81	
Mean	1.06	1.01	1.11	1.25	1.13	1.46	1.04	0.98	0.92	0.88	0.85	0.82	
Max	1.25	1.10	1.57	2.50	2.14	3.83	1.10	1.02	0.96	0.90	0.88	0.85	3.83
Min	0.92	0.93	0.98	0.98	1.03	1.10	0.94	0.94	0.90	0.86	0.83	0.80	0.80

Annual Max Momentary Gage Height 4.05 M (A.D), at 11.00 Hours, on Sep 8, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.17 M (A.D)
Left Bank Elevation 8.14 M (A.D)
Right Bank Elevation 7.98 M (A.D), Drainage Area 615 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.19	3.88	21.60	4.70	7.93	9.95	8.60	5.92	3.60	2.50	2.18	1.38	
2	2.03	4.43	12.65	4.70	7.60	11.30	8.27	5.92	3.60	2.50	2.02	1.38	
3	2.03	5.25	24.08	5.92	6.92	10.40	8.27	5.92	4.15	2.50	2.02	1.38	
4	1.56	5.25	36.26	31.50	6.59	9.05	7.93	5.58	4.15	2.34	1.86	1.38	
5	1.50	6.59	12.20	40.34	6.92	14.18	7.93	5.58	3.88	2.34	1.86	1.38	
6	1.15	5.58	26.74	17.96	6.92	18.50	7.93	5.25	3.88	2.34	1.86	1.22	
7	1.15	5.92	20.36	13.10	6.92	17.96	7.60	5.25	3.88	2.34	1.70	1.22	
8	0.95	5.58	10.85	10.85	7.26	236.24	7.26	4.98	3.60	2.34	1.70	1.22	
9	0.85	5.25	8.27	9.50	8.60	87.41	7.26	4.98	3.33	2.34	1.70	1.22	
10	0.70	5.25	7.93	8.60	9.95	95.74	7.26	4.70	3.33	2.34	1.70	1.22	
11	0.70	3.33	7.60	7.93	8.60	89.90	7.26	4.43	3.33	2.34	1.70	1.22	
12	0.67	3.33	7.60	7.60	7.93	49.24	6.92	4.43	3.33	2.34	1.70	1.06	
13	0.67	3.60	6.92	7.26	7.60	30.82	6.92	4.43	3.33	2.34	1.70	1.06	
14	0.67	3.33	6.59	10.85	7.26	23.46	6.92	4.43	3.33	2.34	1.70	1.06	
15	0.67	5.92	6.25	106.60	6.92	30.14	6.59	4.15	3.05	2.34	1.70	1.06	
16	1.32	5.92	5.25	42.38	6.59	26.06	6.92	4.15	3.05	2.34	1.54	1.06	
17	1.50	6.25	5.25	48.55	6.59	28.10	7.26	3.88	3.05	2.34	1.54	1.06	
18	9.05	7.93	5.25	31.50	6.25	33.54	6.92	3.88	3.05	2.34	1.54	1.06	
19	9.05	5.25	5.25	19.74	6.25	17.96	7.26	3.88	3.05	2.34	1.54	0.90	
20	8.60	5.25	5.25	15.80	6.25	16.88	6.92	3.88	2.78	2.18	1.54	0.90	
21	8.60	8.60	7.60	12.20	6.59	14.18	6.92	5.25	2.78	2.18	1.54	0.90	
22	6.59	7.26	7.60	10.85	8.27	13.10	6.59	4.70	2.78	2.02	1.38	0.90	
23	6.25	6.59	4.70	9.95	9.50	13.10	6.59	4.43	2.78	2.02	1.38	0.90	
24	5.25	5.92	4.70	8.60	12.65	11.30	3.60	4.15	2.78	2.02	1.38	1.70	
25	5.92	5.25	4.70	8.60	76.92	10.40	3.60	4.15	2.78	1.86	1.38	1.70	
26	3.05	4.98	4.70	9.05	29.46	9.95	4.70	3.88	2.78	1.86	1.38	1.54	
27	3.05	4.98	8.27	11.30	17.96	9.95	5.58	4.15	2.78	1.86	1.38	1.38	
28	4.70	4.98	7.60	9.05	14.18	9.50	6.25	4.15	2.50	1.86	1.38	1.22	
29	4.43	6.92	5.58	9.05	10.85	8.60	6.25	4.15	2.50	1.86		1.06	
30	4.43	6.92	5.25	8.60	9.50	8.60	5.92	3.60	2.50	1.86		1.06	
31		6.92		8.27	9.95		5.92		2.50	2.18		1.06	
Total	99.28	172.41	302.85	550.90	351.68	965.51	210.12	138.23	98.21	68.70	46.00	36.86	3040.75 CMSDAY
Mean	3.31	5.56	10.10	17.77	11.34	32.18	6.78	4.61	3.17	2.22	1.64	1.19	8.33 CMS
Max	9.05	8.60	36.26	106.60	76.92	236.24	8.60	5.92	4.15	2.50	2.18	1.70	236.24 CMS
Min	0.67	3.33	4.70	4.70	6.25	8.60	3.60	3.60	2.50	1.86	1.38	0.90	0.67 CMS
Runoff	8.578	14.896	26.166	47.598	30.385	83.420	18.154	11.943	8.485	5.936	3.974	3.185	262.721 MCM

Momentary Peak 260.05 CMS, at 4.05 M (A.D), at 11.00 Hours, on Sep 8, 1998
Runoff Yield 13.55 Liters/Second/Square KM, Momentary Peak Yield 422.845 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

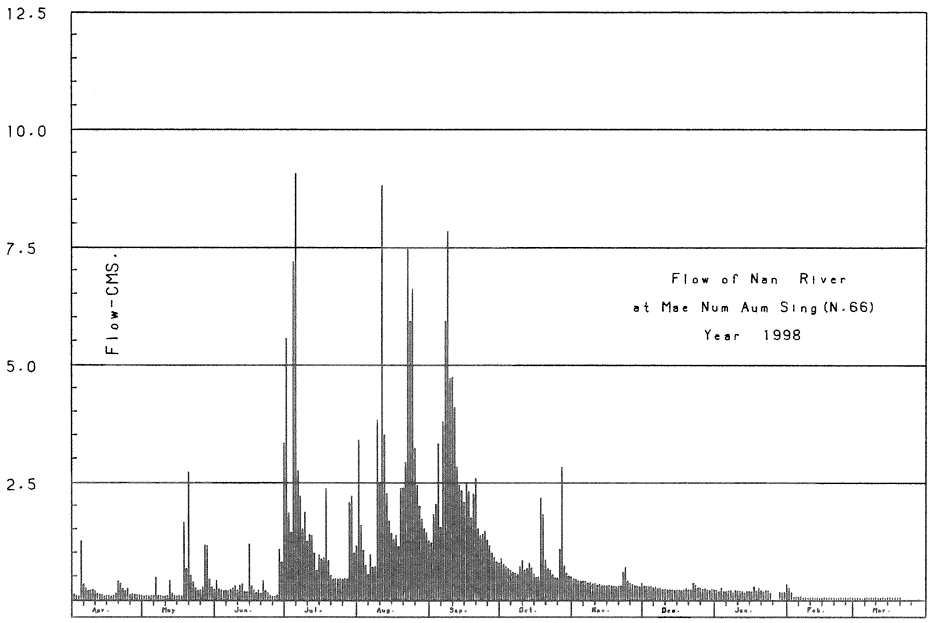
Huai Om Sing at Ban Om Sing, Phitsanulok (N.66)

Location	Lat. 17°-07'-17" N., Long. 100°-53'-51" E., on right bank at Ban Om Sing, Amphoe Nakhon Thai, Phitsanulok.
Drainage Area	147 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 8 meters from the top staff gage.
Elevation	+7.626 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1995 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.02	0.00	0.16	1.66	1.15	0.47	0.34	0.18	0.11	0.06	0.08	-0.02	
2	0.00	0.00	0.08	0.68	0.60	0.67	0.30	0.18	0.10	0.05	0.04	-0.02	
3	0.00	0.00	0.06	0.55	0.41	0.74	0.28	0.16	0.10	0.08	-0.01	-0.02	
4	0.48	0.00	0.06	2.00	0.29	1.13	0.27	0.16	0.10	0.05	-0.01	-0.02	
5	0.13	0.00	0.06	2.35	0.22	0.59	0.25	0.16	0.09	0.05	-0.01	-0.02	
6	0.08	0.20	0.05	0.96	0.37	1.25	0.24	0.15	0.09	0.05	-0.01	-0.02	
7	0.06	0.01	0.07	0.79	0.28	1.74	0.23	0.14	0.08	0.06	-0.02	-0.02	
8	0.06	0.00	0.08	0.57	0.28	2.12	0.22	0.14	0.08	0.03	-0.02	-0.02	
9	0.07	0.00	0.11	0.69	1.26	1.47	0.28	0.13	0.07	0.06	-0.02	-0.02	
10	0.05	0.00	0.06	0.48	0.88	1.48	0.33	0.13	0.07	0.05	-0.02	-0.02	
11	0.03	0.00	0.11	0.53	2.30	1.33	0.25	0.12	0.07	0.05	-0.02	-0.02	
12	0.02	0.16	0.13	0.52	1.18	0.98	0.27	0.12	0.07	0.05	-0.02	-0.02	
13	0.01	0.03	0.05	0.39	0.81	0.86	0.31	0.11	0.06	0.03	-0.02	-0.02	
14	0.00	0.00	0.04	0.25	0.63	0.83	0.27	0.11	0.06	0.05	-0.02	-0.02	
15	0.00	0.00	0.46	0.37	0.54	0.75	0.22	0.11	0.06	0.05	-0.02	-0.02	
16	0.00	0.00	0.11	0.34	0.49	0.88	0.20	0.11	0.06	0.04	-0.02	-0.02	
17	0.00	0.00	0.06	0.35	0.52	0.82	0.20	0.11	0.06	0.10	-0.02	-0.02	
18	0.00	0.62	0.04	0.84	0.44	0.65	0.78	0.10	0.06	0.05	-0.02	-0.02	
19	0.03	0.27	0.06	0.33	0.84	0.81	0.67	0.10	0.08	0.08	-0.02	-0.02	
20	0.16	0.95	0.03	0.21	0.85	0.91	0.33	0.10	0.06	0.06	-0.02	-0.02	
21	0.13	0.21	0.16	0.18	1.01	0.58	0.27	0.11	0.07	0.04	-0.02	-0.04	
22	0.08	0.15	0.06	0.18	2.05	0.52	0.25	0.24	0.14	0.06	-0.02	-0.04	
23	0.05	0.08	0.03	0.18	1.74	0.53	0.22	0.28	0.11	0.05	-0.02	-0.04	
24	0.08	0.06	0.01	0.18	1.88	0.56	0.19	0.16	0.09	0.03	-0.02	-0.04	
25	0.02	0.06	-0.01	0.18	1.10	0.49	0.19	0.13	0.08	-0.05	-0.02	-0.04	
26	0.02	0.09	-0.01	0.18	0.86	0.44	0.42	0.12	0.07	-0.05	-0.02	-0.04	
27	0.02	0.45	0.01	0.18	0.73	0.39	0.98	0.11	0.08	-0.05	-0.02	-0.04	
28	0.01	0.44	0.41	0.75	0.64	0.35	0.29	0.10	0.06	0.04	-0.02	-0.04	
29	0.01	0.18	0.32	0.79	0.58	0.32	0.23	0.10	0.06	0.03		-0.04	
30	0.00	0.10	1.13	0.39	0.54	0.31	0.21	0.13	0.07	0.04		-0.04	
31		0.07		0.44	0.48		0.20		0.07	0.12		-0.04	
Mean	0.05	0.13	0.13	0.60	0.84	0.83	0.31	0.14	0.08	0.04	-0.01	-0.03	
Max	0.48	0.95	1.13	2.35	2.30	2.12	0.98	0.28	0.14	0.12	0.08	-0.02	2.35
Min	0.00	0.00	-0.01	0.18	0.22	0.31	0.19	0.10	0.06	-0.05	-0.02	-0.04	-0.05

Annual Max Momentary Gage Height 3.09 M (A.D), at 10.00 Hours, on Jul 5, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.04 M (A.D)
Left Bank Elevation 7.43 M (A.D)
Right Bank Elevation 7.41 M (A.D), Drainage Area 147 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.14	0.10	0.42	5.58	3.42	1.24	0.89	0.46	0.32	0.22	0.26	0.06	
2	0.10	0.10	0.26	1.86	1.60	1.83	0.78	0.46	0.30	0.20	0.18	0.06	
3	0.10	0.10	0.22	1.46	1.08	2.06	0.72	0.42	0.30	0.26	0.08	0.06	
4	1.27	0.10	0.22	7.20	0.75	3.35	0.69	0.42	0.30	0.20	0.08	0.06	
5	0.36	0.10	0.22	9.08	0.56	1.57	0.64	0.42	0.28	0.20	0.08	0.06	
6	0.26	0.50	0.20	2.77	0.97	3.80	0.61	0.40	0.28	0.20	0.08	0.06	
7	0.22	0.12	0.24	2.22	0.72	5.95	0.58	0.38	0.26	0.22	0.06	0.06	
8	0.22	0.10	0.26	1.52	0.72	7.84	0.56	0.38	0.26	0.16	0.06	0.06	
9	0.24	0.10	0.32	1.89	3.84	4.72	0.72	0.36	0.24	0.22	0.06	0.06	
10	0.20	0.10	0.22	1.27	2.51	4.76	0.86	0.36	0.24	0.20	0.06	0.06	
11	0.16	0.10	0.32	1.41	8.81	4.12	0.64	0.34	0.24	0.20	0.06	0.06	
12	0.14	0.42	0.36	1.38	3.53	2.84	0.69	0.34	0.24	0.20	0.06	0.06	
13	0.12	0.16	0.20	1.02	2.28	2.45	0.80	0.32	0.22	0.16	0.06	0.06	
14	0.10	0.10	0.18	0.64	1.70	2.35	0.69	0.32	0.22	0.20	0.06	0.06	
15	0.10	0.10	1.21	0.97	1.44	2.09	0.56	0.32	0.22	0.20	0.06	0.06	
16	0.10	0.10	0.32	0.89	1.30	2.51	0.50	0.32	0.22	0.18	0.06	0.06	
17	0.10	0.10	0.22	0.91	1.38	2.32	0.50	0.32	0.22	0.30	0.06	0.06	
18	0.10	1.66	0.18	2.38	1.16	1.76	2.19	0.30	0.22	0.20	0.06	0.06	
19	0.16	0.69	0.22	0.86	2.38	2.28	1.83	0.30	0.26	0.26	0.06	0.06	
20	0.42	2.74	0.16	0.53	2.41	2.61	0.86	0.30	0.22	0.22	0.06	0.06	
21	0.36	0.53	0.42	0.46	2.94	1.54	0.69	0.32	0.24	0.18	0.06	0.02	
22	0.26	0.40	0.22	0.46	7.47	1.38	0.64	0.61	0.38	0.22	0.06	0.02	
23	0.20	0.26	0.16	0.46	5.95	1.41	0.56	0.72	0.32	0.20	0.06	0.02	
24	0.26	0.22	0.12	0.46	6.62	1.49	0.48	0.42	0.28	0.16	0.06	0.02	
25	0.14	0.22	0.08	0.46	3.25	1.30	0.48	0.36	0.26	0.00	0.06	0.02	
26	0.14	0.28	0.08	0.46	2.45	1.16	1.10	0.34	0.24	0.00	0.06	0.02	
27	0.14	1.19	0.12	0.46	2.02	1.02	2.84	0.32	0.26	0.00	0.06	0.02	
28	0.12	1.16	1.08	2.09	1.73	0.91	0.75	0.30	0.22	0.18	0.06	0.02	
29	0.12	0.46	0.83	2.22	1.54	0.83	0.58	0.30	0.22	0.16		0.02	
30	0.10	0.30	3.35	1.02	1.44	0.80	0.53	0.36	0.24	0.18		0.02	
31		0.24		1.16	1.27		0.50		0.24	0.34		0.02	
Total	6.45	12.85	12.41	55.55	79.24	74.29	25.46	11.29	7.96	5.82	2.08	1.42	294.82 CMSDAY
Mean	0.21	0.41	0.41	1.79	2.56	2.48	0.82	0.38	0.26	0.19	0.07	0.05	0.81 CMS
Max	1.27	2.74	3.35	9.08	8.81	7.84	2.84	0.72	0.38	0.34	0.26	0.06	9.08 CMS
Min	0.10	0.10	0.08	0.46	0.56	0.80	0.48	0.30	0.22	0.00	0.06	0.02	0.00 CMS
Runoff	0.557	1.110	1.072	4.800	6.846	6.419	2.200	0.975	0.688	0.503	0.180	0.123	25.472 MCM

Momentary Peak 13.56 CMS, at 3.09 M (A.D), at 10.00 Hours, on Jul 5, 1998
Runoff Yield 5.49 Liters/Second/Square KM, Momentary Peak Yield 92.245 Liters/Second/Square KM

WATER YEAR 1998

NAN RIVER BASIN

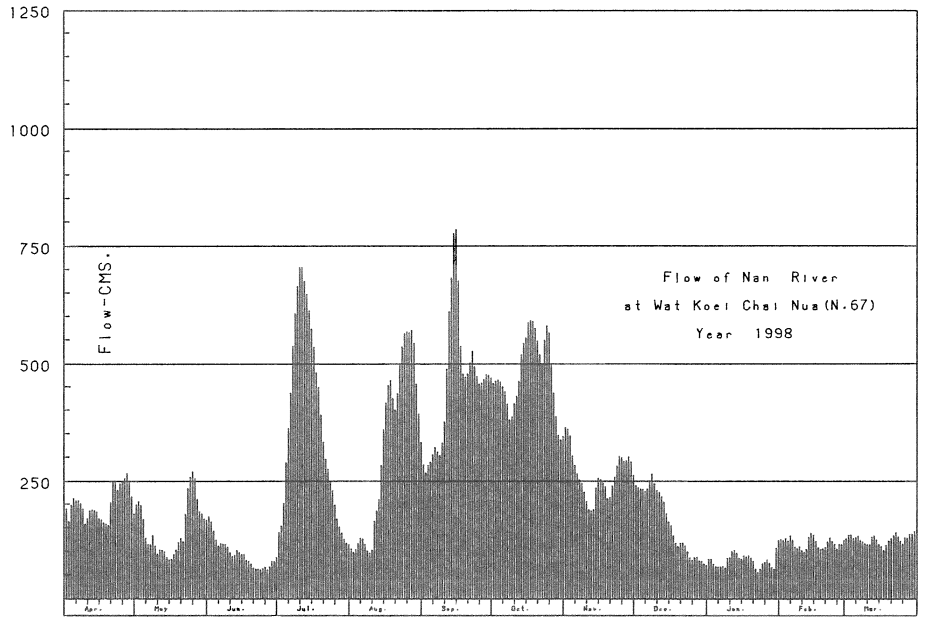
Nan River at Ban Koei Chai, Nakhon Sawan (N.67)

Location	Lat. 15°-52'-09" N., Long. 100°-16'-06" E., on right bank at the bridge near Wat Koei Chai Nua, Amphoe Chum Saeng, Nakhon Sawan.
Drainage Area	- sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+13.12 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank near the gage observer s house.
Elevation	+27.470 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Mae Yom side flow. Stage-discharge relation defined by 65 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	20.30	20.39	20.14	19.72	19.26	21.21	22.58	21.89	20.81	18.90	19.54	19.58	
2	20.02	20.45	20.00	19.91	19.16	21.07	22.60	21.85	20.75	18.93	19.53	19.65	
3	20.40	20.39	19.78	20.42	19.23	21.20	22.63	21.75	20.74	18.73	19.56	19.68	
4	20.52	20.08	19.53	21.26	19.43	21.27	22.59	21.38	20.71	18.67	19.52	19.56	
5	20.49	19.57	19.38	21.86	19.57	21.41	22.53	21.21	20.67	18.63	19.63	19.61	
6	20.48	19.39	19.42	22.43	19.57	21.53	22.44	21.04	20.74	18.66	19.54	19.63	
7	20.43	19.41	19.43	23.10	19.40	21.45	22.25	20.93	20.90	18.65	19.32	19.53	
8	20.30	19.66	19.40	23.54	19.21	21.40	22.01	20.84	21.05	18.62	19.30	19.47	
9	19.96	19.35	19.34	23.89	19.11	21.60	22.05	20.67	20.85	18.93	19.33	19.44	
10	20.08	19.11	19.16	24.15	19.24	21.98	22.27	20.46	20.69	18.98	19.22	19.39	
11	20.28	19.22	18.99	24.14	20.01	22.78	22.38	20.30	20.67	19.19	19.13	19.41	
12	20.28	19.23	19.03	23.97	20.27	23.57	22.61	20.26	20.56	19.21	19.27	19.60	
13	20.28	19.15	19.23	23.78	20.50	24.01	22.98	20.30	20.46	19.14	19.59	19.65	
14	20.23	18.98	19.13	23.57	21.21	24.56	23.14	20.74	20.20	18.94	19.72	19.53	
15	20.10	18.87	19.09	23.34	21.84	24.62	23.22	20.96	20.02	18.93	19.65	19.42	
16	20.04	18.92	19.07	23.09	22.27	23.96	23.41	20.92	19.90	19.02	19.49	19.34	
17	19.99	19.06	18.89	22.74	22.55	23.10	23.45	20.86	19.66	19.01	19.32	19.23	
18	19.93	19.24	18.83	22.51	22.61	22.72	23.43	20.77	19.43	19.02	19.23	19.37	
19	19.92	19.45	18.76	22.09	22.35	22.66	23.35	20.53	19.36	18.97	19.28	19.52	
20	20.43	19.56	18.60	21.62	22.17	22.72	23.17	20.54	19.43	18.83	19.31	19.56	
21	20.89	19.49	18.58	21.33	22.41	22.87	22.99	20.80	19.46	18.58	19.49	19.66	
22	20.89	20.20	18.56	21.13	22.83	23.04	22.84	20.97	19.36	18.42	19.58	19.72	
23	20.71	20.75	18.56	20.90	23.10	22.82	23.19	21.20	19.19	18.58	19.51	19.63	
24	20.83	20.97	18.57	20.69	23.28	22.67	23.37	21.37	18.95	18.74	19.40	19.49	
25	20.90	21.09	18.65	20.40	23.29	22.57	23.29	21.36	18.89	18.82	19.28	19.43	
26	20.94	20.94	18.53	20.09	23.28	22.57	22.85	21.27	18.98	18.87	19.40	19.58	
27	21.06	20.52	18.66	19.86	23.32	22.64	22.43	21.30	18.97	18.78	19.42	19.59	
28	20.89	20.24	18.82	19.72	23.14	22.70	22.05	21.36	18.87	18.61	19.51	19.67	
29	20.57	20.21	18.84	19.54	22.57	22.70	21.74	21.28	18.83	18.58		19.70	
30	20.19	20.07	18.96	19.45	22.09	22.65	21.67	21.01	18.76	19.28		19.75	
31		20.04		19.39	21.63		21.72		18.68	19.53		19.77	
Mean	20.41	19.81	19.06	21.73	21.29	22.54	22.68	21.00	19.89	18.86	19.43	19.55	
Max	21.06	21.09	20.14	24.15	23.32	24.62	23.45	21.89	21.05	19.53	19.72	19.77	24.62
Min	19.92	18.87	18.53	19.39	19.11	21.07	21.67	20.26	18.68	18.42	19.13	19.23	18.42

Annual Max Momentary Gage Height 24.72 M (MSL), at 1.00 Hours, on Sep 15, 1998
Zero Gage at Bottom Elevation 13.12 M (MSL), River Bed 12.65 M (MSL)
Left Bank Elevation 28.72 M (MSL)
Right Bank Elevation 27.89 M (MSL), Drainage Area Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	191.1	200.1	175.9	141.3	106.3	285.4	460.4	366.3	242.7	84.3	126.6	129.9	
2	165.8	206.2	164.2	156.8	100.2	269.6	463.2	361.5	236.6	86.1	125.8	135.6	
3	201.1	200.1	146.2	203.1	104.5	284.3	467.4	349.3	235.6	73.9	128.3	138.1	
4	213.3	170.7	125.8	291.0	118.3	292.1	461.8	304.5	232.6	70.2	125.0	128.3	
5	210.2	129.1	114.5	362.7	129.1	307.9	453.4	285.4	228.5	67.7	134.0	132.4	
6	209.2	115.2	117.5	439.4	129.1	322.4	440.8	266.3	235.6	69.6	126.6	134.0	
7	204.2	116.7	118.3	537.9	116.0	312.7	414.2	254.9	251.8	69.0	110.0	125.8	
8	191.1	136.4	116.0	608.6	103.3	306.7	382.0	245.7	267.4	67.1	108.8	121.2	
9	160.9	112.3	111.5	665.0	97.1	331.0	387.3	228.5	246.8	86.1	110.8	119.0	
10	170.7	97.1	100.2	707.1	105.1	378.0	417.0	207.2	230.5	89.2	103.9	115.2	
11	189.2	103.9	89.8	705.4	165.0	489.2	432.4	191.1	228.5	102.0	98.4	116.7	
12	189.2	104.5	92.2	677.8	188.3	613.4	464.6	187.3	217.3	103.3	106.9	131.5	
13	189.2	99.6	104.5	647.3	211.3	684.3	519.6	191.1	207.2	99.0	130.7	135.6	
14	184.4	89.2	98.4	613.4	285.4	777.5	544.2	235.6	181.6	86.7	141.3	125.8	
15	172.4	82.4	95.9	576.4	360.2	787.8	557.1	257.9	165.8	86.1	135.6	117.5	
16	167.5	85.5	94.7	536.4	417.0	676.2	587.7	253.9	156.0	91.6	122.7	111.5	
17	163.4	94.1	83.7	483.1	456.2	537.9	594.1	247.8	136.4	91.0	110.0	104.5	
18	158.5	105.1	80.0	450.6	464.6	480.0	590.9	238.6	118.3	91.6	104.5	113.8	
19	157.7	119.8	75.7	392.7	428.2	471.6	578.0	214.3	113.0	88.6	107.6	125.0	
20	204.2	128.3	65.9	333.4	403.3	480.0	549.0	215.3	118.3	80.0	109.4	128.3	
21	250.8	122.7	64.7	298.9	436.6	502.9	521.2	241.7	120.5	64.7	122.7	136.4	
22	250.8	181.6	63.4	276.4	496.8	528.8	498.3	258.9	113.0	55.8	129.9	141.3	
23	232.6	236.6	63.4	251.8	537.9	495.2	552.3	284.3	102.0	64.7	124.2	134.0	
24	244.7	258.9	64.1	230.5	566.8	473.0	581.2	303.4	87.3	74.5	116.0	122.7	
25	251.8	271.9	69.0	201.1	568.4	459.0	568.4	302.3	83.7	79.4	107.6	118.3	
26	255.9	255.9	61.6	171.5	566.8	459.0	499.8	292.1	89.2	82.4	116.0	129.9	
27	268.5	213.3	69.6	152.8	573.2	468.8	439.4	295.5	88.6	76.9	117.5	130.7	
28	250.8	185.4	79.4	141.3	544.2	477.2	387.3	302.3	82.4	66.5	124.2	137.2	
29	218.4	182.5	80.6	126.6	459.0	477.2	348.0	293.3	80.0	64.7		139.7	
30	180.7	169.9	87.9	119.8	392.7	470.2	339.5	263.0	75.7	107.6		143.8	
31		167.5		115.2	334.6		345.6		70.8	125.8		145.4	
Total	6098.3	4742.5	2874.6	11615.3	9965.5	13899.3	14846.1	7939.3	5043.7	2546.1	3325.0	3969.1	86864.8 CMSDAY
Mean	203.3	153.0	95.8	374.7	321.5	463.3	478.9	264.6	162.7	82.1	118.8	128.0	238.0 CMS
Max	268.5	271.9	175.9	707.1	573.2	787.8	594.1	366.3	267.4	125.8	141.3	145.4	787.8 CMS
Min	157.7	82.4	61.6	115.2	97.1	269.6	339.5	187.3	70.8	55.8	98.4	104.5	55.8 CMS
Runoff	526.89	409.75	248.37	1003.56	861.02	1200.90	1282.70	685.96	435.78	219.98	287.28	342.93	7505.12 MCM

Momentary Peak 805.00 CMS, at 24.72 M (MSL), at 1.00 Hours, on Sep 15, 1998

Runoff Yield ********* Liters/Second/Square KM, Momentary Peak Yield ********* Liters/Second/Square KM

WATER YEAR 1998

NAM MAE KOK RIVER BASIN

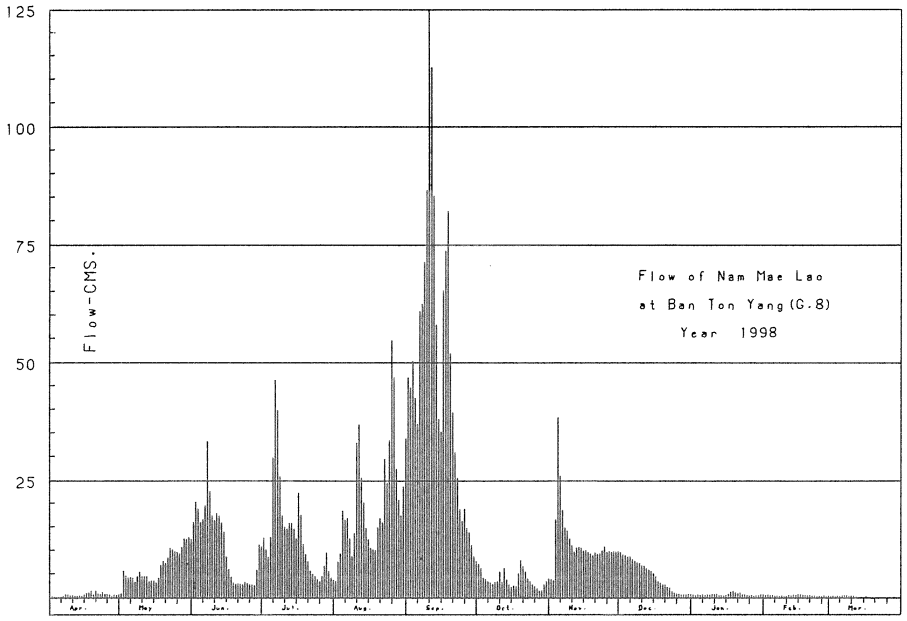
Nam Mae Lao at Ban Ton Yang, Chiang Rai (G.8)

Location	Lat. 19°47'27" N., Long. 99°45'12" E., on left bank at the bridge of Chiang Rai-Payao Highway, Tambon Bua Sali, Amphoe Mae Lao, Chiang Rai.
Drainage Area	2,934 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 8.00 meters from the top staff gage.
Elevation	+5.118 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1994 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Fairly stable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Mae Lao weir situated about 10 kilometers upstream from the gage site. Stage-discharge relation defined by 85 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.43	0.48	1.04	0.91	0.49	1.83	0.69	0.52	0.80	0.21	0.21	0.16	
2	0.41	0.62	1.20	0.82	0.71	1.79	0.64	0.51	0.77	0.20	0.21	0.16	
3	0.41	0.56	1.15	0.75	0.78	1.90	0.54	1.06	0.77	0.21	0.20	0.16	
4	0.40	0.54	1.04	0.92	1.13	1.75	0.52	1.67	0.75	0.21	0.20	0.16	
5	0.42	0.55	1.06	1.50	1.06	1.64	0.50	1.40	0.76	0.22	0.17	0.16	
6	0.42	0.53	1.17	1.82	1.07	2.09	0.47	1.14	0.73	0.21	0.16	0.16	
7	0.47	0.49	1.57	1.70	0.91	2.12	0.46	1.00	0.72	0.21	0.16	0.20	
8	0.46	0.55	1.29	1.40	0.76	2.27	0.48	0.97	0.70	0.22	0.16	0.19	
9	0.45	0.61	1.09	1.09	0.95	2.51	0.50	0.91	0.70	0.23	0.16	0.17	
10	0.44	0.55	1.06	1.00	1.56	3.01	0.61	0.85	0.67	0.24	0.17	0.17	
11	0.44	0.55	1.11	0.99	1.64	2.86	0.48	0.80	0.67	0.23	0.19	0.15	
12	0.44	0.56	1.09	1.03	1.39	2.49	0.64	0.83	0.64	0.19	0.18	0.12	
13	0.43	0.50	1.04	1.03	1.20	2.04	0.52	0.84	0.63	0.18	0.20	0.11	
14	0.43	0.50	0.96	0.99	0.99	1.66	0.44	0.83	0.61	0.18	0.21	0.10	
15	0.47	0.50	0.76	0.91	0.90	1.61	0.40	0.81	0.59	0.18	0.22	0.10	
16	0.49	0.48	0.63	1.27	0.83	2.17	0.43	0.81	0.55	0.25	0.22	0.14	
17	0.51	0.54	0.55	1.10	0.82	2.31	0.41	0.80	0.50	0.29	0.21	0.12	
18	0.53	0.67	0.47	0.86	0.81	2.44	0.59	0.78	0.47	0.33	0.19	0.11	
19	0.47	0.71	0.46	0.78	1.00	1.93	0.72	0.77	0.45	0.28	0.19	0.10	
20	0.53	0.70	0.46	0.71	1.07	1.69	0.66	0.79	0.44	0.27	0.19	0.08	
21	0.48	0.75	0.45	0.62	1.04	1.52	0.61	0.78	0.41	0.27	0.17	0.06	
22	0.48	0.83	0.45	0.58	1.49	1.39	0.53	0.78	0.39	0.23	0.16	0.06	
23	0.51	0.82	0.48	0.56	1.35	1.14	0.49	0.81	0.32	0.22	0.16	0.07	
24	0.48	0.80	0.47	0.52	1.57	1.05	0.45	0.84	0.27	0.21	0.16	0.08	
25	0.47	0.80	0.44	0.50	1.98	1.15	0.41	0.80	0.26	0.19	0.16	0.10	
26	0.46	0.78	0.44	0.56	1.83	0.99	0.37	0.80	0.23	0.18	0.16	0.10	
27	0.43	0.84	0.44	0.67	1.44	0.96	0.33	0.80	0.22	0.17	0.15	0.09	
28	0.45	0.91	0.63	0.79	1.22	0.85	0.33	0.80	0.21	0.17	0.16	0.09	
29	0.46	0.90	0.86	0.61	1.09	0.76	0.45	0.80	0.22	0.20		0.09	
30	0.46	0.92	0.84	0.54	1.32	0.71	0.49	0.80	0.23	0.22		0.09	
31		0.90		0.51	1.58		0.53		0.24	0.22		0.07	
Mean	0.46	0.66	0.82	0.90	1.16	1.75	0.51	0.87	0.51	0.22	0.18	0.12	
Max	0.53	0.92	1.57	1.82	1.98	3.01	0.72	1.67	0.80	0.33	0.22	0.20	3.01
Min	0.40	0.48	0.44	0.50	0.49	0.71	0.33	0.51	0.21	0.17	0.15	0.06	0.06

Annual Max Momentary Gage Height 3.06 M (A.D), at 16.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.25 M (A.D)
Left Bank Elevation 5.43 M (A.D)
Right Bank Elevation 5.42 M (A.D), Drainage Area 2934 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.47	0.92	16.21	12.77	3.52	46.86	7.35	4.02	9.90	0.72	0.72	0.49	
2	0.29	5.91	20.45	10.42	7.79	44.78	6.32	3.83	9.19	0.65	0.72	0.49	
3	0.29	4.76	19.12	8.73	9.43	50.50	4.39	16.74	9.19	0.72	0.65	0.49	
4	0.20	4.39	16.21	13.03	18.59	42.70	4.02	38.57	8.73	0.72	0.65	0.49	
5	0.38	4.58	16.74	30.00	16.74	37.04	3.65	26.00	8.96	0.78	0.53	0.49	
6	0.38	4.20	19.65	46.34	17.01	60.95	3.25	18.86	8.26	0.72	0.49	0.49	
7	0.83	3.52	33.50	40.10	12.77	62.60	3.11	15.15	8.02	0.72	0.49	0.65	
8	0.74	4.58	22.88	26.00	8.96	71.34	3.38	14.36	7.55	0.78	0.49	0.61	
9	0.65	5.71	17.54	17.54	13.82	86.70	3.65	12.77	7.55	0.85	0.49	0.53	
10	0.56	4.58	16.74	15.15	33.00	124.90	5.71	11.20	6.94	0.92	0.53	0.53	
11	0.56	4.58	18.06	14.89	37.04	112.80	3.38	9.90	6.94	0.85	0.61	0.45	
12	0.56	4.76	17.54	15.94	25.71	85.35	6.32	10.68	6.32	0.61	0.57	0.33	
13	0.47	3.65	16.21	15.94	20.45	58.20	4.02	10.94	6.11	0.57	0.65	0.29	
14	0.47	3.65	14.09	14.89	14.89	38.06	2.84	10.68	5.71	0.57	0.72	0.25	
15	0.83	3.65	8.96	12.77	12.50	35.51	2.30	10.16	5.31	0.57	0.78	0.25	
16	1.01	3.38	6.11	22.34	10.68	65.35	2.71	10.16	4.58	0.99	0.78	0.41	
17	1.24	4.39	4.58	17.80	10.42	73.83	2.44	9.90	3.65	1.25	0.72	0.33	
18	1.53	6.94	3.25	11.46	10.16	82.10	5.31	9.43	3.25	1.61	0.61	0.29	
19	0.83	7.79	3.11	9.43	15.15	52.15	8.02	9.19	2.98	1.19	0.61	0.25	
20	1.53	7.55	3.11	7.79	17.01	39.59	6.73	9.67	2.84	1.12	0.61	0.20	
21	0.92	8.73	2.98	5.91	16.21	31.00	5.71	9.43	2.44	1.12	0.53	0.15	
22	0.92	10.68	2.98	5.13	29.60	25.71	4.20	9.43	2.20	0.85	0.49	0.15	
23	1.24	10.42	3.38	4.76	24.57	18.86	3.52	10.16	1.52	0.78	0.49	0.18	
24	0.92	9.90	3.25	4.02	33.50	16.47	2.98	10.94	1.12	0.72	0.49	0.20	
25	0.83	9.90	2.84	3.65	54.90	19.12	2.44	9.90	1.05	0.61	0.49	0.25	
26	0.74	9.43	2.84	4.76	46.86	14.89	2.01	9.90	0.85	0.57	0.49	0.25	
27	0.47	10.94	2.84	6.94	27.60	14.09	1.61	9.90	0.78	0.53	0.45	0.23	
28	0.65	12.77	6.11	9.67	20.99	11.20	1.61	9.90	0.72	0.53	0.49	0.23	
29	0.74	12.50	11.46	5.71	17.54	8.96	2.98	9.90	0.78	0.65		0.23	
30	0.74	13.03	10.94	4.39	23.72	7.79	3.52	9.90	0.85	0.78		0.23	
31		12.50		3.83	34.00		4.20		0.92	0.78		0.18	
Total	21.99	214.29	343.68	422.10	645.13	1439.40	123.68	361.57	145.21	24.83	16.34	10.59	3768.81 CMSDAY
Mean	0.73	6.91	11.46	13.62	20.81	47.98	3.99	12.05	4.68	0.80	0.58	0.34	10.33 CMS
Max	1.53	13.03	33.50	46.34	54.90	124.90	8.02	38.57	9.90	1.61	0.78	0.65	124.90 CMS
Min	0.20	0.92	2.84	3.65	3.52	7.79	1.61	3.83	0.72	0.53	0.45	0.15	0.15 CMS
Runoff	1.900	18.515	29.694	36.469	55.739	124.364	10.686	31.240	12.546	2.145	1.412	0.915	325.625 MCM

Momentary Peak 129.40 CMS, at 3.06 M (A.D), at 16.00 Hours, on Sep 10, 1998

Runoff Yield 3.52 Liters/Second/Square KM, Momentary Peak Yield 44.104 Liters/Second/Square KM

WATER YEAR 1998

NAM MAE ING BASIN

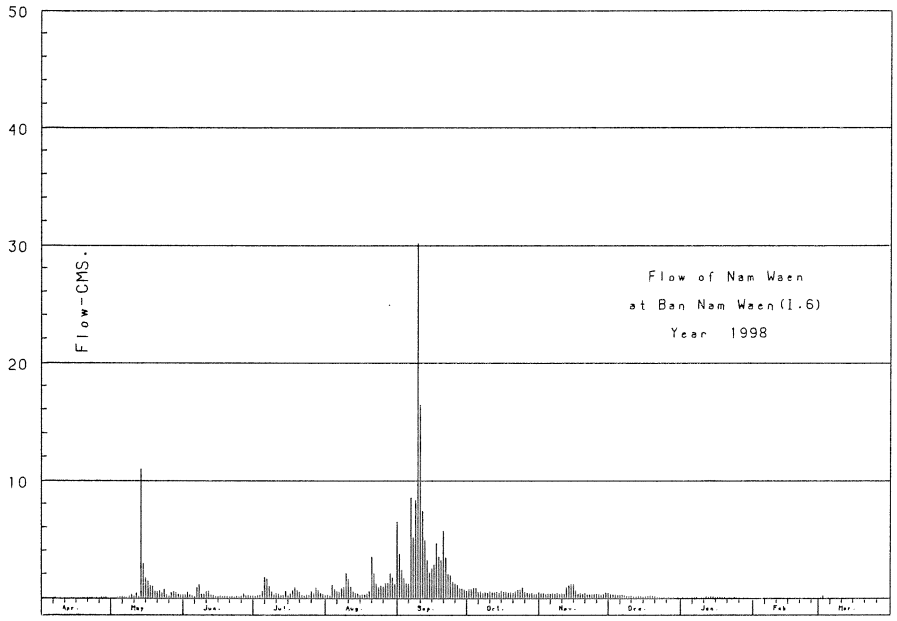
Nam Waen at Ban Nam Waen, Phayao (I.6)

Location	Lat. 19°-29'-24" N., Long. 100°-16'-35" E., on left bank at the bridge of Amphoe Chun-Amphoe Chiang Kham highway, Amphoe Chiang Kham, Phayao.
Drainage Area	146 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank in the vicinity of gage observer s house.
Elevation	+8.152 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1980 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Nam Waen reservoir about 4-5 kilometers above gage site. Stage-discharge relation defined by 58 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.41	0.41	0.52	0.46	0.51	1.11	0.61	0.35	0.32	0.23	0.20	0.24	
2	0.40	0.45	0.56	0.51	0.50	0.92	0.62	0.34	0.32	0.22	0.19	0.28	
3	0.41	0.45	0.52	0.50	0.68	0.79	0.63	0.33	0.31	0.22	0.20	0.19	
4	0.41	0.44	0.49	0.59	0.62	0.71	0.64	0.33	0.31	0.22	0.19	0.19	
5	0.40	0.46	0.47	0.81	0.58	0.70	0.57	0.34	0.31	0.22	0.18	0.19	
6	0.40	0.41	0.65	0.78	0.56	1.55	0.57	0.33	0.30	0.23	0.19	0.18	
7	0.40	0.43	0.69	0.67	0.63	1.26	0.55	0.34	0.30	0.22	0.20	0.18	
8	0.42	0.47	0.53	0.57	0.64	1.53	0.55	0.35	0.26	0.22	0.19	0.18	
9	0.40	0.52	0.52	0.52	0.87	2.71	0.55	0.33	0.27	0.22	0.19	0.18	
10	0.39	0.46	0.58	0.54	0.78	2.04	0.57	0.33	0.27	0.23	0.18	0.18	
11	0.39	0.55	0.58	0.53	0.65	1.46	0.56	0.34	0.26	0.25	0.18	0.18	
12	0.39	0.47	0.52	0.51	0.58	1.23	0.56	0.48	0.26	0.25	0.17	0.18	
13	0.40	1.73	0.50	0.50	0.54	1.03	0.56	0.54	0.27	0.25	0.17	0.18	
14	0.38	0.99	0.48	0.59	0.54	0.88	0.55	0.55	0.25	0.26	0.17	0.18	
15	0.39	0.80	0.47	0.50	0.51	0.94	0.58	0.56	0.25	0.23	0.17	0.18	
16	0.39	0.74	0.47	0.53	0.51	0.98	0.57	0.41	0.26	0.24	0.17	0.17	
17	0.40	0.68	0.47	0.60	0.52	1.21	0.56	0.33	0.27	0.23	0.17	0.17	
18	0.40	0.66	0.46	0.64	0.53	1.08	0.55	0.34	0.27	0.23	0.17	0.17	
19	0.42	0.59	0.46	0.60	0.58	1.03	0.55	0.34	0.27	0.22	0.16	0.16	
20	0.41	0.57	0.46	0.56	1.08	1.31	0.55	0.34	0.24	0.22	0.14	0.18	
21	0.42	0.59	0.46	0.50	0.86	1.07	0.57	0.32	0.23	0.22	0.17	0.17	
22	0.40	0.55	0.46	0.49	0.70	0.86	0.61	0.32	0.23	0.21	0.17	0.17	
23	0.42	0.62	0.46	0.51	0.65	0.83	0.60	0.31	0.22	0.22	0.18	0.19	
24	0.41	0.51	0.46	0.51	0.67	0.74	0.49	0.33	0.22	0.22	0.18	0.19	
25	0.41	0.50	0.47	0.57	0.66	0.70	0.37	0.32	0.23	0.21	0.18	0.18	
26	0.43	0.55	0.54	0.54	0.71	0.69	0.36	0.32	0.22	0.20	0.18	0.17	
27	0.44	0.58	0.50	0.64	0.72	0.63	0.35	0.31	0.22	0.21	0.18	0.17	
28	0.42	0.55	0.50	0.59	0.86	0.62	0.34	0.32	0.22	0.21	0.17	0.18	
29	0.41	0.53	0.50	0.55	0.80	0.61	0.32	0.37	0.22	0.20		0.18	
30	0.41	0.51	0.48	0.52	0.70	0.58	0.32	0.34	0.22	0.21		0.17	
31		0.51		0.51	1.38		0.37		0.22	0.20		0.17	
Mean	0.41	0.59	0.51	0.56	0.68	1.06	0.52	0.36	0.26	0.22	0.18	0.18	
Max	0.44	1.73	0.69	0.81	1.38	2.71	0.64	0.56	0.32	0.26	0.20	0.28	2.71
Min	0.38	0.41	0.46	0.46	0.50	0.58	0.32	0.31	0.22	0.20	0.14	0.16	0.14

Annual Max Momentary Gage Height 3.15 M (A.D), at 9.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.10 M (A.D)
Left Bank Elevation 8.81 M (A.D)
Right Bank Elevation 8.79 M (A.D), Drainage Area 146 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.10	0.10	0.36	0.19	0.31	3.85	0.77	0.46	0.36	0.12	0.05	0.15	
2	0.08	0.17	0.54	0.31	0.27	2.48	0.82	0.43	0.36	0.10	0.04	0.24	
3	0.10	0.17	0.36	0.27	1.14	1.72	0.88	0.40	0.32	0.10	0.05	0.04	
4	0.10	0.16	0.25	0.67	0.82	1.29	0.93	0.40	0.32	0.10	0.04	0.04	
5	0.08	0.19	0.21	1.83	0.63	1.24	0.58	0.43	0.32	0.10	0.04	0.04	
6	0.08	0.10	0.98	1.66	0.54	8.64	0.58	0.40	0.29	0.12	0.04	0.04	
7	0.08	0.14	1.19	1.08	0.88	5.25	0.50	0.43	0.29	0.10	0.05	0.04	
8	0.12	0.21	0.40	0.58	0.93	8.38	0.50	0.46	0.19	0.10	0.04	0.04	
9	0.08	0.36	0.36	0.36	2.18	30.22	0.50	0.40	0.22	0.10	0.04	0.04	
10	0.07	0.19	0.63	0.45	1.66	16.46	0.58	0.40	0.22	0.12	0.04	0.04	
11	0.07	0.50	0.63	0.40	0.98	7.49	0.54	0.43	0.19	0.17	0.04	0.04	
12	0.07	0.21	0.36	0.31	0.63	4.95	0.54	0.93	0.19	0.17	0.04	0.04	
13	0.08	11.06	0.27	0.27	0.45	3.23	0.54	1.16	0.22	0.17	0.04	0.04	
14	0.06	2.94	0.23	0.67	0.45	2.23	0.50	1.20	0.17	0.19	0.04	0.04	
15	0.07	1.77	0.21	0.27	0.31	2.61	0.63	1.24	0.17	0.12	0.04	0.04	
16	0.07	1.45	0.21	0.40	0.31	2.87	0.58	0.68	0.19	0.15	0.04	0.04	
17	0.08	1.14	0.21	0.72	0.36	4.75	0.54	0.40	0.22	0.12	0.04	0.04	
18	0.08	1.03	0.19	0.93	0.40	3.61	0.50	0.43	0.22	0.12	0.04	0.04	
19	0.12	0.67	0.19	0.72	0.63	3.23	0.50	0.43	0.22	0.10	0.03	0.03	
20	0.10	0.58	0.19	0.54	3.61	5.76	0.50	0.43	0.15	0.10	0.02	0.04	
21	0.12	0.67	0.19	0.27	2.12	3.53	0.58	0.36	0.12	0.10	0.04	0.04	
22	0.08	0.50	0.19	0.25	1.24	2.12	0.77	0.36	0.12	0.07	0.04	0.04	
23	0.12	0.82	0.19	0.31	0.98	1.94	0.72	0.32	0.10	0.10	0.04	0.04	
24	0.10	0.31	0.19	0.31	1.08	1.45	0.96	0.40	0.10	0.10	0.04	0.04	
25	0.10	0.27	0.21	0.58	1.03	1.24	0.53	0.36	0.12	0.07	0.04	0.04	
26	0.14	0.50	0.45	0.45	1.29	1.19	0.50	0.36	0.10	0.05	0.04	0.04	
27	0.16	0.63	0.27	0.93	1.35	0.88	0.46	0.32	0.10	0.07	0.04	0.04	
28	0.12	0.50	0.27	0.67	2.12	0.82	0.43	0.36	0.10	0.07	0.04	0.04	
29	0.10	0.40	0.27	0.50	1.77	0.77	0.36	0.53	0.10	0.05		0.04	
30	0.10	0.31	0.23	0.36	1.24	0.63	0.36	0.43	0.10	0.07		0.04	
31		0.31		0.31	6.53		0.53		0.10	0.05		0.04	
Total	2.83	28.36	10.43	17.57	38.24	134.83	18.21	15.34	5.99	3.27	1.12	1.54	277.73 CMSDAY
Mean	0.09	0.91	0.35	0.57	1.23	4.49	0.59	0.51	0.19	0.11	0.04	0.05	0.76 CMS
Max	0.16	11.06	1.19	1.83	6.53	30.22	0.96	1.24	0.36	0.19	0.05	0.24	30.22 CMS
Min	0.06	0.10	0.19	0.19	0.27	0.63	0.36	0.32	0.10	0.05	0.02	0.03	0.02 CMS
Runoff	0.245	2.450	0.901	1.518	3.304	11.649	1.573	1.325	0.518	0.283	0.097	0.133	23.996 MCM

Momentary Peak 40.15 CMS, at 3.15 M (A.D), at 9.00 Hours, on Sep 9, 1998
Runoff Yield 5.21 Liters/Second/Square KM, Momentary Peak Yield 275.000 Liters/Second/Square KM

WATER YEAR 1998

NAM MAE ING BASIN

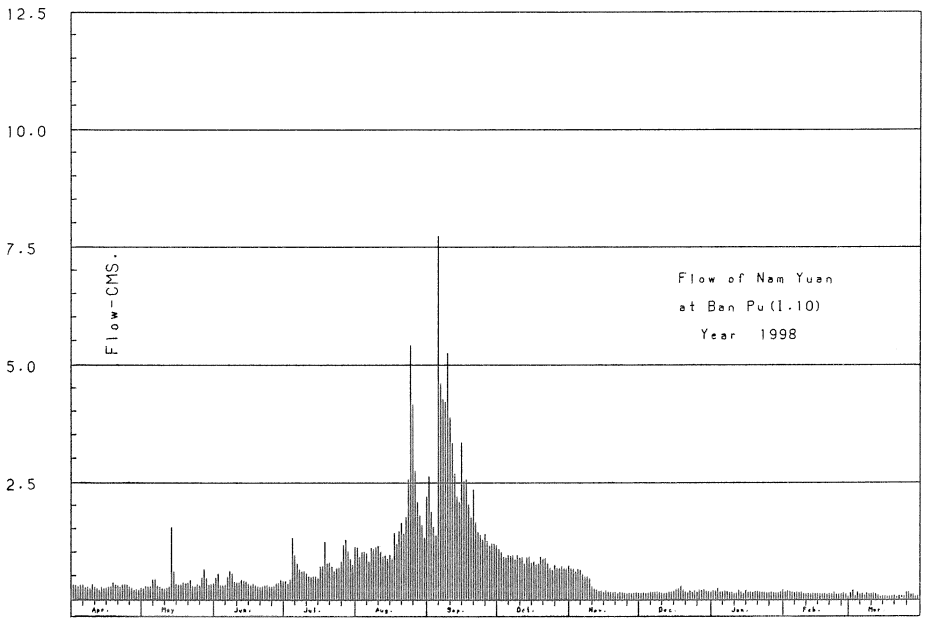
Nam Yuan at Ban Pu, Phayao (I.10)

Location	Lat. 19°-31'-25" N., Long. 100°-20'-06" E., on left bank at the bridge on road, Ban Pu, Amphoe Chiang Kham, Phayao.
Drainage Area	185 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank in the vicinity of gage observer s house.
Elevation	+5.860 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir about 30 meters above gage site. Stage-discharge relation defined by 54 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.47	1.43	1.52	1.50	1.69	1.99	1.68	1.58	1.38	1.41	1.40	1.38	
2	1.46	1.45	1.55	1.48	1.64	1.85	1.67	1.57	1.38	1.41	1.41	1.42	
3	1.45	1.45	1.46	1.51	1.67	1.79	1.64	1.56	1.38	1.43	1.41	1.34	
4	1.46	1.45	1.46	1.74	1.67	1.75	1.64	1.57	1.38	1.40	1.39	1.39	
5	1.47	1.51	1.46	1.65	1.66	2.72	1.65	1.57	1.40	1.40	1.39	1.37	
6	1.44	1.51	1.53	1.61	1.62	2.31	1.65	1.54	1.39	1.41	1.39	1.37	
7	1.44	1.46	1.56	1.57	1.69	2.26	1.65	1.53	1.40	1.40	1.39	1.35	
8	1.43	1.44	1.55	1.56	1.68	2.25	1.63	1.53	1.40	1.39	1.39	1.38	
9	1.47	1.43	1.49	1.56	1.69	2.41	1.65	1.52	1.39	1.39	1.38	1.37	
10	1.44	1.42	1.49	1.55	1.70	2.20	1.64	1.45	1.38	1.38	1.37	1.38	
11	1.43	1.43	1.48	1.53	1.67	2.11	1.64	1.43	1.38	1.38	1.37	1.38	
12	1.42	1.45	1.51	1.53	1.64	2.00	1.61	1.42	1.38	1.42	1.37	1.37	
13	1.44	1.79	1.50	1.53	1.65	1.91	1.64	1.41	1.40	1.39	1.37	1.34	
14	1.43	1.56	1.50	1.53	1.63	1.89	1.64	1.41	1.39	1.38	1.37	1.32	
15	1.43	1.47	1.47	1.52	1.65	2.11	1.61	1.40	1.41	1.41	1.37	1.33	
16	1.44	1.46	1.46	1.59	1.63	1.97	1.62	1.41	1.42	1.40	1.36	1.33	
17	1.45	1.47	1.47	1.59	1.76	1.98	1.60	1.40	1.43	1.39	1.37	1.33	
18	1.48	1.48	1.46	1.72	1.71	1.88	1.61	1.39	1.45	1.39	1.37	1.32	
19	1.47	1.48	1.44	1.61	1.77	1.83	1.64	1.39	1.42	1.40	1.36	1.34	
20	1.46	1.48	1.44	1.61	1.81	1.94	1.63	1.39	1.40	1.41	1.37	1.34	
21	1.44	1.51	1.44	1.59	1.76	1.81	1.63	1.38	1.39	1.40	1.37	1.32	
22	1.47	1.45	1.46	1.56	1.83	1.77	1.61	1.39	1.41	1.40	1.39	1.33	
23	1.47	1.45	1.46	1.58	1.98	1.75	1.58	1.39	1.40	1.39	1.36	1.34	
24	1.47	1.47	1.45	1.58	2.43	1.73	1.57	1.38	1.41	1.39	1.36	1.33	
25	1.44	1.46	1.45	1.62	2.24	1.76	1.60	1.38	1.40	1.39	1.37	1.40	
26	1.43	1.52	1.45	1.70	2.01	1.72	1.58	1.38	1.42	1.39	1.38	1.39	
27	1.42	1.57	1.48	1.73	1.89	1.70	1.58	1.38	1.42	1.39	1.37	1.36	
28	1.42	1.52	1.48	1.67	1.84	1.71	1.59	1.38	1.42	1.38	1.32	1.35	
29	1.42	1.47	1.51	1.63	1.80	1.71	1.58	1.39	1.41	1.39		1.33	
30	1.43	1.47	1.50	1.60	1.74	1.70	1.57	1.38	1.40	1.40		1.33	
31		1.48		1.69	1.91		1.59		1.40	1.42		1.30	
Mean	1.45	1.48	1.48	1.59	1.78	1.95	1.62	1.44	1.40	1.40	1.38	1.35	
Max	1.48	1.79	1.56	1.74	2.43	2.72	1.68	1.58	1.45	1.43	1.41	1.42	2.72
Min	1.42	1.42	1.44	1.48	1.62	1.70	1.57	1.38	1.38	1.38	1.32	1.30	1.30

Annual Max Momentary Gage Height 3.74 M (A.D), at 21.00 Hours, on Aug 24, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.46 M (A.D)
Left Bank Elevation 5.48 M (A.D)
Right Bank Elevation 5.42 M (A.D), Drainage Area 185 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.33	0.25	0.47	0.40	1.13	2.65	1.09	0.68	0.15	0.20	0.18	0.15	
2	0.31	0.29	0.57	0.36	0.92	1.88	1.04	0.65	0.15	0.20	0.20	0.22	
3	0.29	0.29	0.31	0.43	1.04	1.56	0.92	0.61	0.15	0.25	0.20	0.10	
4	0.31	0.29	0.31	1.34	1.04	1.39	0.92	0.65	0.15	0.18	0.17	0.17	
5	0.33	0.43	0.31	0.96	1.00	7.75	0.96	0.65	0.18	0.18	0.17	0.14	
6	0.27	0.43	0.50	0.79	0.83	4.61	0.96	0.54	0.17	0.20	0.17	0.14	
7	0.27	0.31	0.61	0.65	1.13	4.29	0.96	0.50	0.18	0.18	0.17	0.12	
8	0.25	0.27	0.57	0.61	1.09	4.22	0.88	0.50	0.18	0.17	0.17	0.15	
9	0.33	0.25	0.38	0.61	1.13	5.27	0.96	0.47	0.17	0.17	0.15	0.14	
10	0.27	0.22	0.38	0.57	1.17	3.90	0.92	0.29	0.15	0.15	0.14	0.15	
11	0.25	0.25	0.36	0.50	1.04	3.36	0.92	0.25	0.15	0.15	0.14	0.15	
12	0.22	0.29	0.43	0.50	0.92	2.70	0.79	0.22	0.15	0.22	0.14	0.14	
13	0.27	1.56	0.40	0.50	0.96	2.21	0.92	0.20	0.18	0.17	0.14	0.10	
14	0.25	0.61	0.40	0.50	0.88	2.10	0.92	0.20	0.17	0.15	0.14	0.08	
15	0.25	0.33	0.33	0.47	0.96	3.36	0.79	0.18	0.20	0.20	0.14	0.09	
16	0.27	0.31	0.31	0.72	0.88	2.54	0.83	0.20	0.22	0.18	0.13	0.09	
17	0.29	0.33	0.33	0.72	1.43	2.59	0.75	0.18	0.25	0.17	0.14	0.09	
18	0.36	0.36	0.31	1.26	1.21	2.04	0.79	0.17	0.29	0.17	0.14	0.08	
19	0.33	0.36	0.27	0.79	1.47	1.77	0.92	0.17	0.22	0.18	0.13	0.10	
20	0.31	0.36	0.27	0.79	1.66	2.37	0.88	0.17	0.18	0.20	0.14	0.10	
21	0.27	0.43	0.27	0.72	1.43	1.66	0.88	0.15	0.17	0.18	0.14	0.08	
22	0.33	0.29	0.31	0.61	1.77	1.47	0.79	0.17	0.20	0.18	0.17	0.09	
23	0.33	0.29	0.31	0.68	2.59	1.39	0.68	0.17	0.18	0.17	0.13	0.10	
24	0.33	0.33	0.29	0.68	5.42	1.30	0.65	0.15	0.20	0.17	0.13	0.09	
25	0.27	0.31	0.29	0.83	4.16	1.43	0.75	0.15	0.18	0.17	0.14	0.18	
26	0.25	0.47	0.29	1.17	2.76	1.26	0.68	0.15	0.22	0.17	0.15	0.17	
27	0.22	0.65	0.36	1.30	2.10	1.17	0.68	0.15	0.22	0.17	0.14	0.13	
28	0.22	0.47	0.36	1.04	1.82	1.21	0.72	0.15	0.22	0.15	0.08	0.12	
29	0.22	0.33	0.43	0.88	1.60	1.21	0.68	0.17	0.20	0.17		0.09	
30	0.25	0.33	0.40	0.75	1.34	1.17	0.65	0.15	0.18	0.18		0.09	
31		0.36		1.13	2.21		0.72		0.18	0.22		0.05	
Total	8.45	12.05	11.13	23.26	49.09	75.83	26.00	9.04	5.79	5.60	4.18	3.69	234.11 CMSDAY
Mean	0.28	0.39	0.37	0.75	1.58	2.53	0.84	0.30	0.19	0.18	0.15	0.12	0.64 CMS
Max	0.36	1.56	0.61	1.34	5.42	7.75	1.09	0.68	0.29	0.25	0.20	0.22	7.75 CMS
Min	0.22	0.22	0.27	0.36	0.83	1.17	0.65	0.15	0.15	0.15	0.08	0.05	0.05 CMS
Runoff	0.730	1.041	0.962	2.010	4.241	6.552	2.246	0.781	0.500	0.484	0.361	0.319	20.227 MCM

Momentary Peak 26.32 CMS, at 3.74 M (A.D), at 21.00 Hours, on Aug 24, 1998

Runoff Yield 3.47 Liters/Second/Square KM, Momentary Peak Yield 142.270 Liters/Second/Square KM

WATER YEAR 1998

NAM MAE ING BASIN

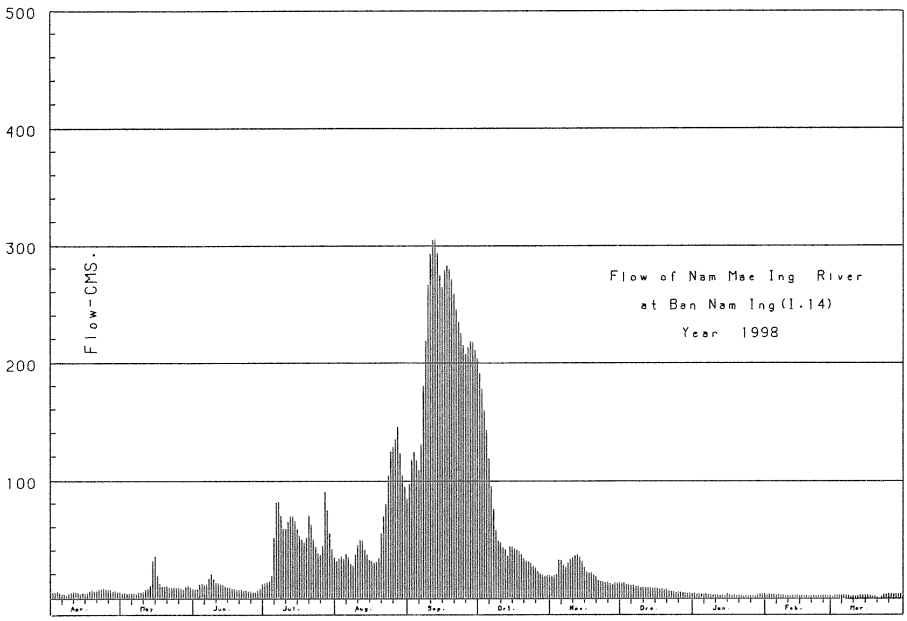
Nam Mae Ing at Ban Nam Ing, Chiang Rai (I.14)

Location	Lat. 19°-50'-00" N., Long. 100°-12'-15" E., on right bank at the bridge on road about 2 kilometers from Amphoe Khun Tan, Chiang Rai.
Drainage Area	6,155 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the approach of the bridge.
Elevation	+10.680 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1993 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Fairly stable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir about 100 meters downstream from the gage site. Stage-discharge relation defined by 31 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.13	1.10	1.29	1.50	2.10	3.64	5.35	1.72	1.53	1.04	1.28	0.82	
2	1.11	1.08	1.32	1.54	2.15	4.05	5.12	1.72	1.52	1.02	1.32	0.92	
3	1.19	1.05	1.47	1.57	2.20	4.20	4.82	1.77	1.49	1.01	1.30	0.95	
4	1.08	1.03	1.52	1.73	2.15	4.06	4.53	2.11	1.47	1.03	1.28	0.93	
5	1.04	1.08	1.48	2.62	2.26	3.89	4.09	2.12	1.46	1.02	1.26	0.93	
6	0.99	1.04	1.47	3.30	2.18	4.31	3.60	1.99	1.44	1.01	1.26	0.92	
7	0.94	1.04	1.66	3.33	2.03	5.17	3.20	1.95	1.42	1.00	1.25	0.92	
8	1.03	1.13	1.76	3.06	1.97	5.81	2.77	2.05	1.41	0.96	1.23	0.90	
9	1.13	1.16	1.64	2.80	2.25	6.55	2.55	2.14	1.39	0.94	1.20	0.85	
10	1.15	1.15	1.52	2.81	2.45	6.94	2.50	2.17	1.36	0.93	1.18	0.87	
11	1.17	1.27	1.51	2.96	2.57	7.12	2.39	2.23	1.37	0.93	1.17	0.86	
12	1.14	1.34	1.49	3.05	2.55	7.12	2.36	2.24	1.37	0.92	1.20	0.88	
13	1.01	1.44	1.45	3.06	2.36	6.96	2.22	2.20	1.36	0.91	1.21	0.94	
14	1.07	2.09	1.42	2.95	2.24	6.68	2.42	2.08	1.35	1.20	1.20	0.95	
15	1.05	2.21	1.38	2.80	2.13	6.52	2.42	1.95	1.34	1.40	1.18	0.93	
16	1.08	1.73	1.36	2.65	2.09	6.74	2.37	1.82	1.33	1.28	1.16	0.93	
17	1.21	1.50	1.33	2.58	2.06	6.81	2.35	1.80	1.32	1.23	1.15	0.91	
18	1.24	1.41	1.30	2.50	2.07	6.75	2.31	1.79	1.31	1.23	1.14	0.83	
19	1.22	1.39	1.28	2.62	2.17	6.63	2.25	1.75	1.30	1.22	1.13	0.86	
20	1.22	1.41	1.27	3.08	2.71	6.44	2.15	1.69	1.29	1.21	1.18	0.72	
21	1.29	1.37	1.26	2.88	3.05	6.23	2.09	1.61	1.23	1.20	0.90	0.82	
22	1.32	1.38	1.24	2.57	3.29	6.07	2.08	1.58	1.20	1.15	0.88	1.15	
23	1.33	1.37	1.22	2.42	3.80	5.91	2.04	1.56	1.16	1.14	0.88	1.30	
24	1.31	1.36	1.21	2.27	4.20	5.74	1.98	1.54	1.14	1.16	0.92	1.34	
25	1.28	1.35	1.18	2.24	4.27	5.62	1.92	1.53	1.13	1.17	0.92	1.36	
26	1.25	1.32	1.16	2.43	4.40	5.71	1.84	1.50	1.11	1.15	0.91	1.37	
27	1.21	1.31	1.15	3.51	4.58	5.80	1.77	1.49	1.11	1.14	0.90	1.35	
28	1.20	1.38	1.22	3.16	4.18	5.78	1.73	1.52	1.10	1.26	0.90	1.35	
29	1.16	1.44	1.32	2.71	3.79	5.68	1.72	1.53	1.09	1.35		1.37	
30	1.13	1.36	1.48	2.36	3.60	5.55	1.72	1.53	1.08	1.34		1.37	
31		1.32		2.17	3.37		1.73		1.07	1.34		1.37	
Mean	1.16	1.34	1.38	2.62	2.81	5.82	2.66	1.82	1.30	1.13	1.12	1.03	
Max	1.33	2.21	1.76	3.51	4.58	7.12	5.35	2.24	1.53	1.40	1.32	1.37	7.12
Min	0.94	1.03	1.15	1.50	1.97	3.64	1.72	1.49	1.07	0.91	0.88	0.72	0.72

Annual Max Momentary Gage Height 7.13 M (A.D), at 15.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.10 M (A.D)
Left Bank Elevation 10.63 M (A.D)
Right Bank Elevation 9.38 M (A.D), Drainage Area 6155 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	5.42	5.00	7.84	12.70	32.20	97.38	192.00	19.36	13.54	4.28	3.42	1.90	
2	5.14	4.76	8.44	13.82	34.00	117.50	178.20	19.36	13.26	4.04	3.82	2.92	
3	6.26	4.40	11.95	14.66	35.80	125.00	160.20	21.01	12.45	3.92	3.60	3.25	
4	4.76	4.16	13.26	19.69	34.00	118.00	143.15	32.56	11.95	4.16	3.42	3.03	
5	4.28	4.76	12.20	52.20	38.14	109.51	119.50	32.92	11.70	4.04	3.24	3.03	
6	3.69	4.28	11.95	81.40	35.08	131.05	95.50	28.27	11.20	3.92	3.24	2.92	
7	3.14	4.28	17.42	82.81	29.68	181.20	76.70	26.95	10.70	3.80	3.15	2.92	
8	4.16	5.42	20.68	70.34	27.61	219.60	58.27	30.40	10.45	3.36	2.97	2.70	
9	5.42	5.84	16.78	59.50	37.75	266.75	49.45	33.64	9.98	3.14	2.70	2.20	
10	5.70	5.70	13.26	59.91	45.55	292.80	47.50	34.72	9.32	3.03	2.56	2.40	
11	5.98	7.52	12.98	66.06	50.23	305.40	43.21	36.97	9.54	3.03	2.49	2.30	
12	5.56	8.88	12.45	69.90	49.45	305.40	42.04	37.36	9.54	2.92	2.70	2.50	
13	3.92	11.20	11.45	70.34	42.04	294.20	36.58	35.80	9.32	2.81	2.79	3.14	
14	4.64	31.84	10.70	65.65	37.36	275.20	44.38	31.48	9.10	2.70	2.70	3.25	
15	4.40	36.19	9.76	59.50	33.28	264.80	44.38	26.95	8.88	4.70	2.56	3.03	
16	4.76	19.69	9.32	53.40	31.84	279.10	42.43	22.66	8.66	3.42	2.42	3.03	
17	6.56	12.70	8.66	50.62	30.76	283.70	41.65	22.00	8.44	2.97	2.35	2.81	
18	7.04	10.45	8.00	47.50	31.12	279.75	40.09	21.67	8.22	2.97	2.28	2.00	
19	6.72	9.98	7.68	52.20	34.72	271.95	37.75	20.35	8.00	2.88	2.21	2.30	
20	6.72	10.45	7.52	71.22	55.81	259.60	34.00	18.38	7.84	2.79	2.56	0.98	
21	7.84	9.54	7.36	62.78	69.90	245.95	31.84	15.82	6.88	2.70	2.70	0.58	
22	8.44	9.76	7.04	50.23	80.93	235.55	31.48	14.94	6.40	2.35	2.50	2.35	
23	8.66	9.54	6.72	44.38	105.10	225.60	30.04	14.38	5.84	2.28	2.50	3.60	
24	8.22	9.32	6.56	38.53	125.00	215.40	27.94	13.82	5.56	2.42	2.92	4.04	
25	7.68	9.10	6.12	37.36	128.85	208.20	25.96	13.54	5.42	2.49	2.92	4.26	
26	7.20	8.44	5.84	44.77	136.00	213.60	23.32	12.70	5.14	2.35	2.81	4.37	
27	6.56	8.22	5.70	91.27	145.90	219.00	21.01	12.45	5.14	2.28	2.70	4.15	
28	6.40	9.76	6.72	74.86	124.00	217.80	19.69	13.26	5.00	3.24	2.70	4.15	
29	5.84	11.20	8.44	55.81	104.61	211.80	19.36	13.54	4.88	4.15		4.37	
30	5.42	9.32	12.20	42.04	95.50	204.00	19.36	13.54	4.76	4.04		4.37	
31		8.44		34.72	84.69		19.69		4.64	4.04		4.37	
Total	176.53	310.14	305.00	1650.17	1946.90	6674.79	1796.67	690.80	261.75	101.22	78.93	93.22	14086.12 CMSDAY
Mean	5.88	10.00	10.17	53.23	62.80	222.49	57.96	23.03	8.44	3.27	2.82	3.01	38.59 CMS
Max	8.66	36.19	20.68	91.27	145.90	305.40	192.00	37.36	13.54	4.70	3.82	4.37	305.40 CMS
Min	3.14	4.16	5.70	12.70	27.61	97.38	19.36	12.45	4.64	2.28	2.21	0.58	0.58 CMS
Runoff	15.252	26.796	26.352	142.575	168.212	576.702	155.232	59.685	22.615	8.745	6.820	8.054	1217.041 MCM

Momentary Peak 306.10 CMS, at 7.13 M (A.D), at 15.00 Hours, on Sep 11, 1998
Runoff Yield 6.27 Liters/Second/Square KM, Momentary Peak Yield 49.732 Liters/Second/Square KM

WATER YEAR 1998

NAM MAE ING BASIN

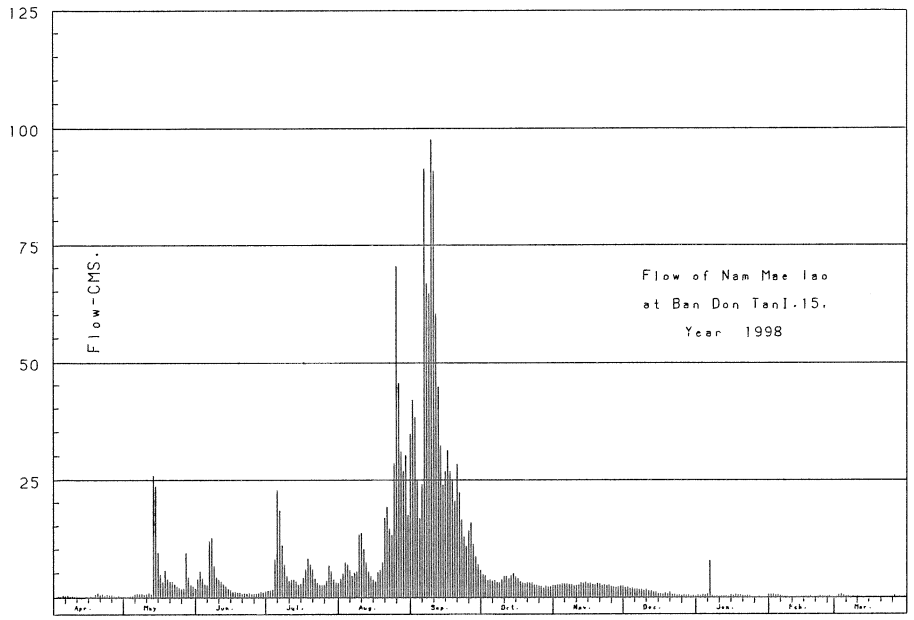
Nam Mae Lao at Ban Don Tan, Phayao (I.15)

Location	Lat. 19°-33'-35" N., Long. 100°-17'-50" E., on left bank at the bridge of Amphoe Thoeng-Amphoe Chiang Kham, Amphoe Phu Sang, Phayao.
Drainage Area	306 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 10.00 meters from the top staff gage.
Elevation	+6.567 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Stable with variable water surface slope.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 72 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.31	0.30	0.66	0.46	0.67	2.72	0.74	0.56	0.52	0.34	0.37	0.31	
2	0.31	0.29	0.78	0.45	0.75	2.56	0.72	0.56	0.52	0.34	0.37	0.35	
3	0.32	0.33	0.67	0.48	0.91	1.92	0.65	0.57	0.50	0.35	0.35	0.38	
4	0.34	0.33	0.58	0.95	0.89	1.50	0.65	0.58	0.50	0.36	0.35	0.33	
5	0.33	0.38	0.55	1.81	0.80	1.87	0.64	0.59	0.49	0.37	0.34	0.33	
6	0.33	0.38	1.20	1.59	0.72	4.39	0.64	0.58	0.48	0.94	0.32	0.32	
7	0.32	0.39	1.25	1.15	0.77	3.66	0.62	0.58	0.48	0.33	0.31	0.32	
8	0.31	0.38	0.87	0.88	0.78	3.58	0.60	0.57	0.47	0.32	0.31	0.32	
9	0.32	0.36	0.70	0.72	1.29	4.56	0.66	0.55	0.46	0.32	0.30	0.31	
10	0.33	0.37	0.66	0.64	1.32	4.38	0.72	0.55	0.47	0.32	0.30	0.31	
11	0.30	0.40	0.62	0.65	1.10	3.43	0.71	0.57	0.45	0.31	0.29	0.30	
12	0.29	0.38	0.58	0.66	0.91	2.85	0.68	0.60	0.44	0.33	0.29	0.30	
13	0.30	1.97	0.53	0.62	0.79	2.27	0.72	0.60	0.43	0.32	0.32	0.29	
14	0.30	1.85	0.49	0.57	0.71	1.87	0.76	0.61	0.42	0.32	0.29	0.29	
15	0.30	1.05	0.46	0.58	0.65	2.01	0.70	0.60	0.40	0.35	0.32	0.29	
16	0.32	0.73	0.43	0.68	0.63	2.23	0.67	0.59	0.38	0.34	0.30	0.30	
17	0.31	0.62	0.43	0.81	0.78	2.01	0.63	0.58	0.38	0.36	0.32	0.28	
18	0.36	0.80	0.42	0.97	0.80	1.93	0.60	0.56	0.40	0.36	0.33	0.27	
19	0.41	0.66	0.41	0.89	0.92	1.69	0.60	0.60	0.39	0.35	0.30	0.27	
20	0.35	0.63	0.39	0.81	1.50	2.09	0.60	0.58	0.42	0.34	0.30	0.25	
21	0.37	0.62	0.39	0.68	1.63	1.79	0.61	0.56	0.37	0.32	0.32	0.26	
22	0.34	0.58	0.40	0.60	1.37	1.48	0.60	0.56	0.36	0.34	0.32	0.29	
23	0.36	0.53	0.40	0.57	1.29	1.26	0.57	0.56	0.35	0.33	0.33	0.29	
24	0.35	0.51	0.39	0.55	2.09	1.14	0.56	0.56	0.35	0.31	0.32	0.30	
25	0.34	0.49	0.39	0.57	3.78	1.35	0.55	0.54	0.34	0.30	0.32	0.31	
26	0.32	0.49	0.38	0.63	2.88	1.45	0.53	0.52	0.35	0.30	0.32	0.34	
27	0.31	1.05	0.41	0.87	2.21	1.16	0.51	0.52	0.35	0.31	0.31	0.31	
28	0.32	0.69	0.42	0.78	2.02	1.00	0.54	0.52	0.34	0.30	0.31	0.31	
29	0.31	0.57	0.42	0.66	2.18	0.88	0.53	0.55	0.33	0.30		0.31	
30	0.30	0.53	0.43	0.60	1.53	0.80	0.52	0.54	0.33	0.30		0.29	
31		0.50		0.59	2.39		0.55		0.32	0.36		0.28	
Mean	0.33	0.62	0.56	0.76	1.32	2.19	0.63	0.57	0.41	0.35	0.32	0.30	
Max	0.41	1.97	1.25	1.81	3.78	4.56	0.76	0.61	0.52	0.94	0.37	0.38	4.56
Min	0.29	0.29	0.38	0.45	0.63	0.80	0.51	0.52	0.32	0.30	0.29	0.25	0.25

Annual Max Momentary Gage Height 4.91 M (A.D), at 18.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.04 M (A.D)
Left Bank Elevation 8.82 M (A.D)
Right Bank Elevation 8.83 M (A.D), Drainage Area 306 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.32	0.25	3.94	1.63	4.07	42.04	5.01	2.72	2.27	0.55	0.78	0.32	
2	0.32	0.23	5.57	1.52	5.15	38.52	4.73	2.72	2.27	0.55	0.78	0.62	
3	0.40	0.48	4.07	1.84	7.49	25.11	3.81	2.83	2.05	0.62	0.62	0.85	
4	0.55	0.48	2.95	8.11	7.18	17.01	3.81	2.95	2.05	0.70	0.62	0.48	
5	0.48	0.85	2.61	22.91	5.85	24.11	3.68	3.06	1.95	0.78	0.55	0.48	
6	0.48	0.85	12.04	18.72	4.73	91.34	3.68	2.95	1.84	7.96	0.40	0.40	
7	0.40	0.92	12.83	11.26	5.43	67.04	3.43	2.95	1.84	0.48	0.32	0.40	
8	0.32	0.85	6.89	7.03	5.57	64.72	3.17	2.83	1.74	0.40	0.32	0.40	
9	0.40	0.70	4.45	4.73	13.45	97.70	3.94	2.61	1.63	0.40	0.25	0.32	
10	0.48	0.78	3.94	3.68	13.93	90.98	4.73	2.61	1.74	0.40	0.25	0.32	
11	0.25	1.00	3.43	3.81	10.47	60.37	4.59	2.83	1.52	0.32	0.23	0.25	
12	0.23	0.85	2.95	3.94	7.49	45.00	4.19	3.17	1.42	0.48	0.23	0.25	
13	0.25	26.11	2.39	3.43	5.71	32.37	4.73	3.17	1.32	0.40	0.40	0.23	
14	0.25	23.71	1.95	2.83	4.59	24.11	5.29	3.30	1.21	0.40	0.23	0.23	
15	0.25	9.68	1.63	2.95	3.81	26.92	4.45	3.17	1.00	0.62	0.40	0.23	
16	0.40	4.87	1.32	4.19	3.55	31.53	4.07	3.06	0.85	0.55	0.25	0.25	
17	0.32	3.43	1.32	6.00	5.57	26.92	3.55	2.95	0.85	0.70	0.40	0.21	
18	0.70	5.85	1.21	8.43	5.85	25.31	3.17	2.72	1.00	0.70	0.48	0.20	
19	1.10	3.94	1.10	7.18	7.64	20.62	3.17	3.17	0.92	0.62	0.25	0.20	
20	0.62	3.55	0.92	6.00	17.01	28.59	3.17	2.95	1.21	0.55	0.25	0.16	
21	0.78	3.43	0.92	4.19	19.48	22.52	3.30	2.72	0.78	0.40	0.40	0.18	
22	0.55	2.95	1.00	3.17	14.73	16.65	3.17	2.72	0.70	0.55	0.40	0.23	
23	0.70	2.39	1.00	2.83	13.45	12.98	2.83	2.72	0.62	0.48	0.48	0.23	
24	0.62	2.16	0.92	2.61	28.59	11.10	2.72	2.72	0.62	0.32	0.40	0.25	
25	0.55	1.95	0.92	2.83	70.68	14.41	2.61	2.50	0.55	0.25	0.40	0.32	
26	0.40	1.95	0.85	3.55	45.72	16.11	2.39	2.27	0.62	0.25	0.40	0.55	
27	0.32	9.68	1.10	6.89	31.11	11.41	2.16	2.27	0.62	0.32	0.32	0.32	
28	0.40	4.32	1.21	5.57	27.13	8.90	2.50	2.27	0.55	0.25	0.32	0.32	
29	0.32	2.83	1.21	3.94	30.48	7.03	2.39	2.61	0.48	0.25		0.32	
30	0.25	2.39	1.32	3.17	17.58	5.85	2.27	2.50	0.48	0.25		0.23	
31		2.05		3.06	34.89		2.61		0.40	0.70		0.21	
Total	13.41	125.48	87.96	172.00	478.38	1007.27	109.32	84.02	37.10	22.20	11.13	9.96	2158.23 CMSDAY
Mean	0.45	4.05	2.93	5.55	15.43	33.58	3.53	2.80	1.20	0.72	0.40	0.32	5.91 CMS
Max	1.10	26.11	12.83	22.91	70.68	97.70	5.29	3.30	2.27	7.96	0.78	0.85	97.70 CMS
Min	0.23	0.23	0.85	1.52	3.55	5.85	2.16	2.27	0.40	0.25	0.23	0.16	0.16 CMS
Runoff	1.159	10.841	7.600	14.861	41.332	87.028	9.445	7.259	3.205	1.918	0.962	0.861	186.471 MCM

Momentary Peak 112.22 CMS, at 4.91 M (A.D), at 18.00 Hours, on Sep 9, 1998

Runoff Yield 19.30 Liters/Second/Square KM, Momentary Peak Yield 366.289 Liters/Second/Square KM

WATER YEAR 1998

CHAO PHRAYA RIVER BASIN

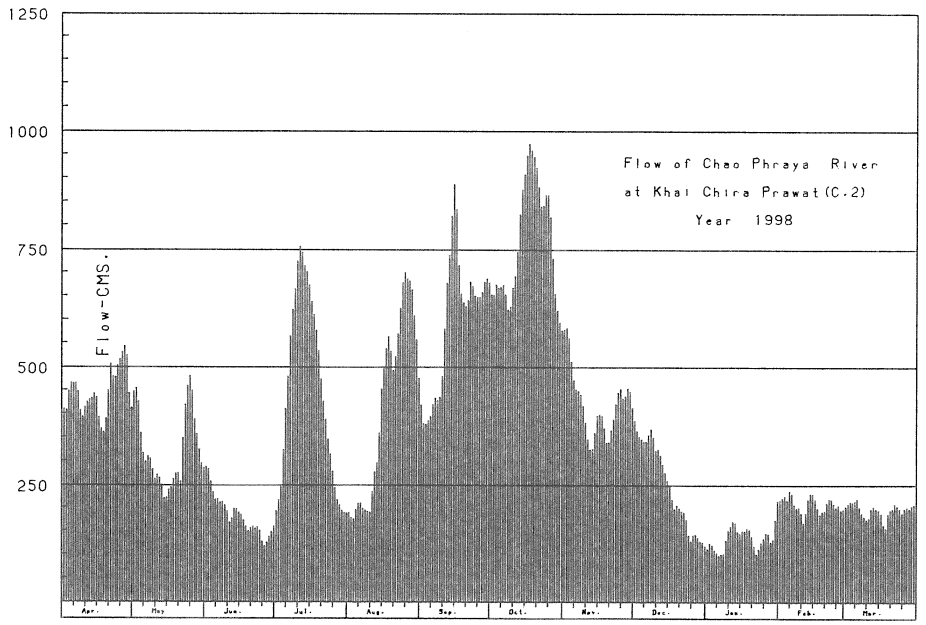
Chao Phraya River at Khai Chira Prawat, Nakhon Sawan (C.2)

Location	Lat. 15°-40'-15" N., Long. 100°-06'-45" E., on left bank at Khai Chira Prawat about 3 kilometers downstream from Dechatiwong Bridge, Amphoe Muang, Nakhon Sawan.
Drainage Area	110,569 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	About 20 meters west of the gage site.
Elevation	+25.628 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1914 to date.
Rating Operation	
Period of Rating	1956 to date.
Rated by Float	-
Rated by Current Meter	1956 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Phumiphol Dam, Sirikit Dam and Phrom Phiram Dam. Stage-discharge relation defined by 91 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	19.14	19.32	18.51	17.93	17.90	19.19	20.19	19.88	19.02	17.34	18.07	17.99	
2	19.14	19.35	18.48	18.08	17.83	18.99	20.18	19.90	18.92	17.43	18.11	18.02	
3	19.33	19.22	18.34	18.27	17.82	18.99	20.27	19.81	18.85	17.41	18.13	18.06	
4	19.40	18.90	18.19	18.70	17.95	19.02	20.24	19.60	18.83	17.30	18.08	18.04	
5	19.40	18.66	18.09	19.15	18.03	19.07	20.25	19.43	18.79	17.25	18.20	18.06	
6	19.40	18.57	18.09	19.46	18.04	19.19	20.26	19.34	18.80	17.21	18.17	18.10	
7	19.33	18.63	18.05	19.83	17.96	19.26	20.19	19.33	18.87	17.23	18.01	17.98	
8	19.13	18.60	18.05	20.06	17.94	19.23	20.06	19.29	18.94	17.23	17.97	17.89	
9	19.07	18.48	18.01	20.23	17.92	19.27	20.08	19.18	18.84	17.50	17.97	17.85	
10	19.16	18.36	17.92	20.45	17.91	19.46	20.24	19.00	18.69	17.65	17.90	17.81	
11	19.22	18.41	17.77	20.56	18.19	19.89	20.33	18.82	18.71	17.70	17.78	17.82	
12	19.24	18.38	17.82	20.51	18.45	20.28	20.52	18.71	18.64	17.78	17.89	17.96	
13	19.26	18.30	17.96	20.41	18.55	20.49	20.79	18.71	18.53	17.75	18.09	17.98	
14	19.30	18.11	17.95	20.37	18.89	20.78	20.96	18.90	18.44	17.63	18.17	17.96	
15	19.27	18.11	17.91	20.26	19.35	21.00	21.07	19.07	18.34	17.59	18.16	17.93	
16	19.06	18.22	17.87	20.13	19.53	20.82	21.20	19.09	18.28	17.63	18.08	17.88	
17	18.94	18.26	17.80	20.01	19.72	20.42	21.27	19.07	18.08	17.64	17.97	17.73	
18	18.91	18.36	17.70	19.88	19.82	20.19	21.23	18.95	17.96	17.67	17.87	17.67	
19	19.05	18.43	17.64	19.69	19.69	20.12	21.19	18.78	18.00	17.66	17.92	17.89	
20	19.33	18.43	17.68	19.44	19.52	20.08	21.11	18.79	17.97	17.55	17.92	17.93	
21	19.58	18.33	17.70	19.22	19.64	20.14	20.98	18.92	17.92	17.38	18.04	17.96	
22	19.46	18.84	17.68	19.04	19.85	20.29	20.84	19.04	17.91	17.24	18.09	18.02	
23	19.46	19.19	17.69	18.83	20.07	20.25	20.85	19.20	17.80	17.33	18.09	18.00	
24	19.56	19.38	17.65	18.65	20.28	20.18	20.92	19.31	17.58	17.44	18.02	17.95	
25	19.62	19.47	17.48	18.46	20.36	20.16	20.92	19.35	17.49	17.53	17.98	17.90	
26	19.68	19.33	17.38	18.25	20.31	20.16	20.77	19.25	17.57	17.60	18.00	17.96	
27	19.74	19.04	17.46	18.09	20.30	20.21	20.47	19.28	17.59	17.60	17.94	17.97	
28	19.65	18.88	17.55	18.01	20.23	20.29	20.19	19.35	17.53	17.47	17.94	17.96	
29	19.31	18.71	17.63	17.94	20.00	20.31	20.05	19.32	17.48	17.50		17.99	
30	19.16	18.54	17.70	17.90	19.80	20.28	19.94	19.16	17.45	17.80		18.02	
31		18.49		17.90	19.44		19.88		17.38	18.06		17.99	
Mean	19.31	18.69	17.86	19.22	19.07	19.93	20.56	19.19	18.23	17.52	18.02	17.94	
Max	19.74	19.47	18.51	20.56	20.36	21.00	21.27	19.90	19.02	18.06	18.20	18.10	21.27
Min	18.91	18.11	17.38	17.90	17.82	18.99	19.88	18.71	17.38	17.21	17.78	17.67	17.21

Annual Max Momentary Gage Height 21.27 M (MSL), at 4.00 Hours, on Oct 17, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 13.79 M (MSL)
Left Bank Elevation 25.72 M (MSL)
Right Bank Elevation 26.32 M (MSL), Drainage Area 110569 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	411.2	448.6	290.2	195.8	191.2	421.5	655.5	579.6	386.6	115.1	217.0	204.9	
2	411.2	455.5	284.7	218.6	180.6	380.5	653.1	584.5	366.1	125.2	223.1	209.4	
3	450.9	427.6	259.2	247.4	179.0	380.5	676.9	562.5	352.8	122.9	226.2	215.5	
4	467.0	362.0	235.3	325.2	198.8	386.6	668.8	513.5	349.1	110.6	218.6	212.5	
5	467.0	317.8	220.1	413.3	211.0	396.9	671.5	474.0	341.8	105.0	236.8	215.5	
6	467.0	301.3	220.1	480.9	212.5	421.5	674.2	453.2	343.6	100.5	232.2	221.6	
7	450.9	312.3	214.0	567.4	200.3	435.8	655.5	450.9	356.5	102.8	207.9	203.4	
8	409.1	306.8	214.0	623.7	197.3	429.7	623.7	442.0	370.2	102.8	201.8	189.7	
9	396.9	284.7	207.9	666.1	194.2	437.9	628.6	419.4	351.0	133.0	201.8	183.6	
10	415.3	262.8	194.2	726.3	192.7	480.9	668.8	382.5	323.4	154.2	191.2	177.5	
11	427.6	271.8	171.7	757.9	235.3	582.0	693.1	347.3	327.0	161.5	173.1	179.0	
12	431.7	266.4	179.0	743.5	279.2	679.6	746.4	327.0	314.2	173.1	189.7	200.3	
13	435.8	252.0	200.3	714.9	297.6	737.8	825.4	327.0	293.9	168.8	220.1	203.4	
14	444.0	223.1	198.8	703.9	360.2	822.3	877.0	362.0	277.4	151.3	232.2	200.3	
15	437.9	223.1	192.7	674.2	455.5	889.2	910.5	396.9	259.2	145.6	230.7	195.8	
16	394.8	239.8	186.6	640.8	497.2	834.5	950.0	401.0	249.0	151.3	218.6	188.2	
17	370.2	245.9	176.0	611.5	541.4	717.7	972.9	396.9	218.6	152.8	201.8	165.8	
18	364.1	262.8	161.5	579.6	564.9	655.5	959.8	372.3	200.3	157.2	186.6	157.2	
19	392.7	275.5	152.8	534.4	534.4	638.4	947.0	339.9	206.4	155.7	194.2	189.7	
20	450.9	275.5	158.6	476.3	494.9	628.6	922.6	341.8	201.8	140.0	194.2	195.8	
21	508.9	257.4	161.5	427.6	522.8	643.3	883.1	366.1	194.2	119.6	212.5	200.3	
22	480.9	351.0	158.6	390.7	572.3	682.3	840.6	390.7	192.7	103.9	220.1	209.4	
23	480.9	421.5	160.1	349.1	626.1	671.5	843.6	423.5	176.0	114.0	220.1	206.4	
24	504.2	462.4	154.2	316.0	679.6	653.1	864.9	446.3	144.2	126.3	209.4	198.8	
25	518.2	483.3	130.8	281.0	701.2	648.2	864.9	455.5	131.9	137.2	203.4	191.2	
26	532.1	450.9	119.6	244.4	687.7	648.2	819.3	433.8	142.8	147.0	206.4	200.3	
27	546.1	390.7	128.5	220.1	685.0	660.7	732.1	439.9	145.6	147.0	197.3	201.8	
28	525.1	358.3	140.0	207.9	666.1	682.3	655.5	455.5	137.2	129.6	197.3	200.3	
29	446.3	327.0	151.3	197.3	609.0	687.7	621.2	448.6	130.8	133.0		204.9	
30	415.3	295.8	161.5	191.2	560.0	679.6	594.3	415.3	127.4	176.0		209.4	
31		286.6		191.2	476.3		579.6		119.6	215.5		204.9	
Total	13454.2	10100.2	5583.8	13918.2	13004.3	18014.3	23680.4	12749.4	7731.3	4278.5	5864.3	6136.8	134515.7 CMSDAY
Mean	448.5	325.8	186.1	449.0	419.5	600.5	763.9	425.0	249.4	138.0	209.4	198.0	368.5 CMS
Max	546.1	483.3	290.2	757.9	701.2	889.2	972.9	584.5	386.6	215.5	236.8	221.6	972.9 CMS
Min	364.1	223.1	119.6	191.2	179.0	380.5	579.6	327.0	119.6	100.5	173.1	157.2	100.5 CMS
Runoff	1162.44	872.66	482.44	1202.53	1123.57	1556.44	2045.99	1101.55	667.98	369.66	506.68	530.22	11622.16 MCM

Momentary Peak 972.87 CMS, at 21.27 M (MSL), at 4.00 Hours, on Oct 17, 1998

Runoff Yield 3.33 Liters/Second/Square KM, Momentary Peak Yield 8.799 Liters/Second/Square KM

WATER YEAR 1998

CHAO PHRAYA RIVER BASIN

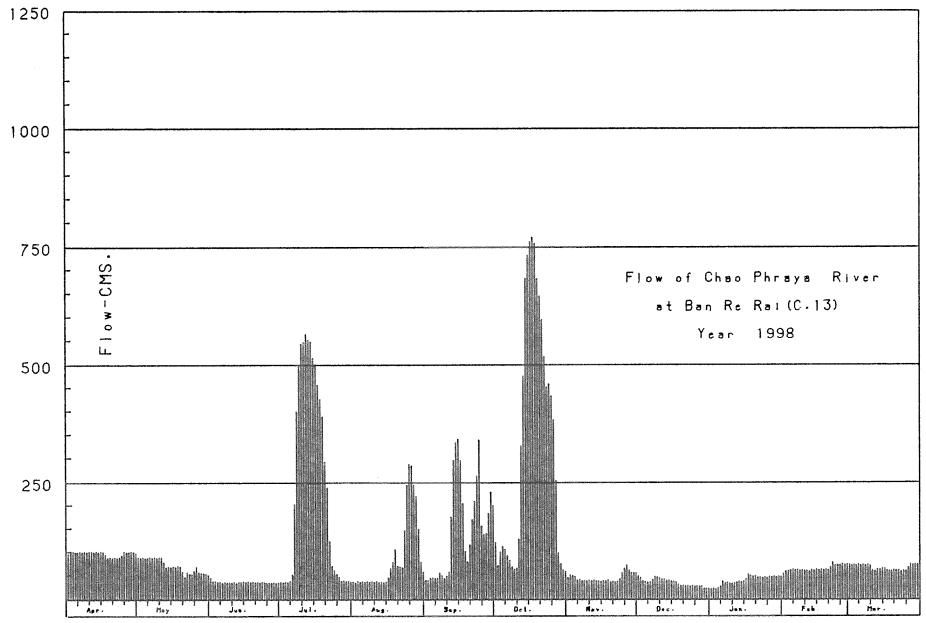
Chao Phraya River at Ban Re Rai, Chai Nat (C.13)

Location	Lat. 15°-09'-57" N., Long. 100°-11'-32" E., on left bank at Wat Pho Ngam about 1.5 kilometers downstream from Chao Phraya Diversion Dam, Amphoe Sanphaya, Chainat
Drainage Area	120,693 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 400 meters from the B.M.1
Elevation	+16.400 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1947 to date.
Rating Operation	
Period of Rating	1953-1962, 1965-1968, 1972, 1975-1976, 1980 to date.
Rated by Float	-
Rated by Current Meter	1953-1962, 1965-1968, 1972, 1975-1976, 1980 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Flow regulated by Chao Phraya Dam above gage site. Stage-discharge relation defined by 195 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.71	6.64	6.02	5.82	5.83	5.93	6.95	6.05	6.13	5.51	6.20	6.48	
2	6.76	6.64	5.88	5.82	5.82	5.89	6.47	6.14	6.03	5.51	6.31	6.48	
3	6.76	6.64	5.86	5.82	5.86	6.02	6.75	6.15	5.90	5.51	6.30	6.48	
4	6.76	6.64	5.85	5.83	5.85	6.02	6.88	6.08	5.83	5.53	6.34	6.48	
5	6.76	6.64	5.83	5.86	5.85	6.00	6.81	5.93	5.84	5.65	6.35	6.49	
6	6.76	6.64	5.81	6.19	5.85	6.00	6.69	5.94	5.82	5.85	6.35	6.48	
7	6.76	6.64	5.82	7.61	5.85	6.25	6.58	5.90	5.95	5.80	6.34	6.48	
8	6.76	6.64	5.81	8.82	5.85	6.12	6.44	5.89	6.07	5.80	6.33	6.48	
9	6.76	6.64	5.81	9.30	5.85	6.01	6.35	5.89	6.08	5.79	6.32	6.48	
10	6.76	6.64	5.83	9.54	5.85	6.10	6.41	5.90	6.00	5.77	6.32	6.47	
11	6.76	6.64	5.82	9.55	5.86	6.27	7.03	5.90	5.98	5.77	6.31	6.38	
12	6.76	6.55	5.79	9.63	5.84	7.42	8.40	5.91	5.96	5.84	6.30	6.31	
13	6.76	6.43	5.82	9.57	5.83	8.23	9.20	5.90	5.91	5.86	6.33	6.35	
14	6.76	6.43	5.84	9.56	5.82	8.44	10.13	5.87	5.90	5.85	6.33	6.36	
15	6.76	6.43	5.85	9.39	5.82	8.49	10.32	5.87	5.89	5.85	6.35	6.37	
16	6.76	6.43	5.85	9.33	6.05	8.22	10.43	5.88	5.85	5.95	6.35	6.37	
17	6.70	6.44	5.85	9.10	6.38	7.63	10.47	5.90	5.83	6.20	6.35	6.34	
18	6.64	6.45	5.85	8.95	6.54	6.76	10.42	5.92	5.71	6.11	6.35	6.30	
19	6.64	6.45	5.84	8.76	6.82	6.56	10.12	5.85	5.67	6.10	6.35	6.32	
20	6.64	6.28	5.83	8.20	6.46	6.91	9.98	5.85	5.66	6.11	6.35	6.33	
21	6.64	6.08	5.82	7.85	6.43	7.38	9.76	5.85	5.66	6.06	6.41	6.34	
22	6.64	6.25	5.82	6.99	6.42	7.65	9.41	5.85	5.65	6.04	6.54	6.32	
23	6.64	6.22	5.82	6.46	7.18	8.01	9.08	5.99	5.65	6.05	6.46	6.30	
24	6.69	6.18	5.83	6.32	7.89	8.48	9.12	6.23	5.65	6.05	6.49	6.31	
25	6.76	6.32	5.80	6.21	8.17	7.28	8.99	6.40	5.65	6.05	6.49	6.32	
26	6.76	6.42	5.79	6.05	8.16	7.10	8.71	6.47	5.64	6.07	6.50	6.42	
27	6.76	6.28	5.80	5.89	7.88	7.12	7.95	6.34	5.64	6.08	6.49	6.49	
28	6.76	6.23	5.80	5.88	7.72	7.48	6.73	6.24	5.63	6.08	6.49	6.49	
29	6.76	6.24	5.79	5.88	7.22	7.79	6.52	6.26	5.53	6.08		6.49	
30	6.72	6.20	5.79	5.87	6.54	7.59	6.33	6.23	5.51	6.08		6.50	
31		6.18		5.85	6.27		6.29		5.51	6.09		6.49	
Mean	6.73	6.44	5.83	7.48	6.44	7.04	8.12	6.02	5.80	5.91	6.37	6.41	
Max	6.76	6.64	6.02	9.63	8.17	8.49	10.47	6.47	6.13	6.20	6.54	6.50	10.47
Min	6.64	6.08	5.79	5.82	5.82	5.89	6.29	5.85	5.51	5.51	6.20	6.30	5.51

Annual Max Momentary Gage Height 10.54 M (MSL), at 15.00 Hours, on Oct 16, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 1.71 M (MSL)
Left Bank Elevation 16.80 M (MSL)
Right Bank Elevation 16.37 M (MSL), Drainage Area 120693 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	97.3	90.1	46.7	37.5	38.0	42.6	121.9	48.1	51.8	23.9	55.0	74.4	
2	102.4	90.1	40.3	37.5	37.5	40.7	73.6	52.2	47.2	23.9	61.7	74.4	
3	102.4	90.1	39.4	37.5	39.4	46.7	101.4	52.7	41.2	23.9	61.0	74.4	
4	102.4	90.1	38.9	38.0	38.9	46.7	114.7	49.5	38.0	24.8	63.8	74.4	
5	102.4	90.1	38.0	39.4	38.9	45.8	107.5	42.6	38.4	29.9	64.5	75.2	
6	102.4	90.1	37.1	54.5	38.9	45.8	95.2	43.0	37.5	38.9	64.5	74.4	
7	102.4	90.1	37.5	203.5	38.9	58.0	84.0	41.2	43.5	36.6	63.8	74.4	
8	102.4	90.1	37.1	402.8	38.9	51.3	71.2	40.7	49.0	36.6	63.1	74.4	
9	102.4	90.1	37.1	496.5	38.9	46.3	64.5	40.7	49.5	36.1	62.4	74.4	
10	102.4	90.1	38.0	546.8	38.9	50.4	68.8	41.2	45.8	35.2	62.4	73.6	
11	102.4	90.1	37.5	549.0	39.4	59.2	130.4	41.2	44.9	35.2	61.7	66.6	
12	102.4	81.0	36.1	566.8	38.4	177.3	327.5	41.7	44.0	38.4	61.0	61.7	
13	102.4	70.4	37.5	553.4	38.0	298.4	476.8	41.2	41.7	39.4	63.1	64.5	
14	102.4	70.4	38.4	551.2	37.5	334.6	684.9	39.8	41.2	38.9	63.1	65.2	
15	102.4	70.4	38.9	515.0	37.5	343.4	732.2	39.8	40.7	38.9	64.5	65.9	
16	102.4	70.4	38.9	502.6	48.1	296.8	761.1	40.3	38.9	43.5	64.5	65.9	
17	96.2	71.2	38.9	457.2	66.6	206.5	771.9	41.2	38.0	55.0	64.5	63.8	
18	90.1	72.0	38.9	427.7	80.0	102.4	758.4	42.1	32.5	50.9	64.5	61.0	
19	90.1	72.0	38.4	391.6	108.6	82.0	682.4	38.9	30.7	50.4	64.5	62.4	
20	90.1	59.8	38.0	293.5	72.8	117.8	647.8	38.9	30.3	50.9	64.5	63.1	
21	90.1	49.5	37.5	239.7	70.4	171.8	596.4	38.9	30.3	48.6	68.8	63.8	
22	90.1	58.0	37.5	126.0	69.6	209.5	519.1	38.9	29.9	47.6	80.0	62.4	
23	90.1	56.2	37.5	72.8	147.4	263.9	453.2	45.3	29.9	48.1	72.8	61.0	
24	95.2	54.1	38.0	62.4	245.7	341.6	461.1	56.8	29.9	48.1	75.2	61.7	
25	102.4	62.4	36.6	55.6	288.7	158.7	435.5	68.0	29.9	48.1	75.2	62.4	
26	102.4	69.6	36.1	48.1	287.1	138.3	382.4	73.6	29.5	49.0	76.0	69.6	
27	102.4	59.8	36.6	40.7	244.2	140.6	254.8	63.8	29.5	49.5	75.2	75.2	
28	102.4	56.8	36.6	40.3	220.0	185.5	99.3	57.4	29.0	49.5	75.2	75.2	
29	102.4	57.4	36.1	40.3	151.9	230.6	78.0	58.6	24.8	49.5		75.2	
30	98.3	55.0	36.1	39.8	80.0	200.6	63.1	56.8	23.9	49.5		76.0	
31		54.1		38.9	59.2		60.4		23.9	49.9		75.2	
Total	2975.6	2261.6	1140.2	7506.6	2818.3	4533.8	10279.5	1415.1	1135.3	1288.7	1856.5	2141.8	39353.0 CMSDAY
Mean	99.2	73.0	38.0	242.1	90.9	151.1	331.6	47.2	36.6	41.6	66.3	69.1	107.8 CMS
Max	102.4	90.1	46.7	566.8	288.7	343.4	771.9	73.6	51.8	55.0	80.0	76.0	771.9 CMS
Min	90.1	49.5	36.1	37.5	37.5	40.7	60.4	38.9	23.9	23.9	55.0	61.0	23.9 CMS
Runoff	257.09	195.40	98.51	648.57	243.50	391.72	888.15	122.26	98.09	111.34	160.40	185.05	3400.10 MCM

Momentary Peak 791.00 CMS, at 10.54 M (MSL), at 15.00 Hours, on Oct 16, 1998

Runoff Yield 0.89 Liters/Second/Square KM, Momentary Peak Yield 6.554 Liters/Second/Square KM

WATER YEAR 1998

CHAO PHRAYA RIVER BASIN

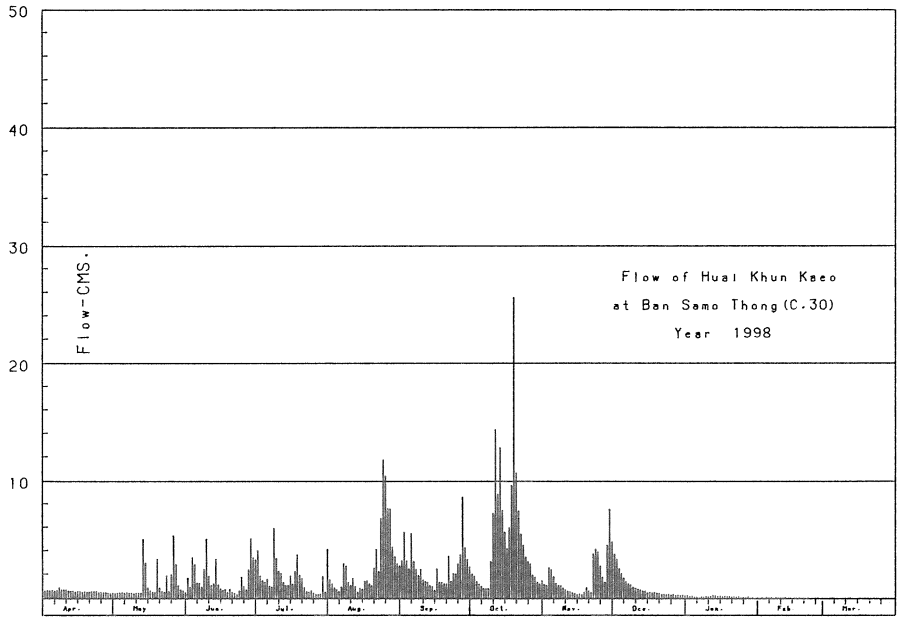
Huai Khun Kaeo at Ban Samo Thong, Uthai Thani (C.30)

Location	Lat. 15°-21'-04" N., Long. 99°-32'-22" E., on right bank infront of Wat Samo Thong School, Ban Samo Thong, Amphoe Ban Rai, Uthai Thani.
Drainage Area	219 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 60 meters from the top staff gage.
Elevation	+11.750 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1983 to date.
Rated by Float	-
Rated by Current Meter	1983 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 56 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.06	1.01	1.22	1.41	1.20	1.34	1.25	1.15	1.39	0.92	0.83	0.81	
2	1.06	1.01	1.11	1.23	1.15	1.52	1.23	1.13	1.35	0.90	0.83	0.81	
3	1.06	1.03	1.36	1.20	1.11	1.34	1.19	1.30	1.29	0.89	0.83	0.81	
4	1.06	1.02	1.32	1.17	1.07	1.29	1.15	1.28	1.25	0.87	0.83	0.81	
5	1.06	1.02	1.17	1.21	1.05	1.51	1.13	1.23	1.22	0.86	0.83	0.81	
6	1.06	1.02	1.16	1.13	1.12	1.34	1.10	1.16	1.18	0.85	0.83	0.81	
7	1.11	1.02	1.12	1.11	1.32	1.28	1.09	1.14	1.16	0.86	0.83	0.81	
8	1.07	1.01	1.28	1.54	1.31	1.24	1.10	1.13	1.14	0.86	0.83	0.81	
9	1.08	1.01	1.48	1.36	1.17	1.28	1.34	1.11	1.12	0.87	0.83	0.81	
10	1.07	1.01	1.23	1.27	1.14	1.20	1.62	1.07	1.10	0.87	0.83	0.81	
11	1.06	1.01	1.13	1.25	1.21	1.19	1.96	1.06	1.09	0.87	0.83	0.81	
12	1.05	1.02	1.16	1.18	1.12	1.17	1.71	1.04	1.07	0.95	0.83	0.81	
13	1.05	1.48	1.35	1.13	1.04	1.14	1.90	1.03	1.06	0.90	0.82	0.81	
14	1.04	1.33	1.15	1.14	1.10	1.12	1.63	1.01	1.05	0.90	0.82	0.81	
15	1.04	1.11	1.10	1.23	1.09	1.07	1.52	0.99	1.03	0.89	0.81	0.81	
16	1.04	1.05	1.06	1.15	1.19	1.29	1.42	0.99	1.03	0.89	0.81	0.81	
17	1.04	1.04	1.09	1.27	1.19	1.18	1.54	0.99	1.03	0.88	0.81	0.81	
18	1.04	1.02	1.02	1.38	1.16	1.17	1.75	1.03	1.03	0.88	0.81	0.80	
19	1.04	1.35	1.09	1.24	1.13	1.16	2.34	1.11	1.02	0.87	0.81	0.80	
20	1.04	1.11	1.03	1.21	1.29	1.15	1.80	1.05	1.01	0.87	0.81	0.80	
21	1.04	1.04	1.01	1.11	1.42	1.37	1.63	1.02	1.00	0.86	0.81	0.80	
22	1.05	1.04	0.98	1.05	1.27	1.19	1.51	1.39	0.99	0.86	0.81	0.80	
23	1.04	1.23	1.06	1.03	1.59	1.25	1.44	1.42	0.98	0.85	0.81	0.79	
24	1.03	1.05	1.22	1.06	1.85	1.25	1.37	1.40	0.98	0.85	0.81	0.79	
25	1.03	1.24	1.12	1.01	1.79	1.32	1.34	1.31	0.97	0.85	0.81	0.79	
26	1.02	1.50	1.08	1.00	1.64	1.38	1.32	1.22	0.96	0.85	0.80	0.79	
27	1.02	1.32	1.28	0.99	1.64	1.70	1.24	1.18	0.95	0.85	0.80	0.79	
28	1.01	1.13	1.48	0.97	1.43	1.43	1.22	1.44	0.94	0.82	0.80	0.79	
29	1.01	1.08	1.36	1.23	1.37	1.35	1.18	1.64	0.94	0.82		0.79	
30	1.01	1.05	1.35	1.04	1.32	1.30	1.15	1.46	0.93	0.83		0.79	
31		1.03		1.42	1.31		1.19		0.93	0.83		0.79	
Mean	1.05	1.11	1.19	1.18	1.28	1.28	1.43	1.18	1.07	0.87	0.82	0.80	
Max	1.11	1.50	1.48	1.54	1.85	1.70	2.34	1.64	1.39	0.95	0.83	0.81	2.34
Min	1.01	1.01	0.98	0.97	1.04	1.07	1.09	0.99	0.93	0.82	0.80	0.79	0.79

Annual Max Momentary Gage Height 2.89 M (A.D), at 6.00 Hours, on Oct 19, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 1.01 M (A.D)
Left Bank Elevation 11.13 M (A.D)
Right Bank Elevation 11.75 M (A.D), Drainage Area 219 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.71	0.47	1.82	4.12	1.60	3.21	2.15	1.25	3.85	0.29	0.15	0.12	
2	0.71	0.47	0.97	1.93	1.25	5.71	1.93	1.11	3.34	0.26	0.15	0.12	
3	0.71	0.56	3.47	1.60	0.97	3.21	1.53	2.70	2.59	0.24	0.15	0.12	
4	0.71	0.52	2.96	1.39	0.76	2.59	1.25	2.48	2.15	0.21	0.15	0.12	
5	0.71	0.52	1.39	1.71	0.66	5.55	1.11	1.93	1.82	0.20	0.15	0.12	
6	0.71	0.52	1.32	1.11	1.04	3.21	0.90	1.32	1.46	0.18	0.15	0.12	
7	0.97	0.52	1.04	0.97	2.96	2.48	0.85	1.18	1.32	0.20	0.15	0.12	
8	0.76	0.47	2.48	6.03	2.83	2.04	0.90	1.11	1.18	0.20	0.15	0.12	
9	0.80	0.47	5.11	3.47	1.39	2.48	3.21	0.97	1.04	0.21	0.15	0.12	
10	0.76	0.47	1.93	2.37	1.18	1.60	7.32	0.76	0.90	0.21	0.15	0.12	
11	0.71	0.47	1.11	2.15	1.71	1.53	14.39	0.71	0.85	0.21	0.15	0.12	
12	0.66	0.52	1.32	1.46	1.04	1.39	8.90	0.61	0.76	0.34	0.15	0.12	
13	0.66	5.11	3.34	1.11	0.61	1.18	12.90	0.56	0.71	0.26	0.13	0.12	
14	0.61	3.08	1.25	1.18	0.90	1.04	7.50	0.47	0.66	0.26	0.13	0.12	
15	0.61	0.97	0.90	1.93	0.85	0.76	5.71	0.40	0.56	0.24	0.12	0.12	
16	0.61	0.66	0.71	1.25	1.53	2.59	4.26	0.40	0.56	0.24	0.12	0.12	
17	0.61	0.61	0.85	2.37	1.53	1.46	6.03	0.40	0.56	0.23	0.12	0.12	
18	0.61	0.52	0.52	3.72	1.32	1.39	9.70	0.56	0.56	0.23	0.12	0.10	
19	0.61	3.34	0.85	2.04	1.11	1.32	25.70	0.97	0.52	0.21	0.12	0.10	
20	0.61	0.97	0.56	1.71	2.59	1.25	10.70	0.66	0.47	0.21	0.12	0.10	
21	0.61	0.61	0.47	0.97	4.26	3.60	7.50	0.52	0.42	0.20	0.12	0.10	
22	0.66	0.61	0.39	0.66	2.37	1.53	5.55	3.85	0.40	0.20	0.12	0.10	
23	0.61	1.93	0.71	0.56	6.82	2.15	4.54	4.26	0.39	0.18	0.12	0.09	
24	0.56	0.66	1.82	0.71	11.80	2.15	3.60	3.98	0.39	0.18	0.12	0.09	
25	0.56	2.04	1.04	0.47	10.50	2.96	3.21	2.83	0.37	0.18	0.12	0.09	
26	0.52	5.39	0.80	0.42	7.67	3.72	2.96	1.82	0.36	0.18	0.10	0.09	
27	0.52	2.96	2.48	0.40	7.67	8.70	2.04	1.46	0.34	0.18	0.10	0.09	
28	0.47	1.11	5.11	0.37	4.40	4.40	1.82	4.54	0.32	0.13	0.10	0.09	
29	0.47	0.80	3.47	1.93	3.60	3.34	1.46	7.67	0.32	0.13		0.09	
30	0.47	0.66	3.34	0.61	2.96	2.70	1.25	4.83	0.31	0.15		0.09	
31		0.56		4.26	2.83		1.53		0.31	0.15		0.09	
Total	19.30	38.57	53.53	54.98	92.71	81.24	162.40	56.31	29.79	6.49	3.68	3.35	602.35 CMSDAY
Mean	0.64	1.24	1.78	1.77	2.99	2.71	5.24	1.88	0.96	0.21	0.13	0.11	1.65 CMS
Max	0.97	5.39	5.11	6.03	11.80	8.70	25.70	7.67	3.85	0.34	0.15	0.12	25.70 CMS
Min	0.47	0.47	0.39	0.37	0.61	0.76	0.85	0.40	0.31	0.13	0.10	0.09	0.09 CMS
Runoff	1.668	3.332	4.625	4.750	8.010	7.019	14.031	4.865	2.574	0.561	0.318	0.289	52.043 MCM

Momentary Peak 48.04 CMS, at 2.89 M (A.D), at 6.00 Hours, on Oct 19, 1998

Runoff Yield 7.54 Liters/Second/Square KM, Momentary Peak Yield 219.361 Liters/Second/Square KM

WATER YEAR 1998

SAKAE KRANG RIVER BASIN

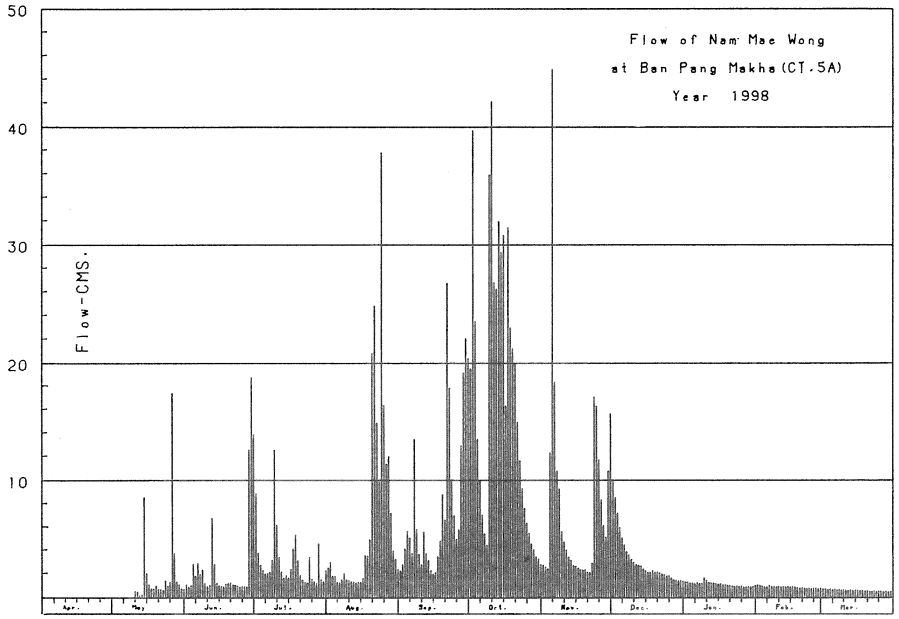
Nam Mae Wong at Ban Pang Makha, Kamphaeng Phet (CT.5A)

Location	Lat. 15°-54'-10" N., Long. 99°-28'-45" E., on left bank behind Wat Pang Makha, Amphoe Khanu Woralaksaburi, Kamphaeng Phet.
Drainage Area	979 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	Infront of the station office.
Elevation	+4.600 m. (A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1969 to date.
Rating Operation	
Period of Rating	1969 to date.
Rated by Float	-
Rated by Current Meter	1969 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir above gage site on Apr.1-May11,98, Mar.3-31,99 discharge estimated by recession equation. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.14	0.03	0.04	0.63	0.24	0.21	0.96	0.26	0.68	0.10	0.04	-0.02	
2	0.16	0.03	0.01	0.36	0.28	0.26	1.35	0.24	0.62	0.09	0.04	-0.03	
3	0.14	0.02	0.03	0.26	0.16	0.39	1.05	0.23	0.56	0.08	0.02	0.22	
4	0.29	0.03	0.27	0.21	0.15	0.48	0.80	0.76	0.50	0.07	0.01	0.52	
5	0.07	0.04	0.16	0.18	0.09	0.45	0.68	1.43	0.45	0.06	0.01	0.52	
6	0.30	0.04	0.27	0.18	0.07	0.35	0.55	0.93	0.41	0.08	0.03	0.51	
7	0.34	0.12	0.17	0.20	0.12	0.80	0.47	0.71	0.37	0.07	0.02	0.50	
8	0.28	0.22	0.22	0.30	0.18	0.49	0.41	0.65	0.34	0.06	0.01	0.49	
9	0.25	-0.05	0.06	0.77	0.12	0.35	1.29	0.48	0.31	0.14	0.01	0.48	
10	0.26	-0.07	0.02	0.51	0.11	0.26	1.39	0.43	0.28	0.11	0.01	0.46	
11	0.24	-0.07	0.03	0.32	0.10	0.48	1.12	0.38	0.27	0.09	0.01	0.45	
12	0.19	-0.15	0.54	0.20	0.09	0.35	1.11	0.33	0.26	0.07	0.01	0.44	
13	0.17	-0.14	0.27	0.14	0.08	0.30	1.22	0.30	0.25	0.08	0.01	0.44	
14	0.17	0.62	0.07	0.16	0.08	0.21	1.17	0.26	0.23	0.06	0.01	0.44	
15	0.17	0.19	0.03	0.14	0.09	0.18	1.20	0.25	0.21	0.06	0.01	0.44	
16	0.17	0.04	0.01	0.22	0.13	0.19	0.88	0.24	0.20	0.06	0.01	0.44	
17	0.17	-0.02	0.01	0.39	0.34	0.33	1.21	0.22	0.20	0.05	0.01	0.43	
18	0.17	-0.03	0.05	0.46	0.33	0.43	1.04	0.22	0.21	0.04	-0.01	0.42	
19	0.17	0.03	0.07	0.30	0.44	0.63	1.00	0.22	0.20	0.04	-0.01	0.42	
20	0.15	-0.04	0.07	0.16	0.99	0.53	0.97	0.20	0.20	0.03	-0.01	0.42	
21	0.20	-0.04	0.05	0.12	1.08	1.12	0.84	0.20	0.19	0.02	-0.01	0.41	
22	0.18	-0.05	0.03	0.08	0.84	0.92	0.74	0.28	0.18	0.02	-0.02	0.41	
23	0.17	0.11	0.02	0.08	0.68	0.68	0.65	0.90	0.17	0.02	-0.02	0.58	
24	0.12	0.02	0.01	0.32	1.32	0.55	0.58	0.88	0.16	0.02	-0.02	0.54	
25	0.13	0.08	0.01	0.12	0.88	0.44	0.52	0.74	0.16	0.02	-0.02	0.57	
26	0.10	0.91	0.01	0.10	0.73	0.49	0.47	0.61	0.14	0.01	-0.02	0.54	
27	0.10	0.35	0.01	0.07	0.75	0.78	0.42	0.51	0.12	0.01	-0.02	0.54	
28	0.08	0.10	0.77	0.42	0.56	0.95	0.38	0.45	0.11	0.01	-0.02	0.47	
29	0.07	0.04	0.94	0.12	0.37	1.02	0.33	0.71	0.11	0.01		0.44	
30	0.03	-0.02	0.81	0.10	0.31	0.98	0.31	0.86	0.11	0.01		0.44	
31		-0.04		0.21	0.22		0.26		0.10	0.04		0.43	
Mean	0.17	0.07	0.17	0.25	0.38	0.52	0.82	0.50	0.27	0.05	0.00	0.43	
Max	0.34	0.91	0.94	0.77	1.32	1.12	1.39	1.43	0.68	0.14	0.04	0.58	1.43
Min	0.03	-0.15	0.01	0.07	0.07	0.18	0.26	0.20	0.10	0.01	-0.02	-0.03	-0.15

Annual Max Momentary Gage Height 1.99 M (A.D), at 18.00 Hours, on Oct 15, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.56 M (A.D)
Left Bank Elevation 4.58 M (A.D)
Right Bank Elevation 4.16 M (A.D), Drainage Area 979 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	1.10	8.84	2.60	2.30	19.56	2.80	10.06	1.40	1.10	0.80	
2	0.00	0.00	0.95	3.86	3.00	2.80	39.68	2.60	8.59	1.35	1.10	0.75	
3	0.00	0.00	1.05	2.80	1.88	4.19	23.50	2.50	7.26	1.30	1.00	0.74	
4	0.00	0.00	2.90	2.30	1.80	5.66	13.55	12.35	6.00	1.25	0.95	0.73	
5	0.00	0.00	1.88	2.04	1.35	5.15	10.06	44.84	5.15	1.20	0.95	0.72	
6	0.00	0.00	2.90	2.04	1.25	3.75	7.05	18.33	4.47	1.30	1.05	0.71	
7	0.00	0.00	1.96	2.20	1.56	13.55	5.49	10.85	3.97	1.25	1.00	0.70	
8	0.00	0.00	2.40	3.20	2.04	5.83	4.47	9.32	3.64	1.20	0.95	0.69	
9	0.00	0.00	1.20	12.65	1.56	3.75	35.99	5.66	3.31	1.72	0.95	0.68	
10	0.00	0.55	1.00	6.21	1.48	2.80	42.18	4.81	3.00	1.48	0.95	0.67	
11	0.00	0.55	1.05	3.42	1.40	5.66	26.82	4.08	2.90	1.35	0.95	0.67	
12	0.00	0.20	6.84	2.20	1.35	3.75	26.31	3.53	2.80	1.25	0.95	0.66	
13	0.00	0.24	2.90	1.72	1.30	3.20	32.03	3.20	2.70	1.30	0.95	0.65	
14	0.00	8.59	1.25	1.88	1.30	2.30	29.37	2.80	2.50	1.20	0.95	0.64	
15	0.00	2.12	1.05	1.72	1.35	2.04	30.90	2.70	2.30	1.20	0.95	0.63	
16	0.00	1.10	0.95	2.40	1.64	2.12	16.39	2.60	2.20	1.20	0.95	0.62	
17	0.00	0.80	0.95	4.19	3.64	3.53	31.46	2.40	2.20	1.15	0.95	0.62	
18	0.00	0.75	1.15	5.32	3.53	4.81	23.04	2.40	2.30	1.10	0.85	0.61	
19	0.00	1.05	1.25	3.20	4.98	8.84	21.20	2.40	2.20	1.10	0.85	0.60	
20	0.00	0.70	1.25	1.88	20.79	6.63	19.97	2.20	2.20	1.05	0.85	0.59	
21	0.00	0.70	1.15	1.56	24.88	26.82	14.97	2.20	2.12	1.00	0.85	0.58	
22	0.00	0.65	1.05	1.30	14.97	17.92	11.75	3.00	2.04	1.00	0.80	0.58	
23	0.00	1.48	1.00	1.30	10.06	10.06	9.32	17.10	1.96	1.00	0.80	0.57	
24	0.00	1.00	0.95	3.42	37.80	7.05	7.68	16.39	1.88	1.00	0.80	0.56	
25	0.00	1.30	0.95	1.56	16.39	4.98	6.42	11.75	1.88	1.00	0.80	0.55	
26	0.00	17.51	0.95	1.40	11.45	5.83	5.49	8.35	1.72	0.95	0.80	0.55	
27	0.00	3.75	0.95	1.25	12.05	12.95	4.64	6.21	1.56	0.95	0.80	0.54	
28	0.00	1.40	12.65	4.64	7.26	19.15	4.08	5.15	1.48	0.95	0.80	0.53	
29	0.00	1.10	18.74	1.56	3.97	22.12	3.53	10.85	1.48	0.95		0.53	
30	0.00	0.80	13.90	1.40	3.31	20.38	3.31	15.68	1.48	0.95		0.52	
31		0.70		2.30	2.40		2.80		1.40	1.10		0.51	
Total	0.00	47.04	88.27	95.76	204.34	239.92	533.01	239.05	98.75	36.20	25.65	19.50	1627.49 CMSDAY
Mean	0.00	1.52	2.94	3.09	6.59	8.00	17.19	7.97	3.19	1.17	0.92	0.63	4.46 CMS
Max	0.00	17.51	18.74	12.65	37.80	26.82	42.18	44.84	10.06	1.72	1.10	0.80	44.84 CMS
Min	0.00	0.00	0.95	1.25	1.25	2.04	2.80	2.20	1.40	0.95	0.80	0.51	0.00 CMS
Runoff	0.000	4.064	7.627	8.274	17.655	20.729	46.052	20.654	8.532	3.128	2.216	1.685	140.615 MCM

Momentary Peak 87.38 CMS, at 1.99 M (A.D), at 18.00 Hours, on Oct 15, 1998

Runoff Yield 4.55 Liters/Second/Square KM, Momentary Peak Yield 89.254 Liters/Second/Square KM

WATER YEAR 1998

SAKAE KRANG RIVER BASIN

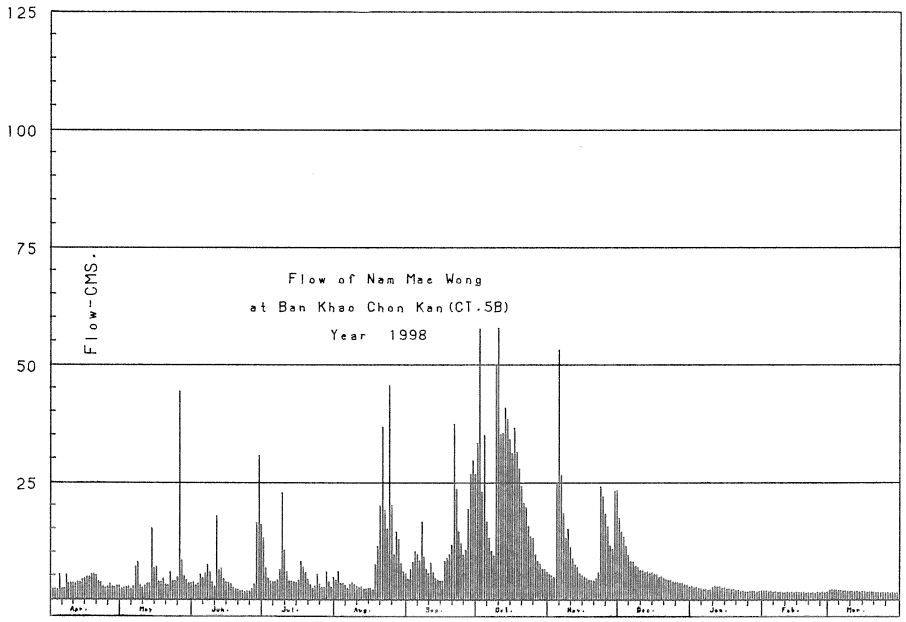
Nam Mae Wong at Ban Khao Chon Kan, Nakhon Sawan (CT.5B)

Location	Lat. 15°-54'-11" N., Long. 99°-27'-37" E., on right bank 8 kilometers upstream from CT.5A, Tambon Mae Lay, Amphoe Lat Yao, Nakhon Sawan.
Drainage Area	930 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 7.00 meters from the top staff gage.
Elevation	+13.173 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1988 to date.
Rated by Float	-
Rated by Current Meter	1988 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir during Mar.14-31,99 discharge estimated by recession equation. Stage-discharge relation defined by 4 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	5.09	5.10	5.18	5.58	5.21	5.23	6.11	5.28	5.72	5.13	5.06	5.08	
2	5.08	5.10	5.15	5.34	5.31	5.32	6.57	5.26	5.63	5.12	5.05	5.08	
3	5.08	5.12	5.16	5.24	5.18	5.39	5.87	5.25	5.59	5.12	5.04	5.08	
4	5.27	5.12	5.27	5.20	5.17	5.48	6.15	5.91	5.53	5.11	5.04	5.07	
5	5.10	5.10	5.24	5.20	5.15	5.46	5.70	6.50	5.45	5.10	5.03	5.07	
6	5.09	5.12	5.28	5.19	5.11	5.40	5.58	5.96	5.40	5.09	5.03	5.06	
7	5.27	5.35	5.37	5.22	5.15	5.70	5.49	5.75	5.39	5.08	5.03	5.06	
8	5.16	5.38	5.30	5.32	5.19	5.43	5.44	5.58	5.36	5.07	5.02	5.05	
9	5.18	5.15	5.18	5.87	5.15	5.33	6.44	5.65	5.34	5.06	5.02	5.05	
10	5.17	5.10	5.13	5.49	5.13	5.28	6.57	5.52	5.32	5.12	5.02	5.05	
11	5.17	5.13	5.73	5.30	5.12	5.38	6.15	5.42	5.31	5.13	5.02	5.04	
12	5.18	5.17	5.32	5.21	5.12	5.30	6.16	5.37	5.30	5.13	5.02	5.04	
13	5.19	5.16	5.33	5.20	5.10	5.23	6.27	5.34	5.30	5.12	5.02	5.04	
14	5.21	5.65	5.23	5.20	5.09	5.22	6.22	5.29	5.29	5.11	5.02	5.74	
15	5.23	5.33	5.18	5.19	5.11	5.21	6.13	5.26	5.29	5.11	5.02	5.74	
16	5.24	5.35	5.18	5.21	5.10	5.20	6.06	5.25	5.28	5.10	5.02	5.74	
17	5.25	5.20	5.17	5.40	5.08	5.40	6.18	5.23	5.27	5.09	5.02	5.74	
18	5.27	5.19	5.11	5.34	5.37	5.42	6.07	5.22	5.25	5.09	5.02	5.74	
19	5.28	5.22	5.10	5.30	5.52	5.46	5.99	5.21	5.25	5.08	5.01	5.74	
20	5.26	5.16	5.08	5.22	5.80	5.53	5.90	5.21	5.24	5.07	5.01	5.73	
21	5.20	5.14	5.06	5.16	6.19	6.20	5.81	5.23	5.22	5.06	5.01	5.73	
22	5.18	5.30	5.05	5.11	5.77	5.89	5.79	5.30	5.22	5.05	5.01	5.73	
23	5.13	5.21	5.04	5.13	5.65	5.63	5.67	5.90	5.21	5.05	5.01	5.73	
24	5.10	5.20	5.04	5.28	6.36	5.54	5.59	5.85	5.20	5.04	5.02	5.73	
25	5.13	5.25	5.05	5.16	5.80	5.45	5.58	5.75	5.19	5.04	5.02	5.74	
26	5.16	6.34	5.09	5.12	5.46	5.50	5.46	5.66	5.18	5.04	5.02	5.74	
27	5.13	5.40	5.17	5.11	5.63	5.78	5.40	5.53	5.18	5.04	5.02	5.74	
28	5.11	5.26	5.69	5.30	5.57	5.96	5.37	5.50	5.17	5.04	5.02	5.74	
29	5.14	5.21	6.05	5.20	5.38	6.03	5.33	5.88	5.16	5.03		5.74	
30	5.13	5.18	5.68	5.13	5.30	5.96	5.32	5.88	5.14	5.04		5.74	
31		5.17		5.24	5.28		5.30		5.13	5.05		5.74	
Mean	5.17	5.25	5.25	5.26	5.37	5.51	5.86	5.53	5.31	5.08	5.02	5.45	
Max	5.28	6.34	6.05	5.87	6.36	6.20	6.57	6.50	5.72	5.13	5.06	5.74	6.57
Min	5.08	5.10	5.04	5.11	5.08	5.20	5.30	5.21	5.13	5.03	5.01	5.04	5.01

Annual Max Momentary Gage Height 6.80 M (A.D), at 15.00 Hours, on Oct 9, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 4.40 M (A.D)
Left Bank Elevation 13.41 M (A.D)
Right Bank Elevation 13.16 M (A.D), Drainage Area 930 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.40	2.50	3.70	13.20	4.20	4.60	33.45	5.60	17.48	2.95	2.10	2.30	
2	2.30	2.50	3.25	6.96	6.24	6.48	57.98	5.20	14.70	2.80	2.00	2.30	
3	2.30	2.80	3.40	4.80	3.70	8.16	23.00	5.00	13.50	2.80	1.90	2.30	
4	5.40	2.80	5.40	4.00	3.55	10.32	35.25	24.63	11.70	2.65	1.90	2.20	
5	2.50	2.50	4.80	4.00	3.25	9.84	16.80	53.50	9.60	2.50	1.80	2.20	
6	2.40	2.80	5.60	3.85	2.65	8.40	13.20	26.78	8.40	2.40	1.80	2.10	
7	5.40	7.20	7.68	4.40	3.25	16.80	10.56	18.50	8.16	2.30	1.80	2.10	
8	3.40	7.92	6.00	6.48	3.85	9.12	9.36	13.20	7.44	2.20	1.70	2.00	
9	3.70	3.25	3.70	23.00	3.25	6.72	50.08	15.30	6.96	2.10	1.70	2.00	
10	3.55	2.50	2.95	10.56	2.95	5.60	57.98	11.40	6.48	2.80	1.70	2.00	
11	3.55	2.95	17.82	6.00	2.80	7.92	35.25	8.88	6.24	2.95	1.70	1.90	
12	3.70	3.55	6.48	4.20	2.80	6.00	35.70	7.68	6.00	2.95	1.70	1.90	
13	3.85	3.40	6.72	4.00	2.50	4.60	41.07	6.96	6.00	2.80	1.70	1.90	
14	4.20	15.30	4.60	4.00	2.40	4.40	38.52	5.80	5.80	2.65	1.70	1.88	
15	4.60	6.72	3.70	3.85	2.65	4.20	34.35	5.20	5.80	2.65	1.70	1.86	
16	4.80	7.20	3.70	4.20	2.50	4.00	31.20	5.00	5.60	2.50	1.70	1.84	
17	5.00	4.00	3.55	8.40	2.30	8.40	36.60	4.60	5.40	2.40	1.70	1.82	
18	5.40	3.85	2.65	6.96	7.68	8.88	31.65	4.40	5.00	2.40	1.70	1.80	
19	5.60	4.40	2.50	6.00	11.40	9.84	28.07	4.20	5.00	2.30	1.60	1.78	
20	5.20	3.40	2.30	4.40	20.20	11.70	24.20	4.20	4.80	2.20	1.60	1.76	
21	4.00	3.10	2.10	3.40	37.05	37.50	20.60	4.60	4.40	2.10	1.60	1.74	
22	3.70	6.00	2.00	2.65	19.18	23.80	19.86	6.00	4.40	2.00	1.60	1.72	
23	2.95	4.20	1.90	2.95	15.30	14.70	15.90	24.20	4.20	2.00	1.60	1.70	
24	2.50	4.00	1.90	5.60	45.72	12.00	13.50	22.20	4.00	1.90	1.70	1.68	
25	2.95	5.00	2.00	3.40	20.20	9.60	13.20	18.50	3.85	1.90	1.70	1.66	
26	3.40	44.68	2.40	2.80	9.84	10.80	9.84	15.60	3.70	1.90	1.70	1.65	
27	2.95	8.40	3.55	2.65	14.70	19.52	8.40	11.70	3.70	1.90	1.70	1.63	
28	2.65	5.20	16.50	6.00	12.90	26.78	7.68	10.80	3.55	1.90	1.70	1.61	
29	3.10	4.20	30.75	4.00	7.92	29.85	6.72	23.40	3.40	1.80		1.59	
30	2.95	3.70	16.20	2.95	6.00	26.78	6.48	23.40	3.10	1.90		1.57	
31		3.55		4.80	5.60		6.00		2.95	2.00		1.56	
Total	110.40	183.57	179.80	174.46	288.53	367.31	772.45	396.43	201.31	72.60	48.50	58.05	2853.41 CMSDAY
Mean	3.68	5.92	5.99	5.63	9.31	12.24	24.92	13.21	6.49	2.34	1.73	1.87	7.82 CMS
Max	5.60	44.68	30.75	23.00	45.72	37.50	57.98	53.50	17.48	2.95	2.10	2.30	57.98 CMS
Min	2.30	2.50	1.90	2.65	2.30	4.00	6.00	4.20	2.95	1.80	1.60	1.56	1.56 CMS
Runoff	9.539	15.860	15.535	15.073	24.929	31.736	66.740	34.252	17.393	6.273	4.190	5.016	246.535 MCM

Momentary Peak 73.20 CMS, at 6.80 M (A.D), at 15.00 Hours, on Oct 9, 1998

Runoff Yield 8.41 Liters/Second/Square KM, Momentary Peak Yield 78.710 Liters/Second/Square KM

WATER YEAR 1998

SAKAE KRANG RIVER BASIN

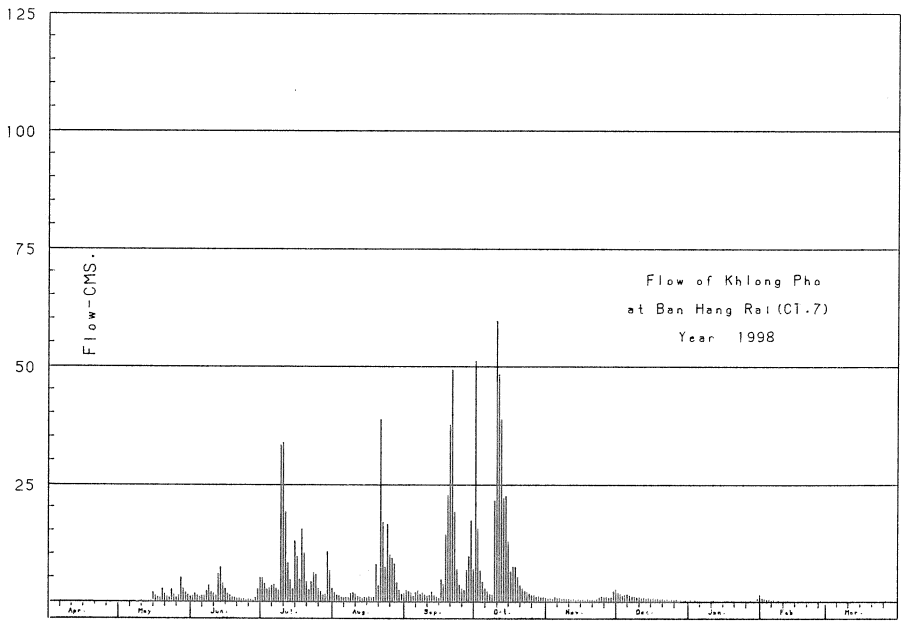
Khlong Pho at Ban Hang Rai, Nakhon Sawan (CT.7)

Location	Lat. 15°-38'-23" N., Long. 99°-32'-20" E., on right bank near the gage observer's house, Ban Hang Rai, Amphoe Lat Yao, Nakhon Sawan.
Drainage Area	457 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	Infront of gage observer's house.
Elevation	+4.660 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1975 to date.
Rating Operation	
Period of Rating	1975 to 1984, 1988 to date.
Rated by Float	-
Rated by Current Meter	1975 to 1984, 1988 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir about 500 meters above gage site. Stage-discharge relation defined by 73 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.03	-0.14	0.63	1.18	0.80	0.88	2.62	0.49	0.80	0.35	0.52	0.20	
2	0.01	-0.15	0.78	1.07	0.71	0.86	1.71	0.49	0.73	0.34	0.45	0.20	
3	-0.01	-0.15	0.67	0.93	0.65	0.79	1.30	0.47	0.69	0.33	0.41	0.23	
4	-0.01	-0.15	0.61	0.96	0.62	0.68	1.12	0.58	0.69	0.33	0.38	0.20	
5	-0.01	-0.15	0.68	1.04	0.57	0.82	0.96	0.54	0.74	0.31	0.37	0.20	
6	-0.02	-0.15	0.62	1.05	0.53	0.87	0.83	0.52	0.66	0.31	0.34	0.18	
7	-0.03	-0.15	0.88	0.96	0.57	0.75	0.74	0.48	0.63	0.32	0.33	0.18	
8	-0.03	-0.15	1.03	0.87	0.76	0.79	0.68	0.47	0.60	0.30	0.31	0.18	
9	-0.03	0.04	0.83	2.25	0.81	0.73	1.92	0.46	0.57	0.30	0.30	0.19	
10	-0.03	0.30	0.72	2.26	0.72	0.64	2.76	0.43	0.56	0.29	0.29	0.16	
11	-0.04	0.27	0.68	1.84	0.65	0.71	2.57	0.43	0.51	0.29	0.28	0.16	
12	-0.04	0.24	1.24	1.41	0.57	0.83	2.38	0.42	0.51	0.29	0.27	0.18	
13	-0.05	0.23	1.35	1.15	0.53	0.69	1.93	0.40	0.50	0.29	0.25	0.15	
14	-0.05	0.22	1.08	0.95	0.56	0.60	1.95	0.40	0.49	0.28	0.27	0.16	
15	-0.06	0.82	0.95	1.62	0.56	0.54	1.61	0.39	0.47	0.28	0.24	0.15	
16	-0.06	0.66	0.76	1.48	0.59	1.16	1.28	0.38	0.46	0.28	0.27	0.15	
17	-0.06	0.61	0.67	1.16	0.57	1.06	1.34	0.38	0.45	0.27	0.25	0.14	
18	-0.07	0.52	0.58	1.71	0.56	1.67	1.35	0.39	0.45	0.27	0.23	0.14	
19	-0.07	0.95	0.52	1.52	1.39	1.95	1.19	0.39	0.44	0.27	0.24	0.15	
20	-0.07	0.73	0.50	1.11	1.04	2.35	1.05	0.38	0.43	0.26	0.23	0.15	
21	-0.07	0.60	0.47	0.92	2.38	2.59	0.93	0.38	0.42	0.26	0.24	0.15	
22	-0.07	0.56	0.45	1.12	1.76	1.84	0.86	0.40	0.41	0.26	0.22	0.15	
23	-0.08	0.92	0.42	1.26	1.34	1.31	0.81	0.58	0.38	0.25	0.23	0.26	
24	-0.08	0.70	0.40	1.24	1.75	1.06	0.76	0.60	0.38	0.25	0.21	0.19	
25	-0.09	0.59	0.38	0.93	1.50	0.93	0.70	0.60	0.37	0.25	0.21	0.18	
26	-0.10	0.68	0.36	0.83	1.46	0.90	0.65	0.57	0.36	0.25	0.21	0.18	
27	-0.11	1.19	0.37	0.71	1.40	1.30	0.61	0.54	0.35	0.24	0.22	0.17	
28	-0.11	0.93	0.57	0.72	1.11	1.48	0.59	0.57	0.35	0.24	0.20	0.16	
29	-0.13	0.81	0.94	1.53	0.88	1.78	0.57	0.86	0.35	0.23		0.18	
30	-0.13	0.69	1.19	1.29	0.75	1.31	0.53	0.91	0.35	0.50		0.18	
31		0.63		0.97	0.76		0.52		0.35	0.70		0.18	
Mean	-0.06	0.41	0.71	1.23	0.93	1.13	1.25	0.50	0.50	0.30	0.28	0.18	
Max	0.01	1.19	1.35	2.26	2.38	2.59	2.76	0.91	0.80	0.70	0.52	0.26	2.76
Min	-0.13	-0.15	0.36	0.71	0.53	0.54	0.52	0.38	0.35	0.23	0.20	0.14	-0.15

Annual Max Momentary Gage Height 2.94 M (A.D), at 18.00 Hours, on Sep 20, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.05 M (A.D)
Left Bank Elevation 4.25 M (A.D)
Right Bank Elevation 4.44 M (A.D), Drainage Area 457 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.10	0.03	1.22	5.14	2.00	2.48	51.17	0.78	2.00	0.45	0.86	0.28	
2	0.13	0.03	1.90	3.83	1.55	2.36	15.53	0.78	1.65	0.43	0.68	0.28	
3	0.12	0.03	1.38	2.78	1.30	1.95	6.80	0.73	1.46	0.41	0.58	0.30	
4	0.12	0.03	1.14	2.96	1.18	1.42	4.36	1.04	1.46	0.41	0.51	0.28	
5	0.12	0.03	1.42	3.56	1.01	2.12	2.96	0.92	1.70	0.37	0.49	0.28	
6	0.11	0.03	1.18	3.65	0.89	2.42	2.18	0.86	1.34	0.37	0.43	0.26	
7	0.10	0.03	2.48	2.96	1.01	1.75	1.70	0.75	1.22	0.39	0.41	0.26	
8	0.10	0.03	3.47	2.42	1.80	1.95	1.42	0.73	1.10	0.35	0.37	0.26	
9	0.10	0.15	2.18	33.45	2.06	1.65	21.74	0.70	1.01	0.35	0.35	0.27	
10	0.10	0.35	1.60	33.84	1.60	1.26	59.84	0.63	0.98	0.34	0.34	0.24	
11	0.10	0.33	1.42	19.30	1.30	1.55	48.35	0.63	0.83	0.34	0.33	0.24	
12	0.10	0.31	5.96	8.43	1.01	2.18	38.92	0.60	0.83	0.34	0.33	0.26	
13	0.09	0.30	7.53	4.75	0.89	1.46	22.06	0.55	0.80	0.34	0.31	0.24	
14	0.09	0.29	3.92	2.90	0.98	1.10	22.70	0.55	0.78	0.33	0.33	0.24	
15	0.08	2.12	2.90	13.09	0.98	0.92	12.82	0.53	0.73	0.33	0.31	0.24	
16	0.08	1.34	1.80	9.65	1.07	4.88	6.52	0.51	0.70	0.33	0.33	0.24	
17	0.08	1.14	1.38	4.88	1.01	3.74	7.38	0.51	0.68	0.33	0.31	0.23	
18	0.07	0.86	1.04	15.53	0.98	14.44	7.53	0.53	0.68	0.33	0.30	0.23	
19	0.07	2.90	0.86	10.51	8.11	22.70	5.27	0.53	0.65	0.33	0.31	0.24	
20	0.07	1.65	0.80	4.23	3.56	37.60	3.65	0.51	0.63	0.32	0.30	0.24	
21	0.07	1.10	0.73	2.72	38.92	49.45	2.78	0.51	0.60	0.32	0.31	0.24	
22	0.07	0.98	0.68	4.36	16.96	19.30	2.36	0.55	0.58	0.32	0.29	0.24	
23	0.07	2.72	0.60	6.24	7.38	6.95	2.06	1.04	0.51	0.31	0.30	0.32	
24	0.07	1.50	0.55	5.96	16.68	3.74	1.80	1.10	0.51	0.31	0.28	0.27	
25	0.06	1.07	0.51	2.78	10.00	2.78	1.50	1.10	0.49	0.31	0.28	0.26	
26	0.05	1.42	0.47	2.18	9.30	2.60	1.30	1.01	0.47	0.31	0.28	0.26	
27	0.05	5.27	0.49	1.55	8.25	6.80	1.14	0.92	0.45	0.31	0.29	0.25	
28	0.05	2.78	1.01	1.60	4.23	9.65	1.07	1.01	0.45	0.31	0.28	0.24	
29	0.04	2.06	2.84	10.76	2.48	17.53	1.01	2.36	0.45	0.30		0.26	
30	0.04	1.46	5.27	6.66	1.75	6.95	0.89	2.66	0.45	0.80		0.26	
31		1.22		3.02	1.80		0.86		0.45	1.50		0.26	
Total	2.50	33.56	58.73	235.69	152.04	235.68	359.67	25.63	26.64	12.29	10.49	7.97	1160.89 CMSDAY
Mean	0.08	1.08	1.96	7.60	4.90	7.86	11.60	0.85	0.86	0.40	0.37	0.26	3.18 CMS
Max	0.13	5.27	7.53	33.84	38.92	49.45	59.84	2.66	2.00	1.50	0.86	0.32	59.84 CMS
Min	0.04	0.03	0.47	1.55	0.89	0.92	0.86	0.51	0.45	0.30	0.28	0.23	0.03 CMS
Runoff	0.216	2.900	5.074	20.364	13.136	20.363	31.075	2.214	2.302	1.062	0.906	0.689	100.301 MCM

Momentary Peak 72.88 CMS, at 2.94 M (A.D), at 18.00 Hours, on Sep 20, 1998
Runoff Yield 6.96 Liters/Second/Square KM, Momentary Peak Yield 159.475 Liters/Second/Square KM

WATER YEAR 1998

SAKAE KRANG RIVER BASIN

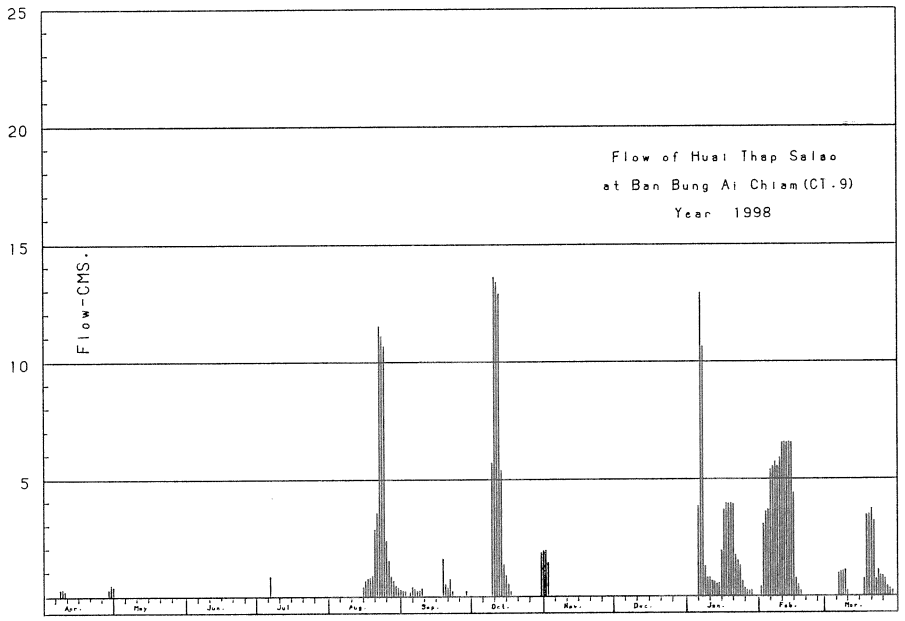
Huai Thap Salao at Ban Bung Ai Chiam, Uthai Thani (CT.9)

Location	Lat. 15°-31'-38" N., Long. 99°-28'-10" E., on left bank about 9 kilometers upstream from CT.6, Ban Bung Ai Chiam, King Amphoe Lan Sak, Uthai Thani.
Drainage Area	522 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+123.45 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 100 meters from the gage observer's house.
Elevation	+129.00 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1977 to date.
Rating Operation	
Period of Rating	1977 to date.
Rated by Float	-
Rated by Current Meter	1977 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Rabum Dam above gage site. Stage-discharge relation defined by 52 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	123.97	124.04	124.03	124.00	123.96	124.11	124.05	124.33	124.01	124.00	124.14	124.08	
2	123.95	124.01	123.99	124.00	123.96	124.11	124.04	124.28	124.01	124.00	124.43	124.08	
3	123.97	124.00	124.00	123.99	123.96	124.10	124.04	124.10	124.00	124.00	124.47	124.08	
4	123.97	123.99	124.00	123.99	123.95	124.11	124.04	124.05	124.00	123.98	124.48	124.08	
5	123.98	123.99	123.99	123.99	123.95	124.14	124.04	124.03	124.00	124.49	124.60	124.09	
6	123.98	123.98	124.03	124.21	123.95	124.12	124.04	124.02	124.00	124.98	124.61	124.22	
7	124.12	123.97	124.00	124.02	123.95	124.11	124.03	124.01	124.00	124.88	124.62	124.23	
8	124.12	123.97	124.00	124.00	123.95	124.11	124.04	124.00	124.00	124.26	124.61	124.23	
9	124.11	123.97	124.00	124.03	123.95	124.13	124.62	124.00	124.00	124.20	124.63	124.24	
10	124.00	123.97	124.00	124.03	123.95	124.09	125.01	124.00	124.00	124.20	124.67	124.11	
11	123.97	123.97	124.00	124.00	123.95	124.07	125.00	124.00	124.00	124.18	124.67	124.10	
12	123.97	123.97	123.99	123.98	123.95	124.06	124.98	123.99	124.00	124.17	124.67	124.09	
13	123.97	123.97	123.99	123.97	123.95	124.05	124.60	123.99	124.00	124.16	124.67	124.09	
14	123.95	123.97	123.99	123.96	123.96	124.05	124.27	123.99	124.00	124.16	124.67	124.09	
15	123.95	123.97	124.00	123.96	124.14	124.04	124.21	123.99	124.00	124.33	124.53	124.09	
16	123.94	123.97	124.00	123.96	124.18	124.04	124.16	123.99	124.00	124.48	124.20	124.08	
17	123.94	123.97	124.00	123.96	124.20	124.04	124.11	123.99	123.99	124.50	124.15	124.19	
18	123.94	123.97	124.00	123.96	124.20	124.30	124.10	123.99	123.99	124.50	124.11	124.46	
19	123.94	123.97	124.00	124.08	124.21	124.16	124.09	123.99	123.99	124.50	124.09	124.46	
20	123.95	123.97	123.99	124.00	124.41	124.13	124.08	123.99	123.99	124.50	124.09	124.48	
21	123.95	123.97	123.99	123.98	124.47	124.19	124.07	123.99	124.00	124.31	124.08	124.44	
22	123.95	123.97	123.99	123.96	124.92	124.11	124.07	124.01	124.00	124.29	124.07	124.19	
23	123.95	123.97	123.99	123.96	124.90	124.10	124.06	124.00	124.00	124.26	124.07	124.24	
24	123.95	123.97	123.99	123.98	124.88	124.08	124.06	124.00	124.00	124.18	124.08	124.21	
25	123.95	123.97	123.99	123.99	124.37	124.06	124.06	123.99	124.00	124.13	124.08	124.21	
26	123.95	123.97	123.99	124.09	124.29	124.05	124.05	124.00	124.00	124.11	124.08	124.19	
27	123.95	123.97	123.99	124.00	124.21	124.07	124.04	124.00	124.00	124.11	124.08	124.14	
28	124.12	123.97	123.99	123.99	124.18	124.11	124.04	124.03	124.00	124.11	124.08	124.12	
29	124.15	123.97	123.98	123.97	124.15	124.07	124.04	124.03	124.00	124.10		124.11	
30	124.14	123.97	124.01	123.97	124.13	124.05	124.32	124.01	124.00	124.10		124.10	
31		124.03		123.96	124.12		124.33		124.00	124.10		124.09	
Mean	123.99	123.98	124.00	124.00	124.17	124.10	124.22	124.03	124.00	124.27	124.35	124.18	
Max	124.15	124.04	124.03	124.21	124.92	124.30	125.01	124.33	124.01	124.98	124.67	124.48	125.01
Min	123.94	123.97	123.98	123.96	123.95	124.04	124.03	123.99	123.99	123.98	124.07	124.08	123.94

Annual Max Momentary Gage Height 125.05 M (MSL), at 15.00 Hours, on Oct 9, 1998
Zero Gage at Bottom Elevation 123.45 M (MSL), River Bed 124.01 M (MSL)
Left Bank Elevation 127.51 M (MSL)
Right Bank Elevation 127.51 M (MSL), Drainage Area 522 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.01	0.01	0.01	0.01	0.01	0.26	0.02	1.98	0.01	0.01	0.44	0.02	
2	0.00	0.01	0.01	0.01	0.01	0.26	0.01	1.48	0.01	0.01	3.12	0.02	
3	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.01	3.61	0.02	
4	0.01	0.01	0.01	0.01	0.00	0.26	0.01	0.02	0.01	0.01	3.73	0.02	
5	0.01	0.01	0.01	0.01	0.00	0.44	0.01	0.01	0.01	3.86	5.40	0.02	
6	0.01	0.01	0.01	0.89	0.00	0.32	0.01	0.01	0.01	12.93	5.57	0.97	
7	0.32	0.01	0.01	0.01	0.00	0.26	0.01	0.01	0.01	10.68	5.74	1.06	
8	0.32	0.01	0.01	0.01	0.00	0.26	0.01	0.01	0.01	1.31	5.57	1.06	
9	0.26	0.01	0.01	0.01	0.00	0.38	5.74	0.01	0.01	0.80	5.91	1.14	
10	0.01	0.01	0.01	0.01	0.00	0.02	13.64	0.01	0.01	0.80	6.59	0.26	
11	0.01	0.01	0.01	0.01	0.00	0.02	13.39	0.01	0.01	0.68	6.59	0.02	
12	0.01	0.01	0.01	0.01	0.00	0.02	12.93	0.01	0.01	0.62	6.59	0.02	
13	0.01	0.01	0.01	0.01	0.00	0.02	5.40	0.01	0.01	0.56	6.59	0.02	
14	0.00	0.01	0.01	0.01	0.01	0.02	1.39	0.01	0.01	0.56	6.59	0.02	
15	0.00	0.01	0.01	0.01	0.44	0.01	0.89	0.01	0.01	1.98	4.41	0.02	
16	0.00	0.01	0.01	0.01	0.68	0.01	0.56	0.01	0.01	3.73	0.80	0.02	
17	0.00	0.01	0.01	0.01	0.80	0.01	0.26	0.01	0.01	3.98	0.50	0.74	
18	0.00	0.01	0.01	0.01	0.80	1.65	0.02	0.01	0.01	3.98	0.26	3.49	
19	0.00	0.01	0.01	0.02	0.89	0.56	0.02	0.01	0.01	3.98	0.02	3.49	
20	0.00	0.01	0.01	0.01	2.87	0.38	0.02	0.01	0.01	3.98	0.02	3.73	
21	0.00	0.01	0.01	0.01	3.61	0.74	0.02	0.01	0.01	1.76	0.02	3.24	
22	0.00	0.01	0.01	0.01	11.56	0.26	0.02	0.01	0.01	1.56	0.02	0.74	
23	0.00	0.01	0.01	0.01	11.10	0.02	0.02	0.01	0.01	1.31	0.02	1.14	
24	0.00	0.01	0.01	0.01	10.68	0.02	0.02	0.01	0.01	0.68	0.02	0.89	
25	0.00	0.01	0.01	0.01	2.42	0.02	0.02	0.01	0.01	0.38	0.02	0.89	
26	0.00	0.01	0.01	0.02	1.56	0.02	0.02	0.01	0.01	0.26	0.02	0.74	
27	0.00	0.01	0.01	0.01	0.89	0.02	0.01	0.01	0.01	0.26	0.02	0.44	
28	0.32	0.01	0.01	0.01	0.68	0.26	0.01	0.01	0.01	0.26	0.02	0.32	
29	0.50	0.01	0.01	0.01	0.50	0.02	0.01	0.01	0.01	0.02		0.26	
30	0.44	0.01	0.01	0.01	0.38	0.02	1.87	0.01	0.01	0.02		0.02	
31		0.01		0.01	0.32		1.98		0.01	0.02		0.02	
Total	2.25	0.31	0.30	1.21	50.22	6.58	58.35	3.76	0.31	61.00	78.21	24.86	287.36 CMSDAY
Mean	0.08	0.01	0.01	0.04	1.62	0.22	1.88	0.13	0.01	1.97	2.79	0.80	0.79 CMS
Max	0.50	0.01	0.01	0.89	11.56	1.65	13.64	1.98	0.01	12.93	6.59	3.73	13.64 CMS
Min	0.00	0.01	0.01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.00 CMS
Runoff	0.194	0.027	0.026	0.105	4.339	0.569	5.041	0.325	0.027	5.270	6.757	2.148	24.828 MCM

Momentary Peak 14.63 CMS, at 125.05 M (MSL), at 15.00 Hours, on Oct 9, 1998
Runoff Yield 1.51 Liters/Second/Square KM, Momentary Peak Yield 28.027 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

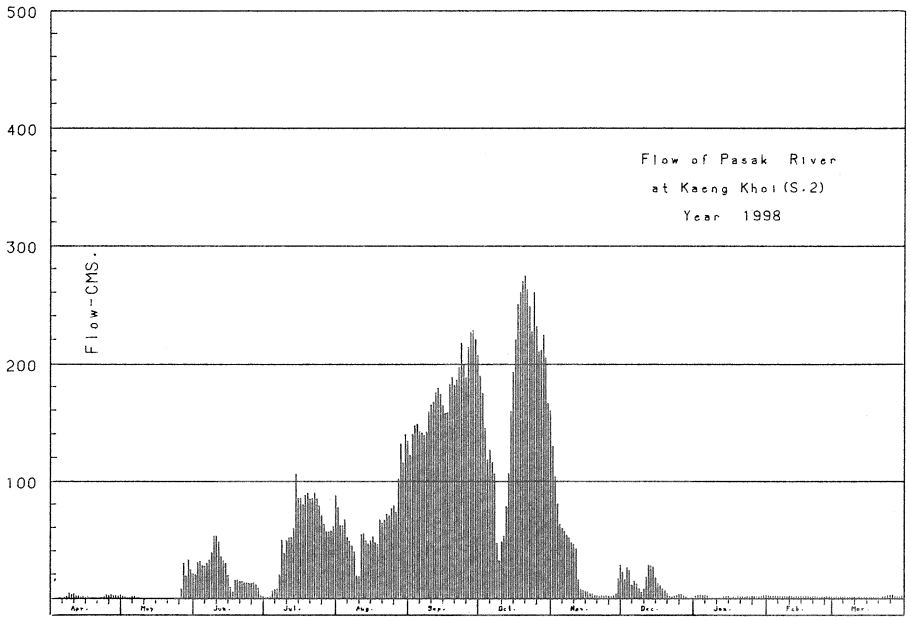
Pasak River at Kaeng Khoi, Saraburi (S.2)

Location	Lat. 14°-35'-32" N., Long. 101°-00'-23" E., on left bank about 100 meters downstream from Kaeng Khoi Water Supply, Amphoe Kaeng Khoi, Saraburi.
Drainage Area	14,522 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+6.11 m.(M.S.L.)
Bench Mark	B.M._H.D.
Location	On left bank near the automatic gage building.
Elevation	+20.130 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1914 to date.
Rating Operation	
Period of Rating	1959 - 1962, 1965 - 1966, 1993 to date.
Rated by Float	-
Rated by Current Meter	1959 - 1962, 1965 - 1966, 1993 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 19 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.75	6.87	7.48	6.79	8.38	8.92	9.64	9.01	7.52	6.86	6.88	6.83	
2	6.75	6.81	7.68	6.79	8.18	9.12	9.49	8.70	7.37	6.91	6.86	6.83	
3	6.75	6.80	7.69	6.84	8.17	9.19	9.17	8.42	7.60	6.91	6.87	6.83	
4	6.79	6.79	7.63	7.04	8.24	9.21	8.87	8.19	7.54	6.90	6.86	6.83	
5	6.76	6.82	7.61	7.11	8.04	9.14	8.97	8.15	7.25	6.90	6.86	6.83	
6	6.79	6.87	7.67	7.11	7.98	9.13	8.85	8.11	7.34	6.87	6.85	6.83	
7	6.85	6.81	7.71	7.47	7.90	9.10	8.73	8.07	7.26	6.83	6.84	6.83	
8	6.96	6.77	7.83	8.00	7.83	9.14	7.94	8.03	7.14	6.79	6.84	6.82	
9	6.94	6.76	8.05	7.82	7.45	9.32	7.71	7.97	7.00	6.76	6.85	6.82	
10	6.94	6.74	8.06	8.00	7.43	9.38	7.98	7.92	7.13	6.76	6.85	6.82	
11	6.88	6.74	7.97	8.03	8.08	9.41	8.05	7.87	7.42	6.75	6.85	6.82	
12	6.85	6.73	7.78	8.04	8.08	9.49	8.39	7.37	7.64	6.76	6.84	6.82	
13	6.83	6.73	7.70	8.14	7.99	9.53	8.74	7.12	7.62	6.86	6.84	6.82	
14	6.83	6.72	7.67	8.73	7.94	9.48	9.32	7.07	7.61	6.86	6.84	6.82	
15	6.82	6.73	7.45	8.47	7.99	9.38	9.67	7.05	7.42	6.85	6.84	6.81	
16	6.84	6.74	7.17	8.47	8.05	9.31	9.95	7.02	7.28	6.82	6.84	6.81	
17	6.81	6.73	7.03	8.41	7.97	9.31	10.23	6.97	7.24	6.81	6.84	6.81	
18	6.79	6.72	7.37	8.50	7.92	9.56	10.33	6.95	7.12	6.82	6.84	6.81	
19	6.79	6.71	7.36	8.53	8.24	9.63	10.41	6.90	7.08	6.84	6.84	6.81	
20	6.78	6.72	7.34	8.46	8.20	9.56	10.46	6.87	6.97	6.84	6.84	6.81	
21	6.75	6.73	7.33	8.47	8.24	9.60	10.35	6.87	6.87	6.84	6.84	6.81	
22	6.76	6.73	7.31	8.53	8.30	9.71	10.22	6.87	6.83	6.84	6.83	6.82	
23	6.85	6.73	7.30	8.47	8.29	9.92	10.01	6.87	6.84	6.84	6.83	6.86	
24	6.90	6.73	7.30	8.39	8.36	9.74	10.33	6.87	6.91	6.84	6.83	6.88	
25	6.91	6.75	7.30	8.29	8.40	9.62	10.06	6.87	6.95	6.84	6.83	6.91	
26	6.91	7.13	7.30	8.19	8.32	9.88	9.84	6.86	6.93	6.84	6.83	6.91	
27	6.89	7.66	7.26	8.11	8.68	10.01	9.86	6.86	6.88	6.84	6.83	6.86	
28	6.87	7.45	7.13	8.10	9.03	10.02	9.98	6.97	6.82	6.84	6.83	6.83	
29	6.87	7.73	6.90	8.12	8.84	9.95	9.79	7.38	6.76	6.87		6.84	
30	6.90	7.55	6.81	8.16	9.11	9.81	9.40	7.63	6.75	6.88		6.86	
31		7.48		8.50	9.05		9.33		6.70	6.89		6.86	
Mean	6.84	6.90	7.47	8.00	8.22	9.49	9.42	7.46	7.15	6.84	6.84	6.83	
Max	6.96	7.73	8.06	8.73	9.11	10.02	10.46	9.01	7.64	6.91	6.88	6.91	10.46
Min	6.75	6.71	6.81	6.79	7.43	8.92	7.71	6.86	6.70	6.75	6.83	6.81	6.70

Annual Max Momentary Gage Height 10.46 M (MSL), at 6.00 Hours, on Oct 20, 1998
Zero Gage at Bottom Elevation 6.11 M (MSL), River Bed 5.69 M (MSL)
Left Bank Elevation 20.67 M (MSL)
Right Bank Elevation 20.56 M (MSL), Drainage Area 14522 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.75	2.69	21.10	1.35	78.45	123.00	190.23	130.92	23.00	2.52	2.86	2.01	
2	0.75	1.67	31.20	1.35	63.00	141.00	175.79	104.37	16.30	3.43	2.52	2.01	
3	0.75	1.50	31.73	2.18	62.25	147.42	145.58	81.63	27.00	3.43	2.69	2.01	
4	1.35	1.35	28.58	6.50	67.60	149.25	118.62	63.75	24.00	3.20	2.52	2.01	
5	0.90	1.84	27.53	8.28	52.80	142.83	127.38	60.75	12.12	3.20	2.52	2.01	
6	1.35	2.69	30.68	8.28	49.10	141.92	116.88	57.75	15.10	2.69	2.35	2.01	
7	2.35	1.67	32.77	20.65	45.50	139.17	106.81	54.90	12.40	2.01	2.18	2.01	
8	4.58	1.05	39.90	50.00	39.90	142.83	47.30	52.10	9.10	1.35	2.18	1.84	
9	4.12	0.90	53.50	39.10	19.75	159.42	32.77	48.65	5.50	0.90	2.35	1.84	
10	4.12	0.60	54.20	50.00	18.85	165.20	49.10	46.40	8.83	0.90	2.35	1.84	
11	2.86	0.60	48.65	52.10	55.60	168.09	53.50	43.10	18.40	0.75	2.35	1.84	
12	2.35	0.45	36.45	52.80	55.60	175.79	79.23	16.30	29.10	0.90	2.18	1.84	
13	2.01	0.45	32.25	60.00	49.55	179.64	107.62	8.55	28.05	2.52	2.18	1.84	
14	2.01	0.30	30.68	106.81	47.30	174.82	159.42	7.25	27.53	2.52	2.18	1.84	
15	1.84	0.45	19.75	85.69	49.55	165.20	193.11	6.75	18.40	2.35	2.18	1.67	
16	2.18	0.60	9.93	85.69	53.50	158.46	221.31	6.00	12.95	1.84	2.18	1.67	
17	1.67	0.45	6.25	80.81	48.65	158.46	250.47	4.81	11.85	1.67	2.18	1.67	
18	1.35	0.30	16.30	88.13	46.40	182.53	261.30	4.35	8.55	1.84	2.18	1.67	
19	1.35	0.15	15.90	90.56	67.60	189.26	270.10	3.20	7.50	2.18	2.18	1.67	
20	1.20	0.30	15.10	84.88	64.50	182.53	275.60	2.69	4.81	2.18	2.18	1.67	
21	0.75	0.45	14.70	85.69	67.60	186.38	263.50	2.69	2.69	2.18	2.18	1.67	
22	0.90	0.45	13.90	90.56	72.25	197.01	249.40	2.69	2.01	2.18	2.01	1.84	
23	2.35	0.45	13.50	85.69	71.48	218.27	227.39	2.69	2.18	2.18	2.01	2.52	
24	3.20	0.45	13.50	79.23	76.90	200.05	261.30	2.69	3.43	2.18	2.01	2.86	
25	3.43	0.75	13.50	71.48	80.00	188.30	232.45	2.69	4.35	2.18	2.01	3.43	
26	3.43	8.83	13.50	63.75	73.80	214.23	210.18	2.52	3.89	2.18	2.01	3.43	
27	3.03	30.15	12.40	57.75	102.75	227.39	212.20	2.52	2.86	2.18	2.01	2.52	
28	2.69	19.75	8.83	57.00	132.75	228.40	224.35	4.81	1.84	2.18	2.01	2.01	
29	2.69	33.82	3.20	58.50	116.00	221.31	205.11	16.70	0.90	2.69		2.18	
30	3.20	24.50	1.67	61.50	140.08	207.14	167.12	28.58	0.75	2.86		2.52	
31		21.10		88.13	134.58		160.39		0.00	3.03		2.52	
Total	65.51	160.71	691.15	1774.44	2103.64	5275.30	5395.51	872.80	345.39	68.40	62.74	64.47	16880.06 CMSDAY
Mean	2.18	5.18	23.04	57.24	67.86	175.84	174.05	29.09	11.14	2.21	2.24	2.08	46.25 CMS
Max	4.58	33.82	54.20	106.81	140.08	228.40	275.60	130.92	29.10	3.43	2.86	3.43	275.60 CMS
Min	0.75	0.15	1.67	1.35	18.85	123.00	32.77	2.52	0.00	0.75	2.01	1.67	0.00 CMS
Runoff	5.660	13.885	59.715	153.312	181.754	455.786	466.172	75.410	29.842	5.910	5.421	5.570	1458.437 MCM

Momentary Peak 275.60 CMS, at 10.46 M (MSL), at 6.00 Hours, on Oct 20, 1998

Runoff Yield 3.18 Liters/Second/Square KM, Momentary Peak Yield 18.978 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

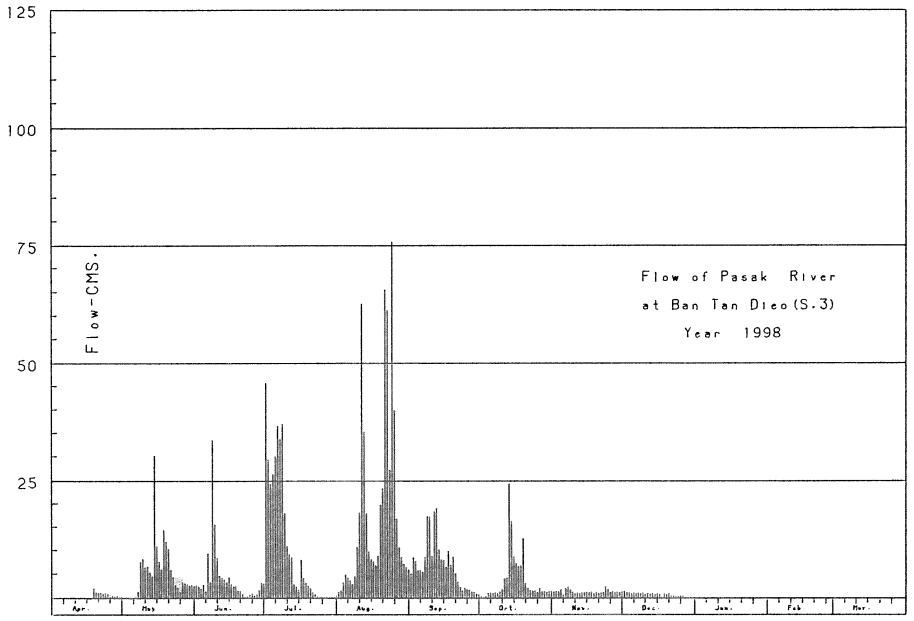
Pasak River at Ban Tan Dieo, Phetchabun (S.3)

Location	Lat. 16°-46'-55" N., Long. 101°-14'-57" E., on left bank near the bridge of Samakkhichai-Nonthakit road, Amphoe Lomsak, Phetchabun.
Drainage Area	1,047 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the staff gage.
Elevation	+7.813 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1950 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the concrete weir about 150 meters downstream from the gage site. Stage-discharge relation defined by 33 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.09	1.28	1.72	4.11	1.55	1.65	1.34	1.59	1.60	0.84	0.74	0.71	
2	0.98	1.27	1.71	3.32	1.62	1.98	1.32	1.60	1.57	0.79	0.74	0.68	
3	0.91	1.24	1.65	3.04	1.78	1.90	1.30	1.60	1.53	0.80	0.73	0.67	
4	0.89	1.22	1.73	3.16	1.64	1.73	1.53	1.63	1.51	0.86	0.73	0.67	
5	0.88	1.20	1.61	3.36	1.56	1.72	1.52	1.45	1.52	0.92	0.72	0.67	
6	0.85	1.20	2.11	3.68	1.48	1.70	1.52	1.67	1.52	0.94	0.72	0.66	
7	0.83	1.60	1.80	3.55	1.40	1.97	1.53	1.69	1.52	0.94	0.71	0.66	
8	0.83	2.03	3.53	3.70	1.61	2.64	1.53	1.64	1.52	0.95	0.70	0.66	
9	0.83	2.05	2.52	2.68	2.16	2.62	1.56	1.57	1.52	0.95	0.69	0.66	
10	0.83	1.96	1.96	2.18	2.68	1.99	1.65	1.52	1.48	0.96	0.68	0.64	
11	0.82	1.81	1.62	2.02	4.81	2.71	1.84	1.51	1.49	0.96	0.68	0.64	
12	0.82	1.69	1.56	1.97	3.62	2.74	1.84	1.52	1.49	0.96	0.67	0.62	
13	0.82	1.58	1.50	1.76	2.68	2.12	3.05	1.53	1.49	0.96	0.67	0.62	
14	0.81	3.37	1.45	1.69	2.07	1.94	2.56	1.56	1.48	0.95	0.67	0.62	
15	0.81	2.16	1.58	1.63	1.95	1.92	1.98	1.55	1.48	0.95	0.67	0.62	
16	0.81	1.89	1.36	2.05	1.89	1.81	1.87	1.56	1.49	0.94	0.68	0.62	
17	0.80	1.74	1.31	1.84	1.83	2.08	1.80	1.56	1.31	0.93	0.68	0.60	
18	1.66	2.44	1.30	1.79	2.00	1.83	1.83	1.52	1.47	0.92	0.68	0.60	
19	1.57	2.24	1.13	1.71	2.80	1.99	2.31	1.55	1.48	0.91	0.68	0.59	
20	1.55	2.13	1.08	1.67	2.99	1.90	1.77	1.52	1.50	0.83	0.68	0.55	
21	1.52	1.94	0.91	1.54	4.93	1.80	1.68	1.52	1.41	0.82	0.69	0.55	
22	1.50	1.85	0.74	1.48	4.76	1.70	1.62	1.57	1.36	0.80	0.70	0.55	
23	1.49	1.74	0.74	1.33	3.21	1.61	1.62	1.70	1.39	0.80	0.68	0.55	
24	1.46	1.67	0.91	1.30	5.31	1.68	1.61	1.65	1.42	0.79	0.68	0.55	
25	1.42	1.57	0.95	1.28	3.85	1.65	1.58	1.59	1.39	0.78	0.67	0.55	
26	1.39	1.79	0.80	1.27	2.59	1.62	1.65	1.57	1.33	0.78	0.68	0.55	
27	1.36	1.78	0.93	1.26	2.15	1.60	1.60	1.56	1.12	0.78	0.67	0.55	
28	1.33	1.74	1.15	1.24	1.97	1.55	1.59	1.56	1.02	0.78	0.67	0.55	
29	1.32	1.73	1.43	1.35	1.86	1.50	1.58	1.56	1.01	0.78		0.55	
30	1.31	1.73	1.39	1.34	1.78	1.43	1.58	1.56	0.84	0.78		0.55	
31		1.72		1.36	1.75		1.59		0.84	0.78		0.55	
Mean	1.12	1.79	1.47	2.12	2.53	1.90	1.72	1.57	1.39	0.87	0.69	0.61	
Max	1.66	3.37	3.53	4.11	5.31	2.74	3.05	1.70	1.60	0.96	0.74	0.71	5.31
Min	0.80	1.20	0.74	1.24	1.40	1.43	1.30	1.45	0.84	0.78	0.67	0.55	0.55

Annual Max Momentary Gage Height 5.84 M (A.D), at 15.00 Hours, on Aug 21, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.21 M (A.D)
Left Bank Elevation 8.83 M (A.D)
Right Bank Elevation 8.80 M (A.D), Drainage Area 1047 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.12	0.33	2.70	45.98	1.27	5.20	0.47	1.46	1.50	0.06	0.04	0.04	
2	0.10	0.31	2.60	29.50	1.70	8.77	0.42	1.50	1.37	0.05	0.04	0.03	
3	0.08	0.24	2.00	24.25	3.30	7.85	0.37	1.50	1.18	0.05	0.04	0.03	
4	0.07	0.19	2.80	26.50	5.10	6.00	1.18	1.80	1.10	0.07	0.04	0.03	
5	0.07	0.15	1.60	30.25	4.38	5.90	1.14	0.83	1.14	0.08	0.04	0.03	
6	0.06	0.15	9.47	36.60	3.74	5.70	1.14	2.20	1.14	0.09	0.04	0.03	
7	0.06	1.50	3.50	34.00	3.10	8.66	1.18	2.40	1.14	0.09	0.04	0.03	
8	0.06	7.89	33.60	37.00	4.80	17.60	1.18	1.90	1.14	0.09	0.03	0.03	
9	0.06	8.29	15.80	18.20	11.00	17.30	1.32	1.37	1.14	0.09	0.03	0.03	
10	0.06	6.54	8.54	11.25	18.20	8.89	2.00	1.14	0.96	0.09	0.03	0.03	
11	0.05	6.81	4.90	9.25	62.65	18.65	4.26	1.10	1.01	0.09	0.03	0.03	
12	0.05	5.60	4.38	8.66	35.40	19.10	4.26	1.14	1.01	0.09	0.03	0.02	
13	0.05	4.54	3.90	3.10	18.20	10.50	24.44	1.18	1.01	0.09	0.03	0.02	
14	0.05	30.44	3.50	2.40	9.87	8.31	16.40	1.32	0.96	0.09	0.03	0.02	
15	0.05	11.00	4.54	1.80	8.43	8.08	8.77	1.27	0.96	0.09	0.03	0.02	
16	0.05	7.74	2.88	8.29	7.74	6.81	7.51	1.32	1.01	0.09	0.03	0.02	
17	0.05	6.10	2.60	4.26	7.05	10.00	6.70	1.32	0.40	0.08	0.03	0.02	
18	2.10	14.60	2.55	3.40	9.00	7.05	7.05	1.14	0.92	0.08	0.03	0.02	
19	1.37	12.00	1.68	2.60	20.00	8.89	12.87	1.27	0.96	0.08	0.03	0.02	
20	1.27	10.63	1.46	2.20	23.32	5.40	3.20	1.14	1.05	0.08	0.03	0.01	
21	1.14	6.16	0.83	1.23	65.71	3.50	2.30	1.14	0.65	0.05	0.03	0.01	
22	1.05	4.45	0.38	0.96	61.40	2.50	1.70	1.37	0.51	0.05	0.03	0.01	
23	1.01	2.90	0.38	0.44	27.44	1.60	1.70	2.50	0.58	0.05	0.03	0.01	
24	0.87	2.20	0.83	0.37	76.02	2.30	1.60	2.00	0.69	0.05	0.03	0.01	
25	0.69	1.37	0.95	0.33	40.13	2.00	1.41	1.46	0.58	0.05	0.03	0.01	
26	0.58	3.40	0.50	0.31	16.85	1.70	2.00	1.37	0.44	0.05	0.03	0.01	
27	0.51	3.30	0.89	0.28	10.88	1.50	1.50	1.32	0.13	0.05	0.03	0.01	
28	0.44	2.90	1.77	0.24	8.66	1.27	1.46	1.32	0.11	0.05	0.03	0.01	
29	0.42	2.80	3.34	0.49	7.39	1.05	1.41	1.32	0.10	0.05		0.01	
30	0.40	2.80	3.05	0.47	6.50	0.73	1.41	1.32	0.06	0.05		0.01	
31		2.70		0.51	6.20		1.46		0.06	0.05		0.01	
Total	12.94	170.03	127.92	345.12	585.43	212.81	123.81	43.42	25.01	2.17	0.91	0.62	1650.19 CMSDAY
Mean	0.43	5.48	4.26	11.13	18.88	7.09	3.99	1.45	0.81	0.07	0.03	0.02	4.52 CMS
Max	2.10	30.44	33.60	45.98	76.02	19.10	24.44	2.50	1.50	0.09	0.04	0.04	76.02 CMS
Min	0.05	0.15	0.38	0.24	1.27	0.73	0.37	0.83	0.06	0.05	0.03	0.01	0.01 CMS
Runoff	1.118	14.691	11.052	29.818	50.581	18.387	10.697	3.751	2.161	0.187	0.079	0.054	142.576 MCM

Momentary Peak 91.70 CMS, at 5.84 M (A.D), at 15.00 Hours, on Aug 21, 1998

Runoff Yield 4.32 Liters/Second/Square KM, Momentary Peak Yield 87.584 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

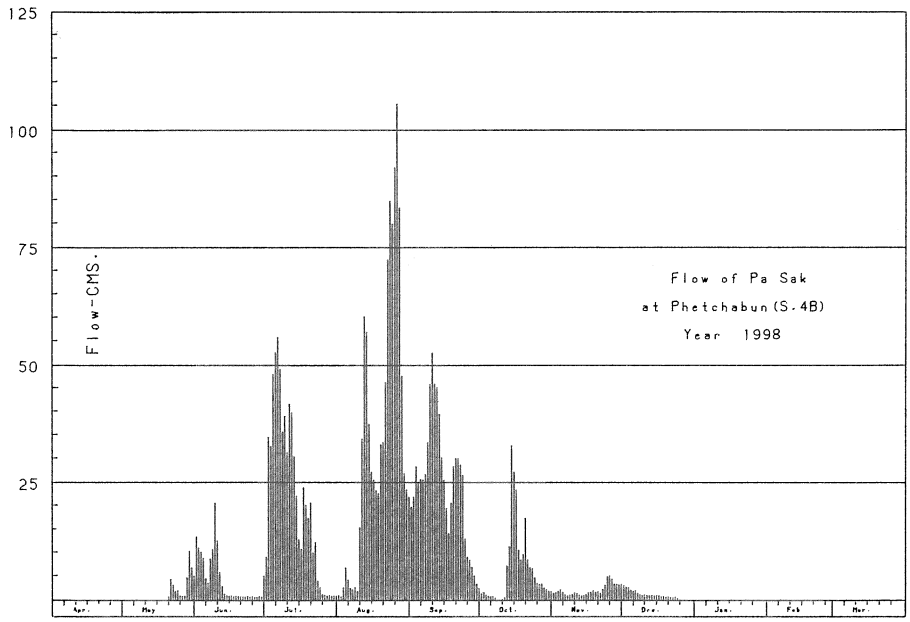
Pasak River at Phetchabun, Phetchabun (S.4B)

Location	Lat. 16°-25'-12" N., Long. 101°-10'-13" E., on left bank about 300 meters downstream from Phathana Phak Nua 2 bridge, Amphoe Muang, Phetchabun.
Drainage Area	3,566 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+106.50 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank infront town-hall Changwat Phetchabun.
Elevation	+116.106 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir about 400 meters downstream from the gage site. Stage-discharge relation defined by 43 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	109.30	109.29	110.01	109.90	109.58	109.81	109.61	109.62	109.69	109.31	109.30	109.30	
2	109.30	109.29	109.95	110.69	109.55	109.94	109.63	109.62	109.68	109.30	109.30	109.30	
3	109.30	109.29	109.93	110.59	109.67	110.35	109.60	109.64	109.67	109.30	109.30	109.30	
4	109.30	109.29	109.89	111.37	109.84	110.14	109.58	109.65	109.65	109.30	109.30	109.30	
5	109.30	109.29	109.76	111.59	109.75	110.19	109.55	109.63	109.64	109.30	109.30	109.30	
6	109.30	109.29	109.71	111.73	109.67	110.17	109.52	109.60	109.64	109.30	109.30	109.30	
7	109.30	109.29	109.89	111.43	109.65	110.25	109.47	109.59	109.62	109.30	109.30	109.29	
8	109.30	109.29	109.94	110.76	109.67	110.63	109.39	109.59	109.60	109.30	109.30	109.29	
9	109.30	109.30	110.12	110.93	109.64	111.27	109.39	109.61	109.60	109.30	109.30	109.29	
10	109.30	109.30	109.99	110.51	110.04	111.59	109.46	109.62	109.60	109.30	109.30	109.29	
11	109.30	109.30	109.81	111.07	110.67	111.28	109.58	109.62	109.60	109.30	109.30	109.29	
12	109.30	109.30	109.69	110.97	111.94	111.24	109.85	109.60	109.59	109.30	109.30	109.29	
13	109.30	109.30	109.61	110.47	111.78	110.96	109.96	109.59	109.58	109.30	109.30	109.29	
14	109.30	109.30	109.60	110.14	110.85	110.45	110.59	109.58	109.58	109.30	109.30	109.29	
15	109.30	109.30	109.57	110.00	110.28	110.17	110.28	109.61	109.57	109.30	109.30	109.29	
16	109.30	109.29	109.56	109.94	110.17	110.10	110.04	109.62	109.56	109.30	109.30	109.29	
17	109.30	109.29	109.56	110.17	110.04	110.02	109.94	109.63	109.55	109.30	109.30	109.29	
18	109.31	109.35	109.55	110.11	109.99	110.12	109.88	109.64	109.53	109.30	109.30	109.28	
19	109.37	109.34	109.55	110.07	110.61	110.34	109.91	109.63	109.53	109.30	109.30	109.28	
20	109.35	109.54	109.53	110.12	110.63	110.45	110.07	109.63	109.53	109.30	109.30	109.28	
21	109.33	109.75	109.53	109.92	111.29	110.44	109.88	109.62	109.53	109.30	109.30	109.28	
22	109.31	109.70	109.54	109.98	112.46	110.37	109.84	109.66	109.50	109.30	109.30	109.28	
23	109.31	109.64	109.54	109.74	112.95	110.24	109.83	109.69	109.51	109.30	109.30	109.28	
24	109.30	109.64	109.54	109.67	112.76	110.00	109.77	109.78	109.45	109.30	109.30	109.28	
25	109.30	109.59	109.53	109.61	113.22	109.90	109.71	109.78	109.35	109.30	109.30	109.28	
26	109.30	109.54	109.53	109.59	113.70	109.88	109.70	109.75	109.33	109.30	109.30	109.29	
27	109.30	109.58	109.53	109.58	112.90	109.84	109.71	109.71	109.32	109.30	109.30	109.29	
28	109.29	109.77	109.54	109.58	111.36	109.78	109.67	109.70	109.31	109.30	109.30	109.29	
29	109.29	109.93	109.54	109.57	110.25	109.71	109.65	109.70	109.31	109.30		109.29	
30	109.29	109.84	109.78	109.56	110.04	109.66	109.64	109.70	109.31	109.32		109.29	
31		109.78		109.56	109.95		109.63		109.31	109.31		109.29	
Mean	109.31	109.45	109.69	110.29	110.80	110.31	109.75	109.65	109.52	109.30	109.30	109.29	
Max	109.37	109.93	110.12	111.73	113.70	111.59	110.59	109.78	109.69	109.32	109.30	109.30	113.70
Min	109.29	109.29	109.53	109.56	109.55	109.66	109.39	109.58	109.31	109.30	109.30	109.28	109.28

Annual Max Momentary Gage Height 114.06 M (MSL), at 24.00 Hours, on Aug 19, 1998
Zero Gage at Bottom Elevation 106.50 M (MSL), River Bed 106.82 M (MSL)
Left Bank Elevation 115.89 M (MSL)
Right Bank Elevation 115.84 M (MSL), Drainage Area 3566 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.03	0.02	13.65	9.28	1.00	19.95	1.32	1.55	3.10	0.03	0.03	0.03	
2	0.03	0.02	11.14	34.62	0.85	21.90	1.77	1.55	2.88	0.03	0.03	0.03	
3	0.03	0.02	10.39	32.82	2.66	28.55	1.10	1.99	2.66	0.03	0.03	0.03	
4	0.03	0.02	8.90	47.97	7.04	25.04	1.00	2.21	2.21	0.03	0.03	0.03	
5	0.03	0.02	4.66	52.78	4.44	25.84	0.85	1.77	1.99	0.03	0.03	0.03	
6	0.03	0.02	3.55	55.86	2.66	25.52	0.69	1.10	1.99	0.03	0.03	0.03	
7	0.03	0.02	8.90	49.26	2.21	26.85	0.44	1.05	1.55	0.03	0.03	0.02	
8	0.03	0.02	10.77	35.88	2.66	33.54	0.07	1.05	1.10	0.03	0.03	0.02	
9	0.03	0.03	20.80	39.07	1.99	45.87	0.07	1.32	1.10	0.03	0.03	0.02	
10	0.03	0.03	12.63	31.38	15.60	52.78	0.39	1.55	1.10	0.03	0.03	0.02	
11	0.03	0.03	5.92	41.80	34.26	46.08	1.00	1.55	1.10	0.03	0.03	0.02	
12	0.03	0.03	3.10	39.83	60.48	45.24	7.41	1.10	1.05	0.03	0.03	0.02	
13	0.03	0.03	1.32	30.66	56.96	39.64	11.51	1.05	1.00	0.03	0.03	0.02	
14	0.03	0.03	1.10	22.10	37.55	30.30	32.82	1.00	1.00	0.03	0.03	0.02	
15	0.03	0.03	0.95	13.00	27.36	25.52	27.36	1.32	0.95	0.03	0.03	0.02	
16	0.03	0.02	0.90	10.77	25.52	19.50	23.44	1.55	0.90	0.03	0.03	0.02	
17	0.03	0.02	0.90	24.05	23.44	14.30	10.77	1.77	0.85	0.03	0.03	0.02	
18	0.03	0.05	0.85	20.15	22.65	20.80	8.53	1.99	0.74	0.03	0.03	0.02	
19	0.06	0.05	0.85	17.55	33.18	28.38	9.65	1.77	0.74	0.03	0.03	0.02	
20	0.05	0.79	0.74	20.80	33.54	30.30	17.55	1.77	0.74	0.03	0.03	0.02	
21	0.04	4.44	0.74	10.02	46.29	30.12	8.53	1.55	0.74	0.03	0.03	0.02	
22	0.03	3.32	0.79	12.26	72.50	28.89	7.04	2.44	0.59	0.03	0.03	0.02	
23	0.03	1.99	0.79	4.21	84.90	26.68	6.67	3.10	0.64	0.03	0.03	0.02	
24	0.03	1.99	0.79	2.66	80.00	13.00	4.88	5.10	0.33	0.03	0.03	0.02	
25	0.03	1.05	0.74	1.32	92.14	9.28	3.55	5.10	0.05	0.03	0.03	0.02	
26	0.03	0.79	0.74	1.05	105.40	8.53	3.32	4.44	0.04	0.03	0.03	0.02	
27	0.03	1.00	0.74	1.00	83.60	7.04	3.55	3.55	0.04	0.03	0.03	0.02	
28	0.02	4.88	0.79	1.00	47.76	5.10	2.66	3.32	0.03	0.03	0.03	0.02	
29	0.02	10.39	0.79	0.95	26.85	3.55	2.21	3.32	0.03	0.03		0.02	
30	0.02	7.04	5.10	0.90	23.44	2.44	1.99	3.32	0.03	0.04		0.02	
31		5.10		0.90	22.05		1.77		0.03	0.03		0.02	
Total	0.93	43.29	134.03	665.90	1080.98	740.53	203.91	65.25	31.30	0.94	0.84	0.68	2968.58 CMSDAY
Mean	0.03	1.40	4.47	21.48	34.87	24.68	6.58	2.17	1.01	0.03	0.03	0.02	8.13 CMS
Max	0.06	10.39	20.80	55.86	105.40	52.78	32.82	5.10	3.10	0.04	0.03	0.03	105.40 CMS
Min	0.02	0.02	0.74	0.90	0.85	2.44	0.07	1.00	0.03	0.03	0.03	0.02	0.02 CMS
Runoff	0.080	3.740	11.580	57.534	93.397	63.982	17.618	5.638	2.704	0.081	0.073	0.059	256.485 MCM

Momentary Peak 115.80 CMS, at 114.06 M (MSL), at 24.00 Hours, on Aug 19, 1998

Runoff Yield 2.28 Liters/Second/Square KM, Momentary Peak Yield 32.473 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

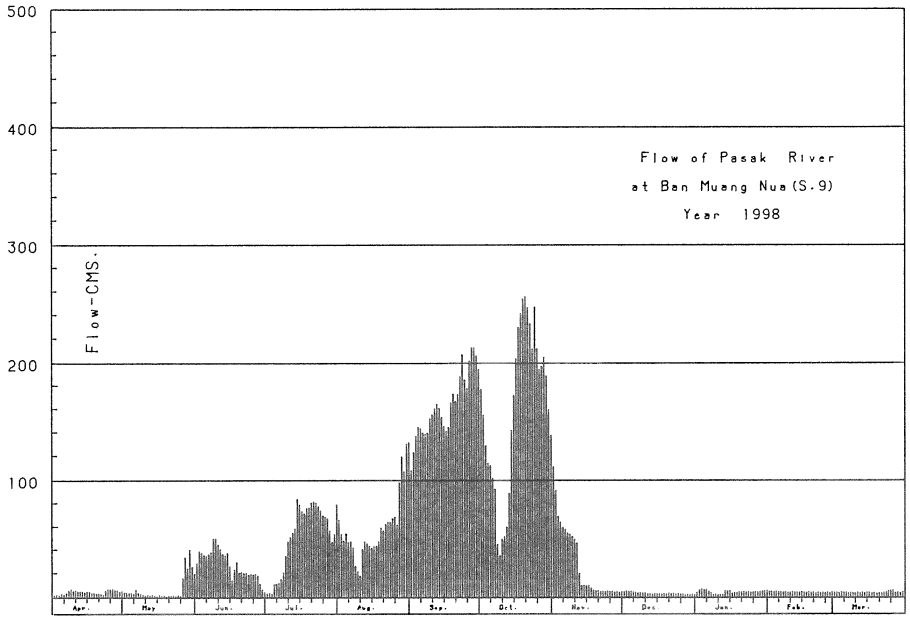
Pasak River at Ban Muang Nua, Saraburi (S.9)

Location	Lat. 14°-37'-33" N., Long. 101°-01'-00" E., on left bank at Ban Muang Nua railway bridge, Amphoe Kaeng Khoi, Saraburi.
Drainage Area	14,374 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+7.49 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank under tamarind tree along the measuring line.
Elevation	+23.099 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1973 to date.
Rating Operation	
Period of Rating	1973 to date.
Rated by Float	-
Rated by Current Meter	1973 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Pasak Dam above gage site. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	8.12	8.23	9.01	8.18	9.66	10.25	11.04	10.30	8.26	8.21	8.27	8.23	
2	8.12	8.21	9.23	8.18	9.46	10.45	10.81	10.04	8.27	8.33	8.26	8.22	
3	8.12	8.20	9.19	8.18	9.38	10.61	10.52	9.72	8.27	8.34	8.26	8.22	
4	8.15	8.19	9.17	8.52	9.48	10.71	10.33	9.63	8.26	8.33	8.26	8.23	
5	8.15	8.16	9.14	8.56	9.35	10.69	10.31	9.57	8.25	8.33	8.25	8.23	
6	8.18	8.31	9.18	8.57	9.37	10.65	10.17	9.53	8.22	8.28	8.24	8.22	
7	8.30	8.21	9.20	8.69	9.27	10.63	10.06	9.49	8.22	8.21	8.24	8.21	
8	8.33	8.16	9.40	8.83	8.97	10.65	9.32	9.46	8.21	8.15	8.24	8.21	
9	8.29	8.15	9.41	9.15	8.85	10.78	9.16	9.44	8.21	8.14	8.24	8.21	
10	8.29	8.11	9.33	9.37	8.77	10.82	9.40	9.39	8.20	8.14	8.24	8.21	
11	8.27	8.11	9.25	9.42	9.26	10.87	9.43	9.35	8.18	8.12	8.24	8.21	
12	8.25	8.12	9.18	9.49	9.36	10.91	9.57	8.83	8.17	8.16	8.24	8.21	
13	8.24	8.11	9.15	9.54	9.34	10.88	10.01	8.49	8.17	8.28	8.22	8.21	
14	8.23	8.09	9.20	9.95	9.30	10.80	10.67	8.49	8.17	8.28	8.23	8.21	
15	8.24	8.09	8.95	9.87	9.28	10.71	10.99	8.49	8.18	8.28	8.23	8.21	
16	8.23	8.12	8.64	9.78	9.29	10.66	11.29	8.49	8.17	8.20	8.22	8.21	
17	8.21	8.11	8.89	9.76	9.31	10.71	11.56	8.40	8.17	8.20	8.23	8.20	
18	8.19	8.10	9.05	9.82	9.36	10.92	11.67	8.30	8.17	8.22	8.24	8.20	
19	8.19	8.09	8.84	9.84	9.55	11.00	11.80	8.30	8.17	8.23	8.23	8.19	
20	8.19	8.09	8.84	9.90	9.52	10.94	11.81	8.28	8.19	8.24	8.23	8.18	
21	8.14	8.11	8.83	9.92	9.61	10.99	11.72	8.26	8.18	8.25	8.22	8.20	
22	8.14	8.10	8.82	9.90	9.63	11.14	11.59	8.26	8.18	8.24	8.22	8.20	
23	8.29	8.10	8.80	9.86	9.64	11.33	11.37	8.27	8.17	8.23	8.22	8.24	
24	8.33	8.10	8.80	9.79	9.68	11.12	11.73	8.27	8.17	8.24	8.22	8.27	
25	8.35	8.10	8.80	9.73	9.71	11.04	11.38	8.27	8.17	8.24	8.22	8.30	
26	8.34	8.71	8.80	9.70	9.59	11.27	11.20	8.25	8.14	8.24	8.22	8.29	
27	8.32	9.13	8.78	9.69	10.13	11.39	11.23	8.25	8.14	8.24	8.22	8.22	
28	8.28	8.91	8.56	9.51	10.40	11.38	11.30	8.25	8.14	8.24	8.23	8.21	
29	8.26	9.24	8.31	9.36	10.24	11.32	11.15	8.24	8.14	8.28		8.22	
30	8.25	8.95	8.22	9.46	10.53	11.20	10.86	8.24	8.14	8.27		8.23	
31		8.80		9.88	10.55		10.62		8.14	8.29		8.24	
Mean	8.23	8.30	8.97	9.37	9.54	10.89	10.78	8.82	8.19	8.24	8.23	8.22	
Max	8.35	9.24	9.41	9.95	10.55	11.39	11.81	10.30	8.27	8.34	8.27	8.30	11.81
Min	8.12	8.09	8.22	8.18	8.77	10.25	9.16	8.24	8.14	8.12	8.22	8.18	8.09

Annual Max Momentary Gage Height 11.82 M (MSL), at 6.00 Hours, on Oct 20, 1998
Zero Gage at Bottom Elevation 7.49 M (MSL), River Bed 6.06 M (MSL)
Left Bank Elevation 20.04 M (MSL)
Right Bank Elevation 20.32 M (MSL), Drainage Area 14374 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.44	4.86	29.10	3.76	66.20	108.25	178.16	112.33	5.52	4.42	5.74	4.86	
2	2.44	4.42	40.15	3.76	53.87	124.58	155.45	91.50	5.74	7.06	5.52	4.64	
3	2.44	4.20	37.95	3.76	48.93	137.65	130.30	69.90	5.74	7.28	5.52	4.64	
4	3.10	3.98	36.85	11.24	55.10	145.95	114.78	64.35	5.52	7.06	5.52	4.86	
5	3.10	3.32	35.20	12.12	47.08	144.18	113.15	60.65	5.30	7.06	5.30	4.86	
6	3.76	6.62	37.40	12.34	48.32	140.92	101.72	58.18	4.64	5.96	5.08	4.64	
7	6.40	4.42	38.50	16.15	42.35	139.28	93.00	55.72	4.64	4.42	5.08	4.42	
8	7.06	3.32	50.17	21.30	27.37	140.92	45.23	53.87	4.42	3.10	5.08	4.42	
9	6.18	3.10	50.78	35.75	22.17	152.60	36.30	52.63	4.42	2.88	5.08	4.42	
10	6.18	2.22	45.85	48.32	18.95	156.40	50.17	49.55	4.20	2.88	5.08	4.42	
11	5.74	2.22	41.25	51.40	41.80	161.15	52.02	47.08	3.76	2.44	5.08	4.42	
12	5.30	2.44	37.40	55.72	47.70	165.01	60.65	21.30	3.54	3.32	5.08	4.42	
13	5.08	2.22	35.75	58.80	46.47	162.10	89.25	10.58	3.54	5.96	4.64	4.42	
14	4.86	1.80	38.50	84.75	44.00	154.50	142.55	10.58	3.54	5.96	4.86	4.42	
15	5.08	1.80	26.50	79.15	42.90	145.95	173.10	10.58	3.76	5.96	4.86	4.42	
16	4.86	2.44	14.40	73.60	43.45	141.73	203.43	10.58	3.54	4.20	4.64	4.42	
17	4.42	2.22	23.90	72.37	44.62	145.95	230.73	8.60	3.54	4.20	4.86	4.20	
18	3.98	2.00	30.83	76.07	47.70	166.02	241.86	6.40	3.54	4.64	5.08	4.20	
19	3.98	1.80	21.73	77.30	59.42	174.11	255.00	6.40	3.54	4.86	4.86	3.98	
20	3.98	1.80	21.73	81.00	57.57	168.04	256.15	5.96	3.98	5.08	4.86	3.76	
21	2.88	2.22	21.30	82.50	63.12	173.10	246.91	5.52	3.76	5.30	4.64	4.20	
22	2.88	2.00	20.87	81.00	64.35	188.27	233.77	5.52	3.76	5.08	4.64	4.20	
23	6.18	2.00	20.00	78.53	64.97	207.48	211.52	5.74	3.54	4.86	4.64	5.08	
24	7.06	2.00	20.00	74.22	67.43	186.24	247.92	5.74	3.54	5.08	4.64	5.74	
25	7.50	2.00	20.00	70.52	69.28	178.16	212.53	5.74	3.54	5.08	4.64	6.40	
26	7.28	16.85	20.00	68.67	61.88	201.41	194.33	5.30	2.88	5.08	4.64	6.18	
27	6.84	34.65	19.30	68.05	98.45	213.54	197.37	5.30	2.88	5.08	4.64	4.64	
28	5.96	24.77	12.12	56.95	120.50	212.53	204.44	5.30	2.88	5.08	4.86	4.42	
29	5.52	40.70	6.62	47.70	107.43	206.47	189.28	5.08	2.88	5.96		4.64	
30	5.30	26.50	4.64	53.87	131.12	194.33	160.20	5.08	2.88	5.74		4.86	
31		20.00		79.77	132.75		138.47		2.88	6.18		5.08	
Total	147.78	234.89	858.79	1640.44	1887.25	4936.82	4959.74	861.06	121.84	157.26	139.16	144.28	16089.31 CMSDAY
Mean	4.93	7.58	28.63	52.92	60.88	164.56	159.99	28.70	3.93	5.07	4.97	4.65	44.08 CMS
Max	7.50	40.70	50.78	84.75	132.75	213.54	256.15	112.33	5.74	7.28	5.74	6.40	256.15 CMS
Min	2.44	1.80	4.64	3.76	18.95	108.25	36.30	5.08	2.88	2.44	4.64	3.76	1.80 CMS
Runoff	12.768	20.294	74.199	141.734	163.058	426.541	428.522	74.396	10.527	13.587	12.023	12.466	1390.117 MCM

Momentary Peak 257.53 CMS, at 11.82 M (MSL), at 6.00 Hours, on Oct 20, 1998

Runoff Yield 3.07 Liters/Second/Square KM, Momentary Peak Yield 17.916 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

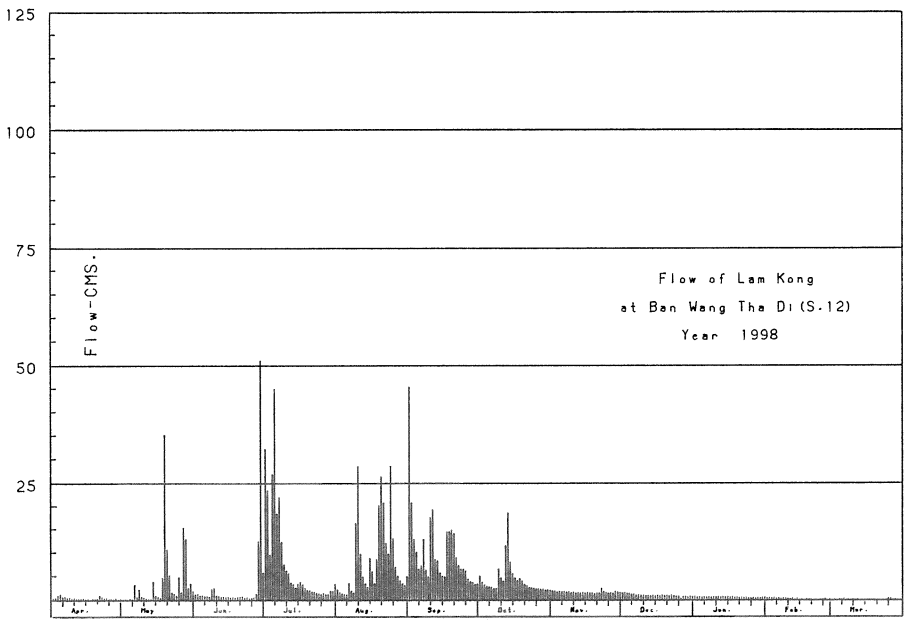
Lam Kong at Ban Wang Tha Di, Phetchabun (S.12)

Location	Lat. 15°-59'-50" N., Long. 101°-14'-28" E., on left bank at Ban Wang Tha Di, Amphoe Nong Phai, Phetchabun.
Drainage Area	471 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank along the gage line.
Elevation	+5.759 m. (A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1978 to date.
Rated by Float	-
Rated by Current Meter	1978 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.50	0.47	0.66	2.30	0.79	2.76	1.06	0.76	0.70	0.58	0.54	0.47	
2	0.49	0.46	0.66	1.96	0.70	1.86	0.94	0.74	0.70	0.58	0.53	0.47	
3	0.61	0.46	0.63	1.33	0.68	1.50	0.88	0.73	0.69	0.56	0.53	0.47	
4	0.66	0.46	0.62	2.10	0.65	1.37	0.86	0.73	0.68	0.57	0.54	0.47	
5	0.57	0.45	0.61	2.74	0.64	1.16	0.85	0.73	0.67	0.57	0.52	0.48	
6	0.57	0.89	0.60	1.76	0.93	1.21	0.83	0.73	0.66	0.57	0.51	0.50	
7	0.53	0.58	0.60	1.90	0.76	1.51	0.81	0.72	0.64	0.57	0.51	0.49	
8	0.53	0.77	0.78	1.48	0.69	1.15	0.80	0.72	0.64	0.57	0.51	0.47	
9	0.50	0.60	0.82	1.23	1.67	1.04	1.17	0.71	0.64	0.57	0.51	0.45	
10	0.50	0.52	0.63	1.14	2.16	1.72	1.03	0.71	0.63	0.58	0.50	0.47	
11	0.49	0.50	0.59	1.09	1.35	1.80	0.96	0.70	0.63	0.57	0.50	0.46	
12	0.49	0.49	0.58	0.94	1.04	1.28	1.44	0.70	0.62	0.58	0.50	0.45	
13	0.49	0.48	0.57	0.89	0.92	1.27	1.77	0.70	0.62	0.57	0.49	0.45	
14	0.48	0.96	0.56	0.83	0.83	1.11	1.25	0.70	0.62	0.57	0.49	0.45	
15	0.48	0.62	0.56	0.90	1.30	1.05	1.09	0.70	0.62	0.57	0.48	0.44	
16	0.47	0.55	0.55	0.94	1.12	1.05	1.03	0.70	0.62	0.57	0.48	0.44	
17	0.47	0.52	0.54	0.90	0.92	1.58	0.97	0.70	0.62	0.57	0.48	0.44	
18	0.47	1.02	0.54	0.81	1.28	1.59	1.02	0.69	0.63	0.56	0.48	0.43	
19	0.47	2.41	0.54	0.77	1.83	1.60	0.97	0.68	0.63	0.55	0.48	0.41	
20	0.49	1.39	0.58	0.75	2.08	1.57	0.90	0.68	0.62	0.55	0.47	0.41	
21	0.63	1.06	0.58	0.73	1.86	1.30	0.86	0.70	0.62	0.55	0.47	0.42	
22	0.54	0.71	0.54	0.71	1.46	1.22	0.84	0.81	0.63	0.54	0.47	0.42	
23	0.51	0.66	0.53	0.70	1.35	1.16	0.82	0.74	0.63	0.54	0.47	0.42	
24	0.50	0.62	0.52	0.67	2.16	1.17	0.82	0.70	0.60	0.53	0.47	0.43	
25	0.49	1.04	0.52	0.66	1.51	1.13	0.81	0.70	0.61	0.52	0.47	0.52	
26	0.48	0.70	0.53	0.68	1.19	1.00	0.80	0.69	0.59	0.52	0.47	0.48	
27	0.48	1.62	0.67	0.66	1.06	0.96	0.80	0.69	0.59	0.52	0.47	0.47	
28	0.48	1.51	1.48	0.65	0.97	0.93	0.79	0.73	0.58	0.52	0.47	0.46	
29	0.47	0.81	2.92	0.75	0.92	0.90	0.78	0.72	0.58	0.53		0.46	
30	0.47	0.92	1.10	0.73	0.87	0.90	0.77	0.70	0.58	0.53		0.45	
31		0.73		0.90	1.05		0.76		0.59	0.54		0.44	
Mean	0.51	0.81	0.72	1.12	1.19	1.33	0.95	0.71	0.63	0.56	0.49	0.45	
Max	0.66	2.41	2.92	2.74	2.16	2.76	1.77	0.81	0.70	0.58	0.54	0.52	2.92
Min	0.47	0.45	0.52	0.65	0.64	0.90	0.76	0.68	0.58	0.52	0.47	0.41	0.41

Annual Max Momentary Gage Height 4.20 M (A.D), at 12.00 Hours, on Jun 29, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.03 M (A.D)
Left Bank Elevation 4.60 M (A.D)
Right Bank Elevation 5.03 M (A.D), Drainage Area 471 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.50	0.38	1.38	32.45	2.42	45.64	5.31	2.18	1.70	0.82	0.66	0.38	
2	0.46	0.34	1.38	23.50	1.70	21.00	3.90	2.02	1.70	0.82	0.62	0.38	
3	0.98	0.34	1.14	9.67	1.54	13.00	3.30	1.94	1.62	0.74	0.62	0.38	
4	1.38	0.34	1.06	27.10	1.30	10.43	3.10	1.94	1.54	0.78	0.66	0.38	
5	0.78	0.30	0.98	45.06	1.22	6.66	3.00	1.94	1.46	0.78	0.58	0.42	
6	0.78	3.40	0.90	18.60	3.80	7.39	2.80	1.94	1.38	0.78	0.54	0.50	
7	0.62	0.82	0.90	22.00	2.18	13.20	2.60	1.86	1.22	0.78	0.54	0.46	
8	0.62	2.26	2.34	12.60	1.62	6.52	2.50	1.86	1.22	0.78	0.54	0.38	
9	0.50	0.90	2.70	7.77	16.57	5.04	6.79	1.78	1.22	0.78	0.54	0.30	
10	0.50	0.58	1.14	6.39	28.66	17.70	4.90	1.78	1.14	0.82	0.50	0.38	
11	0.46	0.50	0.86	5.72	10.05	19.50	4.10	1.70	1.14	0.78	0.50	0.34	
12	0.46	0.46	0.82	3.90	5.04	8.72	11.80	1.70	1.06	0.82	0.50	0.30	
13	0.46	0.42	0.78	3.40	3.70	8.53	18.82	1.70	1.06	0.78	0.46	0.30	
14	0.42	4.10	0.74	2.80	2.80	5.98	8.15	1.70	1.06	0.78	0.46	0.30	
15	0.42	1.06	0.74	3.50	9.10	5.17	5.72	1.70	1.06	0.78	0.42	0.26	
16	0.38	0.70	0.70	3.90	6.12	5.17	4.90	1.70	1.06	0.78	0.42	0.26	
17	0.38	0.58	0.66	3.50	3.70	14.60	4.20	1.70	1.06	0.78	0.42	0.26	
18	0.38	4.77	0.66	2.60	8.72	14.80	4.77	1.62	1.14	0.74	0.42	0.22	
19	0.38	35.49	0.66	2.26	20.25	15.00	4.20	1.54	1.14	0.70	0.42	0.14	
20	0.46	10.81	0.82	2.10	26.58	14.40	3.50	1.54	1.06	0.70	0.38	0.14	
21	1.14	5.31	0.82	1.94	21.00	9.10	3.10	1.70	1.06	0.70	0.38	0.18	
22	0.66	1.78	0.66	1.78	12.20	7.58	2.90	2.60	1.14	0.66	0.38	0.18	
23	0.54	1.38	0.62	1.70	10.05	6.66	2.70	2.02	1.14	0.66	0.38	0.18	
24	0.50	1.06	0.58	1.46	28.66	6.79	2.70	1.70	0.90	0.62	0.38	0.22	
25	0.46	5.04	0.58	1.38	13.20	6.25	2.60	1.70	0.98	0.58	0.38	0.58	
26	0.42	1.70	0.62	1.54	7.07	4.50	2.50	1.62	0.86	0.58	0.38	0.42	
27	0.42	15.45	1.46	1.38	5.31	4.10	2.50	1.62	0.86	0.58	0.38	0.38	
28	0.42	13.20	12.60	1.30	4.20	3.80	2.42	1.94	0.82	0.58	0.38	0.34	
29	0.38	2.60	51.24	2.10	3.70	3.50	2.34	1.86	0.82	0.62		0.34	
30	0.38	3.70	5.85	1.94	3.20	3.50	2.26	1.70	0.82	0.62		0.30	
31		1.94		3.50	5.17		2.18		0.86	0.66		0.26	
Total	16.64	121.71	96.39	258.84	270.83	314.23	136.56	54.30	35.30	22.38	13.24	9.86	1350.28 CMSDAY
Mean	0.55	3.93	3.21	8.35	8.74	10.47	4.41	1.81	1.14	0.72	0.47	0.32	3.70 CMS
Max	1.38	35.49	51.24	45.06	28.66	45.64	18.82	2.60	1.70	0.82	0.66	0.58	51.24 CMS
Min	0.38	0.30	0.58	1.30	1.22	3.50	2.18	1.54	0.82	0.58	0.38	0.14	0.14 CMS
Runoff	1.438	10.516	8.328	22.364	23.400	27.149	11.799	4.692	3.050	1.934	1.144	0.852	116.664 MCM

Momentary Peak 134.00 CMS, at 4.20 M (A.D), at 12.00 Hours, on Jun 29, 1998
Runoff Yield 7.85 Liters/Second/Square KM, Momentary Peak Yield 284.501 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

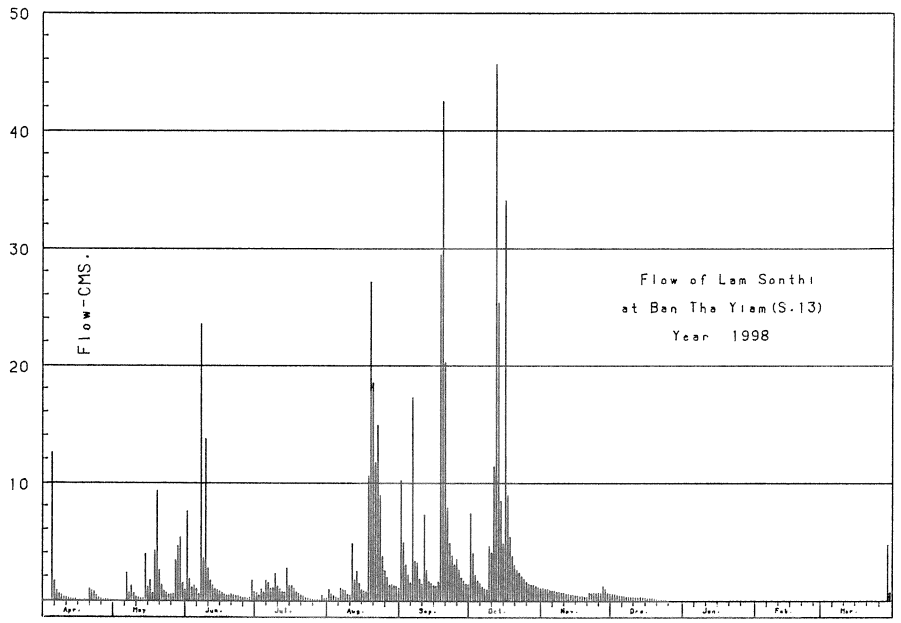
Lam Sonthi at Ban Tha Yiam, Lop Buri (S.13)

Location	Lat. 15°-20'-21" N., Long. 101°-22'-30" E., on left bank near Wat Tha Yiam, Amphoe Chai Badan, Lop Buri.
Drainage Area	359 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	About 15 meters from the top staff gage.
Elevation	+8.697 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1978 to date.
Rated by Float	-
Rated by Current Meter	1978 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir about 200 meters downstream from the gage site during Nov.20,98-Jan.31,99,discharge estimated by recession equation. Stage-discharge relation defined by 30 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.20	0.20	1.74	0.45	0.53	2.12	1.72	0.54	1.25	0.63	0.20	0.20	
2	0.20	0.20	0.69	0.41	0.43	1.30	1.13	0.53	1.27	0.59	0.20	0.20	
3	0.20	0.20	0.56	0.52	0.40	0.94	0.76	0.52	1.26	0.57	0.20	0.20	
4	2.45	0.20	0.58	0.47	0.35	0.76	0.67	0.51	0.39	0.55	0.20	0.20	
5	0.66	0.20	0.53	0.67	0.33	0.64	0.62	0.50	0.38	0.51	0.20	0.20	
6	0.49	0.79	0.44	0.64	0.54	3.00	0.57	0.49	0.37	0.48	0.20	0.20	
7	0.43	0.45	3.62	0.53	0.52	1.00	0.53	0.48	0.36	0.45	0.20	0.20	
8	0.40	0.58	1.04	0.55	0.50	0.96	0.52	0.47	0.35	0.43	0.20	0.20	
9	0.35	0.45	2.60	0.78	0.43	0.70	1.24	0.46	0.35	0.39	0.20	0.20	
10	0.33	0.36	0.88	0.58	0.40	0.61	1.14	0.45	0.34	0.37	0.20	0.20	
11	0.32	0.32	0.67	0.52	1.29	1.70	2.28	0.44	0.34	0.35	0.20	0.20	
12	0.30	0.31	0.58	0.48	0.68	0.84	5.29	0.43	0.34	0.34	0.20	0.20	
13	0.28	0.31	0.53	0.46	0.82	0.66	3.78	0.42	0.33	0.32	0.20	0.20	
14	0.28	1.11	0.50	0.88	0.63	0.62	1.88	0.41	0.33	0.31	0.20	0.20	
15	0.27	0.56	0.48	0.58	0.52	0.59	1.28	0.40	0.32	0.30	0.20	0.20	
16	0.27	0.67	0.46	0.59	0.49	0.57	4.47	0.39	0.32	0.30	0.20	0.20	
17	0.26	0.45	0.42	0.54	0.48	0.65	1.94	0.38	0.32	0.29	0.20	0.20	
18	0.26	1.16	0.40	0.48	2.17	4.12	1.40	0.37	0.78	0.28	0.20	0.20	
19	0.26	1.99	0.38	0.44	3.94	5.09	1.08	0.36	0.96	0.27	0.20	0.20	
20	0.52	0.84	0.43	0.41	3.13	3.30	0.92	0.35	0.88	0.26	0.20	0.20	
21	0.48	0.60	0.40	0.38	2.33	1.79	0.84	0.46	0.88	0.26	0.20	0.20	
22	0.48	0.50	0.39	0.34	2.74	1.30	0.80	0.45	0.87	0.26	0.20	0.20	
23	0.39	0.45	0.38	0.32	1.94	1.08	0.74	0.45	0.86	0.25	0.20	0.20	
24	0.33	0.42	0.36	0.31	1.08	0.94	0.69	0.45	0.85	0.25	0.20	0.20	
25	0.28	0.41	0.34	0.30	0.84	1.02	0.65	0.45	0.84	0.25	0.20	0.20	
26	0.27	0.42	0.33	0.29	0.72	0.84	0.61	0.45	0.82	0.24	0.20	0.20	
27	0.27	1.01	0.32	0.28	0.60	0.72	0.60	0.58	0.80	0.24	0.20	0.20	
28	0.26	1.24	0.34	0.28	0.60	0.66	0.59	0.52	0.77	0.23	0.20	0.20	
29	0.26	1.39	0.68	0.39	0.59	0.62	0.58	0.45	0.74	0.23		1.26	
30	0.25	0.63	0.47	0.31	0.57	0.60	0.55	0.43	0.70	0.22		0.47	
31		0.51		0.32	0.54		0.54		0.66	0.20		0.38	
Mean	0.40	0.61	0.72	0.47	1.00	1.32	1.30	0.45	0.65	0.34	0.20	0.25	
Max	2.45	1.99	3.62	0.88	3.94	5.09	5.29	0.58	1.27	0.63	0.20	1.26	5.29
Min	0.20	0.20	0.32	0.28	0.33	0.57	0.52	0.35	0.32	0.20	0.20	0.20	0.20

Annual Max Momentary Gage Height 6.61 M (A.D), at 22.00 Hours, on Oct 12, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.20 M (A.D)
Left Bank Elevation 8.87 M (A.D)
Right Bank Elevation 8.18 M (A.D), Drainage Area 359 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	7.63	0.70	1.05	10.29	7.50	1.10	0.62	0.00	0.00	0.00	
2	0.00	0.00	1.86	0.54	0.62	4.99	4.12	1.05	0.58	0.00	0.00	0.00	
3	0.00	0.00	1.20	1.00	0.50	3.14	2.22	1.00	0.54	0.00	0.00	0.00	
4	12.64	0.00	1.30	0.78	0.35	2.22	1.76	0.95	0.47	0.00	0.00	0.00	
5	1.71	0.00	1.05	1.76	0.29	1.60	1.50	0.90	0.44	0.00	0.00	0.00	
6	0.86	2.37	0.66	1.60	1.10	17.30	1.25	0.86	0.41	0.00	0.00	0.00	
7	0.62	0.70	23.62	1.05	1.00	3.45	1.05	0.82	0.38	0.00	0.00	0.00	
8	0.50	1.30	3.65	1.15	0.90	3.25	1.00	0.78	0.35	0.00	0.00	0.00	
9	0.35	0.70	13.82	2.32	0.62	1.91	4.68	0.74	0.35	0.00	0.00	0.00	
10	0.29	0.38	2.83	1.30	0.50	1.45	4.17	0.70	0.32	0.00	0.00	0.00	
11	0.26	0.26	1.76	1.00	4.94	7.38	11.43	0.66	0.32	0.00	0.00	0.00	
12	0.20	0.23	1.30	0.82	1.81	2.63	45.64	0.62	0.32	0.00	0.00	0.00	
13	0.16	0.23	1.05	0.74	2.53	1.71	25.42	0.58	0.29	0.00	0.00	0.00	
14	0.16	4.01	0.90	2.83	1.55	1.50	8.57	0.54	0.29	0.00	0.00	0.00	
15	0.14	1.20	0.82	1.30	1.00	1.35	4.88	0.50	0.26	0.00	0.00	0.00	
16	0.14	1.76	0.74	1.35	0.86	1.25	34.06	0.47	0.26	0.00	0.00	0.00	
17	0.12	0.70	0.58	1.10	0.82	1.66	9.00	0.44	0.26	0.00	0.00	0.00	
18	0.12	4.27	0.50	0.82	10.64	29.46	5.50	0.41	0.23	0.00	0.00	0.00	
19	0.12	9.36	0.44	0.66	27.22	42.56	3.86	0.38	0.20	0.00	0.00	0.00	
20	1.00	2.63	0.62	0.54	18.62	20.35	3.04	0.35	0.18	0.00	0.00	0.00	
21	0.82	1.40	0.50	0.44	11.79	7.94	2.63	0.74	0.16	0.00	0.00	0.00	
22	0.82	0.90	0.47	0.32	14.98	4.99	2.43	0.70	0.14	0.00	0.00	0.00	
23	0.47	0.70	0.44	0.26	9.00	3.86	2.12	0.70	0.12	0.00	0.00	0.00	
24	0.29	0.58	0.38	0.23	3.86	3.14	1.86	0.70	0.10	0.00	0.00	0.00	
25	0.16	0.54	0.32	0.20	2.63	3.55	1.66	0.70	0.08	0.00	0.00	0.00	
26	0.14	0.58	0.29	0.18	2.02	2.63	1.45	0.70	0.08	0.00	0.00	0.00	
27	0.14	3.50	0.26	0.16	1.40	2.02	1.40	1.30	0.06	0.00	0.00	0.00	
28	0.12	4.68	0.32	0.16	1.40	1.71	1.35	1.00	0.02	0.00	0.00	0.00	
29	0.12	5.45	1.81	0.47	1.35	1.50	1.30	0.70	0.02	0.00		4.78	
30	0.10	1.55	0.78	0.23	1.25	1.40	1.15	0.62	0.02	0.00		0.78	
31		0.95		0.26	1.10		1.10		0.00	0.00		0.44	
Total	22.57	50.93	71.90	26.27	127.70	192.19	199.10	21.71	7.87	0.00	0.00	6.00	726.24 CMSDAY
Mean	0.75	1.64	2.40	0.85	4.12	6.41	6.42	0.72	0.25	0.00	0.00	0.19	1.99 CMS
Max	12.64	9.36	23.62	2.83	27.22	42.56	45.64	1.30	0.62	0.00	0.00	4.78	45.64 CMS
Min	0.00	0.00	0.26	0.16	0.29	1.25	1.00	0.35	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	1.950	4.400	6.212	2.270	11.033	16.605	17.202	1.876	0.680	0.000	0.000	0.518	62.747 MCM

Momentary Peak 69.50 CMS, at 6.61 M (A.D), at 22.00 Hours, on Oct 12, 1998
Runoff Yield 5.54 Liters/Second/Square KM, Momentary Peak Yield 193.593 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

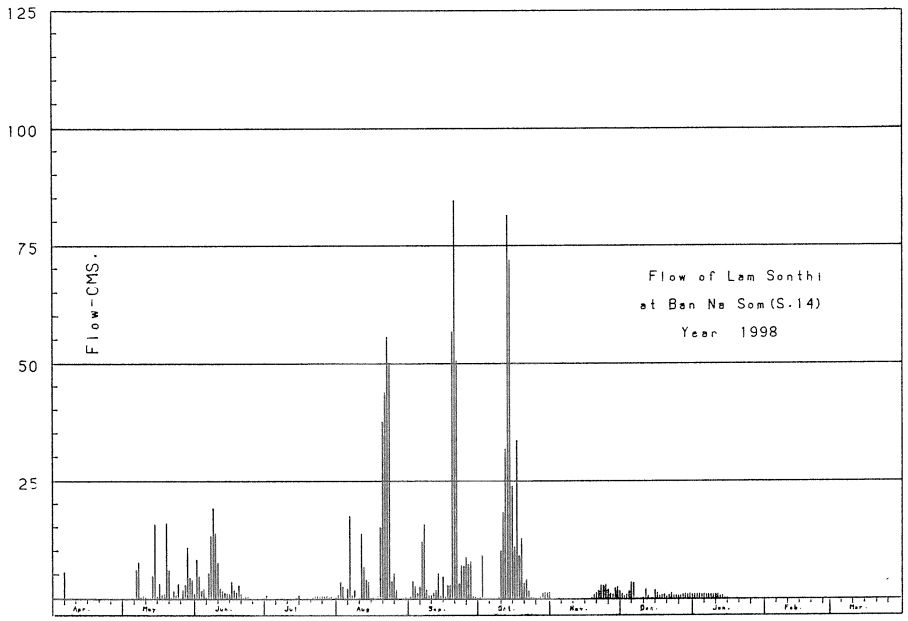
Lam Sonthi at Ban Na Som, Lop Buri (S.14)

Location	Lat. 15°-13'-24" N., Long. 101°-16'-51" E., on left bank at the bridge on road, Ban Na Som, Tambon Nong Yi To, Amphoe Chai Badan, Lop Buri.
Drainage Area	1,247 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the gage observer's house.
Elevation	+10.065 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1980 to date.
Rated by Float	-
Rated by Current Meter	1980 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 20 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.40	1.40	3.20	1.73	1.72	1.60	1.50	1.50	1.80	1.80	1.40	1.40	
2	1.40	1.40	2.62	1.40	2.42	2.46	3.32	1.51	1.71	1.80	1.40	1.40	
3	1.40	1.40	2.00	1.39	2.19	2.21	1.62	1.48	1.76	1.80	1.40	1.40	
4	1.40	1.40	2.07	1.39	1.36	1.89	1.46	1.47	2.01	1.80	1.40	1.40	
5	2.82	1.40	1.60	1.38	2.12	2.22	1.46	1.47	2.40	1.80	1.40	1.40	
6	1.45	2.88	2.78	1.38	4.36	3.71	1.47	1.47	2.39	1.80	1.40	1.40	
7	1.40	3.08	3.86	1.38	1.70	4.14	1.47	1.47	1.46	1.80	1.40	1.40	
8	1.40	1.50	4.54	1.39	2.04	2.03	1.46	1.47	1.40	1.80	1.40	1.40	
9	1.40	1.68	3.92	1.39	1.44	1.74	1.47	1.47	1.48	1.80	1.40	1.40	
10	1.40	1.50	3.10	1.39	1.42	1.70	3.46	1.47	1.50	1.80	1.40	1.40	
11	1.40	1.50	2.13	1.39	3.91	1.90	4.43	1.47	2.10	1.80	1.40	1.40	
12	1.40	1.50	1.96	1.39	2.95	2.03	5.60	1.47	1.64	1.70	1.40	1.40	
13	1.40	2.66	1.88	1.35	2.51	2.75	8.20	1.47	1.43	1.70	1.40	1.40	
14	1.40	4.16	1.80	1.41	2.40	1.71	7.80	1.47	1.43	1.60	1.40	1.40	
15	1.40	1.67	1.80	1.74	1.50	2.65	4.98	1.47	2.05	1.50	1.40	1.40	
16	1.40	2.32	2.40	1.40	1.47	1.65	3.56	1.47	1.86	1.40	1.40	1.40	
17	1.40	1.76	2.03	1.38	1.46	2.28	5.74	1.47	1.72	1.40	1.40	1.40	
18	1.40	1.80	1.86	1.38	1.69	2.26	3.31	1.47	1.72	1.40	1.40	1.40	
19	1.40	4.18	2.27	1.38	4.09	7.11	3.78	1.80	1.80	1.40	1.40	1.40	
20	1.40	2.86	1.76	1.38	6.01	8.33	2.34	1.87	1.62	1.40	1.40	1.40	
21	1.40	1.56	1.70	1.47	6.40	6.78	2.50	2.04	1.76	1.40	1.40	1.40	
22	1.40	1.99	1.66	1.67	7.04	2.36	2.01	2.26	1.86	1.40	1.40	1.40	
23	1.40	1.70	1.60	1.65	6.76	3.00	1.50	2.28	1.72	1.40	1.40	1.40	
24	1.40	2.34	1.50	1.65	2.46	3.01	1.48	2.28	1.70	1.40	1.40	1.40	
25	1.40	1.52	1.36	1.65	2.75	3.27	1.48	2.10	1.70	1.40	1.40	1.40	
26	1.40	2.02	1.34	1.66	2.07	3.04	1.47	1.80	1.70	1.40	1.40	1.40	
27	1.40	2.30	1.43	1.66	1.40	3.12	1.62	1.78	1.80	1.40	1.40	1.40	
28	1.40	3.54	1.40	1.64	1.40	1.66	1.88	2.14	1.80	1.40	1.40	1.40	
29	1.40	2.60	1.39	1.62	1.60	1.56	1.87	2.18	1.80	1.40		1.40	
30	1.40	2.48	1.39	1.47	1.60	1.48	1.89	2.00	1.80	1.40		1.40	
31		1.80		1.51	1.60		1.90		1.80	1.40		1.73	
Mean	1.45	2.13	2.15	1.49	2.70	2.86	2.84	1.70	1.77	1.57	1.40	1.41	
Max	2.82	4.18	4.54	1.74	7.04	8.33	8.20	2.28	2.40	1.80	1.40	1.73	8.33
Min	1.40	1.40	1.34	1.35	1.36	1.48	1.46	1.47	1.40	1.40	1.40	1.40	1.34

Annual Max Momentary Gage Height 8.70 M (A.D), at 12.00 Hours, on Sep 20, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.93 M (A.D)
Left Bank Elevation 11.25 M (A.D)
Right Bank Elevation 11.26 M (A.D), Drainage Area 1247 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.10	0.10	8.44	0.80	0.77	0.40	0.25	0.25	1.03	1.03	0.10	0.10	
2	0.10	0.10	4.66	0.10	3.62	3.83	9.30	0.26	0.73	1.03	0.10	0.10	
3	0.10	0.10	1.70	0.09	2.52	2.61	0.46	0.22	0.90	1.03	0.10	0.10	
4	0.10	0.10	2.00	0.09	0.06	1.33	0.19	0.21	1.74	1.03	0.10	0.10	
5	5.74	0.10	0.40	0.08	2.22	2.65	0.19	0.21	3.52	1.03	0.10	0.10	
6	0.18	6.16	5.50	0.08	17.69	12.20	0.21	0.21	3.47	1.03	0.10	0.10	
7	0.10	7.59	13.42	0.08	0.70	15.71	0.21	0.21	0.19	1.03	0.10	0.10	
8	0.10	0.25	19.41	0.09	1.87	1.83	0.19	0.21	0.10	1.03	0.10	0.10	
9	0.10	0.64	13.91	0.09	0.16	0.83	0.21	0.21	0.22	1.03	0.10	0.10	
10	0.10	0.25	7.73	0.09	0.13	0.70	10.30	0.21	0.25	1.03	0.10	0.10	
11	0.10	0.25	2.26	0.09	13.83	1.37	18.35	0.21	2.13	1.03	0.10	0.10	
12	0.10	0.25	1.57	0.09	6.66	1.83	31.87	0.21	0.52	0.70	0.10	0.10	
13	0.10	4.87	1.30	0.05	4.09	5.34	81.68	0.21	0.14	0.70	0.10	0.10	
14	0.10	15.87	1.03	0.11	3.52	0.73	72.00	0.21	0.14	0.40	0.10	0.10	
15	0.10	0.61	1.03	0.83	0.25	4.82	24.06	0.21	1.92	0.25	0.10	0.10	
16	0.10	3.10	3.52	0.10	0.21	0.55	11.01	0.21	1.23	0.10	0.10	0.10	
17	0.10	0.90	1.83	0.08	0.19	2.91	33.78	0.21	0.77	0.10	0.10	0.10	
18	0.10	1.03	1.23	0.08	0.67	2.83	9.23	0.21	0.77	0.10	0.10	0.10	
19	0.10	16.04	2.87	0.08	15.30	56.97	12.77	1.03	1.03	0.10	0.10	0.10	
20	0.10	6.02	0.90	0.08	37.78	84.86	3.21	1.27	0.46	0.10	0.10	0.10	
21	0.10	0.34	0.70	0.21	43.85	50.63	4.04	1.87	0.90	0.10	0.10	0.10	
22	0.10	1.67	0.58	0.61	55.62	3.31	1.74	2.83	1.23	0.10	0.10	0.10	
23	0.10	0.70	0.40	0.55	50.26	7.01	0.25	2.91	0.77	0.10	0.10	0.10	
24	0.10	3.21	0.25	0.55	3.83	7.09	0.22	2.91	0.70	0.10	0.10	0.10	
25	0.10	0.28	0.06	0.55	5.34	8.94	0.22	2.13	0.70	0.10	0.10	0.10	
26	0.10	1.79	0.04	0.58	2.00	7.30	0.21	1.03	0.70	0.10	0.10	0.10	
27	0.10	3.00	0.14	0.58	0.10	7.87	0.46	0.97	1.03	0.10	0.10	0.10	
28	0.10	10.87	0.10	0.52	0.10	0.58	1.30	2.31	1.03	0.10	0.10	0.10	
29	0.10	4.56	0.09	0.46	0.40	0.34	1.27	2.48	1.03	0.10		0.10	
30	0.10	3.94	0.09	0.21	0.40	0.22	1.33	1.70	1.03	0.10		0.10	
31		1.03		0.26	0.40		1.37		1.03	0.10		0.80	
Total	8.72	95.72	97.16	8.26	274.54	297.59	331.88	27.32	31.41	14.98	2.80	3.80	1194.18 CMSDAY
Mean	0.29	3.09	3.24	0.27	8.86	9.92	10.71	0.91	1.01	0.48	0.10	0.12	3.27 CMS
Max	5.74	16.04	19.41	0.83	55.62	84.86	81.68	2.91	3.52	1.03	0.10	0.80	84.86 CMS
Min	0.10	0.10	0.04	0.05	0.06	0.22	0.19	0.21	0.10	0.10	0.10	0.10	0.04 CMS
Runoff	0.753	8.270	8.395	0.714	23.720	25.712	28.674	2.360	2.714	1.294	0.242	0.328	103.177 MCM

Momentary Peak 94.50 CMS, at 8.70 M (A.D), at 12.00 Hours, on Sep 20, 1998
Runoff Yield 2.62 Liters/Second/Square KM, Momentary Peak Yield 75.782 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

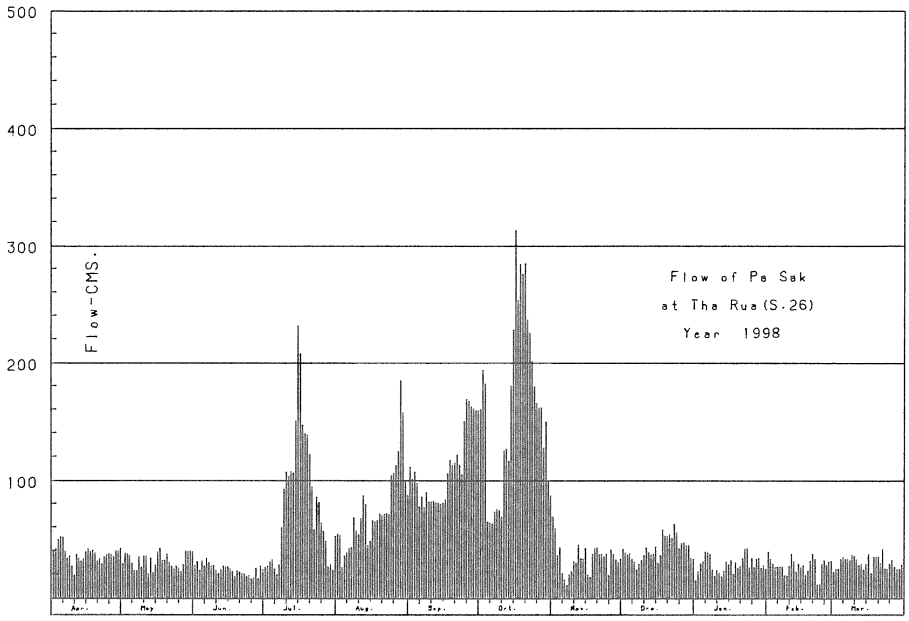
Pasak River at Tha Rua, Phra Nakhon Si Ayutthaya (S.26)

Location	Lat. 14°-33'-22" N., Long. 100°-43'-38" E., on right bank at the railway bridge, Amphoe Tha Rua, Phra Nakhon Si Ayutthaya.
Drainage Area	Flood plain.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 10 meters from the top staff gage.
Elevation	+9.710 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1985 to date.
Rated by Float	-
Rated by Current Meter	1985 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow regulated by Rama VI Barrage. Stage-discharge relation defined by 18 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.26	3.08	3.05	3.03	3.50	4.39	5.02	3.74	3.29	2.82	3.25	2.96	
2	3.28	3.22	3.11	3.04	3.47	4.25	5.41	3.57	3.23	2.96	3.14	3.00	
3	3.42	3.22	2.99	3.11	3.02	4.34	5.29	3.19	3.21	3.08	3.08	3.01	
4	3.45	3.19	3.11	3.13	3.19	4.20	3.67	3.31	3.22	3.10	3.02	3.15	
5	3.45	3.09	3.05	3.01	3.23	3.88	3.65	2.94	3.15	3.25	3.04	3.17	
6	3.25	2.97	3.15	2.92	3.29	4.02	3.64	2.83	3.10	3.23	3.03	3.15	
7	3.16	2.98	3.10	3.06	3.31	3.86	3.80	2.75	3.00	3.22	3.04	3.14	
8	3.18	3.17	3.04	3.59	3.73	4.07	3.84	2.91	3.07	2.99	2.90	3.13	
9	3.05	3.03	3.06	4.13	3.54	3.95	3.83	2.97	3.13	2.90	2.90	3.20	
10	2.91	3.19	2.98	4.34	3.49	3.94	3.73	3.11	3.19	2.98	3.05	3.19	
11	3.21	3.18	2.94	4.28	3.71	3.96	4.58	3.09	3.31	2.94	3.21	3.13	
12	3.15	2.92	2.99	4.34	4.03	3.93	4.61	3.34	3.24	2.89	3.11	3.06	
13	3.12	3.16	3.05	4.33	3.92	3.93	4.47	3.16	3.20	2.97	2.96	3.07	
14	3.14	2.95	3.03	4.90	3.33	3.91	5.26	3.14	3.21	3.10	3.08	3.00	
15	3.25	3.05	3.04	5.82	3.40	3.93	5.79	3.30	3.31	3.07	3.02	3.07	
16	3.28	3.24	3.00	5.57	3.69	3.97	6.58	2.91	3.09	3.13	3.05	3.21	
17	3.25	3.30	2.97	4.85	3.66	4.32	6.03	2.88	3.20	2.93	2.90	2.94	
18	3.26	3.12	2.88	4.77	3.69	4.47	6.32	3.21	3.55	3.09	2.98	3.18	
19	3.23	3.13	2.97	4.75	3.78	4.41	6.25	3.29	3.47	3.02	3.11	3.17	
20	3.11	3.21	2.96	4.55	3.75	4.44	6.33	3.31	3.46	3.04	3.22	3.18	
21	3.14	3.09	2.92	4.15	3.77	4.54	5.87	3.21	3.48	3.16	3.15	3.08	
22	3.08	3.05	2.93	3.56	3.79	4.42	5.76	3.21	3.44	3.28	2.75	3.28	
23	3.18	3.00	2.89	4.01	3.76	4.31	5.49	3.18	3.64	3.30	2.76	3.02	
24	3.20	3.05	2.90	3.94	4.30	4.90	5.26	3.21	3.51	3.02	3.07	3.00	
25	3.22	3.01	2.85	3.65	4.32	5.12	5.08	2.91	3.30	3.16	3.13	3.08	
26	3.20	2.96	2.86	3.54	4.41	5.10	5.03	3.28	3.36	3.03	3.06	3.13	
27	3.18	3.07	3.02	3.39	4.58	5.05	5.04	3.21	3.38	3.14	3.10	3.04	
28	3.26	3.26	2.86	3.04	5.32	5.02	4.61	3.14	3.33	3.15	3.11	2.99	
29	3.25	3.24	3.04	3.06	4.98	5.01	4.89	3.09	3.34	3.02		3.01	
30	3.29	3.26	2.99	2.99	4.24	5.00	4.23	3.14	3.15	3.05		3.06	
31		3.24		3.46	4.04		4.03		3.14	3.00		3.04	
Mean	3.21	3.12	2.99	3.88	3.81	4.35	4.95	3.15	3.28	3.07	3.04	3.09	
Max	3.45	3.30	3.15	5.82	5.32	5.12	6.58	3.74	3.64	3.30	3.25	3.28	6.58
Min	2.91	2.92	2.85	2.92	3.02	3.86	3.64	2.75	3.00	2.82	2.75	2.94	2.75

Annual Max Momentary Gage Height 7.10 M (A.D), at 15.00 Hours, on Oct 16, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 1.46 M (A.D)
Left Bank Elevation 14.40 M (A.D)
Right Bank Elevation 14.59 M (A.D), Drainage Area Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	40.82	29.87	28.04	26.82	55.42	111.77	161.20	70.02	42.64	15.40	40.21	22.87	
2	42.03	38.38	31.69	27.43	53.59	101.63	194.12	59.68	38.99	22.87	33.52	25.00	
3	50.55	38.38	24.47	31.69	26.22	108.15	183.19	36.56	37.78	29.87	29.87	25.61	
4	52.38	36.56	31.69	32.91	36.56	98.00	65.76	43.86	38.38	31.08	26.22	34.13	
5	52.38	30.47	28.04	25.61	38.99	78.53	64.54	21.80	34.13	40.21	27.43	35.34	
6	40.21	23.40	34.13	20.73	42.64	87.05	63.93	15.93	31.08	38.99	26.82	34.13	
7	34.73	23.93	31.08	28.65	43.86	77.32	73.67	11.67	25.00	38.38	27.43	33.52	
8	35.95	35.34	27.43	60.89	69.41	90.09	76.10	20.20	29.26	24.47	19.67	32.91	
9	28.04	26.82	28.65	93.74	57.85	82.79	75.49	23.40	32.91	19.67	19.67	37.17	
10	20.20	36.56	23.93	108.15	54.81	82.18	69.41	31.69	36.56	23.93	28.04	36.56	
11	37.78	35.95	21.80	103.80	68.19	83.40	125.55	30.47	43.86	21.80	37.78	32.91	
12	34.13	20.73	24.47	108.15	87.66	81.58	127.81	45.68	39.60	19.13	31.69	28.65	
13	32.30	34.73	28.04	107.43	80.97	81.58	117.57	34.73	37.17	23.40	22.87	29.26	
14	33.52	22.33	26.82	151.43	45.08	80.36	180.74	33.52	37.78	31.08	29.87	25.00	
15	40.21	28.04	27.43	232.05	49.33	81.58	229.08	43.25	43.86	29.26	26.22	29.26	
16	42.03	39.60	25.00	208.84	66.98	84.01	313.75	20.20	30.47	32.91	28.04	37.78	
17	40.21	43.25	23.40	147.36	65.15	106.70	253.58	18.60	37.17	21.27	19.67	21.80	
18	40.82	32.30	18.60	140.84	66.98	117.57	284.50	37.78	58.46	30.47	23.93	35.95	
19	38.99	32.91	23.40	139.21	72.45	113.22	276.63	42.64	53.59	26.22	31.69	35.34	
20	31.69	37.78	22.87	123.38	70.63	115.40	285.63	43.86	52.98	27.43	38.38	35.95	
21	33.52	30.47	20.73	94.96	71.84	122.65	237.17	37.78	54.20	34.73	34.13	29.87	
22	29.87	28.04	21.27	59.07	73.06	113.95	226.32	37.78	51.77	42.03	11.67	42.03	
23	35.95	25.00	19.13	86.44	71.23	105.98	201.48	35.95	63.93	43.25	12.20	26.22	
24	37.17	28.04	19.67	82.18	105.25	151.43	180.74	37.78	56.03	26.22	29.26	25.00	
25	38.38	25.61	17.00	64.54	106.70	169.34	166.09	20.20	43.25	34.73	32.91	29.87	
26	37.17	22.87	17.53	57.85	113.22	167.71	162.01	42.03	46.90	26.82	28.65	32.91	
27	35.95	29.26	26.22	48.73	125.55	163.64	162.83	37.78	48.12	33.52	31.08	27.43	
28	40.82	40.82	17.53	27.43	185.84	161.20	127.81	33.52	45.08	34.13	31.69	24.47	
29	40.21	39.60	27.43	28.65	157.94	160.39	150.61	30.47	45.68	26.22		25.61	
30	42.64	40.82	24.47	24.47	100.90	159.57	100.18	33.52	34.13	28.04		28.65	
31		39.60		52.98	88.27		87.66		33.52	25.00		27.43	
Total	1140.65	997.46	741.96	2546.41	2352.57	3338.77	5025.15	1032.35	1304.28	902.53	780.61	948.63	21111.37 CMSDAY
Mean	38.02	32.18	24.73	82.14	75.89	111.29	162.10	34.41	42.07	29.11	27.88	30.60	57.84 CMS
Max	52.38	43.25	34.13	232.05	185.84	169.34	313.75	70.02	63.93	43.25	40.21	42.03	313.75 CMS
Min	20.20	20.73	17.00	20.73	26.22	77.32	63.93	11.67	25.00	15.40	11.67	21.80	11.67 CMS
Runoff	98.552	86.181	64.105	220.010	203.262	288.470	434.173	89.195	112.690	77.979	67.445	81.962	1824.022 MCM

Momentary Peak 376.00 CMS, at 7.10 M (A.D), at 15.00 Hours, on Oct 16, 1998

Runoff Yield ********* Liters/Second/Square KM, Momentary Peak Yield ********* Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

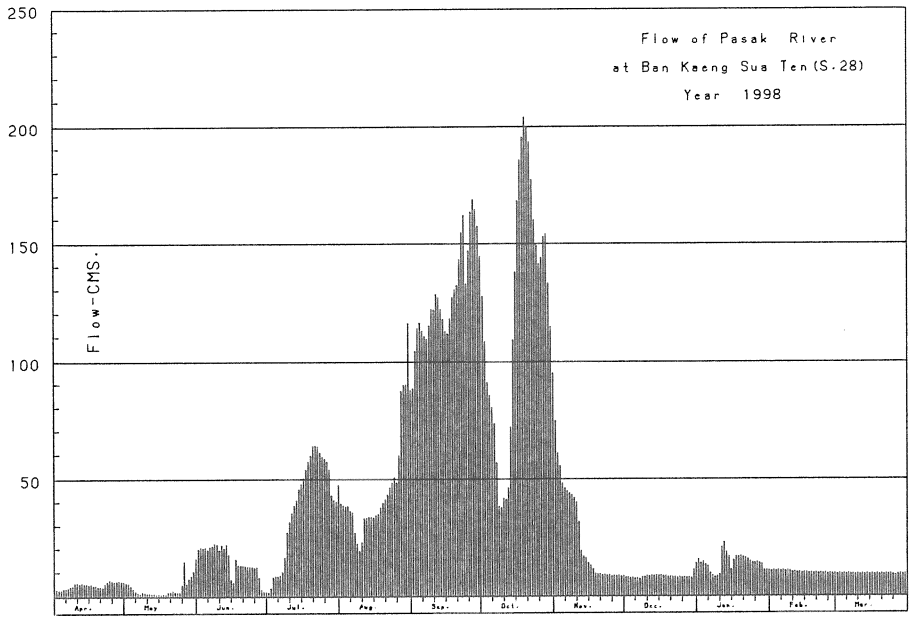
Pasak River at Ban Kaeng Sua Ten, Lop Buri (S.28)

Location	Lat. 14°-50'-21" N., Long. 101°-04'-08" E., on right bank about 100 meters from the bridge of Ban Kaeng Sua Ten-Wang Muang road, Amphoe Phatthana Nikhom, Lop Buri.
Drainage Area	8,778 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 100 meters from the top staff gage.
Elevation	+33.055 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1998 to date.
Rated by Float	-
Rated by Current Meter	1998 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by Pasak Cholasit Dam. Stage-discharge relation defined by 50 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	16.10	16.34	17.27	16.00	18.24	19.97	21.01	19.56	16.51	17.00	16.70	16.61	
2	16.08	16.31	17.29	16.15	18.19	20.41	20.51	19.06	16.49	16.92	16.70	16.61	
3	16.06	16.25	17.29	16.52	18.17	20.66	20.04	18.86	16.49	16.94	16.70	16.61	
4	16.14	16.13	17.29	16.53	18.19	20.73	19.88	18.57	16.48	16.88	16.70	16.61	
5	16.13	16.05	17.25	16.55	18.10	20.63	19.73	18.50	16.48	16.82	16.70	16.61	
6	16.18	15.97	17.30	16.56	18.06	20.58	19.52	18.44	16.47	16.64	16.70	16.61	
7	16.23	15.95	17.34	16.68	17.64	20.54	18.91	18.42	16.46	16.55	16.70	16.61	
8	16.23	15.99	17.38	17.05	17.38	20.70	18.17	18.38	16.50	16.52	16.70	16.60	
9	16.34	16.00	17.38	17.65	17.22	20.87	18.16	18.34	16.53	16.52	16.69	16.60	
10	16.33	15.97	17.25	17.88	17.41	20.87	18.32	18.25	16.54	16.60	16.67	16.60	
11	16.32	15.94	17.35	18.05	17.96	21.03	18.31	17.88	16.55	17.29	16.66	16.60	
12	16.32	15.94	17.29	18.20	17.95	20.99	18.49	17.21	16.55	17.42	16.65	16.60	
13	16.31	15.93	17.36	18.29	17.98	20.87	19.46	17.09	16.56	17.18	16.65	16.60	
14	16.29	15.92	17.12	18.48	17.97	20.77	20.54	17.04	16.56	17.07	16.64	16.60	
15	16.29	15.92	16.45	18.56	17.97	20.63	21.25	16.93	16.56	16.73	16.64	16.60	
16	16.28	15.92	16.33	18.65	18.00	20.61	21.90	16.84	16.56	16.99	16.64	16.60	
17	16.26	15.92	17.02	18.80	18.04	20.77	22.24	16.76	16.55	17.07	16.64	16.60	
18	16.24	15.93	16.85	18.92	18.15	21.00	22.44	16.61	16.54	17.08	16.63	16.60	
19	16.22	15.98	16.86	19.03	18.25	21.07	22.60	16.61	16.52	17.08	16.63	16.60	
20	16.20	16.02	16.84	19.17	18.30	21.12	22.53	16.60	16.52	17.07	16.63	16.60	
21	16.20	16.05	16.84	19.19	18.39	21.36	22.39	16.59	16.51	17.04	16.63	16.60	
22	16.30	16.02	16.81	19.17	18.50	21.62	22.08	16.58	16.50	17.02	16.63	16.60	
23	16.38	15.98	16.81	19.08	18.58	21.77	21.73	16.57	16.50	16.95	16.63	16.60	
24	16.42	16.01	16.82	19.00	18.67	21.13	21.50	16.57	16.50	16.93	16.63	16.60	
25	16.40	16.28	16.80	18.98	18.59	21.45	21.32	16.55	16.50	16.93	16.62	16.58	
26	16.36	16.95	16.80	18.93	19.02	21.80	21.38	16.55	16.50	16.93	16.62	16.55	
27	16.39	16.30	16.51	18.79	19.94	21.91	21.58	16.56	16.50	16.92	16.62	16.60	
28	16.40	16.47	16.08	18.38	20.01	21.82	21.60	16.55	16.49	16.87	16.61	16.60	
29	16.38	16.54	16.02	18.29	20.01	21.68	21.14	16.54	16.49	16.72		16.60	
30	16.36	16.69	16.00	18.26	20.72	21.39	20.68	16.54	16.72	16.70		16.60	
31		17.02		18.55	19.94		20.15		16.92	16.70		16.60	
Mean	16.27	16.15	16.93	18.08	18.44	21.02	20.63	17.39	16.53	16.91	16.66	16.60	
Max	16.42	17.02	17.38	19.19	20.72	21.91	22.60	19.56	16.92	17.42	16.70	16.61	22.60
Min	16.06	15.92	16.00	16.00	17.22	19.97	18.16	16.54	16.46	16.52	16.61	16.55	15.92

Annual Max Momentary Gage Height 22.62 M (MSL), at 24.00 Hours, on Oct 19, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 14.66 M (MSL)
Left Bank Elevation 32.79 M (MSL)
Right Bank Elevation 32.94 M (MSL), Drainage Area 8778 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.13	6.05	20.58	2.07	40.02	88.82	127.92	75.10	8.37	15.80	11.10	9.75	
2	2.92	5.64	20.95	3.67	38.87	104.74	108.38	61.15	8.10	14.44	11.10	9.75	
3	2.71	4.85	20.95	8.51	38.41	114.00	91.35	55.92	8.10	14.78	11.10	9.75	
4	3.56	3.45	20.95	8.64	38.87	116.67	85.60	48.33	7.96	13.80	11.10	9.75	
5	3.45	2.60	20.22	8.92	36.80	112.87	80.49	46.50	7.96	12.90	11.10	9.75	
6	3.99	1.75	21.13	9.05	35.92	111.00	73.90	44.94	7.82	10.20	11.10	9.75	
7	4.59	1.53	21.87	10.80	27.49	109.50	57.23	44.42	7.69	8.92	11.10	9.75	
8	4.59	1.96	22.60	16.67	22.60	115.50	38.41	43.40	8.23	8.51	11.10	9.60	
9	6.05	2.07	22.60	27.69	19.67	122.20	38.18	42.40	8.64	8.51	10.95	9.60	
10	5.91	1.75	20.22	32.11	23.15	122.20	41.90	40.25	8.78	9.60	10.65	9.60	
11	5.77	1.43	22.05	35.70	33.76	128.76	41.65	32.11	8.92	20.95	10.50	9.60	
12	5.77	1.43	20.95	39.10	33.55	127.09	46.24	19.48	8.92	23.33	10.35	9.60	
13	5.64	1.32	22.23	41.17	34.18	122.20	72.14	17.37	9.05	18.95	10.35	9.60	
14	5.37	1.21	17.90	45.98	33.97	118.23	109.50	16.50	9.05	17.02	10.20	9.60	
15	5.37	1.21	7.55	48.07	33.97	112.87	138.30	14.61	9.05	11.55	10.20	9.60	
16	5.24	1.21	5.91	50.42	34.60	112.13	168.60	13.20	9.05	15.63	10.20	9.60	
17	4.98	1.21	16.15	54.35	35.48	118.23	185.66	12.00	8.92	17.02	10.20	9.60	
18	4.72	1.32	13.35	57.49	37.95	127.50	195.69	9.75	8.78	17.20	10.05	9.60	
19	4.46	1.85	13.50	60.37	40.25	130.44	203.90	9.75	8.51	17.20	10.05	9.60	
20	4.20	2.28	13.20	64.11	41.40	132.58	200.26	9.60	8.51	17.02	10.05	9.60	
21	4.20	2.60	13.20	64.66	43.65	143.20	193.18	9.46	8.37	16.50	10.05	9.60	
22	5.50	2.28	12.75	64.11	46.50	155.05	177.63	9.33	8.23	16.15	10.05	9.60	
23	6.59	1.85	12.75	61.68	48.59	162.13	160.17	9.19	8.23	14.95	10.05	9.60	
24	7.14	2.17	12.90	59.58	50.95	133.02	149.57	9.19	8.23	14.61	10.05	9.60	
25	6.87	5.24	12.60	59.06	48.86	147.28	141.40	8.92	8.23	14.61	9.90	9.33	
26	6.32	14.95	12.60	57.75	60.11	163.60	144.10	8.92	8.23	14.61	9.90	8.92	
27	6.73	5.50	8.37	54.09	87.74	169.10	153.22	9.05	8.23	14.44	9.90	9.60	
28	6.87	7.82	2.92	43.40	90.26	164.60	154.13	8.92	8.10	13.65	9.75	9.60	
29	6.59	8.78	2.28	41.17	90.26	157.79	133.46	8.78	8.10	11.40		9.60	
30	6.32	10.95	2.07	40.48	116.28	144.55	114.75	8.78	11.40	11.10		9.60	
31		16.15		47.81	87.74		95.33		14.44	11.10		9.60	
Total	155.55	124.41	457.30	1218.68	1451.85	3887.85	3722.24	747.32	270.20	446.45	292.20	297.70	13071.75 CMSDAY
Mean	5.18	4.01	15.24	39.31	46.83	129.60	120.07	24.91	8.72	14.40	10.44	9.60	35.81 CMS
Max	7.14	16.15	22.60	64.66	116.28	169.10	203.90	75.10	14.44	23.33	11.10	9.75	203.90 CMS
Min	2.71	1.21	2.07	2.07	19.67	88.82	38.18	8.78	7.69	8.51	9.75	8.92	1.21 CMS
Runoff	13.440	10.749	39.511	105.294	125.440	335.910	321.602	64.568	23.345	38.573	25.246	25.721	1129.400 MCM

Momentary Peak 204.96 CMS, at 22.62 M (MSL), at 24.00 Hours, on Oct 19, 1998
Runoff Yield 4.08 Liters/Second/Square KM, Momentary Peak Yield 23.349 Liters/Second/Square KM

WATER YEAR 1998

PASAK RIVER BASIN

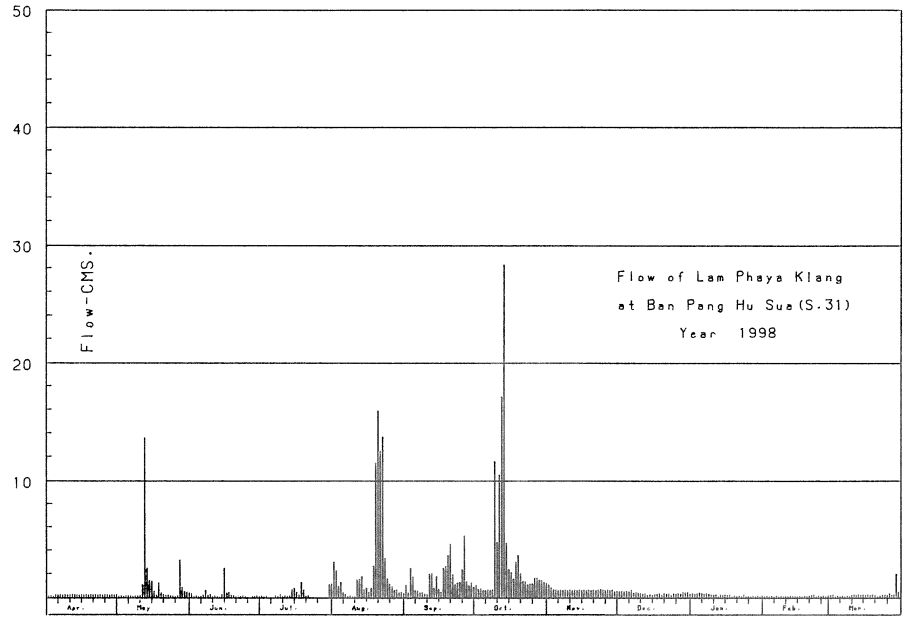
Lam Phaya Klang at Ban Pang Hu Sua, Lop Buri (S.31)

Location	Lat. 15°-06'-05" N., Long. 101°-24'-11" E., on left bank at the bridge of Dan Khun Tod - Chai Badan Highway, Amphoe Chai Badan, Lop Buri.
Drainage Area	381 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the abutment of the bridge.
Elevation	+7.083 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 19 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.17	0.18	0.22	0.16	0.55	0.33	0.33	0.34	0.26	0.22	0.17	0.19	
2	0.17	0.18	0.18	0.16	0.47	0.25	0.30	0.31	0.26	0.22	0.17	0.19	
3	0.17	0.18	0.17	0.15	0.32	0.50	0.30	0.30	0.26	0.22	0.17	0.18	
4	0.20	0.18	0.16	0.14	0.37	0.41	0.28	0.29	0.26	0.23	0.18	0.18	
5	0.19	0.18	0.16	0.14	0.25	0.29	0.27	0.29	0.26	0.22	0.18	0.17	
6	0.19	0.18	0.20	0.14	0.21	0.26	0.27	0.29	0.27	0.22	0.18	0.18	
7	0.19	0.18	0.29	0.15	0.18	0.24	0.28	0.28	0.25	0.22	0.17	0.18	
8	0.19	0.18	0.20	0.15	0.16	0.23	0.28	0.28	0.24	0.22	0.17	0.17	
9	0.19	0.18	0.21	0.19	0.16	0.22	1.23	0.28	0.23	0.20	0.17	0.18	
10	0.19	0.18	0.18	0.17	0.15	0.21	0.70	0.28	0.22	0.19	0.17	0.19	
11	0.19	0.34	0.16	0.17	0.39	0.44	1.15	0.28	0.22	0.19	0.17	0.20	
12	0.19	1.37	0.15	0.16	0.39	0.44	1.61	0.28	0.22	0.18	0.17	0.20	
13	0.19	0.50	0.14	0.17	0.42	0.31	2.29	0.28	0.21	0.19	0.16	0.21	
14	0.19	0.38	0.21	0.27	0.29	0.42	0.69	0.28	0.21	0.20	0.16	0.19	
15	0.19	0.38	0.50	0.31	0.31	0.30	0.48	0.28	0.21	0.19	0.16	0.20	
16	0.19	0.26	0.25	0.23	0.23	0.25	0.45	0.28	0.21	0.19	0.16	0.19	
17	0.19	0.21	0.23	0.19	0.31	0.50	0.40	0.28	0.22	0.19	0.16	0.20	
18	0.19	0.36	0.20	0.37	0.52	0.51	0.55	0.28	0.22	0.18	0.16	0.19	
19	0.19	0.25	0.17	0.27	1.22	0.61	0.61	0.28	0.20	0.18	0.16	0.19	
20	0.19	0.21	0.16	0.18	1.53	0.68	0.44	0.28	0.22	0.18	0.18	0.19	
21	0.19	0.20	0.16	0.15	1.29	0.43	0.38	0.28	0.22	0.16	0.20	0.18	
22	0.21	0.19	0.16	0.14	1.38	0.35	0.37	0.29	0.22	0.16	0.19	0.18	
23	0.21	0.18	0.15	0.12	0.58	0.36	0.35	0.30	0.21	0.19	0.18	0.20	
24	0.20	0.18	0.15	0.11	0.40	0.37	0.35	0.29	0.22	0.16	0.17	0.20	
25	0.19	0.18	0.14	0.11	0.35	0.48	0.36	0.29	0.22	0.16	0.17	0.20	
26	0.19	0.18	0.14	0.11	0.32	0.74	0.40	0.27	0.22	0.17	0.16	0.22	
27	0.19	0.57	0.15	0.11	0.29	0.37	0.40	0.27	0.22	0.18	0.16	0.21	
28	0.19	0.31	0.15	0.10	0.27	0.33	0.39	0.27	0.23	0.17	0.18	0.21	
29	0.19	0.26	0.16	0.11	0.25	0.36	0.38	0.26	0.23	0.17		0.44	
30	0.19	0.24	0.16	0.34	0.24	0.32	0.37	0.26	0.23	0.16		0.24	
31		0.24		0.34	0.22		0.36		0.22	0.17		0.18	
Mean	0.19	0.28	0.19	0.18	0.45	0.38	0.55	0.28	0.23	0.19	0.17	0.20	
Max	0.21	1.37	0.50	0.37	1.53	0.74	2.29	0.34	0.27	0.23	0.20	0.44	2.29
Min	0.17	0.18	0.14	0.10	0.15	0.21	0.27	0.26	0.20	0.16	0.16	0.17	0.10

Annual Max Momentary Gage Height 3.56 M (A.D), at 22.00 Hours, on Aug 21, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.35 M (A.D)
Left Bank Elevation 6.34 M (A.D)
Right Bank Elevation 5.01 M (A.D), Drainage Area 381 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.21	0.24	0.40	0.18	3.12	1.07	1.07	1.16	0.60	0.40	0.21	0.27	
2	0.21	0.24	0.24	0.18	2.36	0.55	0.80	0.89	0.60	0.40	0.21	0.27	
3	0.21	0.24	0.21	0.15	0.98	2.65	0.80	0.80	0.60	0.40	0.21	0.24	
4	0.30	0.24	0.18	0.12	1.43	1.79	0.70	0.75	0.60	0.45	0.24	0.24	
5	0.27	0.24	0.18	0.12	0.55	0.75	0.65	0.75	0.60	0.40	0.24	0.21	
6	0.27	0.24	0.30	0.12	0.35	0.60	0.65	0.75	0.65	0.40	0.24	0.24	
7	0.27	0.24	0.75	0.15	0.24	0.50	0.70	0.70	0.55	0.40	0.21	0.24	
8	0.27	0.24	0.30	0.15	0.18	0.45	0.70	0.70	0.50	0.40	0.21	0.21	
9	0.27	0.24	0.35	0.27	0.18	0.40	11.67	0.70	0.45	0.30	0.21	0.24	
10	0.27	0.24	0.24	0.21	0.15	0.35	4.80	0.70	0.40	0.27	0.21	0.27	
11	0.27	1.16	0.18	0.21	1.61	2.08	10.52	0.70	0.40	0.27	0.21	0.30	
12	0.27	13.69	0.15	0.18	1.61	2.08	17.16	0.70	0.40	0.24	0.21	0.30	
13	0.27	2.65	0.12	0.21	1.89	0.89	28.43	0.70	0.35	0.27	0.18	0.35	
14	0.27	1.52	0.35	0.65	0.75	1.89	4.68	0.70	0.35	0.30	0.18	0.27	
15	0.27	1.52	2.65	0.89	0.89	0.80	2.46	0.70	0.35	0.27	0.18	0.30	
16	0.27	0.60	0.55	0.45	0.45	0.55	2.17	0.70	0.35	0.27	0.18	0.27	
17	0.27	0.35	0.45	0.27	0.89	2.65	1.70	0.70	0.40	0.27	0.18	0.30	
18	0.27	1.34	0.30	1.43	2.84	2.74	3.12	0.70	0.40	0.24	0.18	0.27	
19	0.27	0.55	0.21	0.65	11.53	3.72	3.72	0.70	0.30	0.24	0.18	0.27	
20	0.27	0.35	0.18	0.24	15.99	4.56	2.08	0.70	0.40	0.24	0.24	0.27	
21	0.27	0.30	0.18	0.15	12.54	1.99	1.52	0.70	0.40	0.18	0.30	0.24	
22	0.35	0.27	0.18	0.12	13.83	1.25	1.43	0.75	0.40	0.18	0.27	0.24	
23	0.35	0.24	0.15	0.06	3.41	1.34	1.25	0.80	0.35	0.27	0.24	0.30	
24	0.30	0.24	0.15	0.03	1.70	1.43	1.25	0.75	0.40	0.18	0.21	0.30	
25	0.27	0.24	0.12	0.03	1.25	2.46	1.34	0.75	0.40	0.18	0.21	0.30	
26	0.27	0.24	0.12	0.03	0.98	5.30	1.70	0.65	0.40	0.21	0.18	0.40	
27	0.27	3.31	0.15	0.03	0.75	1.43	1.70	0.65	0.40	0.24	0.18	0.35	
28	0.27	0.89	0.15	0.00	0.65	1.07	1.61	0.65	0.45	0.21	0.24	0.35	
29	0.27	0.60	0.18	0.03	0.55	1.34	1.52	0.60	0.45	0.21		2.08	
30	0.27	0.50	0.18	1.16	0.50	0.98	1.43	0.60	0.45	0.18		0.50	
31		0.50		1.16	0.40		1.34		0.40	0.21		0.24	
Total	8.14	33.46	9.85	9.63	84.55	49.66	114.67	21.80	13.75	8.68	5.94	10.63	370.76 CMSDAY
Mean	0.27	1.08	0.33	0.31	2.73	1.66	3.70	0.73	0.44	0.28	0.21	0.34	1.02 CMS
Max	0.35	13.69	2.65	1.43	15.99	5.30	28.43	1.16	0.65	0.45	0.30	2.08	28.43 CMS
Min	0.21	0.24	0.12	0.00	0.15	0.35	0.65	0.60	0.30	0.18	0.18	0.21	0.00 CMS
Runoff	0.703	2.891	0.851	0.832	7.305	4.291	9.907	1.884	1.188	0.750	0.513	0.918	32.034 MCM

Momentary Peak 52.20 CMS, at 3.56 M (A.D), at 22.00 Hours, on Aug 21, 1998

Runoff Yield 2.67 Liters/Second/Square KM, Momentary Peak Yield 137.008 Liters/Second/Square KM

WATER YEAR 1998

SALAWIN RIVER BASIN

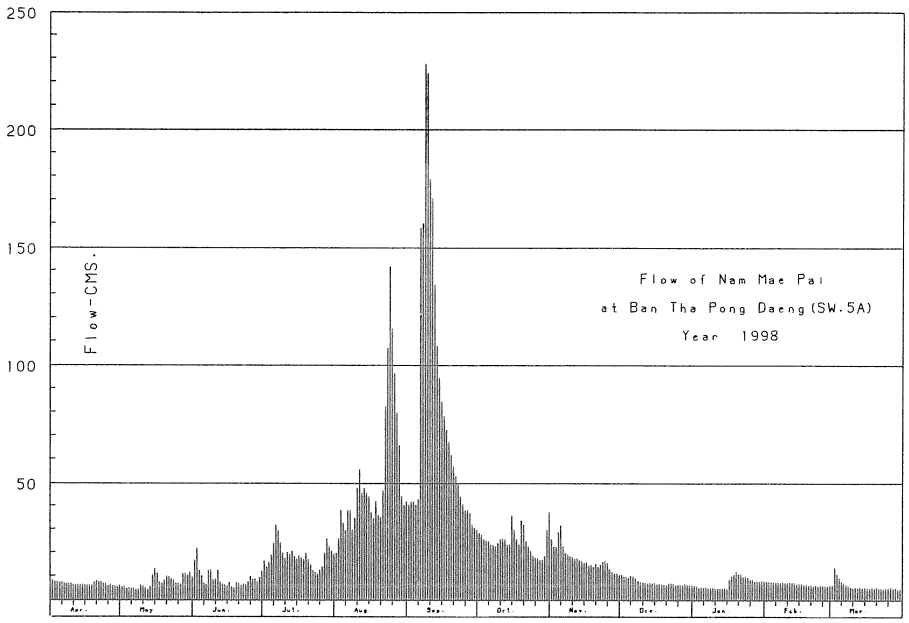
Nam Mae Pai at Ban Tha Pong Daeng, Mae Hong Son (SW.5A)

Location	Lat. 19°16′10″ N., Long. 97°56′55″ E., on left bank at Ban Tha Pong Daeng, Amphoe Muang, Mae Hong Son.
Drainage Area	4,466 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank near the station office.
Elevation	+8.372 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1980 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Rather unstable with variable water surface slope.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the dredger sand about 1 kilometer downstream from the gage site. Stage-discharge relation defined by 83 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.01	-0.08	0.16	0.15	0.21	0.42	0.31	0.28	0.04	-0.07	-0.14	-0.20	
2	-0.02	-0.08	0.23	0.11	0.28	0.43	0.30	0.24	0.03	-0.08	-0.15	0.05	
3	-0.03	-0.10	0.08	0.14	0.40	0.43	0.28	0.24	0.02	-0.09	-0.15	-0.03	
4	-0.03	-0.10	0.03	0.20	0.35	0.42	0.27	0.31	0.02	-0.09	-0.16	-0.09	
5	-0.03	-0.10	-0.04	0.26	0.32	0.44	0.27	0.34	0.03	-0.09	-0.16	-0.14	
6	-0.04	-0.11	-0.06	0.34	0.40	1.52	0.25	0.24	0.03	-0.09	-0.16	-0.17	
7	-0.04	-0.12	0.08	0.32	0.40	1.54	0.25	0.21	0.01	-0.10	-0.16	-0.19	
8	-0.05	-0.12	0.08	0.26	0.32	2.10	0.24	0.20	-0.01	-0.10	-0.16	-0.21	
9	-0.04	-0.06	0.00	0.21	0.37	2.07	0.26	0.19	-0.03	-0.09	-0.16	-0.23	
10	-0.06	-0.08	0.00	0.17	0.48	1.70	0.28	0.18	-0.03	-0.11	-0.16	-0.25	
11	-0.06	-0.10	0.08	0.21	0.54	1.63	0.28	0.17	-0.04	-0.10	-0.16	-0.25	
12	-0.06	-0.12	-0.03	0.20	0.46	1.31	0.28	0.17	-0.04	-0.11	-0.16	-0.25	
13	-0.06	-0.08	-0.05	0.22	0.48	1.06	0.25	0.16	-0.04	-0.10	-0.17	-0.25	
14	-0.06	0.04	-0.06	0.19	0.46	0.91	0.25	0.15	-0.04	-0.10	-0.18	-0.25	
15	-0.06	0.09	-0.07	0.17	0.45	0.80	0.38	0.14	-0.04	-0.11	-0.18	-0.26	
16	-0.07	0.05	-0.04	0.19	0.39	0.72	0.32	0.14	-0.05	-0.11	-0.18	-0.26	
17	-0.06	-0.03	-0.08	0.18	0.37	0.67	0.28	0.12	-0.05	-0.07	-0.19	-0.26	
18	-0.07	-0.04	-0.10	0.16	0.43	0.63	0.25	0.12	-0.05	-0.04	-0.19	-0.25	
19	-0.03	-0.01	-0.03	0.21	0.38	0.59	0.36	0.11	-0.06	0.00	-0.20	-0.26	
20	-0.02	0.03	-0.05	0.16	0.37	0.55	0.34	0.13	-0.06	-0.03	-0.20	-0.25	
21	-0.02	0.02	-0.07	0.12	0.47	0.52	0.27	0.11	-0.05	-0.04	-0.21	-0.26	
22	-0.03	0.01	-0.05	0.08	0.77	0.49	0.24	0.12	-0.04	-0.07	-0.21	-0.27	
23	-0.04	-0.01	-0.06	0.06	1.05	0.45	0.22	0.15	-0.05	-0.07	-0.22	-0.27	
24	-0.05	-0.04	-0.02	0.05	1.38	0.42	0.19	0.15	-0.06	-0.08	-0.21	-0.27	
25	-0.07	-0.05	0.03	0.08	1.13	0.40	0.18	0.14	-0.06	-0.11	-0.21	-0.25	
26	-0.06	-0.05	0.00	0.11	0.93	0.40	0.17	0.09	-0.06	-0.12	-0.22	-0.25	
27	-0.07	0.05	0.01	0.21	0.74	0.39	0.16	0.06	-0.06	-0.14	-0.21	-0.26	
28	-0.08	0.05	-0.03	0.28	0.62	0.34	0.16	0.05	-0.05	-0.14	-0.21	-0.26	
29	-0.08	0.04	0.02	0.24	0.45	0.33	0.19	0.05	-0.06	-0.14		-0.28	
30	-0.07	0.06	0.07	0.22	0.42	0.32	0.32	0.04	-0.07	-0.14		-0.28	
31		0.02		0.20	0.43		0.39		-0.07	-0.14		-0.28	
Mean	-0.05	-0.03	0.00	0.18	0.52	0.80	0.26	0.16	-0.03	-0.09	-0.18	-0.22	
Max	-0.01	0.09	0.23	0.34	1.38	2.10	0.39	0.34	0.04	0.00	-0.14	0.05	2.10
Min	-0.08	-0.12	-0.10	0.05	0.21	0.32	0.16	0.04	-0.07	-0.14	-0.22	-0.28	-0.28

Annual Max Momentary Gage Height 2.49 M (A.D), at 12.00 Hours, on Sep 6, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -1.56 M (A.D)
Left Bank Elevation 7.75 M (A.D)
Right Bank Elevation 5.26 M (A.D), Drainage Area 4466 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	8.63	6.04	17.36	16.80	20.44	41.00	29.06	26.32	11.00	6.41	8.28	6.60	
2	8.26	6.04	22.12	14.56	26.32	42.20	28.00	22.96	10.50	6.04	8.00	14.05	
3	7.89	5.30	13.00	16.24	38.60	42.20	26.32	22.96	10.00	5.67	8.00	11.50	
4	7.89	5.30	10.50	19.60	33.30	41.00	25.48	29.06	10.00	5.67	7.72	9.70	
5	7.89	5.30	7.52	24.64	30.12	43.40	25.48	32.24	10.50	5.67	7.72	8.28	
6	7.52	5.05	6.78	32.24	38.60	158.30	23.80	22.96	10.50	5.67	7.72	7.44	
7	7.52	4.80	13.00	30.12	38.60	160.60	23.80	20.44	9.50	5.30	7.72	6.88	
8	7.15	4.80	13.00	24.64	30.12	228.00	22.96	19.60	8.63	5.30	7.72	6.39	
9	7.52	6.78	9.00	20.44	35.42	224.25	24.64	19.04	7.89	5.67	7.72	5.97	
10	6.78	6.04	9.00	17.92	48.20	179.00	26.32	18.48	7.89	5.05	7.72	5.55	
11	6.78	5.30	13.00	20.44	55.80	170.95	26.32	17.92	7.52	5.30	7.72	5.55	
12	6.78	4.80	7.89	19.60	45.80	134.60	26.32	17.92	7.52	5.05	7.72	5.55	
13	6.78	6.04	7.15	21.28	48.20	108.70	23.80	17.36	7.52	5.30	7.44	5.55	
14	6.78	11.00	6.78	19.04	45.80	94.90	23.80	16.80	7.52	5.30	7.16	5.55	
15	6.78	13.50	6.41	17.92	44.60	85.00	36.48	16.24	7.52	5.05	7.16	5.34	
16	6.41	11.50	7.52	19.04	37.54	78.60	30.12	16.24	7.15	9.12	7.16	5.34	
17	6.78	7.89	6.04	18.48	35.42	72.98	26.32	15.12	7.15	10.30	6.88	5.34	
18	6.41	7.52	5.30	17.36	42.20	67.62	23.80	15.12	7.15	11.20	6.88	5.55	
19	7.89	8.63	7.89	20.44	36.48	62.30	34.36	14.56	6.78	12.40	6.60	5.34	
20	8.26	10.50	7.15	17.36	35.42	57.10	32.24	15.68	6.78	11.50	6.60	5.55	
21	8.26	10.00	6.41	15.12	47.00	53.20	25.48	14.56	7.15	11.20	6.39	5.34	
22	7.89	9.50	7.15	13.00	82.60	49.40	22.96	15.12	7.52	10.30	6.39	5.13	
23	7.52	8.63	6.78	12.00	107.75	44.60	21.28	16.80	7.15	10.30	6.18	5.13	
24	7.15	7.52	8.26	11.50	142.30	41.00	19.04	16.80	6.78	10.00	6.39	5.13	
25	6.41	7.15	10.50	13.00	115.65	38.60	18.48	16.24	6.78	9.12	6.39	5.55	
26	6.78	7.15	9.00	14.56	96.70	38.60	17.92	13.50	6.78	8.84	6.18	5.55	
27	6.41	11.50	9.50	20.44	80.20	37.54	17.36	12.00	6.78	8.28	6.39	5.34	
28	6.04	11.50	7.89	26.32	66.28	32.24	17.36	11.50	7.15	8.28	6.39	5.34	
29	6.04	11.00	10.00	22.96	44.60	31.18	19.04	11.50	6.78	8.28		4.92	
30	6.41	12.00	12.50	21.28	41.00	30.12	30.12	11.00	6.41	8.28		4.92	
31		10.00		19.60	42.20		37.54		6.41	8.28		4.92	
Total	215.61	248.08	284.40	597.94	1633.26	2489.18	786.00	536.04	244.71	238.13	200.34	194.29	7667.98 CMSDAY
Mean	7.19	8.00	9.48	19.29	52.69	82.97	25.35	17.87	7.89	7.68	7.16	6.27	21.01 CMS
Max	8.63	13.50	22.12	32.24	142.30	228.00	37.54	32.24	11.00	12.40	8.28	14.05	228.00 CMS
Min	6.04	4.80	5.30	11.50	20.44	30.12	17.36	11.00	6.41	5.05	6.18	4.92	4.80 CMS
Runoff	18.629	21.434	24.572	51.662	141.114	215.065	67.910	46.314	21.143	20.574	17.309	16.787	662.513 MCM

Momentary Peak 278.70 CMS, at 2.49 M (A.D), at 12.00 Hours, on Sep 6, 1998
Runoff Yield 4.70 Liters/Second/Square KM, Momentary Peak Yield 62.405 Liters/Second/Square KM

WATER YEAR 1998

SALAWIN RIVER BASIN

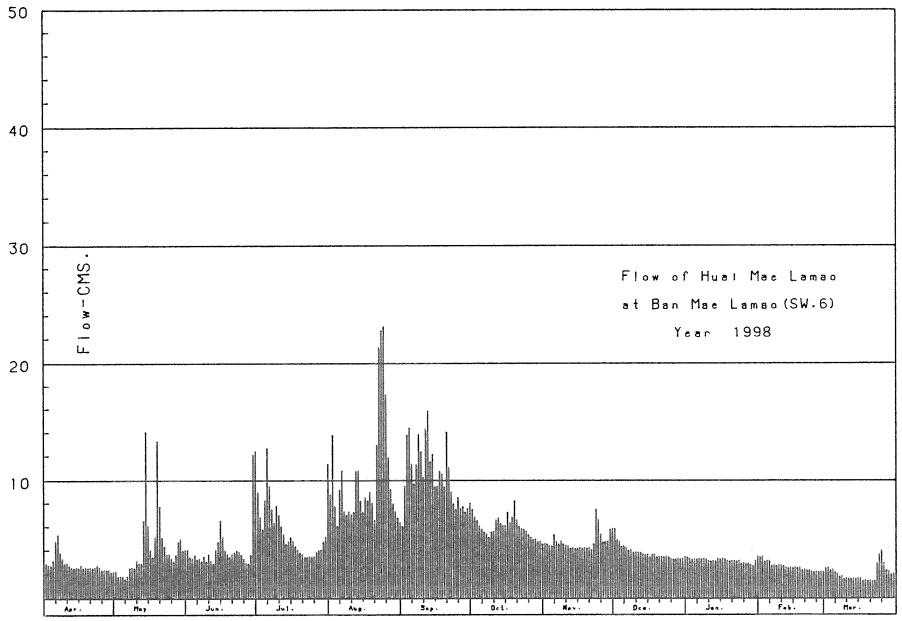
Huai Mae Lamao at Ban Mae Lamao, Tak (SW.6)

Location	Lat. 16°-45'-44" N., Long. 98°-45'-14" E., on left bank downstream from the bridge on highway, at Ban Mae Lamao, Amphoe Mae Sot, Tak.
Drainage Area	1,038 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	About 6.25 meters from automatic gage building.
Elevation	+10.386 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1971 to date.
Rating Operation	
Period of Rating	1971 to date.
Rated by Float	-
Rated by Current Meter	1971 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 118 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.48	0.44	0.54	0.76	0.75	0.64	0.70	0.57	0.63	0.51	0.51	0.46	
2	0.47	0.42	0.51	0.67	0.94	0.78	0.67	0.57	0.59	0.50	0.51	0.46	
3	0.47	0.42	0.50	0.63	0.71	0.94	0.66	0.56	0.58	0.50	0.49	0.45	
4	0.49	0.42	0.52	0.73	0.64	0.96	0.64	0.56	0.56	0.50	0.49	0.45	
5	0.58	0.41	0.50	0.90	0.77	0.85	0.63	0.61	0.56	0.50	0.49	0.44	
6	0.61	0.42	0.50	0.78	0.83	0.79	0.62	0.58	0.55	0.50	0.47	0.43	
7	0.53	0.46	0.49	0.70	0.69	0.85	0.61	0.57	0.54	0.50	0.47	0.42	
8	0.50	0.46	0.51	0.65	0.68	0.94	0.60	0.58	0.54	0.50	0.47	0.42	
9	0.48	0.46	0.49	0.71	0.69	0.89	0.62	0.57	0.53	0.50	0.47	0.41	
10	0.48	0.49	0.52	0.68	0.68	0.81	0.62	0.56	0.53	0.49	0.47	0.41	
11	0.47	0.48	0.49	0.64	0.69	0.96	0.66	0.56	0.53	0.49	0.47	0.41	
12	0.46	0.48	0.48	0.61	0.83	1.01	0.67	0.55	0.53	0.49	0.46	0.41	
13	0.46	0.66	0.54	0.57	0.83	0.86	0.65	0.55	0.52	0.49	0.46	0.41	
14	0.46	0.95	0.58	0.58	0.73	0.88	0.64	0.55	0.52	0.50	0.46	0.41	
15	0.46	0.64	0.66	0.60	0.69	0.78	0.64	0.55	0.52	0.50	0.46	0.41	
16	0.47	0.54	0.60	0.58	0.74	0.78	0.69	0.55	0.51	0.50	0.46	0.41	
17	0.46	0.51	0.54	0.56	0.73	0.83	0.65	0.55	0.52	0.50	0.46	0.40	
18	0.46	0.60	0.52	0.54	0.76	0.82	0.67	0.55	0.52	0.49	0.46	0.40	
19	0.46	0.92	0.51	0.53	0.72	0.78	0.73	0.55	0.51	0.49	0.45	0.40	
20	0.46	0.71	0.52	0.52	0.66	0.95	0.66	0.55	0.51	0.49	0.45	0.40	
21	0.46	0.60	0.53	0.51	0.91	0.84	0.64	0.54	0.51	0.49	0.45	0.39	
22	0.46	0.56	0.54	0.51	1.17	0.76	0.63	0.57	0.51	0.49	0.45	0.40	
23	0.47	0.52	0.53	0.51	1.21	0.72	0.63	0.70	0.51	0.49	0.44	0.48	
24	0.46	0.52	0.52	0.51	1.22	0.70	0.62	0.66	0.51	0.48	0.44	0.52	
25	0.45	0.50	0.50	0.51	1.05	0.74	0.61	0.61	0.50	0.48	0.44	0.54	
26	0.45	0.49	0.48	0.53	0.87	0.70	0.60	0.58	0.50	0.48	0.44	0.48	
27	0.45	0.52	0.48	0.54	0.77	0.71	0.59	0.58	0.50	0.48	0.44	0.45	
28	0.45	0.58	0.52	0.54	0.72	0.69	0.59	0.58	0.50	0.47	0.44	0.44	
29	0.44	0.59	0.88	0.58	0.69	0.70	0.58	0.63	0.50	0.47		0.43	
30	0.44	0.54	0.89	0.60	0.67	0.72	0.58	0.63	0.50	0.49		0.43	
31		0.54		0.85	0.65		0.57		0.51	0.51		0.43	
Mean	0.47	0.54	0.55	0.62	0.80	0.81	0.63	0.58	0.53	0.49	0.46	0.43	
Max	0.61	0.95	0.89	0.90	1.22	1.01	0.73	0.70	0.63	0.51	0.51	0.54	1.22
Min	0.44	0.41	0.48	0.51	0.64	0.64	0.57	0.54	0.50	0.47	0.44	0.39	0.39

Annual Max Momentary Gage Height 1.53 M (A.D), at 1.00 Hours, on May 14, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.03 M (A.D)
Left Bank Elevation 10.65 M (A.D)
Right Bank Elevation 7.93 M (A.D), Drainage Area 1038 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.98	2.24	4.09	9.04	8.80	6.16	7.60	4.64	5.92	3.53	3.53	2.61	
2	2.79	1.87	3.53	6.88	13.92	9.52	6.88	4.64	5.01	3.35	3.53	2.61	
3	2.79	1.87	3.35	5.92	7.84	13.92	6.64	4.46	4.83	3.35	3.17	2.42	
4	3.17	1.87	3.72	8.32	6.16	14.48	6.16	4.46	4.46	3.35	3.17	2.42	
5	4.83	1.68	3.35	12.80	9.28	11.40	5.92	5.44	4.46	3.35	3.17	2.24	
6	5.44	1.87	3.35	9.52	10.84	9.76	5.68	4.83	4.28	3.35	2.79	2.06	
7	3.90	2.61	3.17	7.60	7.36	11.40	5.44	4.64	4.09	3.35	2.79	1.87	
8	3.35	2.61	3.53	6.40	7.12	13.92	5.20	4.83	4.09	3.35	2.79	1.87	
9	2.98	2.61	3.17	7.84	7.36	12.52	5.68	4.64	3.90	3.35	2.79	1.68	
10	2.98	3.17	3.72	7.12	7.12	10.28	5.68	4.46	3.90	3.17	2.79	1.68	
11	2.79	2.98	3.17	6.16	7.36	14.48	6.64	4.46	3.90	3.17	2.79	1.68	
12	2.61	2.98	2.98	5.44	10.84	15.94	6.88	4.28	3.90	3.17	2.61	1.68	
13	2.61	6.64	4.09	4.64	10.84	11.68	6.40	4.28	3.72	3.17	2.61	1.68	
14	2.61	14.20	4.83	4.83	8.32	12.24	6.16	4.28	3.72	3.35	2.61	1.68	
15	2.61	6.16	6.64	5.20	7.36	9.52	6.16	4.28	3.72	3.35	2.61	1.68	
16	2.79	4.09	5.20	4.83	8.56	9.52	7.36	4.28	3.53	3.35	2.61	1.68	
17	2.61	3.53	4.09	4.46	8.32	10.84	6.40	4.28	3.72	3.35	2.61	1.50	
18	2.61	5.20	3.72	4.09	9.04	10.56	6.88	4.28	3.72	3.17	2.61	1.50	
19	2.61	13.36	3.53	3.90	8.08	9.52	8.32	4.28	3.53	3.17	2.42	1.50	
20	2.61	7.84	3.72	3.72	6.64	14.20	6.64	4.28	3.53	3.17	2.42	1.50	
21	2.61	5.20	3.90	3.53	13.08	11.12	6.16	4.09	3.53	3.17	2.42	1.42	
22	2.61	4.46	4.09	3.53	21.38	9.04	5.92	4.64	3.53	3.17	2.42	1.50	
23	2.79	3.72	3.90	3.53	22.79	8.08	5.92	7.60	3.53	3.17	2.24	2.98	
24	2.61	3.72	3.72	3.53	23.18	7.60	5.68	6.64	3.53	2.98	2.24	3.72	
25	2.42	3.35	3.35	3.53	17.30	8.56	5.44	5.44	3.35	2.98	2.24	4.09	
26	2.42	3.17	2.98	3.90	11.96	7.60	5.20	4.83	3.35	2.98	2.24	2.98	
27	2.42	3.72	2.98	4.09	9.28	7.84	5.01	4.83	3.35	2.98	2.24	2.42	
28	2.42	4.83	3.72	4.09	8.08	7.36	5.01	4.83	3.35	2.79	2.24	2.24	
29	2.24	5.01	12.24	4.83	7.36	7.60	4.83	5.92	3.35	2.79		2.06	
30	2.24	4.09	12.52	5.20	6.88	8.08	4.83	5.92	3.35	3.17		2.06	
31		4.09		11.40	6.40		4.64		3.53	3.53		2.06	
Total	86.45	134.74	130.35	179.87	318.85	314.74	187.36	144.76	119.68	99.63	74.70	65.07	1856.20 CMSDAY
Mean	2.88	4.35	4.35	5.80	10.29	10.49	6.04	4.83	3.86	3.21	2.67	2.10	5.09 CMS
Max	5.44	14.20	12.52	12.80	23.18	15.94	8.32	7.60	5.92	3.53	3.53	4.09	23.18 CMS
Min	2.24	1.68	2.98	3.53	6.16	6.16	4.64	4.09	3.35	2.79	2.24	1.42	1.42 CMS
Runoff	7.469	11.642	11.262	15.541	27.549	27.194	16.188	12.507	10.340	8.608	6.454	5.622	160.376 MCM

Momentary Peak 36.05 CMS, at 1.53 M (A.D), at 1.00 Hours, on May 14, 1998

Runoff Yield 4.90 Liters/Second/Square KM, Momentary Peak Yield 34.730 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

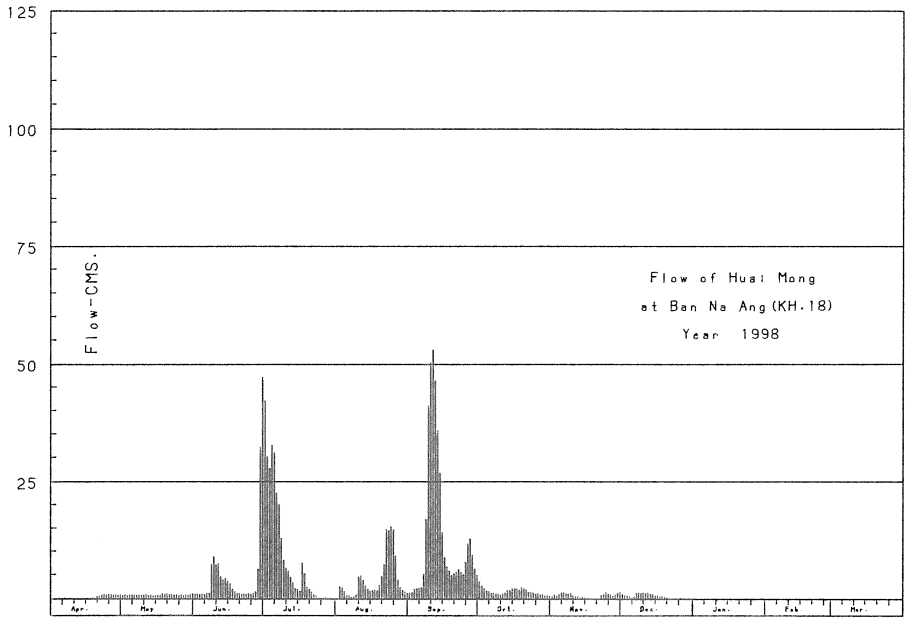
Huai Mong at Ban Na Ang, Udon Thani (Kh.18)

Location	Lat. 17°-34'-39" N., Long. 102°-20'-19" E., on right bank between Phu Pha Dang and Phu Phan about 2 kilometers from Ban Na Ang, Amphoe Ban Phu, Udon Thani.
Drainage Area	1,307 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+183.43 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the automatic gage building.
Elevation	+191.432 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1957 to date.
Rating Operation	
Period of Rating	1957-1959, 1965-1966, 1974-1980, 1997 to date.
Rated by Float	-
Rated by Current Meter	1957-1959, 1965-1966, 1974-1980, 1997 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 18 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	184.18	184.78	184.91	189.88	184.75	185.00	185.78	184.87	184.97	184.55	184.06	183.49	
2	184.18	184.78	184.89	188.99	185.50	185.10	185.59	184.93	184.90	184.61	183.75	183.49	
3	184.23	184.78	184.88	188.77	185.47	185.33	185.40	184.90	184.91	184.58	183.77	183.49	
4	184.23	184.78	184.89	189.17	185.14	185.41	185.27	184.95	184.86	184.56	183.77	183.50	
5	184.24	184.79	184.87	189.06	184.91	185.40	185.16	185.11	184.81	184.56	183.77	183.50	
6	184.18	184.79	184.95	188.28	184.86	185.50	185.06	185.07	184.83	184.53	183.78	183.50	
7	184.17	184.79	185.02	188.07	184.83	186.10	185.00	185.01	185.07	184.45	183.76	183.50	
8	184.18	184.79	186.50	187.27	184.81	187.75	184.99	184.96	185.03	184.42	183.74	183.50	
9	184.18	184.79	186.76	186.66	184.95	189.79	184.96	185.03	185.05	184.40	183.74	183.50	
10	184.18	184.83	186.50	186.38	186.01	190.41	184.94	184.89	185.04	184.36	183.74	183.51	
11	184.18	184.82	186.53	186.22	186.03	190.59	184.97	184.86	185.03	184.35	183.74	183.51	
12	184.23	184.79	186.01	185.99	185.86	190.18	185.08	184.84	185.01	184.35	183.75	183.51	
13	184.23	184.77	185.84	185.71	185.56	189.40	185.25	184.83	184.99	184.34	183.76	183.51	
14	184.21	184.74	185.94	185.41	185.40	188.68	185.28	184.81	184.95	184.34	183.76	183.51	
15	184.20	184.71	185.79	185.33	185.16	187.42	185.37	184.82	184.91	184.35	183.77	183.51	
16	184.19	184.73	185.66	185.23	185.28	186.74	185.42	184.82	184.89	184.33	183.69	183.52	
17	184.23	184.78	185.37	186.54	185.29	186.41	185.37	184.79	184.87	184.30	183.70	183.52	
18	184.26	184.91	185.12	186.15	185.26	186.26	185.31	184.76	184.86	184.29	183.69	183.52	
19	184.42	184.94	185.01	185.50	185.59	186.04	185.46	184.75	184.84	184.28	183.69	183.52	
20	184.53	184.92	184.94	185.39	186.03	186.14	185.42	184.73	184.82	184.27	183.70	183.52	
21	184.65	184.89	184.91	185.09	186.51	186.18	185.30	184.73	184.79	184.26	183.69	183.52	
22	184.82	184.86	184.88	184.95	187.49	186.32	185.16	184.90	184.77	184.24	183.69	183.52	
23	184.84	184.83	184.92	184.87	187.49	186.18	185.07	184.97	184.76	184.22	183.69	183.52	
24	184.83	184.82	184.93	184.81	187.56	186.10	185.09	185.07	184.77	184.20	183.69	183.53	
25	184.83	184.80	184.94	184.78	187.51	186.60	184.98	184.99	184.76	184.20	183.69	183.53	
26	184.83	184.78	184.97	184.80	186.77	187.12	184.98	184.93	184.75	184.20	183.60	183.53	
27	184.81	184.76	185.19	184.79	185.88	187.27	184.96	184.90	184.73	184.20	183.57	183.53	
28	184.80	184.78	186.34	184.79	185.44	186.80	184.93	184.94	184.70	184.20	183.51	183.52	
29	184.80	184.79	189.14	184.75	185.30	186.35	184.91	185.03	184.68	184.21		183.52	
30	184.78	184.82	190.22	184.65	185.09	186.05	184.88	185.11	184.66	184.19		183.52	
31		184.91		184.64	185.04		184.86		184.63	184.15		183.53	
Mean	184.42	184.81	185.69	186.22	185.70	186.95	185.17	184.91	184.86	184.34	183.72	183.51	
Max	184.84	184.94	190.22	189.88	187.56	190.59	185.78	185.11	185.07	184.61	184.06	183.53	190.59
Min	184.17	184.71	184.87	184.64	184.75	185.00	184.86	184.73	184.63	184.15	183.51	183.49	183.49

Annual Max Momentary Gage Height 190.59 M (MSL), at 12.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 183.43 M (MSL), River Bed 182.52 M (MSL)
Left Bank Elevation 190.96 M (MSL)
Right Bank Elevation 192.24 M (MSL), Drainage Area 1307 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.18	0.86	1.12	42.38	0.20	1.30	3.72	0.68	1.15	0.00	0.00	0.00	
2	0.18	0.86	1.08	30.39	2.60	1.50	2.96	0.95	0.80	0.00	0.00	0.00	
3	0.23	0.86	1.06	27.97	2.51	2.09	2.30	0.80	0.85	0.00	0.00	0.00	
4	0.23	0.86	1.08	32.79	1.58	2.33	1.91	1.05	0.64	0.00	0.00	0.00	
5	0.24	0.88	1.04	31.31	0.85	2.30	1.62	1.52	0.44	0.00	0.00	0.00	
6	0.18	0.88	1.20	22.58	0.64	2.60	1.42	1.44	0.52	0.00	0.00	0.00	
7	0.17	0.88	1.34	20.27	0.52	5.30	1.30	1.32	1.44	0.00	0.00	0.00	
8	0.18	0.88	7.40	12.96	0.44	17.15	1.25	1.10	1.36	0.00	0.00	0.00	
9	0.18	0.88	9.12	8.42	1.05	41.16	1.10	1.36	1.40	0.00	0.00	0.00	
10	0.18	0.96	7.40	6.70	4.85	50.36	1.00	0.76	1.38	0.00	0.00	0.00	
11	0.18	0.94	7.58	5.90	4.95	53.24	1.15	0.64	1.36	0.00	0.00	0.00	
12	0.23	0.88	4.85	4.75	4.10	46.70	1.46	0.56	1.32	0.00	0.00	0.00	
13	0.23	0.84	4.00	3.44	2.84	35.90	1.85	0.52	1.25	0.00	0.00	0.00	
14	0.21	0.78	4.50	2.33	2.30	26.98	1.94	0.44	1.05	0.00	0.00	0.00	
15	0.20	0.72	3.76	2.09	1.62	14.18	2.21	0.48	0.85	0.00	0.00	0.00	
16	0.19	0.76	3.24	1.79	1.94	8.98	2.36	0.48	0.76	0.00	0.00	0.00	
17	0.23	0.86	2.21	7.64	1.97	6.86	2.21	0.36	0.68	0.00	0.00	0.00	
18	0.26	1.12	1.54	5.55	1.88	6.10	2.03	0.24	0.64	0.00	0.00	0.00	
19	0.42	1.18	1.32	2.60	2.96	5.00	2.48	0.20	0.56	0.00	0.00	0.00	
20	0.53	1.14	1.18	2.27	4.95	5.50	2.36	0.12	0.48	0.00	0.00	0.00	
21	0.65	1.08	1.12	1.48	7.46	5.70	2.00	0.12	0.36	0.00	0.00	0.00	
22	0.94	1.02	1.06	1.05	14.81	6.40	1.62	0.80	0.28	0.00	0.00	0.00	
23	0.98	0.96	1.14	0.68	14.81	5.70	1.44	1.15	0.24	0.00	0.00	0.00	
24	0.96	0.94	1.16	0.44	15.44	5.30	1.48	1.44	0.28	0.00	0.00	0.00	
25	0.96	0.90	1.18	0.32	14.99	8.00	1.20	1.25	0.24	0.00	0.00	0.00	
26	0.96	0.86	1.24	0.40	9.19	11.76	1.20	0.95	0.20	0.00	0.00	0.00	
27	0.92	0.82	1.68	0.36	4.20	12.96	1.10	0.80	0.12	0.00	0.00	0.00	
28	0.90	0.86	6.50	0.36	2.42	9.40	0.95	1.00	0.00	0.00	0.00	0.00	
29	0.90	0.88	32.39	0.20	2.00	6.55	0.85	1.36	0.00	0.00		0.00	
30	0.86	0.94	47.32	0.00	1.48	5.05	0.72	1.52	0.00	0.00		0.00	
31		1.12		0.00	1.38		0.64		0.00	0.00		0.00	
Total	13.66	28.40	160.81	279.42	132.93	412.35	51.83	25.41	20.65	0.00	0.00	0.00	1125.46 CMSDAY
Mean	0.46	0.92	5.36	9.01	4.29	13.74	1.67	0.85	0.67	0.00	0.00	0.00	3.08 CMS
Max	0.98	1.18	47.32	42.38	15.44	53.24	3.72	1.52	1.44	0.00	0.00	0.00	53.24 CMS
Min	0.17	0.72	1.04	0.00	0.20	1.30	0.64	0.12	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	1.180	2.454	13.894	24.142	11.485	35.627	4.478	2.195	1.784	0.000	0.000	0.000	97.240 MCM

Momentary Peak 53.24 CMS, at 190.59 M (MSL), at 12.00 Hours, on Sep 11, 1998

Runoff Yield 2.36 Liters/Second/Square KM, Momentary Peak Yield 40.735 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

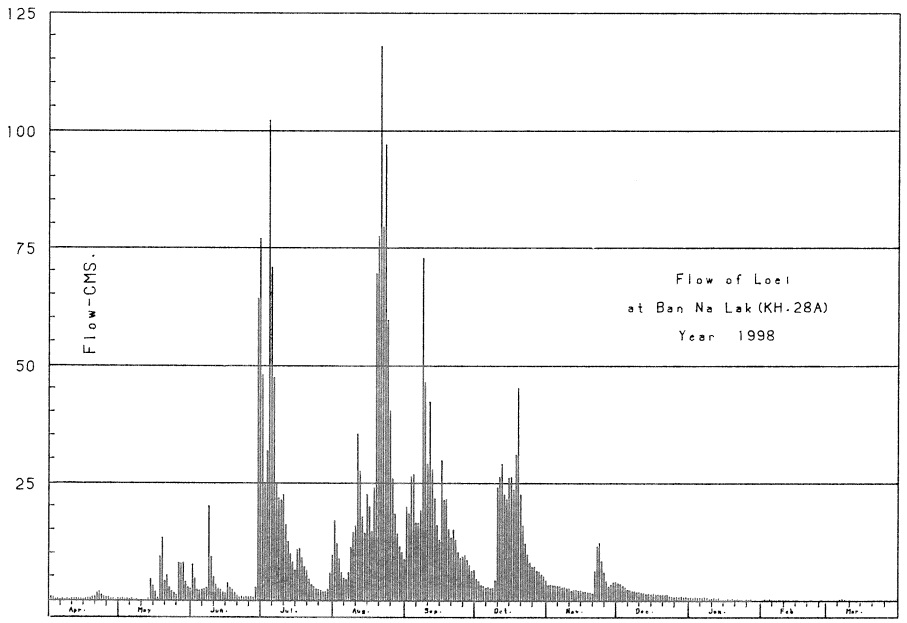
Loei River at Ban Na Lak, Loei (Kh.28A)

Location	Lat. 17°-18'-31" N., Long. 101°-46'-25" E., on left bank at the bridge of Wang Saphung - Loei Highway, Amphoe Wang Saphung, Loei.
Drainage Area	1,262 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+239.62 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank upstream at the footpath of the bridge.
Elevation	+253.928 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1994 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 43 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	239.59	239.52	240.10	241.45	240.55	240.66	239.92	239.83	239.86	239.55	239.46	239.38	
2	239.55	239.52	239.92	240.83	240.34	240.61	239.88	239.83	239.84	239.55	239.46	239.38	
3	239.50	239.51	239.75	241.05	240.17	240.88	239.83	239.83	239.82	239.56	239.48	239.38	
4	239.48	239.51	239.72	242.62	240.00	240.90	239.81	239.82	239.79	239.56	239.48	239.37	
5	239.47	239.50	239.75	242.02	239.92	240.53	239.79	239.82	239.75	239.55	239.47	239.42	
6	239.47	239.51	239.75	241.44	239.91	240.52	239.79	239.81	239.73	239.55	239.46	239.46	
7	239.48	239.48	239.79	240.84	240.01	240.63	239.78	239.80	239.72	239.56	239.45	239.51	
8	239.49	239.45	240.67	240.73	240.30	242.06	239.77	239.79	239.71	239.56	239.44	239.46	
9	239.50	239.43	240.20	240.72	240.44	241.41	239.90	239.78	239.70	239.53	239.43	239.44	
10	239.51	239.41	239.95	240.75	240.50	240.97	240.81	239.77	239.69	239.53	239.43	239.42	
11	239.52	239.40	239.83	240.51	241.14	241.31	240.88	239.73	239.68	239.52	239.43	239.36	
12	239.51	239.39	239.76	240.36	240.92	240.93	240.97	239.73	239.67	239.52	239.41	239.35	
13	239.50	239.53	239.73	240.23	240.58	240.73	240.76	239.74	239.66	239.51	239.40	239.34	
14	239.49	239.91	239.69	240.13	240.44	240.51	240.72	239.73	239.65	239.44	239.40	239.33	
15	239.48	239.81	239.66	240.04	240.76	240.37	240.87	239.72	239.65	239.43	239.39	239.32	
16	239.49	239.69	239.85	240.27	240.67	241.00	240.88	239.71	239.65	239.46	239.39	239.32	
17	239.51	239.55	239.79	240.29	240.45	240.72	240.79	239.70	239.64	239.50	239.38	239.39	
18	239.54	240.20	239.74	240.18	240.80	240.72	241.03	239.69	239.64	239.50	239.35	239.34	
19	239.56	240.39	239.68	240.08	241.99	240.47	241.38	239.68	239.64	239.51	239.31	239.34	
20	239.58	239.89	239.61	240.02	242.15	240.40	240.76	239.67	239.63	239.49	239.28	239.35	
21	239.68	239.96	239.57	239.91	242.90	240.47	240.50	240.02	239.63	239.48	239.32	239.35	
22	239.70	239.80	239.56	239.84	242.19	240.37	240.34	240.31	239.63	239.48	239.34	239.34	
23	239.63	239.70	239.57	239.80	242.53	240.25	240.22	240.34	239.61	239.40	239.35	239.32	
24	239.60	239.68	239.57	239.76	241.74	240.18	240.13	240.15	239.59	239.46	239.36	239.31	
25	239.58	239.62	239.58	239.74	241.26	240.20	240.08	240.01	239.58	239.48	239.40	239.34	
26	239.55	240.13	239.57	239.72	240.87	240.21	240.07	239.88	239.58	239.47	239.40	239.36	
27	239.52	240.11	239.57	239.70	240.61	240.16	240.03	239.81	239.58	239.46	239.39	239.38	
28	239.50	240.13	239.80	239.69	240.43	240.09	240.01	239.83	239.57	239.44	239.38	239.40	
29	239.49	239.87	241.86	239.76	240.31	240.02	239.98	239.87	239.57	239.42		239.41	
30	239.51	239.80	242.14	240.00	240.24	240.04	239.94	239.87	239.56	239.40		239.41	
31		239.76		240.21	240.17		239.89		239.56	239.39		239.42	
Mean	239.53	239.71	239.92	240.41	240.82	240.61	240.31	239.84	239.66	239.49	239.40	239.38	
Max	239.70	240.39	242.14	242.62	242.90	242.06	241.38	240.34	239.86	239.56	239.48	239.51	242.90
Min	239.47	239.39	239.56	239.69	239.91	240.02	239.77	239.67	239.56	239.39	239.28	239.31	239.28

Annual Max Momentary Gage Height 243.01 M (MSL), at 12.00 Hours, on Aug 21, 1998
Zero Gage at Bottom Elevation 239.62 M (MSL), River Bed 239.12 M (MSL)
Left Bank Elevation 253.51 M (MSL)
Right Bank Elevation 253.73 M (MSL), Drainage Area 1262 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.95	0.60	7.70	48.00	17.20	19.96	4.80	3.45	3.90	0.75	0.38	0.16	
2	0.75	0.60	4.80	24.90	12.34	18.66	4.20	3.45	3.60	0.75	0.38	0.16	
3	0.50	0.55	2.50	32.00	8.96	26.40	3.45	3.45	3.30	0.80	0.44	0.16	
4	0.44	0.55	2.20	102.10	6.00	27.00	3.15	3.30	2.90	0.80	0.44	0.14	
5	0.41	0.50	2.50	71.00	4.80	16.72	2.90	3.30	2.50	0.75	0.41	0.26	
6	0.41	0.55	2.50	47.60	4.65	16.48	2.90	3.15	2.30	0.75	0.38	0.38	
7	0.44	0.44	2.90	25.20	6.17	19.18	2.80	3.00	2.20	0.80	0.35	0.55	
8	0.47	0.35	20.22	21.90	11.50	73.00	2.70	2.90	2.10	0.80	0.32	0.38	
9	0.50	0.29	9.50	21.60	14.56	46.40	4.50	2.80	2.00	0.65	0.29	0.32	
10	0.55	0.23	5.25	22.50	16.00	29.10	24.30	2.70	1.90	0.65	0.29	0.26	
11	0.60	0.20	3.45	16.24	35.60	42.40	26.40	2.30	1.80	0.60	0.29	0.12	
12	0.55	0.18	2.60	12.76	27.60	27.90	29.10	2.30	1.70	0.60	0.23	0.10	
13	0.50	0.65	2.30	10.10	17.92	21.90	22.80	2.40	1.60	0.55	0.20	0.08	
14	0.47	4.65	1.90	8.24	14.56	16.24	21.60	2.30	1.50	0.32	0.20	0.06	
15	0.44	3.15	1.60	6.68	22.80	12.97	26.10	2.20	1.50	0.29	0.18	0.04	
16	0.47	1.90	3.75	10.90	20.22	30.00	26.40	2.10	1.50	0.38	0.18	0.04	
17	0.55	0.75	2.90	11.30	14.80	21.60	23.70	2.00	1.40	0.50	0.16	0.18	
18	0.70	9.50	2.40	9.14	24.00	21.60	31.20	1.90	1.40	0.50	0.10	0.08	
19	0.80	13.39	1.80	7.36	69.60	15.28	45.20	1.80	1.40	0.55	0.02	0.08	
20	0.90	4.35	1.10	6.34	77.50	13.60	22.80	1.70	1.30	0.47	0.00	0.10	
21	1.80	5.40	0.85	4.65	118.00	15.28	16.00	6.34	1.30	0.44	0.04	0.10	
22	2.00	3.00	0.80	3.60	79.50	12.97	12.34	11.71	1.30	0.44	0.08	0.08	
23	1.30	2.00	0.85	3.00	97.15	10.50	9.90	12.34	1.10	0.20	0.10	0.04	
24	1.00	1.80	0.85	2.60	59.60	9.14	8.24	8.60	0.95	0.38	0.12	0.02	
25	0.90	1.20	0.90	2.40	40.40	9.50	7.36	6.17	0.90	0.44	0.20	0.08	
26	0.75	8.24	0.85	2.20	26.10	9.70	7.19	4.20	0.90	0.41	0.20	0.12	
27	0.60	7.88	0.85	2.00	18.66	8.78	6.51	3.15	0.90	0.38	0.18	0.16	
28	0.50	8.24	3.00	1.90	14.32	7.53	6.17	3.45	0.85	0.32	0.16	0.20	
29	0.47	4.05	64.40	2.60	11.71	6.34	5.70	4.05	0.85	0.26		0.23	
30	0.55	3.00	77.00	6.00	10.30	6.68	5.10	4.05	0.80	0.20		0.23	
31		2.60		9.70	8.96		4.35		0.80	0.18		0.26	
Total	21.27	90.79	234.22	556.51	911.48	612.81	419.86	116.56	52.45	15.91	6.32	5.17	3043.35 CMSDAY
Mean	0.71	2.93	7.81	17.95	29.40	20.43	13.54	3.89	1.69	0.51	0.23	0.17	8.34 CMS
Max	2.00	13.39	77.00	102.10	118.00	73.00	45.20	12.34	3.90	0.80	0.44	0.55	118.00 CMS
Min	0.41	0.18	0.80	1.90	4.65	6.34	2.70	1.70	0.80	0.18	0.00	0.02	0.00 CMS
Runoff	1.838	7.844	20.237	48.082	78.752	52.947	36.276	10.071	4.532	1.375	0.546	0.447	262.945 MCM

Momentary Peak 124.60 CMS, at 243.01 M (MSL), at 12.00 Hours, on Aug 21, 1998

Runoff Yield 6.61 Liters/Second/Square KM, Momentary Peak Yield 98.732 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

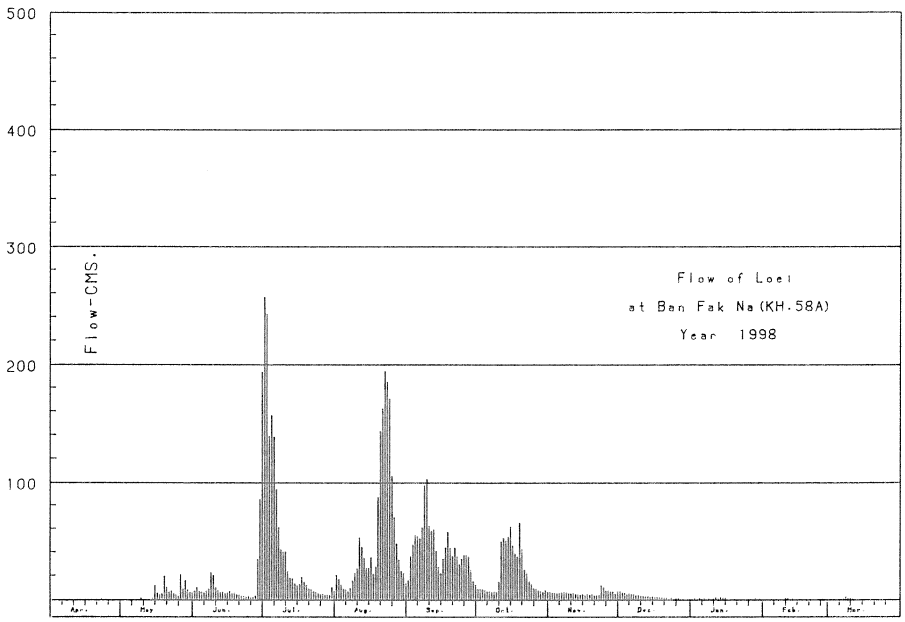
Loei River at Ban Fak Na, Loei (Kh.58A)

Location	Lat. 17°-29'-35" N., Long. 101°-44'-19" E., on left bank at the bridge on road, Ban Fak Na, Amphoe Muang, Loei.
Drainage Area	3,101 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+229.00 m.(M.S.L.)
Bench Mark	B.M.-Highways Dept.
Location	On left bank upstream side at the abutment of the bridge.
Elevation	+240.622 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 60 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	230.34	230.30	230.68	235.43	231.16	231.04	230.78	230.59	230.63	230.22	230.19	230.16	
2	230.38	230.30	230.82	235.23	231.07	231.57	230.74	230.58	230.58	230.25	230.20	230.11	
3	230.37	230.30	230.66	233.64	230.89	231.81	230.77	230.55	230.53	230.24	230.22	230.11	
4	230.34	230.29	230.59	233.96	230.79	231.98	230.69	230.54	230.48	230.24	230.22	230.11	
5	230.32	230.27	230.59	233.64	230.72	231.96	230.65	230.53	230.48	230.25	230.20	230.09	
6	230.32	230.30	230.64	232.83	230.65	231.93	230.61	230.58	230.50	230.27	230.21	230.08	
7	230.32	230.30	230.78	232.13	230.79	232.14	230.60	230.59	230.46	230.24	230.22	230.25	
8	230.33	230.41	231.22	231.72	231.03	232.88	230.58	230.59	230.42	230.24	230.23	230.32	
9	230.33	230.65	231.17	231.66	231.21	232.99	230.60	230.50	230.40	230.23	230.22	230.27	
10	230.33	230.31	230.83	231.68	231.33	232.16	231.00	230.53	230.39	230.25	230.23	230.24	
11	230.32	230.26	230.67	231.24	231.94	232.07	231.86	230.53	230.37	230.27	230.22	230.19	
12	230.34	230.26	230.59	231.10	231.77	232.09	231.94	230.51	230.35	230.27	230.22	230.15	
13	230.35	230.26	230.55	231.06	231.56	231.70	231.87	230.45	230.34	230.28	230.20	230.12	
14	230.35	230.28	230.53	230.94	231.33	231.35	231.96	230.47	230.32	230.28	230.19	230.10	
15	230.34	230.87	230.51	230.87	231.33	231.22	232.14	230.47	230.32	230.25	230.19	230.10	
16	230.35	230.56	230.62	230.93	231.55	231.52	231.78	230.43	230.32	230.21	230.17	230.08	
17	230.35	230.42	230.53	231.11	231.20	231.75	231.64	230.46	230.30	230.20	230.14	230.05	
18	230.35	230.51	230.50	230.99	231.37	232.06	231.57	230.47	230.31	230.20	230.13	230.03	
19	230.45	231.15	230.46	230.89	232.69	231.74	232.23	230.47	230.28	230.20	230.13	230.02	
20	230.56	230.83	230.41	230.80	233.73	231.60	231.71	230.42	230.29	230.17	230.12	230.01	
21	230.54	230.61	230.38	230.73	234.04	231.76	231.30	230.39	230.26	230.14	230.13	230.00	
22	230.58	230.66	230.35	230.67	234.54	231.57	231.20	230.46	230.25	230.14	230.14	230.00	
23	230.53	230.53	230.32	230.59	234.39	231.42	231.00	230.88	230.26	230.17	230.14	230.01	
24	230.47	230.44	230.32	230.54	234.18	231.52	230.91	230.84	230.26	230.19	230.14	229.98	
25	230.41	230.38	230.29	230.50	233.04	231.62	230.80	230.69	230.25	230.20	230.15	229.98	
26	230.37	231.17	230.28	230.46	232.32	231.60	230.74	230.65	230.22	230.19	230.16	230.02	
27	230.33	230.78	230.40	230.45	231.83	231.58	230.70	230.63	230.22	230.24	230.16	230.07	
28	230.32	231.03	231.53	230.43	231.50	231.29	230.62	230.59	230.21	230.25	230.17	230.06	
29	230.32	230.69	232.65	230.44	231.27	231.01	230.61	230.51	230.22	230.22		230.03	
30	230.30	230.59	234.52	230.84	231.20	230.90	230.68	230.61	230.24	230.22		230.04	
31		230.53		230.64	230.93		230.63		230.25	230.20		230.07	
Mean	230.38	230.52	230.81	231.55	231.85	231.73	231.13	230.55	230.35	230.22	230.18	230.09	
Max	230.58	231.17	234.52	235.43	234.54	232.99	232.23	230.88	230.63	230.28	230.23	230.32	235.43
Min	230.30	230.26	230.28	230.43	230.65	230.90	230.58	230.39	230.21	230.14	230.12	229.98	229.98

Annual Max Momentary Gage Height 235.66 M (MSL), at 15.00 Hours, on Jul 1, 1998
Zero Gage at Bottom Elevation 229.00 M (MSL), River Bed 229.55 M (MSL)
Left Bank Elevation 240.36 M (MSL)
Right Bank Elevation 240.34 M (MSL), Drainage Area 3101 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.62	0.50	8.20	257.82	21.10	17.20	9.70	6.85	7.45	1.30	0.95	0.80	
2	0.74	0.50	10.60	243.02	18.10	36.80	9.10	6.70	6.70	1.75	1.00	0.55	
3	0.71	0.50	7.90	139.20	12.70	47.45	9.55	6.25	5.95	1.60	1.30	0.55	
4	0.62	0.48	6.85	157.60	9.85	55.10	8.35	6.10	5.20	1.60	1.30	0.55	
5	0.56	0.44	6.85	139.20	8.80	54.20	7.75	5.95	5.20	1.75	1.00	0.47	
6	0.56	0.50	7.60	94.65	7.75	52.85	7.15	6.70	5.50	2.05	1.15	0.44	
7	0.56	0.50	9.70	61.85	9.85	62.30	7.00	6.85	4.90	1.60	1.30	1.75	
8	0.59	0.84	23.20	43.40	16.90	97.40	6.70	6.85	4.30	1.60	1.45	2.80	
9	0.59	1.85	21.45	40.70	22.85	103.45	7.00	5.50	4.00	1.45	1.30	2.05	
10	0.59	0.53	10.90	41.60	27.20	63.20	16.00	5.95	3.85	1.75	1.45	1.60	
11	0.56	0.42	8.05	23.90	53.30	59.15	49.70	5.95	3.55	2.05	1.30	0.95	
12	0.62	0.42	6.85	19.00	45.65	60.05	53.30	5.65	3.25	2.05	1.30	0.75	
13	0.65	0.42	6.25	17.80	36.40	42.50	50.15	4.75	3.10	2.20	1.00	0.60	
14	0.65	2.20	5.95	14.20	27.20	28.00	54.20	5.05	2.80	2.20	0.95	0.50	
15	0.62	12.10	5.65	12.10	27.20	23.20	62.30	5.05	2.80	1.75	0.95	0.50	
16	0.65	6.40	7.30	13.90	36.00	34.80	46.10	4.45	2.80	1.15	0.85	0.44	
17	0.65	4.30	5.95	19.35	22.50	44.75	39.80	4.90	2.50	1.00	0.70	0.35	
18	0.65	5.65	5.50	15.70	28.80	58.70	36.80	5.05	2.65	1.00	0.65	0.29	
19	0.98	20.75	4.90	12.70	87.50	44.30	66.35	5.05	2.20	1.00	0.65	0.26	
20	1.42	10.90	4.15	10.00	144.15	38.00	42.95	4.30	2.35	0.85	0.60	0.23	
21	1.33	7.15	3.70	8.95	162.60	45.20	26.00	3.85	1.90	0.70	0.65	0.20	
22	1.51	7.90	3.25	8.05	195.10	36.80	22.50	4.90	1.75	0.70	0.70	0.20	
23	1.28	5.95	2.80	6.85	185.35	30.80	16.00	12.40	1.90	0.85	0.70	0.23	
24	1.05	4.60	2.80	6.10	171.70	34.80	13.30	11.20	1.90	0.95	0.70	0.18	
25	0.84	3.70	2.35	5.50	106.20	38.90	10.00	8.35	1.75	1.00	0.75	0.18	
26	0.71	21.45	2.20	4.90	70.40	38.00	9.10	7.75	1.30	0.95	0.80	0.26	
27	0.59	9.70	4.00	4.75	48.35	37.20	8.50	7.45	1.30	1.60	0.80	0.41	
28	0.56	16.90	35.20	4.45	34.00	25.65	7.30	6.85	1.15	1.75	0.85	0.38	
29	0.56	8.35	85.50	4.60	24.95	16.30	7.15	5.65	1.30	1.30		0.29	
30	0.50	6.85	193.80	11.20	22.50	13.00	8.20	7.15	1.60	1.30		0.32	
31		5.95		7.60	13.90		7.45		1.75	1.00		0.41	
Total	22.52	168.70	509.40	1450.64	1698.85	1340.05	725.45	189.45	98.65	43.80	27.10	19.49	6294.10 CMSDAY
Mean	0.75	5.44	16.98	46.79	54.80	44.67	23.40	6.32	3.18	1.41	0.97	0.63	17.24 CMS
Max	1.51	21.45	193.80	257.82	195.10	103.45	66.35	12.40	7.45	2.20	1.45	2.80	257.82 CMS
Min	0.50	0.42	2.20	4.45	7.75	13.00	6.70	3.85	1.15	0.70	0.60	0.18	0.18 CMS
Runoff	1.946	14.576	44.012	125.335	146.781	115.780	62.679	16.368	8.523	3.784	2.341	1.684	543.810 MCM

Momentary Peak 274.84 CMS, at 235.66 M (MSL), at 15.00 Hours, on Jul 1, 1998

Runoff Yield 5.56 Liters/Second/Square KM, Momentary Peak Yield 88.629 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

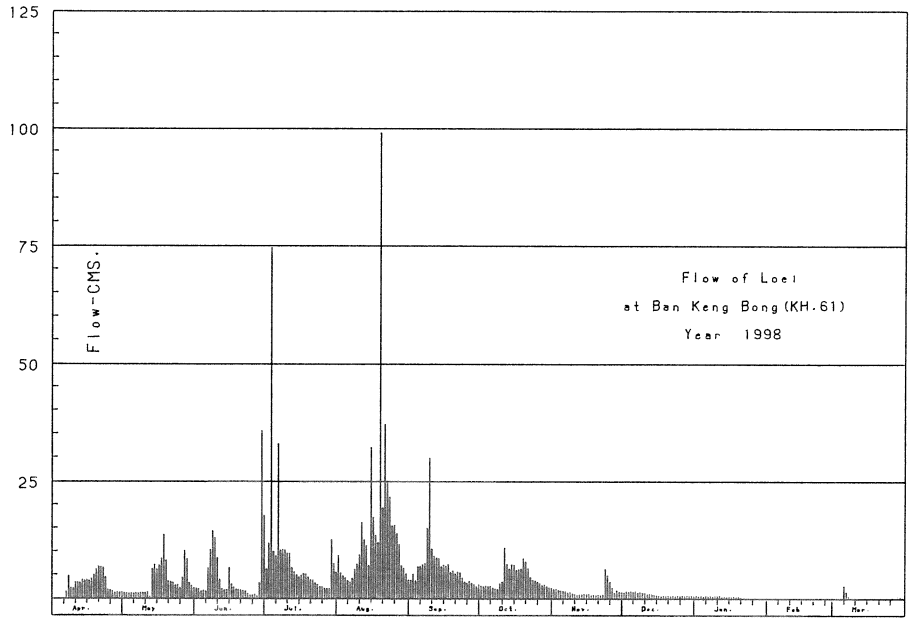
Loei River at Ban Keng Bong, Loei (Kh.61)

Location	Lat. 17°-07'-48" N., Long. 101°-04'-56" E.,on right bank at the bridge of Amphoe Wang Saphung-Ban Nong Khan road, Amphoe Phu Luang, Loei.
Drainage Area	562 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+258.36 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the footpath of the bridge.
Elevation	+272.020 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	258.77	258.84	258.89	259.06	259.16	258.96	258.91	258.88	258.84	258.79	258.70	258.70	
2	258.89	258.83	258.88	259.26	259.02	259.01	258.91	258.88	258.85	258.79	258.70	258.69	
3	258.91	258.83	258.86	260.71	259.00	258.96	258.91	258.87	258.85	258.79	258.70	258.69	
4	258.99	258.83	258.86	259.20	258.98	259.08	258.91	258.86	258.85	258.79	258.70	258.69	
5	258.99	258.83	258.86	259.16	258.96	259.08	258.91	258.86	258.85	258.79	258.70	258.91	
6	258.85	258.83	259.06	259.88	258.94	259.09	258.90	258.85	258.85	258.79	258.70	258.85	
7	259.00	258.83	259.21	259.21	258.98	259.10	258.88	258.84	258.84	258.79	258.70	258.79	
8	258.89	258.83	259.36	259.21	259.05	259.38	258.88	258.84	258.84	258.79	258.70	258.69	
9	258.89	258.84	259.30	259.21	259.10	259.80	258.93	258.83	258.84	258.79	258.70	258.69	
10	258.94	258.84	259.15	259.18	259.17	259.22	258.95	258.82	258.83	258.79	258.70	258.60	
11	258.94	258.84	258.97	259.18	259.42	259.16	259.22	258.81	258.82	258.79	258.70	258.61	
12	258.94	258.78	258.88	259.07	259.29	259.15	259.10	258.81	258.82	258.77	258.71	258.61	
13	258.96	259.06	258.87	259.03	259.24	259.14	259.06	258.82	258.82	258.77	258.71	258.61	
14	258.96	259.09	258.87	259.01	259.09	259.08	259.09	258.82	258.81	258.77	258.71	258.65	
15	258.96	259.05	259.07	258.99	259.86	259.09	259.09	258.82	258.81	258.77	258.71	258.66	
16	258.96	259.09	258.93	259.00	259.46	259.08	259.05	258.82	258.80	258.77	258.71	258.65	
17	258.97	259.14	258.90	259.02	259.32	259.10	259.05	258.81	258.80	258.77	258.71	258.61	
18	259.01	259.33	258.88	259.01	259.27	259.03	259.06	258.81	258.80	258.77	258.71	258.61	
19	259.05	259.13	258.87	258.99	261.11	259.04	259.14	258.81	258.80	258.76	258.71	258.65	
20	259.08	258.95	258.87	258.96	259.53	259.02	259.12	258.81	258.80	258.75	258.71	258.65	
21	259.07	258.95	258.86	258.96	259.97	259.03	259.06	258.81	258.80	258.70	258.71	258.64	
22	259.07	258.94	258.86	258.94	259.68	259.03	258.99	258.81	258.80	258.70	258.70	258.65	
23	258.99	258.92	258.82	258.92	259.59	258.98	258.96	259.06	258.80	258.69	258.70	258.65	
24	258.87	258.92	258.81	258.91	259.40	258.95	258.96	259.00	258.80	258.69	258.70	258.65	
25	258.87	258.90	258.81	258.90	259.40	258.94	258.95	258.95	258.80	258.69	258.69	258.67	
26	258.85	258.98	258.81	258.89	259.34	258.95	258.93	258.89	258.80	258.70	258.68	258.70	
27	258.84	259.20	258.80	258.89	259.25	258.94	258.92	258.84	258.80	258.70	258.69	258.71	
28	258.84	259.14	258.94	258.88	259.09	258.92	258.92	258.86	258.80	258.70	258.70	258.77	
29	258.84	258.94	259.94	259.29	259.06	258.91	258.91	258.85	258.80	258.70		258.77	
30	258.84	258.91	259.48	259.10	259.02	258.92	258.89	258.84	258.79	258.70		258.71	
31		258.89		259.03	258.96		258.89		258.79	258.70		258.66	
Mean	258.92	258.95	258.99	259.13	259.31	259.07	258.98	258.85	258.82	258.75	258.70	258.68	
Max	259.08	259.33	259.94	260.71	261.11	259.80	259.22	259.06	258.85	258.79	258.71	258.91	261.11
Min	258.77	258.78	258.80	258.88	258.94	258.91	258.88	258.81	258.79	258.69	258.68	258.60	258.60

Annual Max Momentary Gage Height 261.36 M (MSL), at 6.00 Hours, on Aug 19, 1998
Zero Gage at Bottom Elevation 258.36 M (MSL), River Bed 258.50 M (MSL)
Left Bank Elevation 272.02 M (MSL)
Right Bank Elevation 272.00 M (MSL), Drainage Area 562 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	1.42	2.32	6.50	9.15	4.00	2.75	2.14	1.42	0.65	0.20	0.20	
2	0.00	1.24	2.14	11.90	5.50	5.25	2.75	2.14	1.60	0.65	0.20	0.19	
3	0.00	1.24	1.78	74.60	5.00	4.00	2.75	1.96	1.60	0.65	0.20	0.19	
4	0.00	1.24	1.78	10.25	4.50	7.00	2.75	1.78	1.60	0.65	0.20	0.19	
5	0.00	1.24	1.78	9.15	4.00	7.00	2.75	1.78	1.60	0.65	0.20	2.75	
6	1.60	1.24	6.50	33.20	3.50	7.25	2.50	1.60	1.60	0.65	0.20	1.60	
7	5.00	1.24	10.52	10.52	4.50	7.50	2.14	1.42	1.42	0.65	0.20	0.65	
8	2.32	1.24	14.65	10.52	6.25	15.20	2.14	1.42	1.42	0.65	0.20	0.19	
9	2.32	1.42	13.00	10.52	7.50	30.00	3.25	1.24	1.42	0.65	0.20	0.19	
10	3.50	1.42	8.87	9.70	9.43	10.80	3.75	1.06	1.24	0.65	0.20	0.10	
11	3.50	1.42	4.25	9.70	16.30	9.15	10.80	0.88	1.06	0.65	0.20	0.11	
12	3.50	0.60	2.14	6.75	12.73	8.87	7.50	0.88	1.06	0.55	0.25	0.11	
13	4.00	6.50	1.96	5.75	11.35	8.60	6.50	1.06	1.06	0.55	0.25	0.11	
14	4.00	7.25	1.96	5.25	7.25	7.00	7.25	1.06	0.88	0.55	0.25	0.15	
15	4.00	6.25	6.75	4.75	32.40	7.25	7.25	1.06	0.88	0.55	0.25	0.16	
16	4.00	7.25	3.25	5.00	17.40	7.00	6.25	1.06	0.70	0.55	0.25	0.15	
17	4.25	8.60	2.50	5.50	13.55	7.50	6.25	0.88	0.70	0.55	0.25	0.11	
18	5.25	13.82	2.14	5.25	12.17	5.75	6.50	0.88	0.70	0.55	0.25	0.11	
19	6.25	8.32	1.96	4.75	99.15	6.00	8.60	0.88	0.70	0.50	0.25	0.15	
20	7.00	3.75	1.96	4.00	19.55	5.50	8.05	0.88	0.70	0.45	0.25	0.15	
21	6.75	3.75	1.78	4.00	37.15	5.75	6.50	0.88	0.70	0.20	0.25	0.14	
22	6.75	3.50	1.78	3.50	25.20	5.75	4.75	0.88	0.70	0.20	0.20	0.15	
23	4.75	3.00	1.06	3.00	21.65	4.50	4.00	6.50	0.70	0.19	0.20	0.15	
24	1.96	3.00	0.88	2.75	15.75	3.75	4.00	5.00	0.70	0.19	0.20	0.15	
25	1.96	2.50	0.88	2.50	15.75	3.50	3.75	3.75	0.70	0.19	0.19	0.17	
26	1.60	4.50	0.88	2.32	14.10	3.75	3.25	2.32	0.70	0.20	0.18	0.20	
27	1.42	10.25	0.70	2.32	11.62	3.50	3.00	1.42	0.70	0.20	0.19	0.25	
28	1.42	8.60	3.50	2.14	7.25	3.00	3.00	1.78	0.70	0.20	0.20	0.55	
29	1.42	3.50	35.80	12.73	6.50	2.75	2.75	1.60	0.70	0.20		0.55	
30	1.42	2.75	17.95	7.50	5.50	3.00	2.32	1.42	0.65	0.20		0.25	
31		2.32		5.75	4.00		2.32		0.65	0.20		0.16	
Total	89.94	124.37	157.42	292.07	465.65	209.87	142.12	51.61	30.96	14.12	6.06	10.28	1594.47 CMSDAY
Mean	3.00	4.01	5.25	9.42	15.02	7.00	4.58	1.72	1.00	0.46	0.22	0.33	4.37 CMS
Max	7.00	13.82	35.80	74.60	99.15	30.00	10.80	6.50	1.60	0.65	0.25	2.75	99.15 CMS
Min	0.00	0.60	0.70	2.14	3.50	2.75	2.14	0.88	0.65	0.19	0.18	0.10	0.00 CMS
Runoff	7.771	10.746	13.601	25.235	40.232	18.133	12.279	4.459	2.675	1.220	0.524	0.888	137.762 MCM

Momentary Peak 116.20 CMS, at 261.36 M (MSL), at 6.00 Hours, on Aug 19, 1998
Runoff Yield 7.77 Liters/Second/Square KM, Momentary Peak Yield 206.762 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

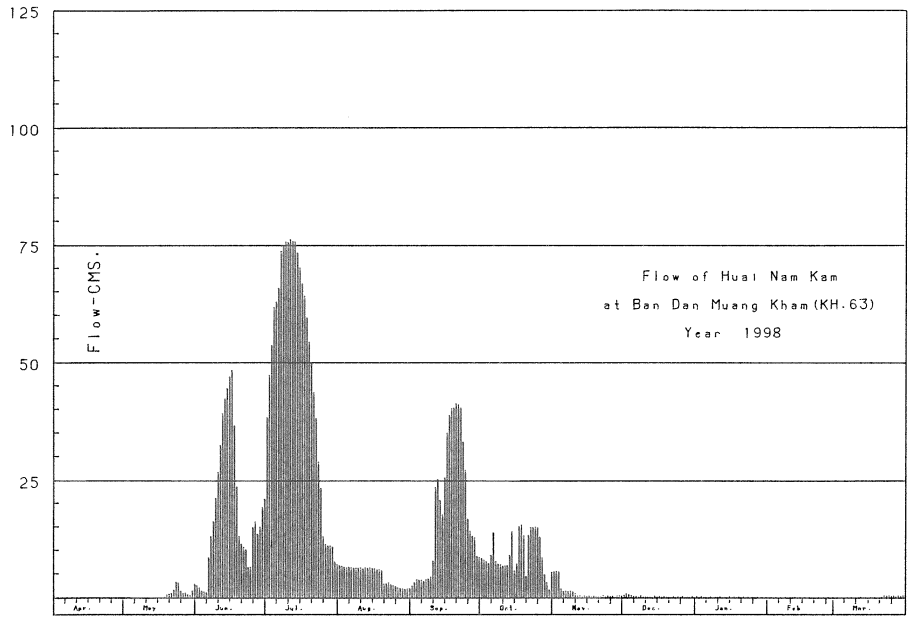
Huai Nam Kam at Ban Dan Muang Kham, Sakon Nakhon (Kh.63)

Location	Lat. 17°-06'-15" N., Long. 104°-21'-26" E., on left bank at the bridge on road, Ban Dan Muang Kham, Amphoe Khok Si Suphan, Sakon Nakhon.
Drainage Area	1,764 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+147.53 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+155.198 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1982 - 1985, 1997 to date.
Rated by Float	-
Rated by Current Meter	1982 - 1985, 1997 to date.
Stability of Channel Regimes	Unstable.
Overbank Flow Conditions	No overbank flow .
General Description	Records fair. Flow during Jan.24-Feb.14,99, discharge estimated by recession equation. Stage-discharge relation defined by 41 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	147.69	147.56	148.28	151.00	148.73	148.28	148.87	148.61	147.96	147.86	148.05	147.74	
2	147.69	147.55	148.22	151.45	148.71	148.38	148.83	148.61	147.99	147.86	148.04	147.73	
3	147.68	147.54	148.12	151.76	148.70	148.44	148.80	148.61	147.98	147.86	148.02	147.76	
4	147.68	147.54	148.06	152.11	148.68	148.44	148.77	148.20	147.93	147.85	148.01	147.75	
5	147.67	147.54	148.05	152.16	148.70	148.43	148.93	148.11	147.91	147.85	148.00	147.74	
6	147.67	147.54	148.88	152.28	148.68	148.41	149.37	148.10	147.88	147.84	147.99	147.73	
7	147.67	147.54	149.28	152.59	148.68	148.44	148.80	148.11	147.88	147.84	148.01	147.74	
8	147.67	147.54	149.58	152.64	148.67	148.47	148.76	148.10	147.92	147.83	148.02	147.75	
9	147.67	147.53	149.95	152.67	148.68	148.50	148.74	148.10	147.89	147.82	147.95	147.76	
10	147.67	147.53	150.32	152.67	148.68	148.82	148.72	148.00	147.87	147.81	147.84	147.75	
11	147.66	147.53	150.68	152.69	148.67	150.11	148.71	147.93	147.87	147.82	147.80	147.75	
12	147.65	147.53	151.04	152.68	148.68	150.22	148.73	147.91	147.85	147.84	147.79	147.75	
13	147.66	147.53	151.21	152.67	148.68	149.93	148.93	147.90	147.82	147.84	147.78	147.75	
14	147.66	147.53	151.31	152.58	148.68	149.70	149.38	147.89	147.89	147.85	147.77	147.74	
15	147.65	147.53	151.44	152.45	148.67	150.25	148.62	147.90	147.89	147.84	147.78	147.73	
16	147.64	147.53	151.50	152.32	148.66	150.82	148.75	147.89	147.87	147.83	147.77	147.73	
17	147.63	147.53	150.91	152.21	148.65	151.03	149.49	147.89	147.87	147.83	147.77	147.73	
18	147.63	147.72	150.12	152.03	148.64	151.10	149.51	147.89	147.87	147.83	147.77	147.73	
19	147.63	147.97	149.29	151.79	148.63	151.11	149.30	147.89	147.86	147.82	147.76	147.73	
20	147.63	147.96	149.15	151.58	148.33	151.15	148.52	147.88	147.85	147.82	147.77	147.73	
21	147.62	147.99	149.08	151.27	148.35	151.14	149.32	147.88	147.85	147.82	147.78	147.87	
22	147.62	148.16	149.04	150.99	148.36	151.11	149.46	147.92	147.85	147.82	147.78	147.91	
23	147.61	148.38	148.69	150.46	148.32	150.72	149.47	147.89	147.85	147.81	147.77	147.92	
24	147.61	148.35	148.69	150.10	148.29	150.35	149.47	147.90	147.85	147.81	147.76	147.91	
25	147.60	148.13	149.47	149.28	148.28	149.63	149.47	147.90	147.85	147.79	147.74	147.91	
26	147.60	147.99	149.57	149.13	148.23	149.39	149.28	147.88	147.85	147.81	147.76	147.90	
27	147.60	148.04	149.34	149.11	148.22	149.30	148.87	147.86	147.85	147.96	147.76	147.90	
28	147.59	147.94	149.47	149.10	148.20	149.26	148.55	147.90	147.85	148.00	147.75	147.90	
29	147.58	147.95	149.82	149.09	148.20	148.91	148.36	147.92	147.86	148.04		147.91	
30	147.57	148.13	149.95	148.80	148.19	148.88	148.17	147.89	147.86	148.04		147.91	
31		148.33		148.74	148.22		148.59		147.85	148.03		147.91	
Mean	147.64	147.78	149.62	151.30	148.52	149.62	148.95	148.02	147.88	147.86	147.85	147.80	
Max	147.69	148.38	151.50	152.69	148.73	151.15	149.51	148.61	147.99	148.04	148.05	147.92	152.69
Min	147.57	147.53	148.05	148.74	148.19	148.28	148.17	147.86	147.82	147.79	147.74	147.73	147.53

Annual Max Momentary Gage Height 152.70 M (MSL), at 18.00 Hours, on Jul 12, 1998
Zero Gage at Bottom Elevation 147.53 M (MSL), River Bed 146.90 M (MSL)
Left Bank Elevation 155.02 M (MSL)
Right Bank Elevation 155.51 M (MSL), Drainage Area 1764 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.19	0.06	2.64	38.50	7.03	2.64	8.57	5.71	0.80	0.42	0.30	0.24	
2	0.19	0.05	2.16	47.35	6.81	3.44	8.13	5.71	0.95	0.42	0.29	0.23	
3	0.18	0.04	1.60	53.86	6.70	3.96	7.80	5.71	0.90	0.42	0.29	0.26	
4	0.18	0.04	1.30	61.75	6.48	3.96	7.47	2.00	0.65	0.40	0.29	0.25	
5	0.17	0.04	1.25	63.00	6.70	3.87	9.23	1.55	0.55	0.40	0.28	0.24	
6	0.17	0.04	8.68	66.00	6.48	3.69	14.07	1.50	0.46	0.38	0.28	0.23	
7	0.17	0.04	13.08	73.75	6.48	3.96	7.80	1.55	0.46	0.38	0.28	0.24	
8	0.17	0.04	16.38	75.00	6.37	4.23	7.36	1.50	0.60	0.36	0.28	0.25	
9	0.17	0.03	21.25	75.75	6.48	4.50	7.14	1.50	0.48	0.34	0.28	0.26	
10	0.17	0.03	26.80	75.75	6.48	8.02	6.92	1.00	0.44	0.32	0.27	0.25	
11	0.16	0.03	32.66	76.25	6.37	23.65	6.81	0.65	0.44	0.34	0.27	0.25	
12	0.15	0.03	39.26	76.00	6.48	25.30	7.03	0.55	0.40	0.38	0.27	0.25	
13	0.16	0.03	42.50	75.75	6.48	20.95	9.23	0.50	0.34	0.38	0.26	0.25	
14	0.16	0.03	44.50	73.50	6.48	17.80	14.18	0.48	0.48	0.40	0.27	0.24	
15	0.15	0.03	47.14	70.25	6.37	25.75	5.82	0.50	0.48	0.38	0.28	0.23	
16	0.14	0.03	48.40	67.00	6.26	35.16	7.25	0.48	0.44	0.36	0.27	0.23	
17	0.13	0.03	36.79	64.25	6.15	39.07	15.39	0.48	0.44	0.36	0.27	0.23	
18	0.13	0.22	23.80	59.75	6.04	40.40	15.61	0.48	0.44	0.36	0.27	0.23	
19	0.13	0.85	13.19	54.49	5.93	40.59	13.30	0.48	0.42	0.34	0.26	0.23	
20	0.13	0.80	11.65	50.08	3.04	41.35	4.72	0.46	0.40	0.34	0.27	0.23	
21	0.12	0.95	10.88	43.70	3.20	41.16	13.52	0.46	0.40	0.34	0.28	0.44	
22	0.12	1.80	10.44	38.31	3.28	40.59	15.06	0.60	0.40	0.34	0.28	0.55	
23	0.11	3.44	6.59	28.96	2.96	33.36	15.17	0.48	0.40	0.32	0.27	0.60	
24	0.11	3.20	6.59	23.50	2.72	27.25	15.17	0.50	0.40	0.32	0.26	0.55	
25	0.10	1.65	15.17	13.08	2.64	16.96	15.17	0.50	0.40	0.32	0.24	0.55	
26	0.10	0.95	16.27	11.43	2.24	14.29	13.08	0.46	0.40	0.31	0.26	0.50	
27	0.10	1.20	13.74	11.21	2.16	13.30	8.57	0.42	0.40	0.31	0.26	0.50	
28	0.09	0.70	15.17	11.10	2.00	12.86	5.05	0.50	0.40	0.31	0.25	0.50	
29	0.08	0.75	19.30	10.99	2.00	9.01	3.28	0.60	0.42	0.31		0.55	
30	0.07	1.65	21.25	7.80	1.95	8.68	1.85	0.48	0.42	0.30		0.55	
31		3.04		7.14	2.16		5.49		0.40	0.30		0.55	
Total	4.20	21.82	570.43	1505.25	152.92	569.75	295.24	37.79	15.01	10.96	7.63	10.66	3201.66 CMSDAY
Mean	0.14	0.70	19.01	48.56	4.93	18.99	9.52	1.26	0.48	0.35	0.27	0.34	8.77 CMS
Max	0.19	3.44	48.40	76.25	7.03	41.35	15.61	5.71	0.95	0.42	0.30	0.60	76.25 CMS
Min	0.07	0.03	1.25	7.14	1.95	2.64	1.85	0.42	0.34	0.30	0.24	0.23	0.03 CMS
Runoff	0.363	1.885	49.285	130.054	13.212	49.226	25.509	3.265	1.297	0.947	0.659	0.921	276.623 MCM

Momentary Peak 76.50 CMS, at 152.70 M (MSL), at 18.00 Hours, on Jul 12, 1998

Runoff Yield 4.97 Liters/Second/Square KM, Momentary Peak Yield 43.367 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

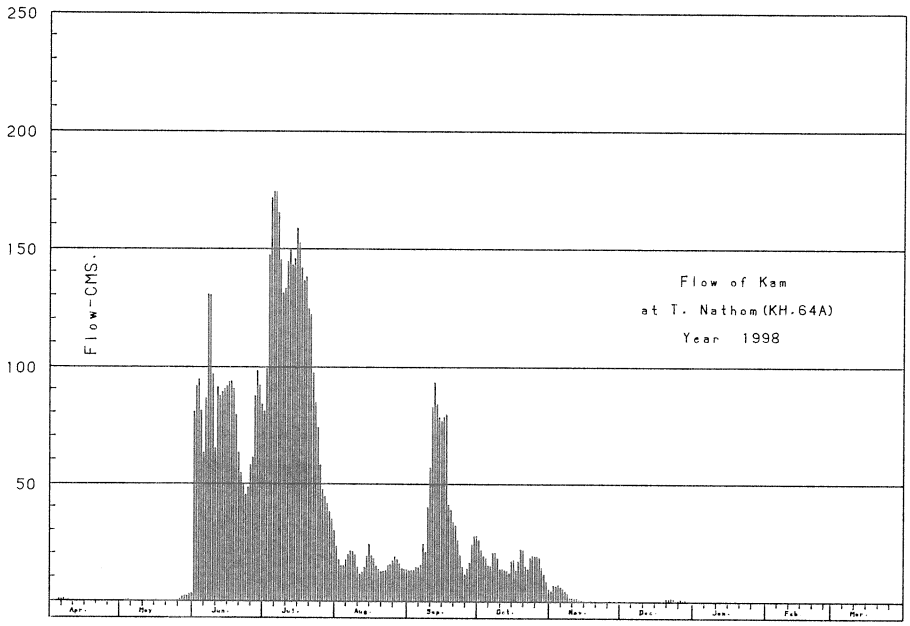
Lam Nam Kam at Ban Don Khao, Nakhon Phanom (Kh.64A)

Location	Lat. 16°-57'-22" N., Long. 104°-37'-27" E., on left bank at the bridge on highway, Ban Don Khao, Amphoe Renu Nakhon, Nakhon Phanom.
Drainage Area	3,345 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+132.03 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the abutment of the bridge.
Elevation	+141.813 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable with variable water surface slope.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The weir situated downstream from the gage site. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	132.63	132.66	135.28	135.29	133.78	135.44	133.88	133.10	132.68	132.65	132.59	132.58	
2	132.63	132.69	135.52	135.66	134.40	135.42	133.73	133.20	132.68	132.63	132.59	132.58	
3	132.63	132.76	135.57	136.56	134.59	135.46	133.65	133.20	132.68	132.63	132.59	132.58	
4	132.78	132.73	135.30	136.96	134.56	135.55	133.61	133.21	132.67	132.63	132.59	132.58	
5	132.80	132.71	134.88	137.01	134.42	135.57	133.52	133.18	132.67	132.63	132.59	132.58	
6	132.79	132.64	135.41	137.00	134.29	135.65	133.50	133.13	132.66	132.63	132.59	132.57	
7	132.76	132.66	136.28	136.86	134.25	136.17	133.70	133.09	132.66	132.63	132.59	132.57	
8	132.74	132.66	136.27	136.52	134.25	136.01	133.69	133.02	132.65	132.63	132.59	132.57	
9	132.72	132.65	135.62	136.29	134.31	136.71	133.62	132.90	132.65	132.62	132.59	132.57	
10	132.66	132.65	134.93	136.32	134.64	137.08	133.47	132.86	132.65	132.63	132.59	132.57	
11	132.65	132.64	135.51	136.51	135.04	137.51	133.46	132.86	132.64	132.62	132.59	132.56	
12	132.65	132.63	135.43	136.60	135.28	137.64	133.45	132.85	132.64	132.62	132.59	132.55	
13	132.65	132.63	135.47	136.49	135.58	137.53	133.43	132.81	132.64	132.62	132.59	132.55	
14	132.64	132.63	135.49	136.53	135.91	137.45	133.41	132.77	132.64	132.63	132.59	132.55	
15	132.63	132.74	135.52	136.75	136.18	137.43	133.57	132.75	132.64	132.63	132.59	132.55	
16	132.63	132.74	135.55	136.64	135.94	137.45	133.59	132.74	132.64	132.63	132.58	132.55	
17	132.63	132.72	135.56	136.47	135.86	137.47	133.44	132.73	132.64	132.63	132.58	132.55	
18	132.63	132.70	135.49	136.38	135.64	136.73	133.58	132.73	132.64	132.63	132.58	132.55	
19	132.63	132.70	135.26	136.40	135.47	136.68	133.75	132.73	132.68	132.63	132.58	132.55	
20	132.63	132.69	134.89	136.17	135.39	136.51	133.73	132.72	132.82	132.62	132.58	132.54	
21	132.63	132.66	134.67	136.12	135.38	136.47	133.50	132.72	132.85	132.62	132.59	132.53	
22	132.63	132.66	134.55	135.63	135.44	136.24	133.47	132.71	132.85	132.61	132.59	132.60	
23	132.63	132.64	134.44	135.37	135.62	135.95	133.63	132.71	132.85	132.61	132.59	132.63	
24	132.63	132.63	134.52	135.14	135.70	135.57	133.65	132.71	132.75	132.61	132.58	132.60	
25	132.65	132.73	134.75	134.76	135.83	135.04	133.65	132.70	132.77	132.61	132.58	132.60	
26	132.65	132.78	134.84	134.49	135.90	134.70	133.64	132.69	132.80	132.60	132.58	132.58	
27	132.65	132.92	135.43	134.42	135.86	134.46	133.63	132.69	132.78	132.60	132.58	132.58	
28	132.65	132.93	135.65	134.33	135.71	134.16	133.48	132.69	132.76	132.60	132.58	132.61	
29	132.65	132.95	135.52	134.24	135.53	134.05	133.39	132.69	132.73	132.60		132.63	
30	132.65	133.00	135.36	134.14	135.46	134.05	133.26	132.69	132.68	132.60		132.60	
31		133.03		134.01	135.46		133.12		132.66	132.60		132.58	
Mean	132.66	132.73	135.30	135.87	135.22	136.07	133.55	132.85	132.70	132.62	132.59	132.57	
Max	132.80	133.03	136.28	137.01	136.18	137.64	133.88	133.21	132.85	132.65	132.59	132.63	137.64
Min	132.63	132.63	134.44	134.01	133.78	134.05	133.12	132.69	132.64	132.60	132.58	132.53	132.53

Annual Max Momentary Gage Height 137.83 M (MSL), at 12.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 132.03 M (MSL), River Bed 132.19 M (MSL)
Left Bank Elevation 141.84 M (MSL)
Right Bank Elevation 141.88 M (MSL), Drainage Area 3345 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.26	0.32	80.60	81.05	23.40	13.40	26.40	4.80	0.36	0.30	0.18	0.16	
2	0.26	0.38	92.00	99.00	18.00	13.20	21.90	6.90	0.36	0.26	0.18	0.16	
3	0.26	0.76	94.50	147.60	15.10	13.60	19.50	6.90	0.36	0.26	0.18	0.16	
4	0.88	0.58	81.50	171.60	15.40	14.50	18.30	7.14	0.34	0.26	0.18	0.16	
5	1.00	0.46	63.20	174.65	17.60	14.70	15.60	6.48	0.34	0.26	0.18	0.16	
6	0.94	0.28	86.50	174.00	20.30	15.50	15.00	5.43	0.32	0.26	0.18	0.14	
7	0.76	0.32	130.90	165.60	21.50	24.40	21.00	4.62	0.32	0.26	0.18	0.14	
8	0.64	0.32	130.35	145.20	21.50	21.20	20.70	3.36	0.30	0.26	0.18	0.14	
9	0.52	0.30	97.00	131.45	19.80	40.40	18.60	1.90	0.30	0.24	0.18	0.14	
10	0.32	0.30	65.20	133.20	14.60	57.00	14.10	1.54	0.30	0.26	0.18	0.14	
11	0.30	0.28	91.50	144.60	11.80	82.80	13.80	1.54	0.28	0.24	0.18	0.12	
12	0.30	0.26	87.50	150.00	12.40	93.60	13.50	1.45	0.28	0.24	0.18	0.10	
13	0.30	0.26	89.50	143.40	14.80	84.40	12.90	1.09	0.28	0.24	0.18	0.10	
14	0.28	0.26	90.50	145.80	19.20	78.50	12.30	0.82	0.28	0.26	0.18	0.10	
15	0.26	0.64	92.00	159.00	24.60	77.10	17.10	0.70	0.28	0.26	0.18	0.10	
16	0.26	0.64	93.50	152.40	19.80	78.50	17.70	0.64	0.28	0.26	0.16	0.10	
17	0.26	0.52	94.00	142.20	18.20	79.90	13.20	0.58	0.28	0.26	0.16	0.10	
18	0.26	0.40	90.50	136.80	15.40	41.20	17.40	0.58	0.28	0.26	0.16	0.10	
19	0.26	0.40	79.70	138.00	13.70	39.30	22.50	0.58	0.36	0.26	0.16	0.10	
20	0.26	0.38	63.60	124.85	12.95	33.80	21.90	0.52	1.18	0.24	0.16	0.08	
21	0.26	0.32	54.80	122.10	12.90	32.60	15.00	0.52	1.45	0.24	0.18	0.06	
22	0.26	0.32	50.00	97.50	13.40	26.00	14.10	0.46	1.45	0.22	0.18	0.20	
23	0.26	0.28	45.60	84.65	15.20	20.00	18.90	0.46	1.45	0.22	0.18	0.26	
24	0.26	0.26	48.80	74.30	16.00	14.70	19.50	0.46	0.70	0.22	0.16	0.20	
25	0.30	0.58	58.00	58.40	17.60	11.80	19.50	0.40	0.82	0.22	0.16	0.20	
26	0.30	0.88	61.60	47.60	19.00	14.00	19.20	0.38	1.00	0.20	0.16	0.16	
27	0.30	2.12	87.50	44.80	18.20	16.80	18.90	0.38	0.88	0.20	0.16	0.16	
28	0.30	2.23	98.50	41.55	16.10	24.20	14.40	0.38	0.76	0.20	0.16	0.22	
29	0.30	2.45	92.00	38.40	14.30	28.00	11.73	0.38	0.58	0.20		0.26	
30	0.30	3.00	84.20	34.90	13.60	28.00	8.34	0.38	0.36	0.20		0.20	
31		3.54		30.35	13.60		5.22		0.32	0.20		0.16	
Total	11.42	24.04	2475.05	3534.95	519.95	1133.10	518.19	61.77	16.85	7.46	4.84	4.58	8312.20 CMSDAY
Mean	0.38	0.78	82.50	114.03	16.77	37.77	16.72	2.06	0.54	0.24	0.17	0.15	22.77 CMS
Max	1.00	3.54	130.90	174.65	24.60	93.60	26.40	7.14	1.45	0.30	0.18	0.26	174.65 CMS
Min	0.26	0.26	45.60	30.35	11.80	11.80	5.22	0.38	0.28	0.20	0.16	0.06	0.06 CMS
Runoff	0.987	2.077	213.844	305.420	44.924	97.900	44.772	5.337	1.456	0.645	0.418	0.396	718.174 MCM

Momentary Peak 111.00 CMS, at 137.83 M (MSL), at 12.00 Hours, on Sep 12, 1998

Runoff Yield 6.81 Liters/Second/Square KM, Momentary Peak Yield 33.184 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

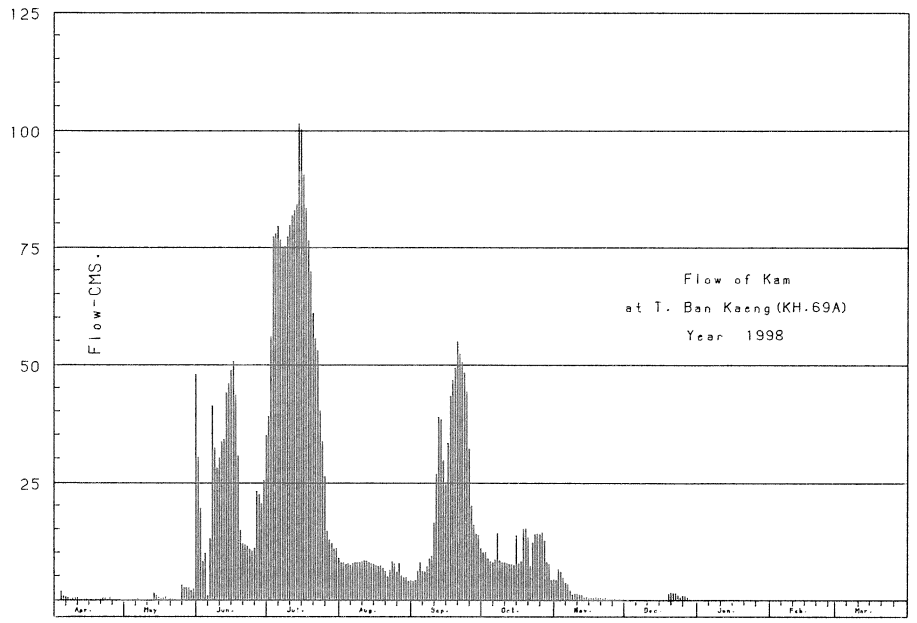
Lam Nam Kam at Ban Nong Rua Thong, Nakhon Phanom (Kh.69A)

Location	Lat. 16°-57'-36" N., Long. 104°-28'-01" E., on right bank at the bridge on highway, Ban Nong Rua Thong, Amphoe Na Kae, Nakhon Phanom.
Drainage Area	1,932 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+139.41 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the footpath of the bridge.
Elevation	+149.406 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Nam Kam barrage situated above gage site. Stage-discharge relation defined by 39 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	139.95	139.95	141.38	141.63	140.51	140.30	140.61	140.32	140.00	139.94	139.82	139.73	
2	139.99	139.94	141.02	142.10	140.50	140.32	140.61	140.43	139.99	139.94	139.81	139.73	
3	140.29	139.95	140.52	142.60	140.49	140.41	140.55	140.41	139.96	139.94	139.81	139.72	
4	140.10	139.96	140.60	142.61	140.49	140.51	140.51	140.34	139.97	139.95	139.80	139.71	
5	140.08	140.01	140.11	142.65	140.48	140.41	140.51	140.29	140.00	139.93	139.78	139.71	
6	140.04	140.01	140.76	142.58	140.49	140.41	140.53	140.27	139.99	139.95	139.76	139.71	
7	140.03	140.01	141.70	142.55	140.51	140.46	140.82	140.21	140.00	140.00	139.77	139.70	
8	140.03	139.98	141.44	142.55	140.50	140.55	140.53	140.12	140.00	139.97	139.83	139.69	
9	140.05	139.95	141.31	142.60	140.51	140.57	140.50	140.15	139.97	139.95	139.91	139.68	
10	140.04	139.95	141.38	142.65	140.51	140.92	140.51	140.14	139.98	139.94	139.93	139.68	
11	140.01	139.89	141.48	142.70	140.53	141.26	140.49	140.13	139.98	139.90	139.85	139.67	
12	140.01	139.94	141.49	142.72	140.52	141.63	140.49	140.11	139.99	139.88	139.81	139.67	
13	140.01	140.16	141.78	142.75	140.51	141.61	140.48	140.06	139.97	139.91	139.81	139.66	
14	140.01	140.10	141.83	143.10	140.49	141.36	140.48	140.06	139.97	139.91	139.80	139.66	
15	140.01	140.06	141.91	143.08	140.49	141.20	140.79	140.04	139.97	139.95	139.79	139.65	
16	140.00	140.04	141.97	142.89	140.47	141.47	140.49	140.04	139.97	139.98	139.75	139.65	
17	140.01	140.03	141.76	142.73	140.47	141.76	140.52	140.05	139.97	139.97	139.74	139.64	
18	140.01	140.08	141.39	142.58	140.47	141.85	140.86	140.05	139.97	139.97	139.75	139.63	
19	140.01	139.99	140.85	142.43	140.45	141.93	140.87	140.05	140.15	139.97	139.88	139.63	
20	140.02	140.03	140.70	142.23	140.41	142.08	140.77	140.04	140.17	139.93	139.89	139.62	
21	140.04	140.03	140.69	142.09	140.36	142.01	140.46	140.04	140.17	139.87	139.88	139.61	
22	140.03	139.99	140.68	142.03	140.42	141.96	140.72	140.04	140.15	139.82	139.86	139.60	
23	140.03	139.97	140.65	141.67	140.52	141.90	140.81	140.02	140.12	139.81	139.83	139.77	
24	140.05	139.95	140.62	141.48	140.49	141.78	140.81	140.01	140.11	139.81	139.81	139.88	
25	140.01	140.26	140.66	141.25	140.41	141.44	140.81	140.01	140.11	139.80	139.80	139.93	
26	140.00	140.24	141.14	140.84	140.50	141.04	140.82	140.01	140.08	139.79	139.79	139.94	
27	139.99	140.24	141.12	140.74	140.36	140.90	140.74	140.01	140.06	139.75	139.76	139.95	
28	139.94	140.23	141.05	140.71	140.35	140.81	140.51	140.01	139.98	139.74	139.75	139.97	
29	139.92	140.21	141.22	140.65	140.34	140.79	140.48	140.01	139.97	139.79		139.97	
30	139.95	140.22	141.52	140.65	140.31	140.65	140.32	140.01	139.97	139.89		139.99	
31		141.89		140.55	140.31		140.32		139.95	139.86		139.97	
Mean	140.02	140.11	141.16	142.08	140.46	141.14	140.60	140.12	140.02	139.90	139.81	139.75	
Max	140.29	141.89	141.97	143.10	140.53	142.08	140.87	140.43	140.17	140.00	139.93	139.99	143.10
Min	139.92	139.89	140.11	140.55	140.31	140.30	140.32	140.01	139.95	139.74	139.74	139.60	139.60

Annual Max Momentary Gage Height 143.11 M (MSL), at 6.00 Hours, on Jul 14, 1998
Zero Gage at Bottom Elevation 139.41 M (MSL), River Bed 139.34 M (MSL)
Left Bank Elevation 149.10 M (MSL)
Right Bank Elevation 149.11 M (MSL), Drainage Area 1932 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.10	30.40	39.05	8.20	4.00	10.20	4.40	0.20	0.08	0.00	0.00	
2	0.00	0.08	19.60	56.00	8.00	4.40	10.20	6.60	0.18	0.08	0.00	0.00	
3	1.90	0.10	8.40	77.50	7.80	6.20	9.00	6.20	0.12	0.08	0.00	0.00	
4	1.00	0.12	10.00	77.95	7.80	8.20	8.20	4.80	0.14	0.10	0.00	0.00	
5	0.84	0.28	1.10	79.75	7.60	6.20	8.20	3.80	0.20	0.06	0.00	0.00	
6	0.52	0.28	13.20	76.60	7.80	6.20	8.60	3.40	0.18	0.10	0.00	0.00	
7	0.44	0.28	41.50	75.25	8.20	7.20	14.40	2.20	0.20	0.20	0.00	0.00	
8	0.44	0.16	32.40	75.25	8.00	9.00	8.60	1.20	0.20	0.14	0.00	0.00	
9	0.60	0.10	28.30	77.50	8.20	9.40	8.00	1.50	0.14	0.10	0.02	0.00	
10	0.52	0.10	30.40	79.75	8.20	16.60	8.20	1.40	0.16	0.08	0.06	0.00	
11	0.28	0.00	33.80	82.00	8.60	26.80	7.80	1.30	0.16	0.00	0.00	0.00	
12	0.28	0.08	34.15	82.90	8.40	39.05	7.80	1.10	0.18	0.00	0.00	0.00	
13	0.28	1.60	44.30	84.25	8.20	38.35	7.60	0.68	0.14	0.02	0.00	0.00	
14	0.28	1.00	46.05	101.40	7.80	29.80	7.60	0.68	0.14	0.02	0.00	0.00	
15	0.28	0.68	48.85	100.32	7.80	25.00	13.80	0.52	0.14	0.10	0.00	0.00	
16	0.20	0.52	50.95	90.55	7.40	33.45	7.80	0.52	0.14	0.16	0.00	0.00	
17	0.28	0.44	43.60	83.35	7.40	43.60	8.40	0.60	0.14	0.14	0.00	0.00	
18	0.28	0.84	30.70	76.60	7.40	46.75	15.20	0.60	0.14	0.14	0.00	0.00	
19	0.28	0.18	15.00	69.85	7.00	49.55	15.40	0.60	1.50	0.14	0.00	0.00	
20	0.36	0.44	12.00	61.20	6.20	55.20	13.40	0.52	1.70	0.06	0.00	0.00	
21	0.52	0.44	11.80	55.60	5.20	52.40	7.20	0.52	1.70	0.00	0.00	0.00	
22	0.44	0.18	11.60	53.20	6.40	50.60	12.40	0.52	1.50	0.00	0.00	0.00	
23	0.44	0.14	11.00	40.45	8.40	48.50	14.20	0.36	1.20	0.00	0.00	0.00	
24	0.60	0.10	10.40	33.80	7.80	44.30	14.20	0.28	1.10	0.00	0.00	0.00	
25	0.28	3.20	11.20	26.50	6.20	32.40	14.20	0.28	1.10	0.00	0.00	0.06	
26	0.20	2.80	23.20	14.80	8.00	20.20	14.40	0.28	0.84	0.00	0.00	0.08	
27	0.18	2.80	22.60	12.80	5.20	16.00	12.80	0.28	0.68	0.00	0.00	0.10	
28	0.08	2.60	20.50	12.20	5.00	14.20	8.20	0.28	0.16	0.00	0.00	0.14	
29	0.04	2.20	25.60	11.00	4.80	13.80	7.60	0.28	0.14	0.00		0.14	
30	0.10	2.40	35.20	11.00	4.20	11.00	4.40	0.28	0.14	0.00		0.18	
31		48.15		9.00	4.20		4.40		0.10	0.00		0.14	
Total	11.94	72.39	757.80	1827.37	221.40	768.35	312.40	45.98	14.76	1.80	0.08	0.84	4035.11 CMSDAY
Mean	0.40	2.34	25.26	58.95	7.14	25.61	10.08	1.53	0.48	0.06	0.00	0.03	11.06 CMS
Max	1.90	48.15	50.95	101.40	8.60	55.20	15.40	6.60	1.70	0.20	0.06	0.18	101.40 CMS
Min	0.00	0.00	1.10	9.00	4.20	4.00	4.40	0.28	0.10	0.00	0.00	0.00	0.00 CMS
Runoff	1.032	6.254	65.474	157.885	19.129	66.385	26.991	3.973	1.275	0.156	0.007	0.073	348.634 MCM

Momentary Peak 101.94 CMS, at 143.11 M (MSL), at 6.00 Hours, on Jul 14, 1998

Runoff Yield 5.72 Liters/Second/Square KM, Momentary Peak Yield 52.764 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

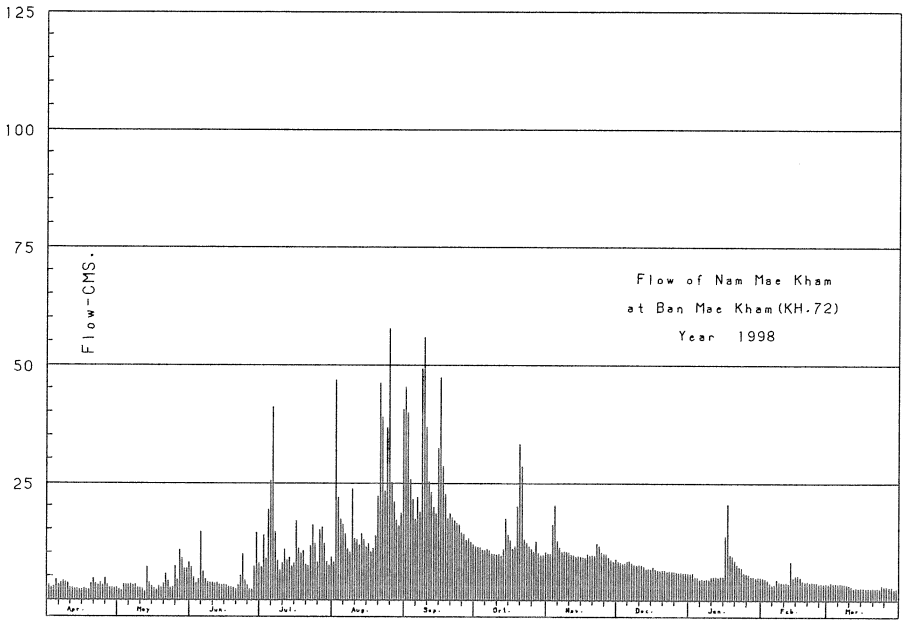
Nam Mae Kham at Ban Mae Kham, Chiang Rai (Kh.72)

Location	Lat. 20-13-03 N., Long. 99-51-38 E., on right bank at the bridge of Mae Chan - Mae Sai Highway, Tambon Mae Kham, Amphoe Mae Chan, Chiang Rai.
Drainage Area	644 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 20 meters from the top staff gage.
Elevation	+6.245 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Rather unstable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the bridge of Chiang Rai-Mae Sai highway construction. Stage-discharge relation defined by 46 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.64	1.55	1.92	1.93	1.99	3.23	2.15	2.08	2.00	1.84	1.78	1.67	
2	1.60	1.53	1.78	2.26	3.26	3.11	2.15	2.07	1.98	1.84	1.76	1.69	
3	1.61	1.65	1.69	2.03	2.59	2.73	2.14	2.36	1.97	1.80	1.74	1.68	
4	1.75	1.66	1.75	2.49	2.41	2.58	2.12	2.53	1.97	1.78	1.68	1.67	
5	1.66	1.66	2.30	2.72	2.36	2.41	2.11	2.21	2.00	1.75	1.65	1.67	
6	1.69	1.66	1.87	3.14	2.28	2.59	2.13	2.14	2.00	1.75	1.65	1.67	
7	1.73	1.65	1.76	2.30	2.13	2.47	2.11	2.10	1.98	1.75	1.75	1.67	
8	1.70	1.65	1.70	2.01	2.09	3.31	2.08	2.10	1.95	1.75	1.70	1.66	
9	1.69	1.60	1.70	1.88	2.66	3.43	2.07	2.10	1.95	1.75	1.70	1.66	
10	1.59	1.58	1.70	1.98	2.23	3.04	2.07	2.09	1.95	1.78	1.69	1.65	
11	1.58	1.56	1.67	2.12	2.22	2.71	2.07	2.07	1.95	1.80	1.69	1.61	
12	1.57	1.50	1.70	2.01	2.17	2.63	2.06	2.06	1.93	1.79	1.68	1.59	
13	1.56	1.93	1.65	2.04	2.28	2.51	2.12	2.05	1.90	1.79	1.99	1.59	
14	1.55	1.69	1.65	1.94	2.22	2.46	2.41	2.05	1.90	1.79	1.77	1.59	
15	1.54	1.63	1.65	1.97	2.15	2.93	2.27	2.05	1.90	1.80	1.81	1.58	
16	1.58	1.57	1.64	2.39	2.18	3.27	2.21	2.04	1.92	2.25	1.81	1.58	
17	1.55	1.55	1.62	2.13	2.10	2.82	2.13	2.04	1.90	2.54	1.79	1.58	
18	1.55	1.62	1.60	2.08	2.13	2.62	2.15	2.07	1.88	2.07	1.72	1.58	
19	1.67	1.60	1.60	2.11	2.26	2.41	2.52	2.06	1.88	2.05	1.71	1.58	
20	1.77	1.67	1.55	1.96	2.60	2.46	2.95	2.06	1.88	2.01	1.71	1.58	
21	1.67	1.83	1.65	1.94	3.25	2.42	2.82	2.06	1.88	1.95	1.70	1.58	
22	1.65	1.73	1.81	2.16	3.09	2.40	2.22	2.18	1.87	1.93	1.70	1.58	
23	1.69	1.60	2.07	2.36	2.64	2.37	2.19	2.16	1.87	1.91	1.70	1.58	
24	1.65	1.60	1.74	2.18	3.04	2.36	2.15	2.09	1.87	1.85	1.69	1.64	
25	1.78	1.94	1.65	1.99	3.46	2.29	2.13	2.08	1.86	1.84	1.67	1.62	
26	1.65	1.75	1.55	2.31	2.71	2.27	2.10	2.07	1.86	1.82	1.67	1.61	
27	1.59	2.12	1.55	2.34	2.56	2.22	2.20	2.04	1.85	1.80	1.67	1.61	
28	1.59	2.03	1.93	2.18	2.40	2.23	2.08	2.01	1.85	1.79	1.67	1.60	
29	1.59	1.90	2.29	1.99	2.35	2.20	2.06	2.00	1.85	1.78		1.56	
30	1.59	1.91	1.97	1.95	2.46	2.17	2.06	2.02	1.84	1.78		1.56	
31		1.98		2.04	3.13		2.09		1.84	1.78		1.58	
Mean	1.63	1.71	1.76	2.16	2.50	2.62	2.20	2.10	1.91	1.87	1.72	1.62	
Max	1.78	2.12	2.30	3.14	3.46	3.43	2.95	2.53	2.00	2.54	1.99	1.69	3.46
Min	1.54	1.50	1.55	1.88	1.99	2.17	2.06	2.00	1.84	1.75	1.65	1.56	1.50

Annual Max Momentary Gage Height 3.75 M (A.D), at 18.00 Hours, on Aug 2, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 1.13 M (A.D)
Left Bank Elevation 6.26 M (A.D)
Right Bank Elevation 6.02 M (A.D), Drainage Area 644 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.24	2.37	7.08	7.24	8.23	45.40	11.50	10.04	8.40	5.77	4.88	3.57	
2	2.80	2.20	4.88	13.90	46.90	39.94	11.50	9.84	8.07	5.77	4.63	3.79	
3	2.91	3.35	3.79	9.01	21.94	25.90	11.29	16.24	7.91	5.12	4.39	3.68	
4	4.51	3.46	4.51	19.36	17.44	21.68	10.87	20.38	7.91	4.88	3.68	3.57	
5	3.46	3.46	14.80	25.60	16.24	17.44	10.66	12.78	8.40	4.51	3.35	3.57	
6	3.79	3.46	6.26	41.26	14.35	21.94	11.08	11.29	8.40	4.51	3.35	3.57	
7	4.27	3.35	4.63	14.80	11.08	18.88	10.66	10.45	8.07	4.51	4.51	3.57	
8	3.90	3.35	3.90	8.60	10.25	49.44	10.04	10.45	7.58	4.51	3.90	3.46	
9	3.79	2.80	3.90	6.42	23.88	56.07	9.84	10.45	7.58	4.51	3.90	3.46	
10	2.72	2.63	3.90	8.07	13.23	36.92	9.84	10.25	7.58	4.88	3.79	3.35	
11	2.63	2.46	3.57	10.87	13.00	25.30	9.84	9.84	7.58	5.12	3.79	2.91	
12	2.55	1.95	3.90	8.60	11.92	23.04	9.63	9.63	7.24	5.00	3.68	2.72	
13	2.46	7.24	3.35	9.22	14.35	19.86	10.87	9.43	6.75	5.00	8.23	2.72	
14	2.37	3.79	3.35	7.41	13.00	18.64	17.44	9.43	6.75	5.00	4.75	2.72	
15	2.29	3.13	3.35	7.91	11.50	32.54	14.13	9.43	6.75	5.12	5.28	2.63	
16	2.63	2.55	3.24	16.96	12.13	47.40	12.78	9.22	7.08	13.68	5.28	2.63	
17	2.37	2.37	3.02	11.08	10.45	28.68	11.08	9.22	6.75	20.64	5.00	2.63	
18	2.37	3.02	2.80	10.04	11.08	22.76	11.50	9.84	6.42	9.84	4.14	2.63	
19	3.57	2.80	2.80	10.66	13.90	17.44	20.12	9.63	6.42	9.43	4.02	2.63	
20	4.75	3.57	2.37	7.74	22.20	18.64	33.30	9.63	6.42	8.60	4.02	2.63	
21	3.57	5.61	3.35	7.41	46.40	17.68	28.68	9.63	6.42	7.58	3.90	2.63	
22	3.35	4.27	5.28	11.71	39.07	17.20	13.00	12.13	6.26	7.24	3.90	2.63	
23	3.79	2.80	9.84	16.24	23.32	16.48	12.34	11.71	6.26	6.92	3.90	2.63	
24	3.35	2.80	4.39	12.13	36.92	16.24	11.50	10.25	6.26	5.94	3.79	3.24	
25	4.88	7.41	3.35	8.23	57.84	14.57	11.08	10.04	6.10	5.77	3.57	3.02	
26	3.35	4.51	2.37	15.04	25.30	14.13	10.45	9.84	6.10	5.45	3.57	2.91	
27	2.72	10.87	2.37	15.76	21.16	13.00	12.55	9.22	5.94	5.12	3.57	2.91	
28	2.72	9.01	7.24	12.13	17.20	13.23	10.04	8.60	5.94	5.00	3.57	2.80	
29	2.72	6.75	14.57	8.23	16.00	12.55	9.63	8.40	5.94	4.88		2.46	
30	2.72	6.92	7.91	7.58	18.64	11.92	9.63	8.81	5.77	4.88		2.46	
31		8.07		9.22	40.82		10.25		5.77	4.88		2.63	
Total	96.55	132.33	150.07	378.43	659.74	734.91	397.12	316.10	214.82	200.06	118.34	92.76	3491.23 CMSDAY
Mean	3.22	4.27	5.00	12.21	21.28	24.50	12.81	10.54	6.93	6.45	4.23	2.99	9.57 CMS
Max	4.88	10.87	14.80	41.26	57.84	56.07	33.30	20.38	8.40	20.64	8.23	3.79	57.84 CMS
Min	2.29	1.95	2.37	6.42	8.23	11.92	9.63	8.40	5.77	4.51	3.35	2.46	1.95 CMS
Runoff	8.342	11.433	12.966	32.696	57.002	63.496	34.311	27.311	18.560	17.285	10.225	8.014	301.642 MCM

Momentary Peak 78.60 CMS, at 3.75 M (A.D), at 18.00 Hours, on Aug 2, 1998

Runoff Yield 14.85 Liters/Second/Square KM, Momentary Peak Yield 122.050 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

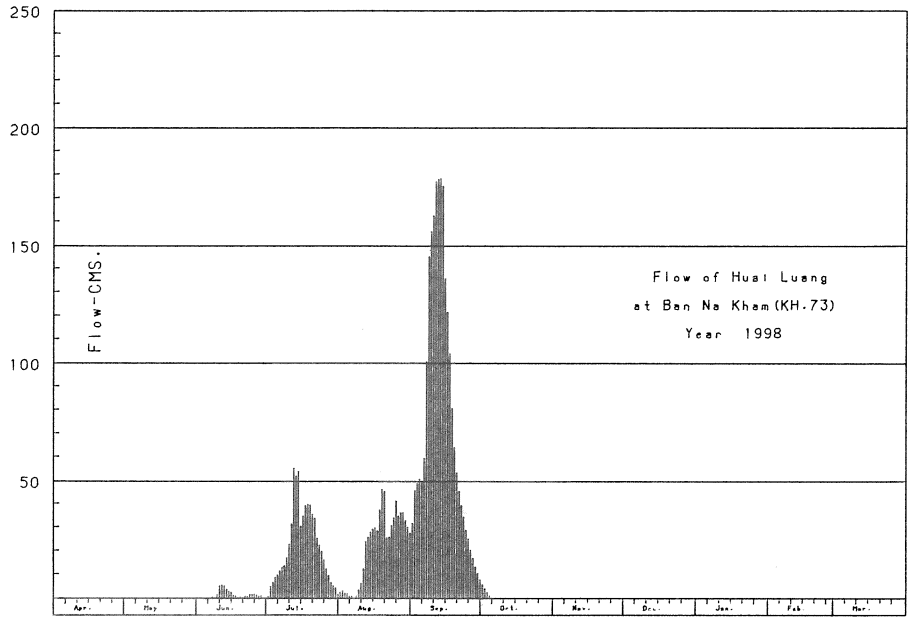
Huai Luang at Ban Na Kham, Udon Thani (Kh.73)

Location	Lat. 17°-38'-22" N., Long. 103°-06'-01" E., on left bank at the bridge of Amphoe Ban Dung-Amphoe Phen highway, Amphoe Phen, Udon Thani.
Drainage Area	3,015 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+153.29 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the footpath of the bridge.
Elevation	+167.181 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The local weir situated downstream from the gage site. Stage-discharge relation defined by 12 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	156.31	156.25	156.26	156.61	156.82	159.49	159.04	156.42	157.28	157.13	156.89	156.39	
2	156.31	156.25	156.26	157.12	156.89	160.08	158.80	156.42	157.28	157.10	156.89	156.39	
3	156.31	156.25	156.26	157.38	156.81	160.18	158.57	156.46	157.26	157.10	156.89	156.39	
4	156.31	156.24	156.26	157.58	156.74	160.22	158.18	156.50	157.26	157.08	156.85	156.39	
5	156.31	156.24	156.28	157.71	156.61	160.20	157.71	156.54	157.26	157.07	156.78	156.39	
6	156.31	156.24	156.33	157.89	156.57	160.42	157.05	156.58	157.14	157.07	156.78	156.39	
7	156.31	156.24	156.54	158.01	156.48	161.01	156.83	156.62	157.14	157.07	156.78	156.39	
8	156.31	156.24	156.57	158.11	156.61	161.42	156.48	156.74	157.14	157.07	156.78	156.39	
9	156.31	156.24	156.69	158.39	156.98	161.50	156.43	156.85	157.14	157.07	156.73	156.37	
10	156.31	156.24	157.15	158.85	157.29	161.55	156.44	156.98	157.14	157.06	156.71	156.37	
11	156.31	156.24	157.24	159.50	157.98	161.65	156.43	157.04	157.14	157.06	156.69	156.37	
12	156.31	156.24	157.16	160.33	158.94	161.66	156.44	157.11	157.14	157.06	156.69	156.37	
13	156.31	156.24	157.01	160.26	159.09	161.66	156.44	157.11	157.14	157.06	156.67	156.35	
14	156.31	156.24	156.87	160.30	159.23	161.66	156.49	157.13	157.14	157.06	156.66	156.34	
15	156.31	156.24	156.84	159.43	159.34	161.56	156.60	157.17	157.14	157.06	156.64	156.22	
16	156.31	156.24	156.68	159.65	159.36	161.52	156.68	157.26	157.14	157.02	156.63	156.22	
17	156.29	156.24	156.58	159.85	159.29	161.45	156.72	157.34	157.14	156.99	156.62	156.22	
18	156.30	156.24	156.54	159.86	159.78	161.33	156.79	157.27	157.14	156.99	156.62	156.21	
19	156.30	156.24	156.54	159.86	160.10	161.19	156.76	157.28	157.14	156.99	156.59	156.19	
20	156.30	156.24	156.56	159.69	160.08	161.05	156.73	157.28	157.14	156.99	156.59	156.16	
21	156.30	156.24	156.57	159.62	159.05	160.92	156.72	157.29	157.14	156.99	156.59	156.16	
22	156.30	156.24	156.60	159.06	159.10	160.78	156.72	157.28	157.14	156.99	156.59	156.17	
23	156.34	156.24	156.69	158.82	159.43	160.63	156.75	157.28	157.14	156.99	156.59	156.17	
24	156.36	156.24	156.74	158.64	159.61	160.46	156.79	157.28	157.14	156.99	156.57	156.17	
25	156.36	156.24	156.71	158.30	159.93	160.31	156.70	157.28	157.14	156.94	156.47	156.16	
26	156.32	156.23	156.69	157.95	159.67	160.10	156.67	157.27	157.14	156.94	156.47	156.14	
27	156.28	156.23	156.63	157.70	159.73	159.94	156.55	157.27	157.14	156.94	156.47	156.14	
28	156.25	156.23	156.60	157.36	159.72	159.71	156.52	157.27	157.14	156.89	156.44	156.15	
29	156.25	156.23	156.43	157.16	159.57	159.49	156.52	157.28	157.14	156.89		156.21	
30	156.23	156.24	156.32	157.08	159.38	159.25	156.48	157.28	157.14	156.89		156.21	
31		156.26		156.74	159.21		156.45		157.14	156.89		156.22	
Mean	156.30	156.24	156.62	158.54	158.56	160.75	156.92	157.03	157.16	157.01	156.67	156.27	
Max	156.36	156.26	157.24	160.33	160.10	161.66	159.04	157.34	157.28	157.13	156.89	156.39	161.66
Min	156.23	156.23	156.26	156.61	156.48	159.25	156.43	156.42	157.14	156.89	156.44	156.14	156.14

Annual Max Momentary Gage Height 161.67 M (MSL), at 12.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 153.29 M (MSL), River Bed 153.41 M (MSL)
Left Bank Elevation 166.97 M (MSL)
Right Bank Elevation 166.96 M (MSL), Drainage Area 3015 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	1.07	2.56	31.86	6.16	0.00	0.00	0.00	0.00	0.00	
2	0.00	0.00	0.00	4.96	3.12	45.90	4.20	0.00	0.00	0.00	0.00	0.00	
3	0.00	0.00	0.00	7.04	2.48	49.30	2.85	0.00	0.00	0.00	0.00	0.00	
4	0.00	0.00	0.00	8.80	1.98	50.80	1.36	0.00	0.00	0.00	0.00	0.00	
5	0.00	0.00	0.00	10.10	1.07	50.00	0.49	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	11.90	0.85	59.60	0.00	0.00	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.70	13.10	0.40	100.90	0.00	0.00	0.00	0.00	0.00	0.00	
8	0.00	0.00	0.85	14.10	1.07	145.60	0.00	0.00	0.00	0.00	0.00	0.00	
9	0.00	0.00	1.63	17.28	3.84	156.00	0.00	0.00	0.00	0.00	0.00	0.00	
10	0.00	0.00	5.20	22.95	6.32	163.00	0.00	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	5.92	32.00	12.80	177.14	0.00	0.00	0.00	0.00	0.00	0.00	
12	0.00	0.00	5.28	55.35	24.16	178.57	0.00	0.00	0.00	0.00	0.00	0.00	
13	0.00	0.00	4.08	52.40	26.26	178.57	0.00	0.00	0.00	0.00	0.00	0.00	
14	0.00	0.00	2.96	54.00	28.22	175.72	0.00	0.00	0.00	0.00	0.00	0.00	
15	0.00	0.00	2.72	31.02	29.76	136.00	0.00	0.00	0.00	0.00	0.00	0.00	
16	0.00	0.00	1.56	35.00	30.04	122.00	0.00	0.00	0.00	0.00	0.00	0.00	
17	0.00	0.00	0.90	39.75	29.06	104.00	0.00	0.00	0.00	0.00	0.00	0.00	
18	0.00	0.00	0.70	40.00	38.00	81.10	0.00	0.00	0.00	0.00	0.00	0.00	
19	0.00	0.00	0.70	40.00	46.50	64.20	0.00	0.00	0.00	0.00	0.00	0.00	
20	0.00	0.00	0.80	35.80	45.90	53.50	0.00	0.00	0.00	0.00	0.00	0.00	
21	0.00	0.00	0.85	34.40	25.70	46.00	0.00	0.00	0.00	0.00	0.00	0.00	
22	0.00	0.00	1.00	25.84	26.40	39.80	0.00	0.00	0.00	0.00	0.00	0.00	
23	0.00	0.00	1.63	22.56	31.02	34.55	0.00	0.00	0.00	0.00	0.00	0.00	
24	0.00	0.00	1.98	20.28	34.20	29.30	0.00	0.00	0.00	0.00	0.00	0.00	
25	0.00	0.00	1.77	16.20	41.75	25.25	0.00	0.00	0.00	0.00	0.00	0.00	
26	0.00	0.00	1.63	12.50	35.40	20.50	0.00	0.00	0.00	0.00	0.00	0.00	
27	0.00	0.00	1.21	10.00	36.75	17.30	0.00	0.00	0.00	0.00	0.00	0.00	
28	0.00	0.00	1.00	6.88	36.50	13.65	0.00	0.00	0.00	0.00	0.00	0.00	
29	0.00	0.00	0.15	5.28	33.40	10.58	0.00	0.00	0.00	0.00		0.00	
30	0.00	0.00	0.00	4.64	30.32	8.05	0.00	0.00	0.00	0.00		0.00	
31		0.00		1.98	27.94		0.00		0.00	0.00		0.00	
Total	0.00	0.00	45.22	687.18	693.77	2368.74	15.06	0.00	0.00	0.00	0.00	0.00	3809.97 CMSDAY
Mean	0.00	0.00	1.51	22.17	22.38	78.96	0.49	0.00	0.00	0.00	0.00	0.00	10.44 CMS
Max	0.00	0.00	5.92	55.35	46.50	178.57	6.16	0.00	0.00	0.00	0.00	0.00	178.57 CMS
Min	0.00	0.00	0.00	1.07	0.40	8.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	3.907	59.372	59.942	204.659	1.301	0.000	0.000	0.000	0.000	0.000	329.181 MCM

Momentary Peak 180.00 CMS, at 161.67 M (MSL), at 12.00 Hours, on Sep 12, 1998
Runoff Yield 3.46 Liters/Second/Square KM, Momentary Peak Yield 59.701 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

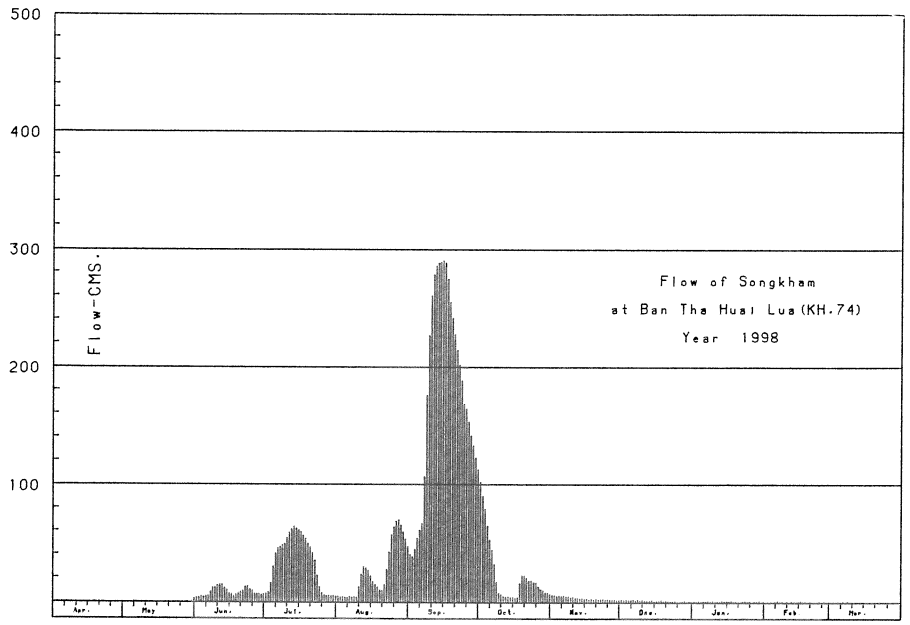
Songkram River at Ban Tha Huai Lua, Sakon Nakhon (Kh.74)

Location	Lat. 17°-49'-05" N., Long. 103°-23'-28" E., on left bank at Ban Tha Huai Lua, Amphoe Ban Muang, Sakon Nakhon.
Drainage Area	2,145 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+144.85 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+156.483 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The local weir situated about 10 kilometers downstream from the gage site. Stage-discharge relation defined by 70 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	146.70	146.68	146.88	147.04	146.95	148.87	152.07	147.02	146.81	146.74	146.72	146.70	
2	146.70	146.68	146.91	147.13	146.93	148.73	151.71	146.99	146.81	146.74	146.72	146.70	
3	146.70	146.68	146.93	147.41	146.92	148.98	151.27	146.98	146.81	146.74	146.72	146.70	
4	146.70	146.69	146.93	148.29	146.92	149.30	150.69	146.97	146.81	146.74	146.72	146.70	
5	146.70	146.69	146.93	148.99	146.91	149.57	149.98	146.97	146.81	146.74	146.72	146.70	
6	146.70	146.69	146.96	149.37	146.93	149.76	149.23	146.96	146.80	146.74	146.72	146.70	
7	146.70	146.68	147.15	149.52	146.93	150.99	148.39	146.95	146.80	146.74	146.72	146.70	
8	146.70	146.68	147.27	149.59	146.93	152.55	147.49	146.93	146.80	146.74	146.72	146.70	
9	146.70	146.68	147.29	149.73	146.93	153.47	147.10	146.92	146.80	146.74	146.71	146.69	
10	146.69	146.68	147.34	150.05	147.29	154.04	147.02	146.91	146.80	146.74	146.71	146.69	
11	146.69	146.68	147.36	150.33	147.96	154.34	146.97	146.90	146.79	146.74	146.71	146.68	
12	146.69	146.68	147.35	150.54	148.26	154.45	146.94	146.88	146.78	146.74	146.71	146.68	
13	146.69	146.68	147.27	150.61	148.23	154.50	146.92	146.88	146.77	146.74	146.71	146.68	
14	146.69	146.68	147.18	150.57	148.10	154.50	146.92	146.87	146.76	146.75	146.71	146.68	
15	146.69	146.68	147.08	150.49	147.88	154.52	146.89	146.85	146.75	146.75	146.71	146.68	
16	146.69	146.67	147.00	150.37	147.52	154.50	146.89	146.84	146.76	146.74	146.71	146.67	
17	146.69	146.67	146.95	150.21	147.38	154.46	146.89	146.84	146.76	146.74	146.71	146.67	
18	146.69	146.68	147.01	150.01	147.29	154.40	147.44	146.83	146.75	146.74	146.71	146.67	
19	146.69	146.70	147.07	149.75	147.22	154.32	147.90	146.83	146.75	146.74	146.71	146.66	
20	146.69	146.71	147.11	149.44	147.18	154.22	147.86	146.83	146.75	146.74	146.71	146.66	
21	146.69	146.70	147.17	149.02	147.36	154.10	147.73	146.83	146.74	146.74	146.71	146.65	
22	146.69	146.70	147.32	148.56	148.16	153.96	147.61	146.83	146.74	146.73	146.70	146.65	
23	146.69	146.70	147.31	147.92	149.13	153.80	147.57	146.82	146.74	146.73	146.70	146.65	
24	146.69	146.69	147.24	147.29	150.22	153.50	147.52	146.82	146.74	146.73	146.70	146.64	
25	146.69	146.70	147.17	147.09	150.64	153.44	147.42	146.81	146.74	146.73	146.70	146.64	
26	146.69	146.71	147.07	147.02	150.85	153.27	147.32	146.81	146.74	146.73	146.70	146.65	
27	146.69	146.71	147.05	146.99	150.89	153.05	147.24	146.81	146.74	146.73	146.70	146.65	
28	146.68	146.71	147.05	146.98	150.72	152.85	147.18	146.80	146.74	146.73	146.70	146.65	
29	146.68	146.71	147.04	146.98	150.41	152.63	147.12	146.80	146.74	146.73		146.65	
30	146.68	146.75	147.03	146.97	150.00	152.36	147.08	146.80	146.74	146.73		146.65	
31		146.86		146.97	149.50		147.04		146.74	146.73		146.65	
Mean	146.69	146.70	147.11	148.75	148.21	152.78	147.98	146.88	146.77	146.74	146.71	146.67	
Max	146.70	146.86	147.36	150.61	150.89	154.52	152.07	147.02	146.81	146.75	146.72	146.70	154.52
Min	146.68	146.67	146.88	146.97	146.91	148.73	146.89	146.80	146.74	146.73	146.70	146.64	146.64

Annual Max Momentary Gage Height 154.52 M (MSL), at 12.00 Hours, on Sep 15, 1998
Zero Gage at Bottom Elevation 144.85 M (MSL), River Bed 145.00 M (MSL)
Left Bank Elevation 156.24 M (MSL)
Right Bank Elevation 156.26 M (MSL), Drainage Area 2145 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.60	0.20	3.60	6.80	5.00	40.70	102.45	6.40	2.20	1.16	0.88	0.60	
2	0.60	0.20	4.20	8.60	4.60	39.30	91.30	5.80	2.20	1.16	0.88	0.60	
3	0.60	0.20	4.60	16.10	4.40	45.50	79.75	5.60	2.20	1.16	0.88	0.60	
4	0.60	0.40	4.60	30.80	4.40	54.40	65.80	5.40	2.20	1.16	0.88	0.60	
5	0.60	0.40	4.60	41.90	4.20	61.96	53.72	5.40	2.20	1.16	0.88	0.60	
6	0.60	0.40	5.20	46.04	4.60	67.28	44.36	5.20	2.00	1.16	0.88	0.60	
7	0.60	0.20	9.00	47.84	4.60	107.65	32.80	5.00	2.00	1.16	0.88	0.60	
8	0.60	0.20	12.10	48.68	4.60	176.50	16.90	4.60	2.00	1.16	0.88	0.60	
9	0.60	0.20	12.70	50.39	4.60	227.26	8.00	4.40	2.00	1.16	0.74	0.40	
10	0.40	0.20	14.20	54.80	12.70	260.48	6.40	4.20	2.00	1.16	0.74	0.40	
11	0.40	0.20	14.80	59.28	24.20	279.08	5.40	4.00	1.86	1.16	0.74	0.20	
12	0.40	0.20	14.50	62.80	30.20	285.90	4.80	3.60	1.72	1.16	0.74	0.20	
13	0.40	0.20	12.10	64.20	29.60	289.00	4.40	3.60	1.58	1.16	0.74	0.20	
14	0.40	0.20	9.60	63.40	27.00	289.00	4.40	3.40	1.44	1.30	0.74	0.20	
15	0.40	0.20	7.60	61.84	22.70	290.24	3.80	3.00	1.30	1.30	0.74	0.20	
16	0.40	0.10	6.00	59.92	17.30	289.00	3.80	2.80	1.44	1.16	0.74	0.10	
17	0.40	0.10	5.00	57.36	15.40	275.40	3.80	2.80	1.44	1.16	0.74	0.10	
18	0.40	0.20	6.20	54.16	12.70	255.00	16.40	2.60	1.30	1.16	0.74	0.10	
19	0.40	0.60	7.40	50.65	10.60	242.20	23.00	2.60	1.30	1.16	0.74	0.05	
20	0.40	0.74	8.20	46.88	9.60	227.80	22.40	2.60	1.30	1.16	0.74	0.05	
21	0.40	0.60	9.40	42.20	14.80	215.00	20.45	2.60	1.16	1.16	0.74	0.00	
22	0.40	0.60	13.60	36.20	28.20	201.80	18.65	2.60	1.16	1.02	0.60	0.00	
23	0.40	0.60	13.30	23.40	43.30	189.00	18.05	2.40	1.16	1.02	0.60	0.00	
24	0.40	0.40	11.20	12.70	57.52	168.50	17.30	2.40	1.16	1.02	0.60	0.00	
25	0.40	0.60	9.40	7.80	64.80	164.60	16.20	2.20	1.16	1.02	0.60	0.00	
26	0.40	0.74	7.40	6.40	69.25	154.35	13.60	2.20	1.16	1.02	0.60	0.00	
27	0.40	0.74	7.00	5.80	70.25	142.50	11.20	2.20	1.16	1.02	0.60	0.00	
28	0.20	0.74	7.00	5.60	66.40	133.25	9.60	2.00	1.16	1.02	0.60	0.00	
29	0.20	0.74	6.80	5.60	60.56	123.70	8.40	2.00	1.16	1.02		0.00	
30	0.20	1.30	6.60	5.40	54.00	112.90	7.60	2.00	1.16	1.02		0.00	
31		3.20		5.40	47.60		6.80		1.16	1.02		0.00	
Total	13.20	15.60	257.90	1088.94	829.68	5409.25	741.53	105.60	48.44	34.84	20.86	7.00	8572.84 CMSDAY
Mean	0.44	0.50	8.60	35.13	26.76	180.31	23.92	3.52	1.56	1.12	0.75	0.23	23.49 CMS
Max	0.60	3.20	14.80	64.20	70.25	290.24	102.45	6.40	2.20	1.30	0.88	0.60	290.24 CMS
Min	0.20	0.10	3.60	5.40	4.20	39.30	3.80	2.00	1.16	1.02	0.60	0.00	0.00 CMS
Runoff	1.140	1.348	22.283	94.084	71.684	467.359	64.068	9.124	4.185	3.010	1.802	0.605	740.693 MCM

Momentary Peak 290.24 CMS, at 154.52 M (MSL), at 12.00 Hours, on Sep 15, 1998

Runoff Yield 10.95 Liters/Second/Square KM, Momentary Peak Yield 135.310 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

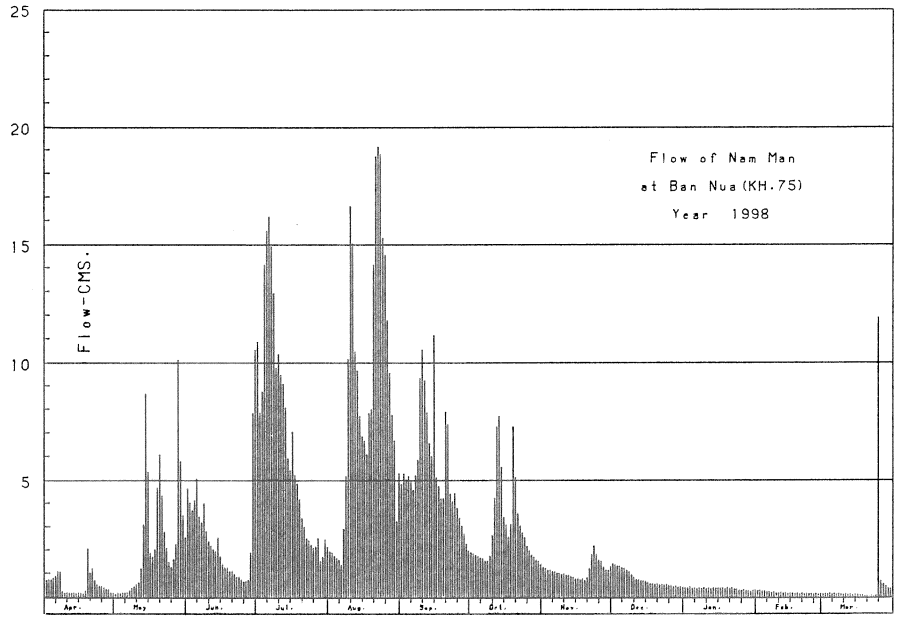
Nam Man at Ban Nua, Loei (Kh.75)

Location	Lat. 17°-16'-38" N., Long. 101°-09'-04" E., on left bank at the bridge of Nam Man, Amphoe Dan Sai, Loei.
Drainage Area	385 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+346.57 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the abutment of the bridge.
Elevation	+356.602 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 50 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	349.07	349.07	350.34	351.26	349.76	350.37	349.75	349.57	349.62	349.23	349.17	349.07	
2	349.07	349.08	350.22	350.84	349.74	350.45	349.73	349.55	349.60	349.24	349.17	349.07	
3	349.08	349.08	350.16	350.97	349.71	350.41	349.72	349.53	349.59	349.25	349.16	349.07	
4	349.10	349.08	350.24	351.64	349.68	350.43	349.70	349.52	349.58	349.23	349.15	349.08	
5	349.16	349.09	350.41	351.80	349.66	350.40	349.69	349.51	349.57	349.23	349.14	349.06	
6	349.24	349.09	350.10	351.87	349.59	350.33	349.67	349.50	349.55	349.22	349.13	349.07	
7	349.24	349.16	350.05	351.73	349.99	350.44	349.65	349.49	349.53	349.23	349.12	349.06	
8	349.13	349.22	350.22	351.51	350.43	350.55	349.64	349.48	349.50	349.23	349.12	349.07	
9	349.10	349.25	349.96	351.11	351.17	351.05	349.71	349.47	349.46	349.23	349.11	349.07	
10	349.09	349.30	349.87	351.20	351.92	351.22	349.93	349.47	349.42	349.22	349.11	349.05	
11	349.09	349.34	349.81	351.07	351.74	351.04	350.26	349.46	349.39	349.22	349.11	349.05	
12	349.09	349.55	349.78	351.02	351.21	350.84	350.76	349.45	349.38	349.22	349.10	349.05	
13	349.08	350.03	349.75	350.87	351.10	350.66	350.82	349.44	349.37	349.22	349.09	349.04	
14	349.08	350.96	349.90	350.56	350.82	350.57	350.50	349.42	349.36	349.23	349.09	349.03	
15	349.07	350.46	349.70	350.47	350.70	351.30	350.10	349.40	349.35	349.22	349.09	349.02	
16	349.06	349.73	349.60	350.73	350.67	350.42	350.02	349.39	349.33	349.23	349.08	349.02	
17	349.06	349.69	349.56	350.44	350.59	350.36	349.90	349.39	349.32	349.23	349.08	349.03	
18	349.14	349.78	349.55	350.38	350.84	350.25	350.03	349.39	349.31	349.22	349.08	349.01	
19	349.79	350.34	349.51	350.25	350.86	350.26	350.76	349.38	349.31	349.23	349.08	349.00	
20	349.49	350.59	349.50	350.09	351.64	350.85	350.42	349.41	349.31	349.22	349.08	349.00	
21	349.54	350.28	349.47	350.00	352.15	350.77	350.13	349.55	349.30	349.23	349.07	349.00	
22	349.37	349.96	349.42	349.90	352.20	350.30	350.02	349.72	349.30	349.22	349.07	348.99	
23	349.29	349.79	349.43	349.87	352.16	350.23	349.95	349.82	349.30	349.20	349.07	349.00	
24	349.27	349.63	349.38	349.83	351.77	350.30	349.91	349.72	349.30	349.19	349.06	348.99	
25	349.25	349.57	349.36	349.79	351.69	350.18	349.82	349.66	349.29	349.18	349.06	351.39	
26	349.23	349.67	349.35	349.81	351.38	350.09	349.76	349.64	349.27	349.18	349.06	349.36	
27	349.21	349.83	349.39	349.90	351.08	350.02	349.72	349.57	349.26	349.17	349.06	349.32	
28	349.17	351.16	349.74	349.64	350.83	349.94	349.69	349.52	349.26	349.15	349.06	349.26	
29	349.11	350.54	350.84	349.70	350.67	349.84	349.66	349.53	349.25	349.15		349.23	
30	349.08	350.11	351.22	349.88	350.06	349.76	349.64	349.57	349.25	349.16		349.21	
31		349.91		349.80	350.45		349.60		349.25	349.17		349.20	
Mean	349.19	349.75	349.86	350.58	350.85	350.45	349.96	349.52	349.38	349.21	349.10	349.16	
Max	349.79	351.16	351.22	351.87	352.20	351.30	350.82	349.82	349.62	349.25	349.17	351.39	352.20
Min	349.06	349.07	349.35	349.64	349.59	349.76	349.60	349.38	349.25	349.15	349.06	348.99	348.99

Annual Max Momentary Gage Height 352.25 M (MSL), at 6.00 Hours, on Aug 23, 1998
Zero Gage at Bottom Elevation 346.57 M (MSL), River Bed 348.00 M (MSL)
Left Bank Elevation 357.03 M (MSL)
Right Bank Elevation 356.61 M (MSL), Drainage Area 385 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.74	0.17	4.67	10.88	1.99	4.84	1.95	1.31	1.47	0.41	0.31	0.17	
2	0.74	0.18	4.05	7.88	1.91	5.30	1.87	1.25	1.40	0.43	0.31	0.17	
3	0.76	0.18	3.75	8.79	1.79	5.06	1.83	1.19	1.37	0.45	0.29	0.17	
4	0.80	0.18	4.15	14.16	1.68	5.18	1.75	1.16	1.34	0.41	0.27	0.18	
5	0.92	0.19	5.06	15.60	1.61	5.00	1.71	1.13	1.31	0.41	0.26	0.16	
6	1.10	0.19	3.45	16.23	1.37	4.61	1.65	1.10	1.25	0.39	0.24	0.17	
7	1.10	0.29	3.22	14.97	2.95	5.24	1.57	1.07	1.19	0.41	0.23	0.16	
8	0.24	0.39	4.05	12.99	5.18	5.90	1.54	1.04	1.10	0.41	0.23	0.17	
9	0.20	0.45	2.82	9.77	10.19	9.35	1.79	1.01	0.98	0.41	0.21	0.17	
10	0.19	0.55	2.43	10.40	16.68	10.56	2.68	1.01	0.86	0.39	0.21	0.15	
11	0.19	0.65	2.19	9.49	15.06	9.28	4.25	0.98	0.78	0.39	0.21	0.15	
12	0.19	1.25	2.07	9.14	10.48	7.88	7.32	0.95	0.75	0.39	0.20	0.15	
13	0.18	3.13	1.95	8.09	9.70	6.62	7.74	0.92	0.73	0.39	0.19	0.14	
14	0.18	8.72	2.55	5.96	7.74	6.02	5.60	0.86	0.70	0.41	0.19	0.13	
15	0.17	5.36	1.75	5.42	6.90	11.20	3.45	0.80	0.68	0.39	0.19	0.12	
16	0.16	1.87	1.40	7.11	6.69	5.12	3.09	0.78	0.62	0.41	0.18	0.12	
17	0.16	1.71	1.28	5.24	6.14	4.78	2.55	0.78	0.60	0.41	0.18	0.13	
18	0.26	2.07	1.25	4.89	7.88	4.20	3.13	0.78	0.58	0.39	0.18	0.11	
19	2.11	4.67	1.13	4.20	8.02	4.25	7.32	0.75	0.58	0.41	0.18	0.10	
20	1.07	6.14	1.10	3.40	14.16	7.95	5.12	0.83	0.58	0.39	0.18	0.10	
21	1.22	4.35	1.01	3.00	18.75	7.39	3.60	1.25	0.55	0.41	0.17	0.10	
22	0.73	2.82	0.86	2.55	19.20	4.45	3.09	1.83	0.55	0.39	0.17	0.09	
23	0.53	2.11	0.89	2.43	18.84	4.10	2.78	2.23	0.55	0.35	0.17	0.10	
24	0.49	1.50	0.75	2.27	15.33	4.45	2.60	1.83	0.55	0.33	0.16	0.09	
25	0.45	1.31	0.70	2.11	14.61	3.85	2.23	1.61	0.53	0.32	0.16	11.92	
26	0.41	1.65	0.68	2.19	11.84	3.40	1.99	1.54	0.49	0.32	0.16	0.70	
27	0.37	2.27	0.78	2.55	9.56	3.09	1.83	1.31	0.47	0.31	0.16	0.60	
28	0.31	10.12	1.91	1.54	7.81	2.73	1.71	1.16	0.47	0.27	0.16	0.47	
29	0.21	5.84	7.88	1.75	6.69	2.31	1.61	1.19	0.45	0.27		0.41	
30	0.18	3.50	10.56	2.47	3.27	1.99	1.54	1.31	0.45	0.29		0.37	
31		2.60		2.15	5.30		1.40		0.45	0.31		0.35	
Total	16.36	76.41	80.34	209.62	269.32	166.10	92.29	34.96	24.38	11.67	5.75	18.12	1005.32 CMSDAY
Mean	0.55	2.46	2.68	6.76	8.69	5.54	2.98	1.17	0.79	0.38	0.21	0.58	2.75 CMS
Max	2.11	10.12	10.56	16.23	19.20	11.20	7.74	2.23	1.47	0.45	0.31	11.92	19.20 CMS
Min	0.16	0.17	0.68	1.54	1.37	1.99	1.40	0.75	0.45	0.27	0.16	0.09	0.09 CMS
Runoff	1.414	6.602	6.941	18.111	23.269	14.351	7.974	3.021	2.106	1.008	0.497	1.566	86.860 MCM

Momentary Peak 19.70 CMS, at 352.25 M (MSL), at 6.00 Hours, on Aug 23, 1998
Runoff Yield 7.15 Liters/Second/Square KM, Momentary Peak Yield 51.169 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

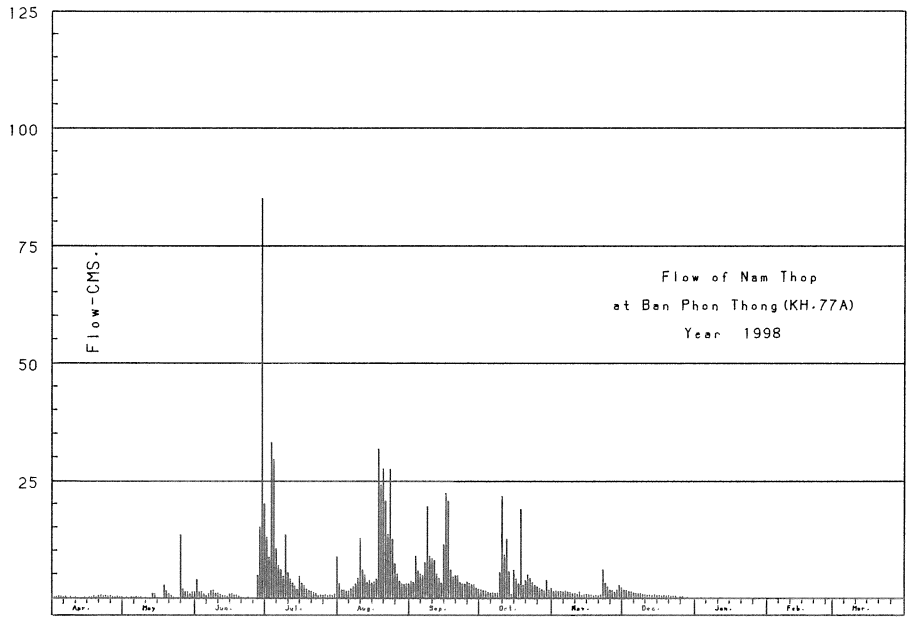
Nam Thop at Ban Phon Thong, Loei (Kh.77A)

Location	Lat. 17°-15'-51" N., Long. 101°-39'-26" E., on right bank at Ban Phon Thong, Amphoe Wang Saphung, Loei.
Drainage Area	142 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+260.98 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+268.630 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. This station situated about 2 kilometers downstream from Kh.77. Flow during Jan.12-Mar.31,99, discharge estimated by recession equation. Stage-discharge relation defined by 33 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	261.21	261.18	261.74	262.12	261.68	261.71	261.58	261.54	261.58	261.29	261.57	261.50	
2	261.20	261.17	261.53	261.97	261.59	261.70	261.57	261.54	261.56	261.30	261.57	261.50	
3	261.23	261.17	261.52	262.73	261.57	261.98	261.54	261.54	261.54	261.32	261.57	261.50	
4	261.22	261.17	261.47	262.64	261.55	261.85	261.52	261.53	261.52	261.31	261.57	261.50	
5	261.22	261.17	261.41	262.04	261.53	261.81	261.50	261.53	261.50	261.31	261.57	261.50	
6	261.21	261.17	261.46	261.90	261.61	261.79	261.49	261.54	261.47	261.31	261.57	261.46	
7	261.20	261.17	261.56	261.86	261.63	261.93	261.49	261.53	261.48	261.31	261.57	261.46	
8	261.19	261.16	261.56	261.78	261.68	262.34	261.48	261.50	261.47	261.31	261.57	261.46	
9	261.18	261.14	261.49	262.14	261.75	261.98	261.83	261.48	261.46	261.30	261.57	261.46	
10	261.17	261.14	261.47	261.83	262.11	261.96	262.41	261.47	261.43	261.29	261.57	261.45	
11	261.17	261.14	261.44	261.74	261.86	261.95	261.99	261.46	261.43	261.29	261.57	261.45	
12	261.17	261.32	261.42	261.69	261.80	261.81	262.11	261.51	261.42	261.34	261.57	261.45	
13	261.16	261.47	261.40	261.64	261.70	261.75	261.84	261.42	261.42	261.42	261.58	261.45	
14	261.16	261.46	261.39	261.60	261.72	261.69	261.44	261.43	261.43	261.32	261.59	261.45	
15	261.15	261.32	261.46	261.78	261.69	262.07	261.85	261.44	261.42	261.43	261.59	261.45	
16	261.15	261.27	261.45	261.69	261.70	262.43	261.74	261.44	261.41	261.41	261.59	261.45	
17	261.23	261.22	261.43	261.65	261.75	262.38	261.68	261.42	261.41	261.40	261.59	261.42	
18	261.25	261.66	261.41	261.60	262.70	261.86	262.32	261.41	261.41	261.44	261.59	261.42	
19	261.23	261.54	261.37	261.57	262.49	261.77	261.65	261.41	261.41	261.46	261.59	261.42	
20	261.29	261.46	261.36	261.53	262.59	261.80	261.73	261.41	261.40	261.46	261.59	261.42	
21	261.29	261.42	261.33	261.50	262.38	261.79	261.80	261.42	261.40	261.46	261.59	261.39	
22	261.27	261.36	261.33	261.49	262.14	261.70	261.76	261.86	261.38	261.46	261.59	261.39	
23	261.26	261.33	261.33	261.40	262.59	261.67	261.69	261.69	261.40	261.46	261.59	261.49	
24	261.26	261.29	261.31	261.44	262.11	261.68	261.66	261.63	261.40	261.46	261.59	261.49	
25	261.24	262.14	261.30	261.43	261.92	261.71	261.64	261.58	261.36	261.46	261.59	261.49	
26	261.23	261.60	261.29	261.43	261.81	261.68	261.61	261.55	261.35	261.46	261.59	261.50	
27	261.22	261.53	261.80	261.42	261.72	261.67	261.60	261.52	261.34	261.46	261.60	261.50	
28	261.21	261.51	262.19	261.42	261.67	261.66	261.54	261.57	261.33	261.47	261.60	261.50	
29	261.21	261.47	263.68	261.42	261.67	261.62	261.73	261.66	261.32	261.48		261.49	
30	261.18	261.51	262.36	261.45	261.67	261.59	261.56	261.62	261.32	261.49		261.49	
31		261.51		261.98	261.68		261.61		261.32	261.48		261.49	
Mean	261.21	261.36	261.58	261.74	261.87	261.84	261.71	261.52	261.42	261.39	261.58	261.46	
Max	261.29	262.14	263.68	262.73	262.70	262.43	262.41	261.86	261.58	261.49	261.60	261.50	263.68
Min	261.15	261.14	261.29	261.40	261.53	261.59	261.44	261.41	261.32	261.29	261.57	261.39	261.14

Annual Max Momentary Gage Height 263.79 M (MSL), at 6.00 Hours, on Jun 29, 1998
Zero Gage at Bottom Elevation 260.98 M (MSL), River Bed 260.99 M (MSL)
Left Bank Elevation 269.04 M (MSL)
Right Bank Elevation 268.64 M (MSL), Drainage Area 142 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.43	0.36	4.10	13.10	3.20	3.65	1.86	1.58	1.86	0.19	0.09	0.03	
2	0.40	0.34	1.51	8.75	1.93	3.50	1.79	1.58	1.72	0.20	0.09	0.03	
3	0.49	0.34	1.44	33.35	1.79	9.00	1.58	1.58	1.58	0.28	0.08	0.03	
4	0.46	0.34	1.09	29.60	1.65	6.00	1.44	1.51	1.44	0.24	0.08	0.03	
5	0.46	0.34	0.67	10.70	1.51	5.20	1.30	1.51	1.30	0.24	0.07	0.03	
6	0.43	0.34	1.02	7.00	2.15	4.85	1.23	1.58	1.09	0.24	0.07	0.02	
7	0.40	0.34	1.72	6.20	2.45	7.75	1.23	1.51	1.16	0.24	0.07	0.02	
8	0.38	0.32	1.72	4.70	3.20	19.70	1.16	1.30	1.09	0.24	0.07	0.02	
9	0.36	0.28	1.23	13.70	4.25	9.00	5.60	1.16	1.02	0.20	0.06	0.02	
10	0.34	0.28	1.09	5.60	12.80	8.50	21.80	1.09	0.81	0.19	0.06	0.02	
11	0.34	0.28	0.88	4.10	6.20	8.25	9.25	1.02	0.81	0.19	0.06	0.02	
12	0.34	0.28	0.74	3.35	5.00	5.20	12.80	1.37	0.74	0.19	0.06	0.02	
13	0.32	1.09	0.60	2.60	3.50	4.25	5.80	0.74	0.74	0.18	0.05	0.02	
14	0.32	1.02	0.56	2.00	3.80	3.35	0.88	0.81	0.81	0.18	0.05	0.02	
15	0.30	0.28	1.02	4.70	3.35	11.60	6.00	0.88	0.74	0.17	0.05	0.02	
16	0.30	0.15	0.95	3.35	3.50	22.40	4.10	0.88	0.67	0.16	0.05	0.02	
17	0.49	0.08	0.81	2.75	4.25	20.90	3.20	0.74	0.67	0.16	0.05	0.02	
18	0.55	2.90	0.67	2.00	32.00	6.20	19.10	0.67	0.67	0.15	0.05	0.02	
19	0.49	1.58	0.48	1.79	24.20	4.55	2.75	0.67	0.67	0.14	0.04	0.01	
20	0.67	1.02	0.44	1.51	27.65	5.00	3.95	0.67	0.60	0.14	0.04	0.01	
21	0.67	0.74	0.32	1.30	20.90	4.85	5.00	0.74	0.60	0.13	0.04	0.01	
22	0.61	0.44	0.32	1.23	13.70	3.50	4.40	6.20	0.52	0.13	0.04	0.01	
23	0.58	0.32	0.32	0.60	27.65	3.05	3.35	3.35	0.60	0.12	0.04	0.01	
24	0.58	0.19	0.24	0.88	12.80	3.20	2.90	2.45	0.60	0.12	0.04	0.01	
25	0.52	13.70	0.20	0.81	7.50	3.65	2.60	1.86	0.44	0.11	0.03	0.01	
26	0.49	2.00	0.19	0.81	5.20	3.20	2.15	1.65	0.40	0.11	0.03	0.01	
27	0.46	1.51	5.00	0.74	3.80	3.05	2.00	1.44	0.36	0.11	0.03	0.01	
28	0.43	1.37	15.20	0.74	3.05	2.90	1.58	1.79	0.32	0.10	0.03	0.01	
29	0.43	1.09	85.20	0.74	3.05	2.30	3.95	2.90	0.28	0.10		0.01	
30	0.36	1.37	20.30	0.95	3.05	1.93	1.72	2.30	0.28	0.09		0.01	
31		1.37		9.00	3.20		2.15		0.28	0.09		0.01	
Total	13.40	36.06	150.03	178.65	252.28	200.48	138.62	47.53	24.87	5.13	1.52	0.54	1049.11 CMSDAY
Mean	0.45	1.16	5.00	5.76	8.14	6.68	4.47	1.58	0.80	0.17	0.05	0.02	2.87 CMS
Max	0.67	13.70	85.20	33.35	32.00	22.40	21.80	6.20	1.86	0.28	0.09	0.03	85.20 CMS
Min	0.30	0.08	0.19	0.60	1.51	1.93	0.88	0.67	0.28	0.09	0.03	0.01	0.01 CMS
Runoff	1.158	3.116	12.963	15.435	21.797	17.321	11.977	4.107	2.149	0.443	0.131	0.047	90.643 MCM

Momentary Peak 92.35 CMS, at 263.79 M (MSL), at 6.00 Hours, on Jun 29, 1998

Runoff Yield 20.24 Liters/Second/Square KM, Momentary Peak Yield 650.352 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

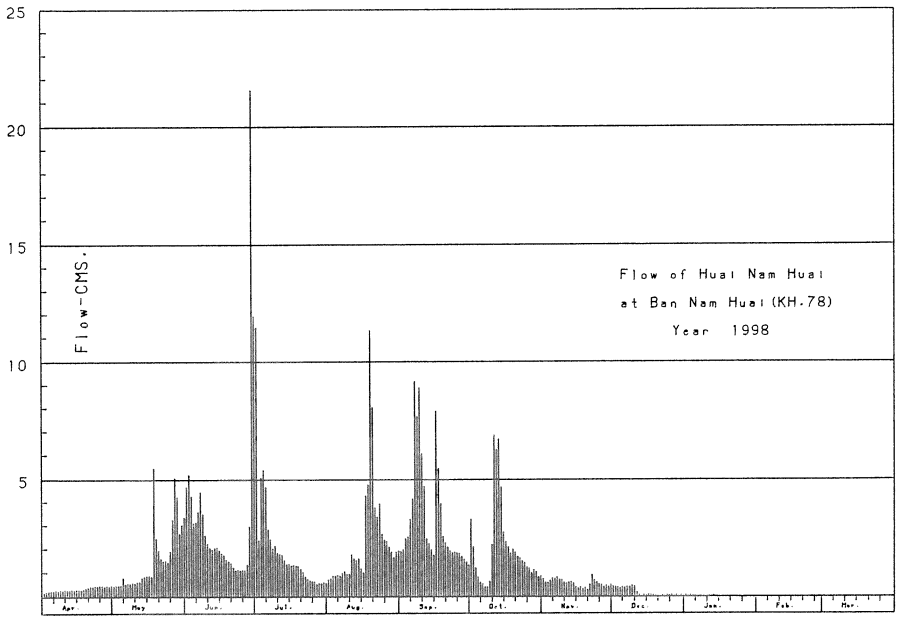
Huai Nam Huai at Ban Nam Huai, Loei (Kh.78)

Location	Lat. 17°-22'-58" N., Long. 101°-42'-45" E., on left bank at the bridge of Amphoe Wang Saphung-Amphoe Muang Highway, Amphoe Muang, Loei.
Drainage Area	869 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+246.22 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the footpath of the bridge.
Elevation	+256.495 m.(M.S.L.)
Gage Reading Frequency	5- time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The local weir situated about 700 meters downstream from the gage site. Stage-discharge relation defined by 3 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	247.89	248.17	249.11	249.90	248.63	248.89	249.13	248.64	248.55	248.39	248.30	247.79	
2	247.91	248.18	249.19	248.98	248.65	248.90	248.93	248.61	248.55	248.39	248.29	247.78	
3	247.93	248.18	249.06	249.31	248.67	249.00	248.75	248.60	248.54	248.39	248.29	247.77	
4	247.94	248.18	248.89	249.34	248.68	249.01	248.66	248.63	248.53	248.38	248.28	247.75	
5	247.96	248.34	248.90	249.27	248.68	249.13	248.61	248.65	248.54	248.38	248.27	247.74	
6	247.97	248.23	248.96	249.08	248.68	249.22	248.58	248.65	248.54	248.38	248.27	247.73	
7	247.97	248.23	249.08	248.99	248.70	249.72	248.55	248.66	248.54	248.38	248.26	247.72	
8	247.98	248.24	248.95	248.91	248.72	249.57	248.54	248.64	248.55	248.35	248.26	247.74	
9	247.99	248.24	248.82	248.94	248.69	249.69	248.62	248.63	248.56	248.32	248.26	247.74	
10	248.00	248.25	248.75	248.88	248.70	249.41	248.95	248.61	248.56	248.32	248.25	247.73	
11	248.00	248.26	248.72	248.86	248.86	249.27	249.49	248.59	248.46	248.35	248.25	247.73	
12	248.00	248.27	248.70	248.86	248.83	249.00	249.43	248.61	248.39	248.38	248.24	247.72	
13	248.00	248.33	248.72	248.81	248.81	248.95	249.47	248.61	248.38	248.37	248.24	247.72	
14	248.00	248.36	248.72	248.78	248.83	248.90	249.27	248.60	248.39	248.36	248.25	247.72	
15	248.00	248.36	248.70	248.78	248.74	248.86	249.05	248.54	248.40	248.34	248.26	247.70	
16	248.00	248.36	248.66	248.77	248.71	249.59	248.97	248.53	248.40	248.33	248.26	247.71	
17	248.01	248.36	248.65	248.77	249.23	249.35	248.93	248.54	248.41	248.33	248.25	247.70	
18	248.02	249.23	248.59	248.77	249.28	249.20	248.87	248.52	248.39	248.34	248.24	247.70	
19	248.09	248.80	248.58	248.76	249.89	249.02	248.91	248.53	248.39	248.35	248.23	247.69	
20	248.12	248.69	248.54	248.74	249.61	248.96	248.88	248.51	248.38	248.34	248.22	247.69	
21	248.13	248.61	248.49	248.71	249.18	248.93	248.85	248.57	248.39	248.34	248.10	247.69	
22	248.15	248.57	248.45	248.67	249.14	248.89	248.83	248.69	248.38	248.33	248.00	247.73	
23	248.16	248.57	248.45	248.64	249.20	248.88	248.81	248.63	248.38	248.33	247.87	247.81	
24	248.16	248.56	248.45	248.63	249.04	248.88	248.79	248.61	248.39	248.34	247.85	247.82	
25	248.16	248.68	248.44	248.62	248.99	248.88	248.76	248.59	248.39	248.32	247.81	247.83	
26	248.16	248.91	248.44	248.61	248.97	248.87	248.74	248.57	248.39	248.32	247.80	247.83	
27	248.16	249.17	248.53	248.59	248.93	248.85	248.71	248.55	248.39	248.33	247.80	247.83	
28	248.16	249.05	248.87	248.59	248.88	248.82	248.73	248.56	248.39	248.34	247.80	247.84	
29	248.16	248.83	250.48	248.60	248.84	248.80	248.72	248.55	248.39	248.33		247.84	
30	248.16	248.88	249.93	248.60	248.88	248.77	248.67	248.57	248.39	248.32		247.84	
31		248.93		248.60	248.89		248.67		248.39	248.31		247.83	
Mean	248.04	248.52	248.83	248.85	248.92	249.07	248.87	248.59	248.44	248.35	248.15	247.76	
Max	248.16	249.23	250.48	249.90	249.89	249.72	249.49	248.69	248.56	248.39	248.30	247.84	250.48
Min	247.89	248.17	248.44	248.59	248.63	248.77	248.54	248.51	248.38	248.31	247.80	247.69	247.69

Annual Max Momentary Gage Height 251.32 M (MSL), at 18.00 Hours, on Jun 29, 1998
Zero Gage at Bottom Elevation 246.22 M (MSL), River Bed 247.51 M (MSL)
Left Bank Elevation 256.34 M (MSL)
Right Bank Elevation 256.46 M (MSL), Drainage Area 869 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.19	0.47	4.67	11.50	0.72	1.95	3.30	0.76	0.45	0.09	0.00	0.00	
2	0.21	0.48	5.23	2.40	0.80	2.00	2.15	0.64	0.45	0.09	0.00	0.00	
3	0.23	0.48	4.32	5.10	0.88	2.50	1.25	0.60	0.42	0.09	0.00	0.00	
4	0.24	0.48	3.13	5.40	0.92	2.55	0.84	0.72	0.39	0.08	0.00	0.00	
5	0.26	0.82	3.20	4.70	0.92	3.30	0.64	0.80	0.42	0.08	0.00	0.00	
6	0.27	0.56	3.62	2.90	0.92	4.20	0.54	0.80	0.42	0.08	0.00	0.00	
7	0.27	0.56	4.46	2.45	1.00	9.20	0.45	0.84	0.42	0.08	0.00	0.00	
8	0.28	0.58	3.55	2.05	1.10	7.70	0.42	0.76	0.45	0.05	0.00	0.00	
9	0.29	0.58	2.64	2.20	0.96	8.90	0.68	0.72	0.48	0.02	0.00	0.00	
10	0.30	0.60	2.25	1.90	1.00	6.10	2.25	0.64	0.48	0.02	0.00	0.00	
11	0.30	0.62	2.10	1.80	1.80	4.70	6.90	0.57	0.22	0.05	0.00	0.00	
12	0.30	0.64	2.00	1.80	1.65	2.50	6.30	0.64	0.09	0.08	0.00	0.00	
13	0.30	0.79	2.10	1.55	1.55	2.25	6.70	0.64	0.08	0.07	0.00	0.00	
14	0.30	0.88	2.10	1.40	1.65	2.00	4.70	0.60	0.09	0.06	0.00	0.00	
15	0.30	0.88	2.00	1.40	1.20	1.80	2.75	0.42	0.10	0.04	0.00	0.00	
16	0.30	0.88	1.84	1.35	1.05	7.90	2.35	0.39	0.10	0.03	0.00	0.00	
17	0.31	0.88	1.80	1.35	4.30	5.50	2.15	0.42	0.12	0.03	0.00	0.00	
18	0.32	5.51	1.57	1.35	4.80	4.00	1.85	0.36	0.09	0.04	0.00	0.00	
19	0.39	2.50	1.54	1.30	11.35	2.60	2.05	0.39	0.09	0.05	0.00	0.00	
20	0.42	1.96	1.42	1.20	8.10	2.30	1.90	0.33	0.08	0.04	0.00	0.00	
21	0.43	1.64	1.27	1.05	3.80	2.15	1.75	0.51	0.09	0.04	0.00	0.00	
22	0.45	1.51	1.15	0.88	3.40	1.95	1.65	0.96	0.08	0.03	0.00	0.00	
23	0.46	1.51	1.15	0.76	4.00	1.90	1.55	0.72	0.08	0.03	0.00	0.00	
24	0.46	1.48	1.15	0.72	2.70	1.90	1.45	0.64	0.09	0.04	0.00	0.00	
25	0.46	1.92	1.12	0.68	2.45	1.90	1.30	0.57	0.09	0.02	0.00	0.00	
26	0.46	3.27	1.12	0.64	2.35	1.85	1.20	0.51	0.09	0.02	0.00	0.00	
27	0.46	5.09	1.39	0.57	2.15	1.75	1.05	0.45	0.09	0.03	0.00	0.00	
28	0.46	4.25	2.99	0.57	1.90	1.60	1.15	0.48	0.09	0.04	0.00	0.00	
29	0.46	2.71	21.60	0.60	1.70	1.50	1.10	0.45	0.09	0.03		0.00	
30	0.46	3.06	11.95	0.60	1.90	1.35	0.88	0.51	0.09	0.02		0.00	
31		3.41		0.60	1.95		0.88		0.09	0.01		0.00	
Total	10.34	51.00	100.43	62.77	74.97	101.80	64.13	17.84	6.41	1.48	0.00	0.00	491.17 CMSDAY
Mean	0.34	1.65	3.35	2.02	2.42	3.39	2.07	0.59	0.21	0.05	0.00	0.00	1.35 CMS
Max	0.46	5.51	21.60	11.50	11.35	9.20	6.90	0.96	0.48	0.09	0.00	0.00	21.60 CMS
Min	0.19	0.47	1.12	0.57	0.72	1.35	0.42	0.33	0.08	0.01	0.00	0.00	0.00 CMS
Runoff	0.893	4.406	8.677	5.423	6.477	8.796	5.541	1.541	0.554	0.128	0.000	0.000	42.437 MCM

Momentary Peak 40.50 CMS, at 251.32 M (MSL), at 18.00 Hours, on Jun 29, 1998
Runoff Yield 1.55 Liters/Second/Square KM, Momentary Peak Yield 46.605 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

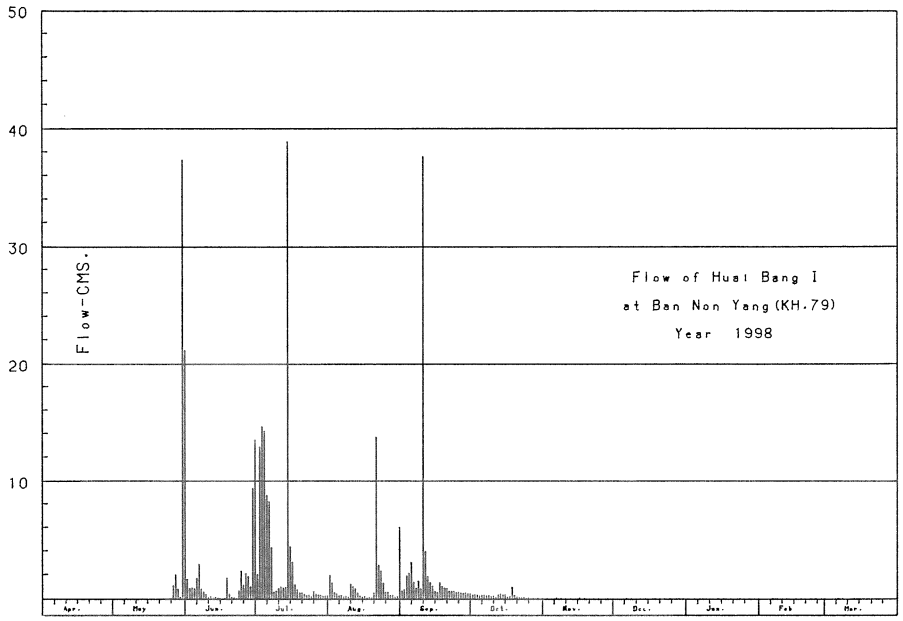
Huai Bang I at Ban Non Yang, Muk Dahan (Kh.79)

Location	Lat.16°-28'-49" N., Long. 104°-20'-08" E., on right bank at the bridge on highway, Ban Non Yang, Amphoe Nong Sung, Muk Dahan.
Drainage Area	110 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+186.13 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+195.802 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 51 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	186.11	186.10	186.69	186.77	186.77	186.45	186.35	186.22	186.18	186.17	186.14	186.13	
2	186.11	186.10	186.51	187.86	186.62	186.47	186.35	186.22	186.18	186.17	186.14	186.13	
3	186.11	186.10	186.51	187.98	186.41	186.76	186.35	186.22	186.18	186.16	186.14	186.14	
4	186.11	186.10	186.50	187.95	186.36	186.79	186.34	186.22	186.18	186.16	186.15	186.15	
5	186.11	186.10	186.72	187.57	186.33	186.99	186.34	186.22	186.18	186.15	186.15	186.16	
6	186.11	186.10	186.96	187.52	186.33	186.63	186.33	186.22	186.18	186.15	186.15	186.17	
7	186.11	186.10	186.48	187.15	186.31	186.51	186.33	186.22	186.18	186.15	186.16	186.17	
8	186.11	186.10	186.42	186.42	186.31	186.67	186.32	186.22	186.18	186.15	186.16	186.18	
9	186.11	186.10	186.35	186.43	186.30	186.48	186.31	186.22	186.18	186.15	186.16	186.18	
10	186.11	186.10	186.30	186.50	186.61	188.99	186.31	186.22	186.18	186.15	186.16	186.18	
11	186.11	186.10	186.30	186.53	186.54	187.11	186.30	186.22	186.18	186.14	186.16	186.17	
12	186.11	186.10	186.29	186.52	186.50	186.74	186.35	186.22	186.18	186.14	186.17	186.17	
13	186.11	186.10	186.27	186.52	186.40	186.64	186.36	186.22	186.18	186.14	186.17	186.17	
14	186.11	186.10	186.26	189.03	186.31	186.55	186.35	186.21	186.18	186.14	186.17	186.16	
15	186.11	186.09	186.23	187.16	186.30	186.44	186.34	186.21	186.18	186.14	186.16	186.16	
16	186.10	186.12	186.20	186.98	186.29	186.40	186.30	186.21	186.18	186.14	186.15	186.15	
17	186.10	186.12	186.19	186.60	186.27	186.64	186.30	186.21	186.18	186.14	186.15	186.15	
18	186.10	186.11	186.71	186.46	186.26	186.54	186.54	186.21	186.18	186.14	186.15	186.14	
19	186.10	186.10	186.37	186.40	186.28	186.52	186.33	186.21	186.18	186.14	186.14	186.14	
20	186.10	186.09	186.25	186.39	186.38	186.49	186.31	186.20	186.18	186.14	186.14	186.13	
21	186.10	186.09	186.23	186.37	187.92	186.45	186.29	186.20	186.18	186.14	186.14	186.13	
22	186.10	186.09	186.23	186.34	186.94	186.44	186.27	186.20	186.18	186.14	186.14	186.14	
23	186.10	186.09	186.45	186.33	186.83	186.42	186.26	186.20	186.17	186.14	186.14	186.15	
24	186.10	186.09	186.83	186.31	186.63	186.41	186.25	186.19	186.17	186.14	186.14	186.15	
25	186.10	186.09	186.57	186.42	186.40	186.40	186.25	186.19	186.17	186.14	186.14	186.14	
26	186.10	186.56	186.79	186.37	186.40	186.39	186.24	186.18	186.17	186.14	186.14	186.14	
27	186.10	186.78	186.75	186.35	186.34	186.39	186.23	186.18	186.17	186.14	186.13	186.14	
28	186.10	186.49	186.55	186.33	186.33	186.39	186.22	186.18	186.17	186.14	186.13	186.15	
29	186.10	186.25	187.62	186.32	186.30	186.38	186.22	186.18	186.17	186.14		186.15	
30	186.10	188.98	187.90	186.31	186.29	186.36	186.22	186.18	186.17	186.14		186.15	
31		188.36		186.31	187.33		186.22		186.17	186.14		186.15	
Mean	186.11	186.32	186.55	186.79	186.50	186.63	186.31	186.21	186.18	186.15	186.15	186.15	
Max	186.11	188.98	187.90	189.03	187.92	188.99	186.54	186.22	186.18	186.17	186.17	186.18	189.03
Min	186.10	186.09	186.19	186.31	186.26	186.36	186.22	186.18	186.17	186.14	186.13	186.13	186.09

Annual Max Momentary Gage Height 190.13 M (MSL), at 10.00 Hours, on Jul 14, 1998
Zero Gage at Bottom Elevation 186.13 M (MSL), River Bed 185.78 M (MSL)
Left Bank Elevation 195.56 M (MSL)
Right Bank Elevation 195.55 M (MSL), Drainage Area 110 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.01	0.01	1.66	2.05	2.05	0.72	0.38	0.08	0.04	0.04	0.03	0.02	
2	0.01	0.01	0.93	12.90	1.34	0.79	0.38	0.08	0.04	0.04	0.03	0.02	
3	0.01	0.01	0.93	14.70	0.58	2.00	0.38	0.08	0.04	0.03	0.03	0.03	
4	0.01	0.01	0.90	14.25	0.41	2.15	0.34	0.08	0.04	0.03	0.03	0.03	
5	0.01	0.01	1.80	8.84	0.30	3.15	0.34	0.08	0.04	0.03	0.03	0.03	
6	0.01	0.01	3.00	8.24	0.30	1.39	0.30	0.08	0.04	0.03	0.03	0.04	
7	0.01	0.01	0.83	4.40	0.23	0.93	0.30	0.08	0.04	0.03	0.03	0.04	
8	0.01	0.01	0.62	0.62	0.23	1.56	0.27	0.08	0.04	0.03	0.03	0.04	
9	0.01	0.01	0.38	0.65	0.20	0.83	0.23	0.08	0.04	0.03	0.03	0.04	
10	0.01	0.01	0.20	0.90	1.29	37.70	0.23	0.08	0.04	0.03	0.03	0.04	
11	0.01	0.01	0.20	1.00	1.04	4.08	0.20	0.08	0.04	0.03	0.03	0.04	
12	0.01	0.01	0.18	0.97	0.90	1.90	0.38	0.08	0.04	0.03	0.04	0.04	
13	0.01	0.01	0.16	0.97	0.55	1.43	0.41	0.08	0.04	0.03	0.04	0.04	
14	0.01	0.01	0.14	38.90	0.23	1.07	0.38	0.07	0.04	0.03	0.04	0.03	
15	0.01	0.01	0.09	4.48	0.20	0.69	0.34	0.07	0.04	0.03	0.03	0.03	
16	0.01	0.02	0.05	3.10	0.18	0.55	0.20	0.07	0.04	0.03	0.03	0.03	
17	0.01	0.02	0.05	1.25	0.16	1.43	0.20	0.07	0.04	0.03	0.03	0.03	
18	0.01	0.01	1.75	0.76	0.14	1.04	1.04	0.07	0.04	0.03	0.03	0.03	
19	0.01	0.01	0.44	0.55	0.17	0.97	0.30	0.07	0.04	0.03	0.03	0.03	
20	0.01	0.01	0.13	0.51	0.48	0.87	0.23	0.05	0.04	0.03	0.03	0.02	
21	0.01	0.01	0.09	0.44	13.80	0.72	0.18	0.05	0.04	0.03	0.03	0.02	
22	0.01	0.01	0.09	0.34	2.90	0.69	0.16	0.05	0.04	0.03	0.03	0.03	
23	0.01	0.01	0.72	0.30	2.35	0.62	0.14	0.05	0.04	0.03	0.03	0.03	
24	0.01	0.01	2.35	0.23	1.39	0.58	0.13	0.05	0.04	0.03	0.03	0.03	
25	0.01	0.01	1.15	0.62	0.55	0.55	0.13	0.05	0.04	0.03	0.03	0.03	
26	0.01	1.11	2.15	0.44	0.55	0.51	0.11	0.04	0.04	0.03	0.03	0.03	
27	0.01	2.10	1.95	0.38	0.34	0.51	0.09	0.04	0.04	0.03	0.02	0.03	
28	0.01	0.87	1.07	0.30	0.30	0.51	0.08	0.04	0.04	0.03	0.02	0.03	
29	0.01	0.13	9.46	0.27	0.20	0.48	0.08	0.04	0.04	0.03		0.03	
30	0.01	37.40	13.50	0.23	0.18	0.41	0.08	0.04	0.04	0.03		0.03	
31		21.20		0.23	6.10		0.08		0.04	0.03		0.03	
Total	0.30	63.08	46.97	123.82	39.64	70.83	8.09	1.96	1.24	0.95	0.85	0.97	358.70 CMSDAY
Mean	0.01	2.03	1.57	3.99	1.28	2.36	0.26	0.07	0.04	0.03	0.03	0.03	0.98 CMS
Max	0.01	37.40	13.50	38.90	13.80	37.70	1.04	0.08	0.04	0.04	0.04	0.04	38.90 CMS
Min	0.01	0.01	0.05	0.23	0.14	0.41	0.08	0.04	0.04	0.03	0.02	0.02	0.01 CMS
Runoff	0.026	5.450	4.058	10.698	3.425	6.120	0.699	0.169	0.107	0.082	0.073	0.084	30.992 MCM

Momentary Peak 78.20 CMS, at 190.13 M (MSL), at 10.00 Hours, on Jul 14, 1998
Runoff Yield 8.93 Liters/Second/Square KM, Momentary Peak Yield 710.909 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

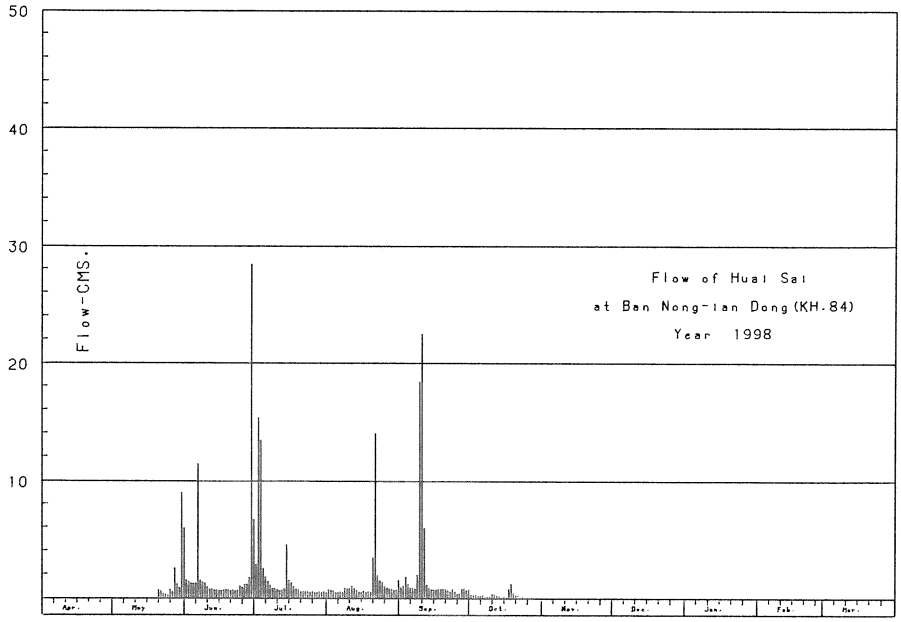
Huai Sai at Ban Nong-ian Dong, Muk Dahan (Kh.84)

Location	Lat. 16°-32'-15" N., Long. 104°-24'-20" E., on left bank at the bridge of Ban Huai Sai-Ban Nong-ian Dong Road, Amphoe Kham Cha-I, Muk Dahan.
Drainage Area	48 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+184.73 m.(M.S.L.)
Bench Mark	B.M.-Highways Department.
Location	On left bank downstream side at the footpath of the bridge.
Elevation	+190.766 m.(M.S.L.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	185.32	185.34	185.68	185.86	185.48	185.54	185.37	185.31	185.26	185.24	185.23	185.22	
2	185.32	185.34	185.65	186.41	185.48	185.56	185.37	185.31	185.26	185.24	185.22	185.22	
3	185.32	185.34	185.63	186.35	185.46	185.77	185.37	185.31	185.26	185.24	185.22	185.22	
4	185.32	185.34	185.61	185.84	185.43	185.60	185.36	185.30	185.26	185.24	185.22	185.22	
5	185.32	185.35	185.63	185.76	185.43	185.53	185.35	185.29	185.26	185.24	185.22	185.22	
6	185.32	185.35	186.28	185.67	185.43	185.51	185.36	185.29	185.26	185.24	185.22	185.22	
7	185.32	185.35	185.69	185.58	185.43	185.51	185.34	185.27	185.26	185.24	185.22	185.22	
8	185.35	185.34	185.63	185.52	185.51	185.80	185.33	185.27	185.26	185.24	185.22	185.22	
9	185.34	185.34	185.63	185.51	185.51	186.50	185.33	185.27	185.25	185.24	185.22	185.22	
10	185.34	185.34	185.53	185.49	185.50	186.60	185.40	185.27	185.25	185.24	185.22	185.22	
11	185.34	185.34	185.50	185.47	185.56	186.07	185.37	185.27	185.25	185.24	185.22	185.22	
12	185.33	185.34	185.49	185.47	185.52	185.60	185.36	185.27	185.25	185.24	185.22	185.22	
13	185.33	185.34	185.48	185.51	185.46	185.51	185.33	185.27	185.24	185.24	185.22	185.22	
14	185.33	185.34	185.47	185.97	185.44	185.50	185.33	185.27	185.24	185.24	185.22	185.22	
15	185.33	185.34	185.47	185.68	185.43	185.48	185.33	185.27	185.25	185.24	185.22	185.22	
16	185.33	185.34	185.47	185.64	185.44	185.49	185.33	185.27	185.25	185.24	185.22	185.22	
17	185.37	185.35	185.46	185.54	185.43	185.49	185.49	185.27	185.25	185.24	185.22	185.22	
18	185.36	185.35	185.49	185.51	185.43	185.51	185.62	185.27	185.25	185.24	185.22	185.22	
19	185.35	185.47	185.47	185.47	185.43	185.50	185.41	185.27	185.25	185.24	185.22	185.22	
20	185.44	185.47	185.47	185.45	185.90	185.50	185.37	185.27	185.24	185.23	185.22	185.22	
21	185.37	185.46	185.47	185.44	186.37	185.46	185.35	185.27	185.24	185.23	185.22	185.22	
22	185.36	185.40	185.46	185.44	185.79	185.45	185.33	185.27	185.24	185.23	185.22	185.23	
23	185.35	185.37	185.46	185.43	185.69	185.49	185.33	185.27	185.24	185.23	185.22	185.23	
24	185.35	185.37	185.57	185.43	185.64	185.45	185.32	185.27	185.24	185.23	185.22	185.23	
25	185.35	185.48	185.54	185.43	185.55	185.40	185.31	185.26	185.24	185.23	185.22	185.23	
26	185.35	185.44	185.59	185.43	185.53	185.39	185.31	185.26	185.24	185.23	185.22	185.23	
27	185.35	185.84	185.61	185.43	185.51	185.51	185.31	185.26	185.24	185.23	185.22	185.23	
28	185.35	185.60	185.74	185.43	185.49	185.50	185.31	185.26	185.24	185.23	185.22	185.23	
29	185.34	185.53	186.73	185.43	185.48	185.48	185.30	185.26	185.24	185.23		185.23	
30	185.34	186.20	186.11	185.43	185.47	185.48	185.30	185.26	185.24	185.23		185.22	
31		186.07		185.43	185.68		185.30		185.24	185.23		185.22	
Mean	185.34	185.45	185.63	185.60	185.55	185.61	185.35	185.27	185.25	185.24	185.22	185.22	
Max	185.44	186.20	186.73	186.41	186.37	186.60	185.62	185.31	185.26	185.24	185.23	185.23	186.73
Min	185.32	185.34	185.46	185.43	185.43	185.39	185.30	185.26	185.24	185.23	185.22	185.22	185.22

Annual Max Momentary Gage Height 187.37 M (MSL), at 6.00 Hours, on Jun 29, 1998
Zero Gage at Bottom Elevation 184.73 M (MSL), River Bed 183.23 M (MSL)
Left Bank Elevation 190.52 M (MSL)
Right Bank Elevation 190.43 M (MSL), Drainage Area 48 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	1.53	2.90	0.75	0.99	0.32	0.09	0.03	0.02	0.01	0.01	
2	0.00	0.00	1.41	15.35	0.75	1.06	0.32	0.09	0.03	0.02	0.01	0.01	
3	0.00	0.00	1.34	13.50	0.67	1.88	0.32	0.09	0.03	0.02	0.01	0.01	
4	0.00	0.00	1.26	2.60	0.56	1.22	0.28	0.05	0.03	0.02	0.01	0.01	
5	0.00	0.00	1.34	1.84	0.56	0.95	0.25	0.04	0.03	0.02	0.01	0.01	
6	0.00	0.00	11.40	1.49	0.56	0.87	0.28	0.04	0.03	0.02	0.01	0.01	
7	0.00	0.00	1.57	1.14	0.56	0.87	0.21	0.04	0.03	0.02	0.01	0.01	
8	0.00	0.00	1.34	0.91	0.87	2.00	0.17	0.04	0.03	0.02	0.01	0.01	
9	0.00	0.00	1.34	0.87	0.87	18.50	0.17	0.04	0.03	0.02	0.01	0.01	
10	0.00	0.00	0.95	0.79	0.83	22.50	0.44	0.04	0.03	0.02	0.01	0.01	
11	0.00	0.00	0.83	0.71	1.06	6.05	0.32	0.04	0.03	0.02	0.01	0.01	
12	0.00	0.00	0.79	0.71	0.91	1.22	0.28	0.04	0.03	0.02	0.01	0.01	
13	0.00	0.00	0.75	0.87	0.67	0.87	0.17	0.04	0.02	0.02	0.01	0.01	
14	0.00	0.00	0.71	4.55	0.60	0.83	0.17	0.04	0.02	0.02	0.01	0.01	
15	0.00	0.00	0.71	1.53	0.56	0.75	0.17	0.04	0.03	0.02	0.01	0.01	
16	0.00	0.00	0.71	1.38	0.60	0.79	0.17	0.04	0.03	0.02	0.01	0.01	
17	0.00	0.00	0.67	0.99	0.56	0.79	0.79	0.04	0.03	0.02	0.01	0.01	
18	0.00	0.00	0.79	0.87	0.56	0.87	1.30	0.04	0.03	0.02	0.01	0.01	
19	0.00	0.00	0.71	0.71	0.56	0.83	0.48	0.04	0.03	0.02	0.01	0.01	
20	0.00	0.71	0.71	0.63	3.50	0.83	0.32	0.04	0.02	0.01	0.01	0.01	
21	0.00	0.67	0.71	0.60	14.10	0.67	0.25	0.04	0.02	0.01	0.01	0.01	
22	0.00	0.44	0.67	0.60	1.96	0.63	0.17	0.04	0.02	0.01	0.01	0.01	
23	0.00	0.32	0.67	0.56	1.57	0.79	0.17	0.04	0.02	0.01	0.01	0.01	
24	0.00	0.32	1.10	0.56	1.38	0.63	0.13	0.04	0.02	0.01	0.01	0.01	
25	0.00	0.75	0.99	0.56	1.02	0.44	0.09	0.03	0.02	0.01	0.01	0.01	
26	0.00	0.60	1.18	0.56	0.95	0.40	0.09	0.03	0.02	0.01	0.01	0.01	
27	0.00	2.60	1.26	0.56	0.87	0.87	0.09	0.03	0.02	0.01	0.01	0.01	
28	0.00	1.22	1.77	0.56	0.79	0.83	0.09	0.03	0.02	0.01	0.01	0.01	
29	0.00	0.95	28.50	0.56	0.75	0.75	0.05	0.03	0.02	0.01		0.01	
30	0.00	9.00	6.75	0.56	0.71	0.75	0.05	0.03	0.02	0.01		0.01	
31		6.05		0.56	1.53		0.05		0.02	0.01		0.01	
Total	0.00	23.63	74.46	60.58	42.19	71.43	8.16	1.30	0.79	0.50	0.28	0.31	283.63 CMSDAY
Mean	0.00	0.76	2.48	1.95	1.36	2.38	0.26	0.04	0.03	0.02	0.01	0.01	0.78 CMS
Max	0.00	9.00	28.50	15.35	14.10	22.50	1.30	0.09	0.03	0.02	0.01	0.01	28.50 CMS
Min	0.00	0.00	0.67	0.56	0.56	0.40	0.05	0.03	0.02	0.01	0.01	0.01	0.00 CMS
Runoff	0.000	2.042	6.433	5.234	3.645	6.172	0.705	0.112	0.068	0.043	0.024	0.027	24.506 MCM

Momentary Peak 75.15 CMS, at 187.37 M (MSL), at 6.00 Hours, on Jun 29, 1998
Runoff Yield 16.19 Liters/Second/Square KM, Momentary Peak Yield 1565.625 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

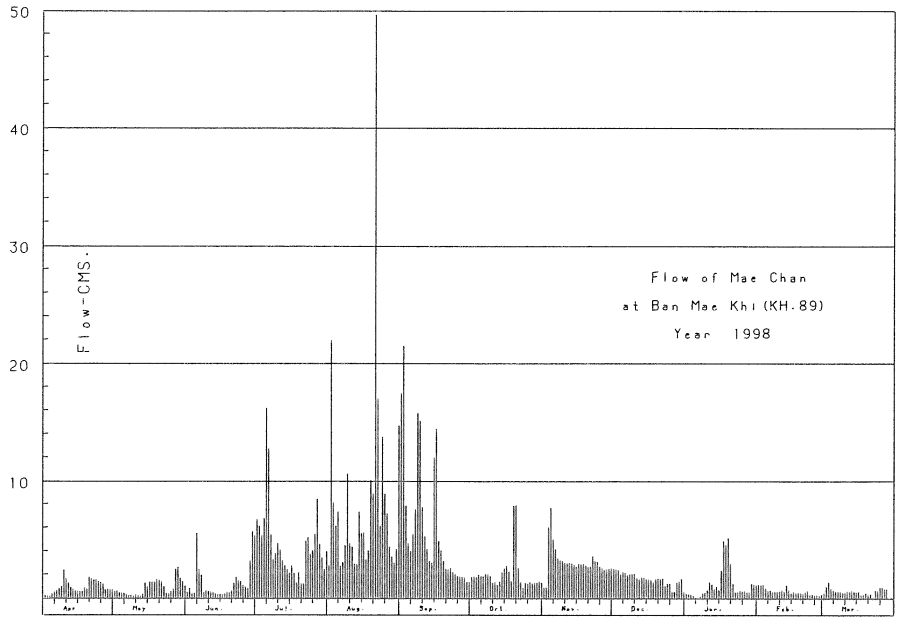
Nam Mae Chan at Ban Mae Khi, Chiang Rai (Kh.89)

Location	Lat. 20°-09'-20" N., Long. 90°-51'-44" E., on left bank at the bridge of Mae Chan - Mae Sai Highway, Tambon Pa Sang, Amphoe Mae Chan, Chiang Rai.
Drainage Area	255 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Temporary.
Location	On left bank at the footpath of the bridge.
Elevation	+5.470 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1993 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The local weir situated about 300 meters downstream from the gage site and flow effected by the bridge of Chiang Rai-Mae Sai highway construction. Stage-discharge relation defined by 41 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.30	0.27	0.24	0.86	0.56	1.25	0.45	0.32	0.53	0.21	0.36	0.23	
2	0.25	0.27	0.31	0.83	1.36	1.35	0.45	0.33	0.52	0.21	0.36	0.33	
3	0.25	0.24	0.22	0.77	0.94	0.93	0.45	0.82	0.52	0.19	0.36	0.40	
4	0.35	0.24	0.22	0.87	0.83	0.72	0.47	0.92	0.47	0.17	0.32	0.31	
5	0.45	0.22	0.79	1.22	0.90	0.67	0.46	0.75	0.50	0.12	0.27	0.29	
6	0.49	0.20	0.52	1.12	0.55	0.78	0.45	0.68	0.49	0.10	0.29	0.25	
7	0.59	0.18	0.47	0.78	0.59	0.91	0.48	0.62	0.47	0.13	0.24	0.26	
8	0.64	0.16	0.25	0.61	0.71	1.21	0.47	0.60	0.47	0.23	0.26	0.25	
9	0.52	0.15	0.27	0.65	1.05	1.19	0.46	0.60	0.48	0.23	0.25	0.24	
10	0.43	0.18	0.27	0.72	0.72	0.92	0.39	0.58	0.48	0.29	0.27	0.24	
11	0.39	0.16	0.25	0.68	0.70	0.77	0.39	0.58	0.44	0.39	0.28	0.26	
12	0.33	0.15	0.24	0.60	0.57	0.68	0.36	0.58	0.42	0.37	0.26	0.26	
13	0.30	0.20	0.21	0.56	0.57	0.60	0.40	0.58	0.45	0.30	0.36	0.27	
14	0.28	0.39	0.21	0.52	0.90	0.58	0.50	0.56	0.44	0.33	0.28	0.26	
15	0.26	0.33	0.21	0.49	0.79	1.10	0.53	0.55	0.43	0.29	0.23	0.24	
16	0.25	0.40	0.19	0.55	0.79	1.17	0.55	0.57	0.42	0.51	0.25	0.25	
17	0.27	0.39	0.22	0.49	0.61	0.74	0.50	0.57	0.42	0.74	0.24	0.19	
18	0.32	0.40	0.24	0.39	0.67	0.67	0.41	0.57	0.39	0.71	0.23	0.18	
19	0.31	0.42	0.24	0.49	1.03	0.60	0.93	0.56	0.43	0.76	0.23	0.23	
20	0.45	0.42	0.27	0.37	0.98	0.53	0.93	0.54	0.43	0.57	0.21	0.21	
21	0.43	0.40	0.38	0.38	1.95	0.52	0.54	0.55	0.43	0.38	0.25	0.20	
22	0.42	0.34	0.45	0.74	1.24	0.53	0.40	0.63	0.43	0.25	0.27	0.09	
23	0.42	0.22	0.41	0.76	0.83	0.50	0.32	0.60	0.35	0.24	0.20	0.29	
24	0.41	0.22	0.41	0.65	1.15	0.47	0.38	0.59	0.37	0.28	0.19	0.27	
25	0.39	0.25	0.35	0.67	0.98	0.46	0.38	0.55	0.38	0.27	0.18	0.33	
26	0.37	0.30	0.33	0.78	0.89	0.45	0.39	0.53	0.28	0.26	0.17	0.32	
27	0.30	0.53	0.32	0.96	0.70	0.45	0.38	0.52	0.26	0.25	0.17	0.31	
28	0.30	0.54	0.60	0.72	0.63	0.44	0.38	0.52	0.39	0.24	0.18	0.30	
29	0.30	0.44	0.80	0.62	0.58	0.40	0.39	0.53	0.40	0.38		0.07	
30	0.29	0.40	0.77	0.52	0.68	0.39	0.40	0.53	0.43	0.36		0.08	
31		0.35		0.67	1.18		0.39		0.24	0.36		0.21	
Mean	0.37	0.30	0.36	0.68	0.86	0.73	0.46	0.58	0.42	0.33	0.26	0.25	
Max	0.64	0.54	0.80	1.22	1.95	1.35	0.93	0.92	0.53	0.76	0.36	0.40	1.95
Min	0.25	0.15	0.19	0.37	0.55	0.39	0.32	0.32	0.24	0.10	0.17	0.07	0.07

Annual Max Momentary Gage Height 2.12 M (A.D), at 18.00 Hours, on Aug 21, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.33 M (A.D)
Left Bank Elevation 5.22 M (A.D)
Right Bank Elevation 5.22 M (A.D), Drainage Area 255 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.30	0.67	0.55	6.74	2.87	17.50	1.87	0.93	2.58	0.42	1.19	0.51	
2	0.22	0.67	0.86	6.25	22.02	21.60	1.87	1.00	2.49	0.42	1.19	1.00	
3	0.22	0.55	0.46	5.36	8.16	7.97	1.87	6.08	2.49	0.36	1.19	1.45	
4	0.40	0.55	0.46	6.91	6.25	4.71	2.05	7.78	2.05	0.31	0.93	0.86	
5	0.60	0.46	5.62	16.30	7.40	4.09	1.96	5.10	2.30	0.18	0.67	0.76	
6	0.68	0.38	2.49	12.78	2.78	5.49	1.87	4.21	2.22	0.13	0.76	0.59	
7	0.91	0.33	2.05	5.49	3.15	7.59	2.13	3.49	2.05	0.20	0.55	0.63	
8	1.04	0.28	0.59	3.37	4.58	15.90	2.05	3.25	2.05	0.51	0.63	0.59	
9	2.49	0.26	0.67	3.85	10.70	15.16	1.96	3.25	2.13	0.51	0.59	0.55	
10	1.71	0.33	0.67	4.71	4.71	7.78	1.39	3.06	2.13	0.76	0.67	0.55	
11	1.39	0.28	0.59	4.21	4.45	5.36	1.39	3.06	1.79	1.39	0.72	0.63	
12	1.00	0.26	0.55	3.25	2.96	4.21	1.19	3.06	1.62	1.26	0.63	0.63	
13	0.80	0.38	0.42	2.87	2.96	3.25	1.45	3.06	1.87	0.80	1.19	0.67	
14	0.72	1.39	0.42	2.49	7.40	3.06	2.30	2.87	1.79	1.00	0.72	0.63	
15	0.63	1.00	0.42	2.22	5.62	12.10	2.58	2.78	1.71	0.76	0.51	0.55	
16	0.59	1.45	0.36	2.78	5.62	14.48	2.78	2.96	1.62	2.39	0.59	0.59	
17	0.67	1.39	0.46	2.22	3.37	4.97	2.30	2.96	1.62	4.97	0.55	0.36	
18	0.93	1.45	0.55	1.39	4.09	4.09	1.53	2.96	1.39	4.58	0.51	0.33	
19	0.86	1.62	0.55	2.22	10.14	3.25	7.97	2.87	1.71	5.23	0.51	0.51	
20	1.87	1.62	0.67	1.26	8.92	2.58	7.97	2.68	1.71	2.96	0.42	0.42	
21	1.71	1.45	1.32	1.32	49.70	2.49	2.68	2.78	1.71	1.32	0.59	0.38	
22	1.62	1.06	1.87	4.97	17.10	2.58	1.45	3.61	1.71	0.59	0.67	0.12	
23	1.62	0.46	1.53	5.23	6.25	2.30	0.93	3.25	1.13	0.55	0.38	0.76	
24	1.53	0.46	1.53	3.85	13.80	2.05	1.32	3.15	1.26	0.72	0.36	0.67	
25	1.39	0.59	1.13	4.09	8.92	1.96	1.32	2.78	1.32	0.67	0.33	1.00	
26	1.26	0.80	1.00	5.49	7.24	1.87	1.39	2.58	0.72	0.63	0.31	0.93	
27	0.80	2.58	0.93	8.54	4.45	1.87	1.32	2.49	0.63	0.59	0.31	0.86	
28	0.80	2.68	3.25	4.71	3.61	1.79	1.32	2.49	1.39	0.55	0.33	0.80	
29	0.80	1.79	5.75	3.49	3.06	1.45	1.39	2.58	1.45	1.32		0.09	
30	0.76	1.45	5.36	2.49	4.21	1.39	1.45	2.58	1.71	1.19		0.10	
31		1.13		4.09	14.82		1.39		0.55	1.19		0.42	
Total	30.32	29.77	43.08	144.94	261.31	184.89	66.44	95.70	52.90	38.46	18.00	18.94	984.75 CMSDAY
Mean	1.01	0.96	1.44	4.68	8.43	6.16	2.14	3.19	1.71	1.24	0.64	0.61	2.70 CMS
Max	2.49	2.68	5.75	16.30	49.70	21.60	7.97	7.78	2.58	5.23	1.19	1.45	49.70 CMS
Min	0.22	0.26	0.36	1.26	2.78	1.39	0.93	0.93	0.55	0.13	0.31	0.09	0.09 CMS
Runoff	2.620	2.572	3.722	12.523	22.577	15.974	5.740	8.268	4.571	3.323	1.555	1.636	85.082 MCM

Momentary Peak 58.24 CMS, at 2.12 M (A.D), at 18.00 Hours, on Aug 21, 1998

Runoff Yield 10.58 Liters/Second/Square KM, Momentary Peak Yield 228.392 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

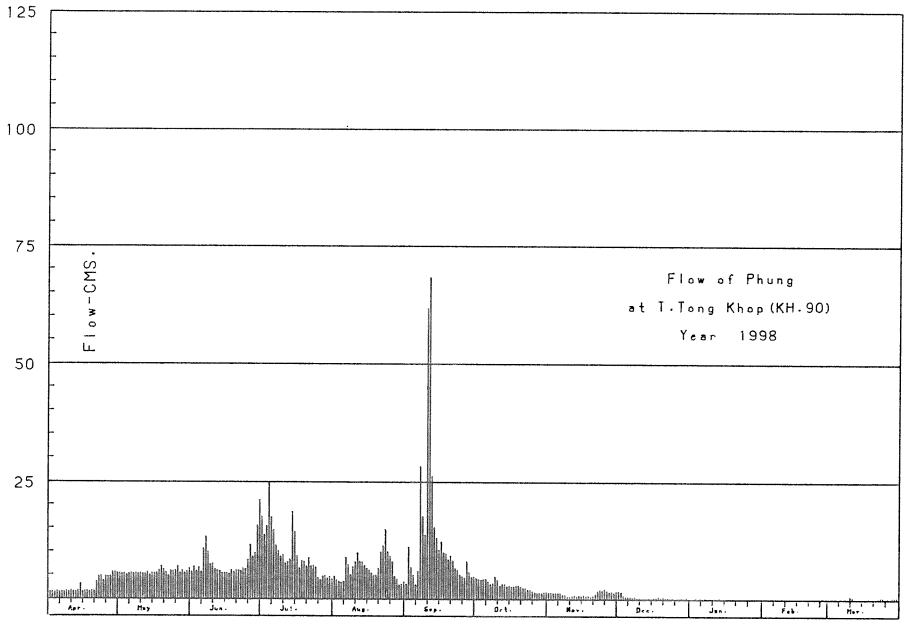
Lam Nam Phung at Ban Tong Khop, Sakhon Nakhon (Kh.90)

Location	Lat. 17°-04'-04" N., Long. 104°-15'-32" E., on right bank at the bridge on highway, Ban Tong Khop, Amphoe Khok Si Suphan, Sakhon Nakhon.
Drainage Area	848 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+158.50 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the footpath of the bridge.
Elevation	+167.456 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean at 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 43 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	159.18	159.41	159.43	159.98	159.38	159.29	159.36	159.17	159.19	158.99	158.98	158.95	
2	159.17	159.41	159.48	159.81	159.33	159.68	159.34	159.16	159.19	158.99	159.00	158.95	
3	159.17	159.41	159.44	159.89	159.32	159.48	159.34	159.16	159.09	159.01	159.00	158.96	
4	159.18	159.40	159.47	160.24	159.30	159.39	159.34	159.15	159.06	158.99	158.99	158.97	
5	159.18	159.41	159.43	159.98	159.32	159.28	159.35	159.16	159.05	159.00	158.97	158.98	
6	159.17	159.41	159.67	159.85	159.58	159.43	159.31	159.14	159.03	158.97	158.98	158.97	
7	159.18	159.41	159.79	159.70	159.50	160.37	159.29	159.12	159.04	158.98	158.98	158.98	
8	159.19	159.41	159.63	159.64	159.40	159.99	159.29	159.09	159.04	158.99	158.96	158.98	
9	159.18	159.41	159.51	159.59	159.48	159.80	159.38	159.06	159.02	159.01	158.94	158.98	
10	159.20	159.41	159.51	159.60	159.53	161.33	159.33	159.04	159.02	159.01	158.94	159.09	
11	159.19	159.41	159.46	159.52	159.63	161.49	159.27	159.09	159.00	159.00	158.95	159.02	
12	159.19	159.41	159.44	159.53	159.54	160.29	159.29	159.09	159.00	158.99	158.95	158.96	
13	159.20	159.42	159.44	159.56	159.53	159.88	159.28	159.08	159.00	159.00	158.94	159.00	
14	159.29	159.40	159.41	160.02	159.50	159.77	159.26	159.08	158.99	159.00	158.94	158.96	
15	159.19	159.41	159.42	159.84	159.47	159.65	159.26	159.08	159.00	158.98	158.96	158.95	
16	159.19	159.41	159.41	159.59	159.44	159.74	159.25	159.09	159.02	159.01	158.96	158.94	
17	159.19	159.42	159.41	159.47	159.42	159.63	159.26	159.08	159.03	158.99	158.95	159.02	
18	159.19	159.44	159.44	159.54	159.38	159.61	159.26	159.06	159.04	158.99	158.95	159.00	
19	159.19	159.49	159.43	159.53	159.39	159.56	159.27	159.06	159.03	158.99	158.94	158.96	
20	159.20	159.45	159.44	159.49	159.46	159.59	159.25	159.07	159.03	158.99	158.96	158.95	
21	159.31	159.42	159.44	159.57	159.63	159.55	159.24	159.14	159.03	158.97	158.97	158.94	
22	159.38	159.39	159.44	159.49	159.70	159.47	159.23	159.20	159.03	158.98	158.96	158.98	
23	159.38	159.44	159.46	159.49	159.86	159.44	159.22	159.21	159.00	158.97	158.96	159.05	
24	159.33	159.43	159.46	159.48	159.63	159.40	159.21	159.21	158.99	158.99	158.96	159.10	
25	159.37	159.44	159.55	159.36	159.59	159.37	159.19	159.22	159.00	158.99	158.98	159.00	
26	159.37	159.49	159.71	159.34	159.54	159.36	159.18	159.20	159.00	158.98	158.99	158.99	
27	159.38	159.42	159.59	159.38	159.38	159.54	159.16	159.18	159.00	158.99	158.98	159.00	
28	159.43	159.44	159.62	159.38	159.34	159.42	159.15	159.17	159.00	158.99	158.96	159.03	
29	159.42	159.42	159.90	159.36	159.28	159.37	159.16	159.16	159.01	158.97		159.04	
30	159.42	159.43	160.11	159.37	159.28	159.37	159.16	159.18	159.01	158.98		159.02	
31		159.46		159.34	159.31		159.17		158.99	158.98		159.00	
Mean	159.25	159.42	159.53	159.61	159.47	159.72	159.26	159.13	159.03	158.99	158.96	158.99	
Max	159.43	159.49	160.11	160.24	159.86	161.49	159.38	159.22	159.19	159.01	159.00	159.10	161.49
Min	159.17	159.39	159.41	159.34	159.28	159.28	159.15	159.04	158.99	158.97	158.94	158.94	158.94

Annual Max Momentary Gage Height 161.96 M (MSL), at 6.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 158.50 M (MSL), River Bed 158.61 M (MSL)
Left Bank Elevation 167.36 M (MSL)
Right Bank Elevation 167.33 M (MSL), Drainage Area 848 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.62	5.50	5.90	17.56	4.94	3.33	4.58	1.53	1.71	0.27	0.24	0.15	
2	1.53	5.50	6.90	13.82	4.04	11.08	4.22	1.44	1.71	0.27	0.30	0.15	
3	1.53	5.50	6.10	15.58	3.86	6.90	4.22	1.44	0.84	0.36	0.30	0.18	
4	1.62	5.30	6.70	24.72	3.50	5.12	4.22	1.35	0.66	0.27	0.27	0.21	
5	1.62	5.50	5.90	17.56	3.86	3.16	4.40	1.44	0.60	0.30	0.21	0.24	
6	1.53	5.50	10.87	14.70	8.98	5.90	3.68	1.26	0.48	0.21	0.24	0.21	
7	1.62	5.50	13.39	11.50	7.30	28.36	3.33	1.08	0.54	0.24	0.24	0.24	
8	1.71	5.50	10.03	10.24	5.30	17.78	3.33	0.84	0.54	0.27	0.18	0.24	
9	1.62	5.50	7.51	9.19	6.90	13.60	4.94	0.66	0.42	0.36	0.12	0.24	
10	1.80	5.50	7.51	9.40	7.93	61.76	4.04	0.54	0.42	0.36	0.12	0.84	
11	1.71	5.50	6.50	7.72	10.03	68.57	2.99	0.84	0.30	0.30	0.15	0.42	
12	1.71	5.50	6.10	7.93	8.14	26.12	3.33	0.84	0.30	0.27	0.15	0.18	
13	1.80	5.70	6.10	8.56	7.93	15.36	3.16	0.78	0.30	0.30	0.12	0.30	
14	3.33	5.30	5.50	18.56	7.30	12.97	2.82	0.78	0.27	0.30	0.12	0.18	
15	1.71	5.50	5.70	14.48	6.70	10.45	2.82	0.78	0.30	0.24	0.18	0.15	
16	1.71	5.50	5.50	9.19	6.10	12.34	2.65	0.84	0.42	0.36	0.18	0.12	
17	1.71	5.70	5.50	6.70	5.70	10.03	2.82	0.78	0.48	0.27	0.15	0.42	
18	1.71	6.10	6.10	8.14	4.94	9.61	2.82	0.66	0.54	0.27	0.15	0.30	
19	1.71	7.10	5.90	7.93	5.12	8.56	2.99	0.66	0.48	0.27	0.12	0.18	
20	1.80	6.30	6.10	7.10	6.50	9.19	2.65	0.72	0.48	0.27	0.18	0.15	
21	3.68	5.70	6.10	8.77	10.03	8.35	2.48	1.26	0.48	0.21	0.21	0.12	
22	4.94	5.12	6.10	7.10	11.50	6.70	2.31	1.80	0.48	0.24	0.18	0.24	
23	4.94	6.10	6.50	7.10	14.92	6.10	2.14	1.97	0.30	0.21	0.18	0.60	
24	4.04	5.90	6.50	6.90	10.03	5.30	1.97	1.97	0.27	0.27	0.18	0.90	
25	4.76	6.10	8.35	4.58	9.19	4.76	1.71	2.14	0.30	0.27	0.24	0.30	
26	4.76	7.10	11.71	4.22	8.14	4.58	1.62	1.80	0.30	0.24	0.27	0.27	
27	4.94	5.70	9.19	4.94	4.94	8.14	1.44	1.62	0.30	0.27	0.24	0.30	
28	5.90	6.10	9.82	4.94	4.22	5.70	1.35	1.53	0.30	0.27	0.18	0.48	
29	5.70	5.70	15.80	4.58	3.16	4.76	1.44	1.44	0.36	0.21		0.54	
30	5.70	5.90	21.08	4.76	3.16	4.76	1.44	1.62	0.36	0.24		0.42	
31		6.50		4.22	3.68		1.53		0.27	0.24		0.30	
Total	84.46	178.92	240.96	302.69	208.04	399.34	89.44	36.41	15.51	8.43	5.40	9.57	1579.17 CMSDAY
Mean	2.82	5.77	8.03	9.76	6.71	13.31	2.89	1.21	0.50	0.27	0.19	0.31	4.33 CMS
Max	5.90	7.10	21.08	24.72	14.92	68.57	4.94	2.14	1.71	0.36	0.30	0.90	68.57 CMS
Min	1.53	5.12	5.50	4.22	3.16	3.16	1.35	0.54	0.27	0.21	0.12	0.12	0.12 CMS
Runoff	7.297	15.459	20.819	26.152	17.975	34.503	7.728	3.146	1.340	0.728	0.467	0.827	136.440 MCM

Momentary Peak 89.20 CMS, at 161.96 M (MSL), at 6.00 Hours, on Sep 11, 1998

Runoff Yield 5.10 Liters/Second/Square KM, Momentary Peak Yield 105.189 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

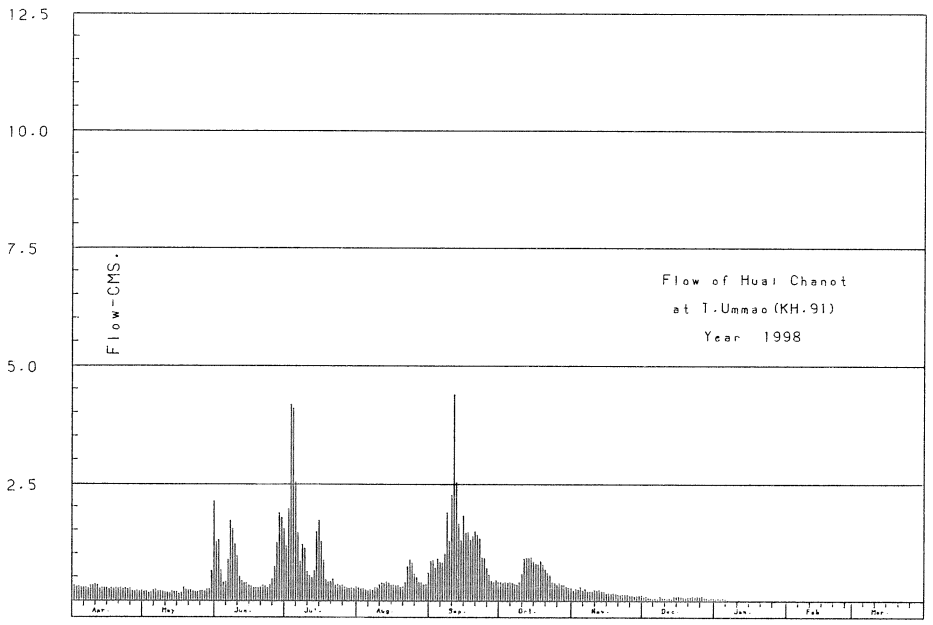
Huai Chanot at Ban Chanot, Nakhon Phanom (Kh.91)

Location	Lat. 16°-47'-46" N., Long. 104°-39'-43" E., on left bank at the bridge on highway, Ban Huai Chanon, Amphoe That Phanom, Nakhon Phanom.
Drainage Area	167 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+149.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the footpath of the bridge.
Elevation	+159.228 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir during Jan.8-Mar.31,99 discharge estimated by recession equation. Stage-discharge relation by 35 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	149.93	149.83	150.32	150.29	149.89	150.19	150.00	149.92	149.83	149.81	150.24	150.16	
2	149.92	149.83	150.34	150.52	149.89	150.19	150.00	149.93	149.83	149.81	150.31	150.15	
3	149.92	149.82	150.12	150.98	149.88	150.14	150.00	149.93	149.82	149.81	150.30	150.14	
4	149.91	149.82	150.00	150.96	149.87	150.20	150.00	149.95	149.81	149.81	150.28	150.13	
5	149.91	149.86	150.00	150.65	149.85	150.18	150.00	149.92	149.81	149.81	150.27	150.13	
6	149.90	149.87	150.20	150.39	149.86	150.17	150.00	149.93	149.81	149.80	150.27	150.13	
7	149.90	149.84	150.46	150.18	149.86	150.24	149.98	149.91	149.81	149.79	150.27	150.13	
8	149.93	149.83	150.41	150.30	149.90	150.50	149.98	149.90	149.83	149.79	150.27	150.12	
9	149.95	149.83	150.31	150.28	149.91	150.33	150.00	149.91	149.82	149.79	150.27	150.10	
10	149.96	149.81	150.22	150.11	149.95	150.59	150.10	149.92	149.81	149.79	150.27	150.09	
11	149.94	149.81	150.07	150.07	149.98	151.02	150.20	149.92	149.81	149.79	150.27	150.08	
12	149.88	149.81	150.01	150.05	149.98	150.65	150.21	149.92	149.81	149.79	150.27	150.07	
13	149.89	149.83	149.99	150.12	150.00	150.44	150.21	149.91	149.81	149.79	150.26	150.06	
14	149.90	149.83	149.98	150.39	149.99	150.33	150.21	149.90	149.83	149.79	150.25	150.05	
15	149.89	149.82	149.95	150.46	149.95	150.49	150.18	149.88	149.83	149.84	150.26	150.04	
16	149.88	149.78	149.92	150.33	149.94	150.39	150.17	149.88	149.83	149.83	150.25	150.03	
17	149.89	149.82	149.91	150.19	149.94	150.39	150.16	149.88	149.83	149.83	150.25	150.03	
18	149.89	149.90	149.89	150.03	149.93	150.34	150.19	149.88	149.82	149.83	150.23	150.00	
19	149.89	149.86	149.90	150.00	149.92	150.36	150.16	149.88	149.82	149.83	150.23	150.00	
20	149.89	149.86	149.90	150.01	149.91	150.40	150.13	149.86	149.82	149.83	150.23	150.00	
21	149.89	149.85	149.94	150.03	149.99	150.37	150.10	149.86	149.83	149.83	150.21	149.99	
22	149.88	149.84	149.93	149.95	150.15	150.35	150.08	149.86	149.83	149.84	150.21	150.66	
23	149.88	149.83	149.89	149.95	150.20	150.21	150.00	149.87	149.83	149.82	150.20	150.00	
24	149.88	149.82	149.96	149.94	150.17	150.21	150.00	149.86	149.83	149.83	150.19	150.00	
25	149.88	149.85	150.03	149.94	150.09	150.14	149.98	149.85	149.83	149.92	150.19	150.00	
26	149.85	149.84	150.15	149.91	150.06	150.08	149.99	149.84	149.83	149.98	150.19	150.00	
27	149.84	149.84	150.32	149.90	150.00	150.02	149.98	149.84	149.82	150.04	150.18	150.00	
28	149.84	149.87	150.50	149.89	149.98	150.00	149.97	149.84	149.81	150.10	150.17	150.04	
29	149.84	149.88	150.48	149.89	149.96	150.03	149.96	149.85	149.81	150.13		150.04	
30	149.84	150.12	150.41	149.89	149.95	150.00	149.94	149.85	149.81	150.16		150.04	
31		150.56		149.91	150.10		149.94		149.81	150.20		150.07	
Mean	149.89	149.87	150.12	150.18	149.97	150.30	150.06	149.89	149.82	149.87	150.24	150.08	
Max	149.96	150.56	150.50	150.98	150.20	151.02	150.21	149.95	149.83	150.20	150.31	150.66	151.02
Min	149.84	149.78	149.89	149.89	149.85	150.00	149.94	149.84	149.81	149.79	150.17	149.99	149.78

Annual Max Momentary Gage Height 151.10 M (MSL), at 6.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 149.00 M (MSL), River Bed 148.78 M (MSL)
Left Bank Elevation 159.34 M (MSL)
Right Bank Elevation 158.99 M (MSL), Drainage Area 167 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.33	0.21	1.26	1.17	0.28	0.87	0.40	0.24	0.10	0.06	0.00	0.00	
2	0.31	0.21	1.32	1.96	0.28	0.87	0.40	0.26	0.10	0.06	0.00	0.00	
3	0.31	0.19	0.66	4.20	0.27	0.72	0.40	0.26	0.08	0.06	0.00	0.00	
4	0.30	0.19	0.41	4.10	0.25	0.90	0.40	0.30	0.06	0.06	0.00	0.00	
5	0.30	0.24	0.41	2.55	0.23	0.84	0.40	0.24	0.06	0.06	0.00	0.00	
6	0.29	0.25	0.90	1.47	0.24	0.81	0.40	0.26	0.06	0.05	0.00	0.00	
7	0.29	0.22	1.73	0.84	0.24	1.02	0.36	0.22	0.06	0.04	0.00	0.00	
8	0.33	0.21	1.54	1.20	0.29	1.88	0.36	0.20	0.10	0.03	0.00	0.00	
9	0.35	0.21	1.23	1.14	0.30	1.29	0.40	0.22	0.08	0.02	0.00	0.00	
10	0.36	0.18	0.96	0.63	0.35	2.26	0.60	0.24	0.06	0.02	0.00	0.00	
11	0.34	0.18	0.54	0.54	0.39	4.42	0.90	0.24	0.06	0.02	0.00	0.00	
12	0.27	0.18	0.43	0.51	0.39	2.55	0.93	0.24	0.06	0.01	0.00	0.00	
13	0.28	0.21	0.40	0.66	0.41	1.65	0.93	0.22	0.06	0.01	0.00	0.00	
14	0.29	0.21	0.39	1.47	0.40	1.29	0.93	0.20	0.10	0.01	0.00	0.00	
15	0.28	0.19	0.35	1.73	0.35	1.84	0.84	0.17	0.10	0.01	0.00	0.00	
16	0.27	0.15	0.31	1.29	0.34	1.47	0.81	0.17	0.10	0.01	0.00	0.00	
17	0.28	0.19	0.30	0.87	0.34	1.47	0.78	0.17	0.10	0.00	0.00	0.00	
18	0.28	0.29	0.28	0.47	0.33	1.32	0.87	0.17	0.08	0.00	0.00	0.00	
19	0.28	0.24	0.29	0.41	0.31	1.38	0.78	0.17	0.08	0.00	0.00	0.00	
20	0.28	0.24	0.29	0.43	0.30	1.50	0.69	0.14	0.08	0.00	0.00	0.00	
21	0.28	0.23	0.34	0.47	0.40	1.41	0.60	0.14	0.10	0.00	0.00	0.00	
22	0.27	0.22	0.33	0.35	0.75	1.35	0.56	0.14	0.10	0.00	0.00	0.00	
23	0.27	0.21	0.28	0.35	0.90	0.93	0.40	0.15	0.10	0.00	0.00	0.00	
24	0.27	0.19	0.36	0.34	0.81	0.93	0.40	0.14	0.10	0.00	0.00	0.00	
25	0.27	0.23	0.47	0.34	0.58	0.72	0.36	0.13	0.10	0.00	0.00	0.00	
26	0.23	0.22	0.75	0.30	0.52	0.56	0.38	0.11	0.10	0.00	0.00	0.00	
27	0.22	0.22	1.26	0.29	0.41	0.44	0.36	0.11	0.08	0.00	0.00	0.00	
28	0.22	0.25	1.88	0.28	0.39	0.40	0.34	0.11	0.06	0.00	0.00	0.00	
29	0.22	0.27	1.80	0.28	0.36	0.46	0.32	0.13	0.06	0.00		0.00	
30	0.22	0.66	1.54	0.28	0.35	0.40	0.28	0.13	0.06	0.00		0.00	
31		2.13		0.30	0.60		0.28		0.06	0.00		0.00	
Total	8.49	9.02	23.01	31.22	12.36	37.95	16.86	5.62	2.50	0.53	0.00	0.00	147.56 CMSDAY
Mean	0.28	0.29	0.77	1.01	0.40	1.26	0.54	0.19	0.08	0.02	0.00	0.00	0.40 CMS
Max	0.36	2.13	1.88	4.20	0.90	4.42	0.93	0.30	0.10	0.06	0.00	0.00	4.42 CMS
Min	0.22	0.15	0.28	0.28	0.23	0.40	0.28	0.11	0.06	0.00	0.00	0.00	0.00 CMS
Runoff	0.734	0.779	1.988	2.697	1.068	3.279	1.457	0.486	0.216	0.046	0.000	0.000	12.749 MCM

Momentary Peak 4.90 CMS, at 151.10 M (MSL), at 6.00 Hours, on Sep 11, 1998
Runoff Yield 2.42 Liters/Second/Square KM, Momentary Peak Yield 29.341 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

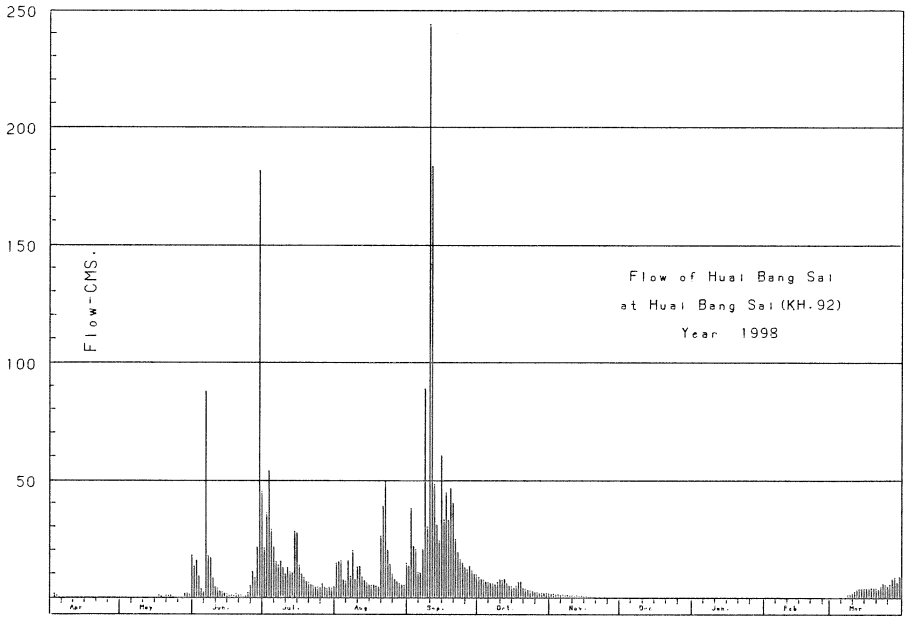
Huai Bang Sai at Ban Kan Luang Dong, Muk Dahan (Kh.92)

Location	Lat., 16°-44'-06" N., Long. 104°-31'-23" E., on left bank at the bridge on highway, Ban Kan Luang Dong, Amphoe Dong Luang, Muk Dahan.
Drainage Area	1,118 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+147.84 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the footpath of the bridge.
Elevation	+158.890 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir during Dec.14,98-Mar.8,99 discharge estimated by recession equation. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	149.06	148.99	149.84	150.11	149.89	149.85	149.65	149.26	149.12	149.25	149.21	149.18	
2	149.26	148.99	149.94	150.52	149.92	150.57	149.62	149.25	149.12	149.25	149.21	149.18	
3	149.22	148.98	149.68	150.91	149.93	150.14	149.60	149.24	149.11	149.25	149.21	149.18	
4	149.12	148.97	149.39	150.34	149.61	150.09	149.57	149.23	149.09	149.24	149.21	149.18	
5	149.09	148.97	149.32	150.13	149.57	149.74	149.55	149.22	149.10	149.25	149.20	149.18	
6	149.08	148.98	151.52	149.91	149.94	149.74	149.54	149.22	149.09	149.25	149.20	149.18	
7	149.08	148.97	150.00	149.86	149.67	150.10	149.52	149.21	149.09	149.25	149.20	149.18	
8	149.11	148.97	149.98	149.93	150.08	151.54	149.51	149.21	149.09	149.25	149.20	149.18	
9	149.10	148.97	149.64	149.83	149.62	150.37	149.55	149.20	149.09	149.25	149.20	149.16	
10	149.06	148.97	149.45	149.72	149.83	153.48	149.61	149.19	149.08	149.23	149.20	149.18	
11	149.03	148.96	149.41	149.82	149.85	152.82	149.59	149.18	149.08	149.23	149.19	149.38	
12	149.02	148.96	149.35	149.75	149.66	150.79	149.62	149.18	149.07	149.23	149.19	149.38	
13	149.01	148.97	149.32	149.74	149.60	150.40	149.52	149.18	149.07	149.22	149.19	149.40	
14	149.01	148.97	149.29	150.31	149.54	150.20	149.48	149.17	149.26	149.22	149.19	149.41	
15	149.01	148.97	149.25	150.30	149.50	151.04	149.46	149.17	149.26	149.22	149.19	149.40	
16	149.00	148.97	149.21	149.86	149.48	150.45	149.43	149.16	149.26	149.23	149.19	149.40	
17	149.07	149.22	149.19	149.72	149.50	150.72	149.47	149.16	149.27	149.23	149.19	149.40	
18	149.04	149.14	149.20	149.65	149.46	150.45	149.55	149.15	149.27	149.22	149.19	149.42	
19	149.02	149.08	149.27	149.58	149.45	150.76	149.57	149.14	149.27	149.22	149.19	149.42	
20	149.02	149.18	149.22	149.55	150.26	150.63	149.43	149.13	149.27	149.22	149.19	149.42	
21	149.00	149.21	149.20	149.51	150.60	150.22	149.40	149.13	149.27	149.22	149.19	149.39	
22	149.08	149.20	149.17	149.48	150.81	150.06	149.38	149.13	149.27	149.22	149.19	149.45	
23	149.07	149.12	149.16	149.45	150.09	149.95	149.36	149.11	149.27	149.22	149.19	149.53	
24	149.04	149.08	149.30	149.44	149.88	149.90	149.35	149.11	149.26	149.22	149.19	149.50	
25	149.02	149.09	149.49	149.44	149.71	149.83	149.33	149.11	149.26	149.21	149.19	149.47	
26	149.01	149.06	149.76	149.51	149.62	149.79	149.31	149.10	149.26	149.21	149.18	149.50	
27	149.01	149.12	149.64	149.44	149.57	149.85	149.30	149.11	149.25	149.21	149.18	149.62	
28	149.00	149.28	150.13	149.40	149.52	149.77	149.30	149.11	149.25	149.21	149.18	149.64	
29	149.00	149.27	152.80	149.44	149.50	149.72	149.29	149.11	149.25	149.21		149.55	
30	149.00	149.25	150.73	149.41	149.48	149.70	149.28	149.10	149.25	149.21		149.67	
31		150.01		149.46	149.89		149.27		149.25	149.21		149.65	
Mean	149.05	149.09	149.69	149.79	149.78	150.42	149.46	149.17	149.19	149.23	149.19	149.38	
Max	149.26	150.01	152.80	150.91	150.81	153.48	149.65	149.26	149.27	149.25	149.21	149.67	153.48
Min	149.00	148.96	149.16	149.40	149.45	149.70	149.27	149.10	149.07	149.21	149.18	149.16	148.96

Annual Max Momentary Gage Height 154.06 M (MSL), at 18.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 147.84 M (MSL), River Bed 148.09 M (MSL)
Left Bank Elevation 158.91 M (MSL)
Right Bank Elevation 158.91 M (MSL), Drainage Area 1118 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.22	0.09	13.58	21.35	14.93	13.85	8.90	1.90	0.50	0.18	0.08	0.04	
2	1.90	0.09	16.32	36.30	15.76	38.30	8.24	1.80	0.50	0.17	0.08	0.04	
3	1.50	0.08	9.56	54.50	16.04	22.40	7.80	1.70	0.40	0.17	0.08	0.04	
4	0.50	0.07	3.83	29.40	8.02	20.70	7.20	1.60	0.28	0.16	0.08	0.04	
5	0.28	0.07	2.64	22.05	7.20	11.00	6.80	1.50	0.30	0.16	0.07	0.04	
6	0.26	0.08	88.20	15.48	16.32	11.00	6.60	1.50	0.28	0.16	0.07	0.03	
7	0.26	0.07	18.00	14.12	9.34	21.00	6.20	1.40	0.28	0.15	0.07	0.03	
8	0.40	0.07	17.44	16.04	20.40	89.40	6.00	1.40	0.28	0.15	0.07	1.35	
9	0.30	0.07	8.68	13.31	8.24	30.45	6.80	1.30	0.28	0.14	0.07	1.73	
10	0.22	0.07	4.90	10.50	13.31	244.00	8.02	1.20	0.26	0.14	0.06	2.22	
11	0.16	0.06	4.18	13.04	13.85	183.80	7.60	1.10	0.26	0.14	0.06	2.85	
12	0.14	0.06	3.15	11.25	9.12	48.50	8.24	1.10	0.24	0.13	0.06	3.66	
13	0.12	0.07	2.64	11.00	7.80	31.50	6.20	1.10	0.24	0.13	0.06	4.00	
14	0.12	0.07	2.20	28.35	6.60	24.50	5.44	1.00	0.28	0.13	0.06	4.18	
15	0.12	0.07	1.80	28.00	5.80	61.00	5.08	1.00	0.27	0.12	0.06	4.00	
16	0.10	0.07	1.40	14.12	5.44	33.50	4.54	0.90	0.27	0.12	0.06	4.00	
17	0.24	1.50	1.20	10.50	5.80	45.00	5.26	0.90	0.26	0.12	0.05	4.00	
18	0.18	0.70	1.30	8.90	5.08	33.50	6.80	0.80	0.25	0.12	0.05	4.36	
19	0.14	0.26	2.00	7.40	4.90	47.00	7.20	0.70	0.25	0.11	0.05	4.36	
20	0.14	1.10	1.50	6.80	26.60	40.85	4.54	0.60	0.24	0.11	0.05	4.36	
21	0.10	1.40	1.30	6.00	39.50	25.20	4.00	0.60	0.23	0.11	0.05	3.83	
22	0.26	1.30	1.00	5.44	49.50	19.80	3.66	0.60	0.23	0.10	0.05	4.90	
23	0.24	0.50	0.90	4.90	20.70	16.60	3.32	0.40	0.22	0.10	0.05	6.40	
24	0.18	0.26	2.30	4.72	14.66	15.20	3.15	0.40	0.22	0.10	0.05	5.80	
25	0.14	0.28	5.62	4.72	10.25	13.31	2.81	0.40	0.21	0.10	0.04	5.26	
26	0.12	0.22	11.50	6.00	8.24	12.25	2.47	0.30	0.21	0.09	0.04	5.80	
27	0.12	0.50	8.68	4.72	7.20	13.85	2.30	0.40	0.20	0.09	0.04	8.24	
28	0.10	2.10	22.05	4.00	6.20	11.75	2.30	0.40	0.20	0.09	0.04	8.68	
29	0.10	2.00	182.00	4.72	5.80	10.50	2.20	0.40	0.19	0.09		6.80	
30	0.10	1.80	45.50	4.18	5.44	10.00	2.10	0.30	0.19	0.09		9.34	
31		18.30		5.08	14.93		2.00		0.18	0.08		8.90	
Total	8.76	33.38	485.37	426.89	402.97	1199.71	163.77	28.70	8.20	3.85	1.65	119.28	2882.53 CMSDAY
Mean	0.29	1.08	16.18	13.77	13.00	39.99	5.28	0.96	0.26	0.12	0.06	3.85	7.90 CMS
Max	1.90	18.30	182.00	54.50	49.50	244.00	8.90	1.90	0.50	0.18	0.08	9.34	244.00 CMS
Min	0.10	0.06	0.90	4.00	4.90	10.00	2.00	0.30	0.18	0.08	0.04	0.03	0.03 CMS
Runoff	0.757	2.884	41.936	36.883	34.817	103.655	14.150	2.480	0.708	0.333	0.143	10.306	249.051 MCM

Momentary Peak 307.50 CMS, at 154.06 M (MSL), at 18.00 Hours, on Sep 10, 1998

Runoff Yield 7.06 Liters/Second/Square KM, Momentary Peak Yield 275.045 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

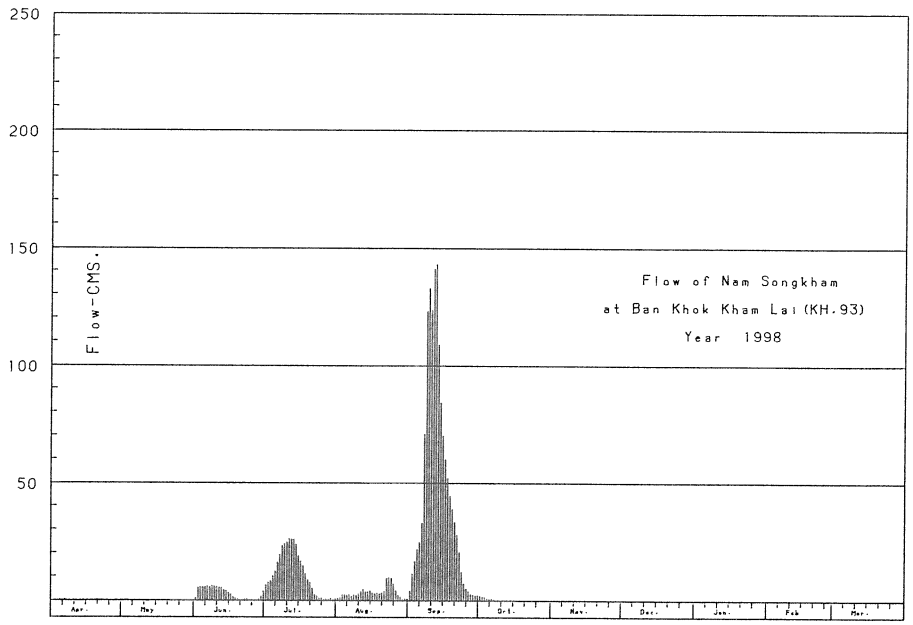
Mae Nam Songkhram at Ban Khok Kham Lai, Udon Thani (Kh.93)

Location	Lat. 17°-33'-20" N., Long. 103°-20'-18" E., on left bank at the bridge of Amphoe Ban Dung-Amphoe Sawang Daen Din highway, Amphoe Ban Dung, Udon Thani.
Drainage Area	707 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+153.12 m.(M.S.L.)
Bench Mark	B.M.-Highways Dept.
Location	On left bank downstream side at the footpath of the bridge.
Elevation	+161.354 m.(M.S.L.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir during Oct.5,98-Mar.31,99 discharge estimated by recession equation. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	154.57	154.52	154.80	155.58	154.76	155.48	155.24	155.16	154.98	154.69	154.58	154.40	
2	154.57	154.52	155.48	155.64	154.90	155.95	155.25	155.16	155.00	154.58	154.58	154.38	
3	154.57	154.50	155.48	155.72	155.09	156.34	155.20	155.17	155.00	154.58	154.58	154.38	
4	154.57	154.46	155.50	155.87	155.16	156.65	155.16	155.16	154.99	154.58	154.58	154.38	
5	154.57	154.42	155.50	156.05	155.10	156.84	155.06	155.12	154.98	154.56	154.58	154.38	
6	154.57	154.42	155.50	156.31	155.10	157.27	155.02	155.14	154.92	154.56	154.58	154.38	
7	154.57	154.42	155.50	156.51	155.01	158.27	154.98	155.14	154.92	154.56	154.58	154.38	
8	154.57	154.42	155.52	156.76	155.09	158.78	154.98	155.14	154.90	154.56	154.56	154.38	
9	154.57	154.42	155.52	156.79	155.10	158.84	155.02	155.13	154.85	154.56	154.54	154 38	
10	154.57	154.42	155.48	156.85	155.17	158.78	155.10	155.09	154.78	154.56	154.54	154.38	
11	154.57	154.42	155.48	156.91	155.31	158.89	155.10	155.04	154.78	154.56	154.54	154.38	
12	154.57	154.42	155.45	156.92	155.38	158.90	155.17	155.02	154.78	154.56	154.54	154.36	
13	154.57	154.42	155.38	156.90	155.30	158.67	155.18	155.02	154.76	154.58	154.54	154.35	
14	154.57	154.42	155.32	156.80	155.27	158.44	155.18	154.98	154.72	154.55	154.54	154.34	
15	154.57	154.42	155.25	156.49	155.35	158.26	155.18	154.98	154.72	154.54	154.50	154.34	
16	154.57	154.42	155.12	156.32	155.22	158.10	155.18	154.98	154.72	154.54	154.50	154.34	
17	154.57	154.42	154.93	156.21	155.22	157.93	155.15	154.97	154.72	154.54	154.49	154.34	
18	154.57	154.42	154.77	155.95	155.22	157.74	154.97	154.96	154.72	154.54	154.49	154.34	
19	154.57	154.42	154.67	155.76	155.22	157.54	155.14	154.96	154.72	154.54	154.48	154.32	
20	154.57	154.42	154.68	155.64	155.22	157.29	155.37	154.96	154.70	154.54	154.46	154.32	
21	154.57	154.42	154.68	155.44	155.29	157.00	155.42	154.96	154.70	154.54	154.47	154.32	
22	154.57	154.42	154.68	155.15	155.82	156.60	155.42	154.96	154.70	154.58	154.47	154.32	
23	154.57	154.42	154.66	154.96	155.82	156.02	155.42	154.96	154.70	154.58	154.47	154.32	
24	154.57	154.42	154.59	154.86	155.82	155.69	155.38	154.96	154.70	154.58	154.45	154.32	
25	154.57	154.42	154.58	154.80	155.66	155.55	155.36	154.96	154.70	154.58	154.44	154.31	
26	154.57	154.42	154.56	154.75	155.49	155.44	155.33	154.95	154.69	154.58	154.43	154.37	
27	154.57	154.42	154.61	154.77	155.31	155.36	155.30	154.94	154.68	154.58	154.43	154.30	
28	154.57	154.42	154.73	154.77	155.18	155.31	155.20	154.94	154.66	154.58	154.43	154.30	
29	154.57	154.42	154.97	154.77	155.11	155.30	155.18	154.94	154.63	154.58		154.33	
30	154.57	154.42	155.30	154.74	155.10	155.28	155.18	154.94	154.62	154.58		154.34	
31		154.42		154.74	155.10		155.16		154.61	154.58		154.37	
Mean	154.57	154.43	155.09	155.80	155.25	157.08	155.19	155.03	154.78	154.57	154.51	154.35	
Max	154.57	154.52	155.52	156.92	155.82	158.90	155.42	155.17	155.00	154.69	154.58	154.40	158.90
Min	154.57	154.42	154.56	154.74	154.76	155.28	154.97	154.94	154.61	154.54	154.43	154.30	154.30

Annual Max Momentary Gage Height 158.91 M (MSL), at 18.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 153.12 M (MSL), River Bed 153.09 M (MSL)
Left Bank Elevation 161.10 M (MSL)
Right Bank Elevation 161.10 M (MSL), Drainage Area 707 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.50	0.40	1.00	6.96	0.90	4.44	1.92	0.00	0.00	0.00	0.00	0.00	
2	0.50	0.40	5.80	7.68	1.50	11.40	2.00	0.00	0.00	0.00	0.00	0.00	
3	0.50	0.36	5.80	8.64	2.45	17.10	1.60	0.00	0.00	0.00	0.00	0.00	
4	0.50	0.28	6.00	10.44	2.80	21.85	1.28	0.00	0.00	0.00	0.00	0.00	
5	0.50	0.20	6.00	12.75	2.50	25.12	1.02	0.00	0.00	0.00	0.00	0.00	
6	0.50	0.20	6.00	16.65	2.50	33.40	0.82	0.00	0.00	0.00	0.00	0.00	
7	0.50	0.20	6.00	19.65	2.05	70.90	0.66	0.00	0.00	0.00	0.00	0.00	
8	0.50	0.20	6.24	23.72	2.45	123.40	0.55	0.00	0.00	0.00	0.00	0.00	
9	0.50	0.20	6.24	24.23	2.50	132.80	0.42	0.00	0.00	0.00	0.00	0.00	
10	0.50	0.20	5.80	25.30	2.85	123.40	0.33	0.00	0.00	0.00	0.00	0.00	
11	0.50	0.20	5.80	26.38	4.10	141.30	0.27	0.00	0.00	0.00	0.00	0.00	
12	0.50	0.20	5.50	26.56	4.80	143.00	0.22	0.00	0.00	0.00	0.00	0.00	
13	0.50	0.20	4.80	26.20	4.00	109.10	0.17	0.00	0.00	0.00	0.00	0.00	
14	0.50	0.20	4.20	24.40	3.70	84.60	0.14	0.00	0.00	0.00	0.00	0.00	
15	0.50	0.20	3.50	19.35	4.50	70.20	0.11	0.00	0.00	0.00	0.00	0.00	
16	0.50	0.20	2.60	16.80	3.20	60.50	0.09	0.00	0.00	0.00	0.00	0.00	
17	0.50	0.20	1.65	15.15	3.20	52.20	0.07	0.00	0.00	0.00	0.00	0.00	
18	0.50	0.20	0.93	11.40	3.20	44.90	0.06	0.00	0.00	0.00	0.00	0.00	
19	0.50	0.20	0.70	9.12	3.20	39.00	0.04	0.00	0.00	0.00	0.00	0.00	
20	0.50	0.20	0.72	7.68	3.20	33.80	0.04	0.00	0.00	0.00	0.00	0.00	
21	0.50	0.20	0.72	5.40	3.90	28.00	0.03	0.00	0.00	0.00	0.00	0.00	
22	0.50	0.20	0.72	2.75	9.84	21.00	0.02	0.00	0.00	0.00	0.00	0.00	
23	0.50	0.20	0.68	1.80	9.84	12.30	0.02	0.00	0.00	0.00	0.00	0.00	
24	0.50	0.20	0.54	1.30	9.84	7.55	0.01	0.00	0.00	0.00	0.00	0.00	
25	0.50	0.20	0.52	1.00	7.10	5.45	0.01	0.00	0.00	0.00	0.00	0.00	
26	0.50	0.20	0.48	0.88	4.57	3.92	0.01	0.00	0.00	0.00	0.00	0.00	
27	0.50	0.20	0.58	0.93	2.50	3.00	0.01	0.00	0.00	0.00	0.00	0.00	
28	0.50	0.20	0.83	0.93	1.44	2.50	0.01	0.00	0.00	0.00	0.00	0.00	
29	0.50	0.20	1.85	0.93	0.88	2.40	0.00	0.00	0.00	0.00		0.00	
30	0.50	0.20	4.00	0.86	0.80	2.24	0.00	0.00	0.00	0.00		0.00	
31		0.20		0.86	0.80		0.00		0.00	0.00		0.00	
Total	15.00	6.84	96.20	356.70	111.11	1430.77	11.93	0.00	0.00	0.00	0.00	0.00	2028.55 CMSDAY
Mean	0.50	0.22	3.21	11.51	3.58	47.69	0.38	0.00	0.00	0.00	0.00	0.00	5.56 CMS
Max	0.50	0.40	6.24	26.56	9.84	143.00	2.00	0.00	0.00	0.00	0.00	0.00	143.00 CMS
Min	0.50	0.20	0.48	0.86	0.80	2.24	0.00	0.00	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	1.296	0.591	8.312	30.819	9.600	123.619	1.031	0.000	0.000	0.000	0.000	0.000	175.267 MCM

Momentary Peak 144.70 CMS, at 158.91 M (MSL), at 18.00 Hours, on Sep 11, 1998
Runoff Yield 7.86 Liters/Second/Square KM, Momentary Peak Yield 204.668 Liters/Second/Square KM

WATER YEAR 1998

KHONG RIVER BASIN

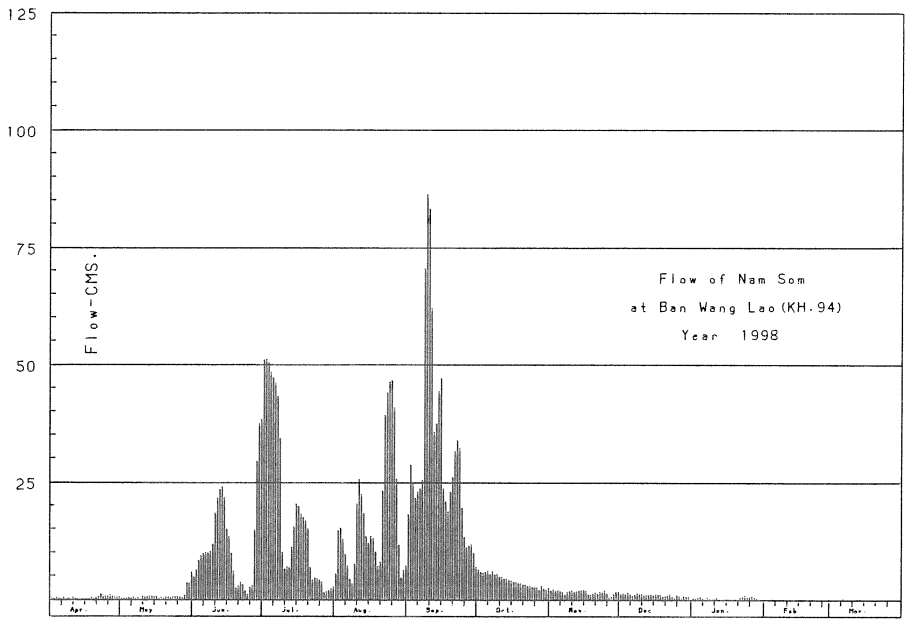
Nam Som at Ban Wang Lao, Udon Thani (Kh.94)

Location	Lat. 17°-58'-04" N., Long. 102°-14'-46" E., on right bank at the bridge on road, Ban Wang Lao, Amphoe Na Yung, Udon Thani.
Drainage Area	869 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+173.24 m.(M.S.L.)
Bench Mark	B.M.-Highways Dept.
Location	On right bank downstream side at the footpath of the bridge.
Elevation	+181.632 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow during Oct.10-26,98, discharge estimated by recession equation. Stage-discharge relation defined by 26 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	173.84	173.84	174.50	178.20	174.59	175.86	174.69	174.11	174.00	173.82	173.78	173.74	
2	173.79	173.81	174.67	178.20	175.56	176.72	174.64	174.13	174.00	173.84	173.75	173.76	
3	173.86	173.84	174.94	178.16	175.62	176.40	174.60	174.10	173.99	173.85	173.73	173.78	
4	173.82	173.86	175.04	178.03	175.40	176.15	174.64	174.10	174.03	173.90	173.79	173.77	
5	173.81	173.84	175.10	177.96	175.09	176.25	174.66	174.09	173.99	173.84	173.77	173.79	
6	173.85	173.86	175.11	177.88	174.79	176.32	174.58	174.05	173.92	173.81	173.79	173.82	
7	173.82	173.83	175.11	177.70	174.45	176.46	174.64	173.98	173.98	173.85	173.75	173.79	
8	173.82	173.84	175.13	177.10	174.30	179.37	174.57	174.06	174.01	173.84	173.80	173.77	
9	173.79	173.81	175.30	175.12	174.85	180.24	174.57	174.09	174.00	173.78	173.76	173.76	
10	173.85	173.90	175.88	174.72	176.04	180.08	174.51	174.10	173.99	173.81	173.75	173.72	
11	173.83	173.89	176.14	174.76	176.47	178.88	174.64	174.06	173.95	173.85	173.73	173.75	
12	173.81	173.90	176.30	174.75	176.21	177.18	174.66	174.07	173.95	173.79	173.70	173.76	
13	173.79	173.90	176.34	175.22	175.88	177.31	174.67	174.11	173.97	173.74	173.68	173.74	
14	173.77	173.92	176.15	175.64	175.46	177.76	174.73	174.10	173.98	173.79	173.66	173.77	
15	173.74	173.87	175.60	176.04	175.32	177.95	174.75	174.13	173.96	173.81	173.70	173.75	
16	173.75	173.89	175.45	176.01	175.45	176.31	174.70	174.09	173.97	173.78	173.71	173.75	
17	173.82	173.84	175.11	175.86	175.41	176.09	174.73	173.99	173.98	173.75	173.75	173.73	
18	173.85	173.85	174.64	175.81	175.14	175.90	174.74	173.96	173.96	173.77	173.74	173.76	
19	173.84	173.84	174.18	175.74	174.78	176.26	174.69	174.02	173.91	173.77	173.77	173.76	
20	173.85	173.87	174.23	175.61	174.89	176.52	174.71	174.04	173.90	173.78	173.71	173.71	
21	173.88	173.90	174.34	174.76	176.28	176.91	174.67	174.01	173.95	173.84	173.67	173.74	
22	173.98	173.86	174.28	174.41	177.43	177.07	174.70	174.07	173.98	173.90	173.69	173.74	
23	173.95	173.87	174.10	174.48	177.75	176.95	174.67	174.05	173.91	173.94	173.71	173.74	
24	173.91	173.89	173.96	174.45	177.99	175.98	174.62	174.10	173.91	173.88	173.72	173.75	
25	173.90	173.88	174.21	174.43	177.92	175.45	174.64	174.02	173.97	173.89	173.70	173.78	
26	173.96	173.87	174.24	174.35	177.53	175.22	174.40	173.85	173.91	173.91	173.72	173.74	
27	173.90	173.86	175.58	174.05	176.48	175.27	174.13	173.90	173.85	173.88	173.72	173.72	
28	173.85	173.93	176.77	174.06	175.29	175.28	174.24	173.97	173.90	173.81	173.78	173.74	
29	173.88	174.34	177.30	174.11	174.48	175.11	174.17	174.06	173.91	173.78		173.75	
30	173.87	174.31	177.36	174.16	174.67	174.76	174.11	174.06	173.88	173.78		173.72	
31		174.62		174.21	174.79		174.17		173.79	173.77		173.74	
Mean	173.85	173.92	175.24	175.68	175.68	176.73	174.57	174.05	173.95	173.82	173.73	173.75	
Max	173.98	174.62	177.36	178.20	177.92	180.24	174.75	174.13	174.03	173.94	173.80	173.82	180.24
Min	173.74	173.81	173.96	174.05	174.30	174.76	174.11	173.85	173.79	173.74	173.66	173.71	173.66

Annual Max Momentary Gage Height 180.54 M (MSL), at 18.00 Hours, on Sep 9, 1998
Zero Gage at Bottom Elevation 173.24 M (MSL), River Bed 173.26 M (MSL)
Left Bank Elevation 182.04 M (MSL)
Right Bank Elevation 181.45 M (MSL), Drainage Area 869 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.50	0.50	5.00	51.20	5.72	18.32	6.52	2.17	1.40	0.40	0.24	0.12	
2	0.27	0.35	6.36	51.20	14.76	28.88	6.12	2.31	1.40	0.50	0.15	0.18	
3	0.60	0.50	8.52	50.56	15.44	24.80	5.80	2.10	1.34	0.55	0.09	0.24	
4	0.40	0.60	9.40	48.48	13.00	21.80	6.12	2.10	1.61	0.80	0.27	0.21	
5	0.35	0.50	10.00	47.40	9.90	23.00	6.28	2.03	1.34	0.50	0.21	0.27	
6	0.55	0.60	10.10	46.20	7.32	23.84	5.64	1.75	0.92	0.35	0.27	0.40	
7	0.40	0.45	10.10	43.50	4.60	25.52	6.12	1.28	1.28	0.55	0.15	0.27	
8	0.40	0.50	10.30	34.50	3.50	70.66	5.56	1.82	1.47	0.50	0.30	0.21	
9	0.27	0.35	12.00	10.20	7.80	86.32	5.56	2.03	1.40	0.24	0.18	0.18	
10	0.55	0.80	18.56	6.76	20.48	83.44	5.08	2.10	1.34	0.35	0.15	0.06	
11	0.45	0.75	21.68	7.08	25.64	62.08	4.89	1.82	1.10	0.55	0.09	0.15	
12	0.35	0.80	23.60	7.00	22.52	35.70	4.70	1.89	1.10	0.27	0.00	0.18	
13	0.27	0.80	24.08	11.20	18.56	37.65	4.52	2.17	1.22	0.12	0.00	0.12	
14	0.21	0.92	21.80	15.68	13.66	44.40	4.35	2.10	1.28	0.27	0.00	0.21	
15	0.12	0.65	15.20	20.48	12.20	47.25	4.19	2.31	1.16	0.35	0.00	0.15	
16	0.15	0.75	13.55	20.12	13.55	23.72	4.03	2.03	1.22	0.24	0.03	0.15	
17	0.40	0.50	10.10	18.32	13.11	21.08	3.87	1.34	1.28	0.15	0.15	0.09	
18	0.55	0.55	6.12	17.72	10.40	18.80	3.73	1.16	1.16	0.21	0.12	0.18	
19	0.50	0.50	2.66	16.88	7.24	23.12	3.58	1.54	0.86	0.21	0.21	0.18	
20	0.55	0.65	3.01	15.32	8.12	26.24	3.45	1.68	0.80	0.24	0.03	0.03	
21	0.70	0.80	3.78	7.08	23.36	31.65	3.32	1.47	1.10	0.50	0.00	0.12	
22	1.28	0.60	3.36	4.28	39.45	34.05	3.19	1.89	1.28	0.80	0.00	0.12	
23	1.10	0.65	2.10	4.84	44.25	32.25	3.07	1.75	0.86	1.04	0.03	0.12	
24	0.86	0.75	1.16	4.60	46.35	19.76	2.95	2.10	0.86	0.70	0.06	0.15	
25	0.80	0.70	2.87	4.44	46.80	13.55	2.84	1.54	1.22	0.75	0.00	0.24	
26	1.16	0.65	3.08	3.85	40.95	11.20	2.73	0.55	0.86	0.86	0.06	0.12	
27	0.80	0.60	14.98	1.75	25.76	11.70	2.31	0.80	0.55	0.70	0.06	0.06	
28	0.55	0.98	29.58	1.82	11.90	11.80	3.08	1.22	0.80	0.35	0.24	0.12	
29	0.70	3.78	37.50	2.17	4.84	10.10	2.59	1.82	0.86	0.24		0.15	
30	0.65	3.57	38.40	2.52	6.36	7.08	2.17	1.82	0.70	0.24		0.06	
31		5.96		2.87	7.32		2.59		0.27	0.21		0.12	
Total	16.44	31.06	378.95	580.02	544.86	929.76	130.95	52.69	34.04	13.74	3.09	4.96	2720.56 CMSDAY
Mean	0.55	1.00	12.63	18.71	17.58	30.99	4.22	1.76	1.10	0.44	0.11	0.16	7.45 CMS
Max	1.28	5.96	38.40	51.20	46.80	86.32	6.52	2.31	1.61	1.04	0.30	0.40	86.32 CMS
Min	0.12	0.35	1.16	1.75	3.50	7.08	2.17	0.55	0.27	0.12	0.00	0.03	0.00 CMS
Runoff	1.420	2.684	32.741	50.114	47.076	80.331	11.314	4.552	2.941	1.187	0.267	0.429	235.056 MCM

Momentary Peak 91.72 CMS, at 180.54 M (MSL), at 18:00 Hours, on Sep 9, 1998

Runoff Yield 8.58 Liters/Second/Square KM, Momentary Peak Yield 105.547 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

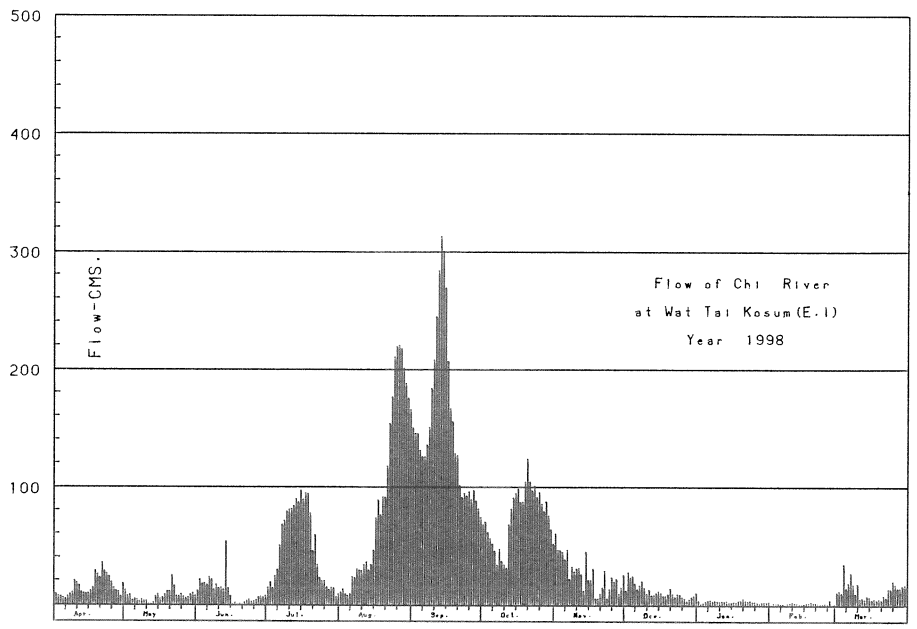
Chi River at Wat Tai Kosum, Maha Sarakham (E.1)

Location	Lat. 16°-15'-02" N., Long. 103°-04'-25" E., on right bank at Wat Tai Kosum about 800 meters north-east of Amphoe Kosum Phisai Office, Maha Sarakham.
Drainage Area	29,788 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+136.64 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the footpath of the bridge.
Elevation	+149.341 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1936-1943, 1951 to date.
Rating Operation	
Period of Rating	1965-1973, 1981 to date.
Rated by Float	-
Rated by Current Meter	1965-1973, 1981 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Kui Chuak barrage above gage site. Stage-discharge relation defined by 22 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	136.88	136.98	136.98	137.04	136.94	139.30	138.06	137.92	136.99	136.62	136.46	136.94	
2	136.77	136.79	137.19	137.15	137.01	139.23	138.10	137.67	137.32	136.49	136.48	136.97	
3	136.78	136.82	137.12	137.04	136.89	139.23	137.95	137.67	137.23	136.49	136.49	136.92	
4	136.70	136.62	137.12	137.25	136.80	139.02	137.85	137.64	137.26	136.59	136.47	137.45	
5	136.68	136.66	137.10	137.37	136.89	138.95	137.77	137.53	137.12	136.62	136.45	137.04	
6	136.77	136.63	137.23	137.74	137.24	138.94	137.66	137.67	137.02	136.62	136.40	137.13	
7	136.88	136.57	137.20	138.06	137.23	139.09	137.44	137.21	137.08	136.59	136.42	137.31	
8	136.92	136.64	137.00	138.11	137.37	139.30	137.68	137.41	137.17	136.59	136.47	137.10	
9	137.18	136.59	137.09	138.25	137.36	139.73	137.50	137.33	137.04	136.59	136.52	136.91	
10	137.13	136.56	137.04	138.27	137.34	140.03	137.44	137.39	136.88	136.55	136.53	137.12	
11	137.09	136.47	137.04	138.28	137.44	140.46	137.40	137.39	137.01	136.57	136.51	136.67	
12	136.94	136.44	137.00	138.33	137.48	140.86	138.06	137.29	136.84	136.59	136.49	136.73	
13	136.89	136.52	137.81	138.42	137.36	141.15	138.28	136.97	136.83	136.59	136.46	136.64	
14	136.89	136.79	137.04	138.38	137.45	141.03	138.44	137.65	136.92	136.54	136.46	136.80	
15	136.89	136.86	136.79	138.54	137.67	140.72	138.50	137.19	136.96	136.54	136.47	136.76	
16	136.96	136.67	136.45	138.41	138.15	140.02	138.56	137.18	136.91	136.54	136.49	136.66	
17	137.04	136.74	136.50	138.50	138.41	139.51	138.38	137.38	136.81	136.55	136.51	136.68	
18	137.35	136.84	136.39	138.50	138.20	139.37	138.38	136.71	136.79	136.59	136.54	136.65	
19	137.28	136.97	136.46	138.22	138.45	138.98	138.64	136.69	136.88	136.62	136.52	136.67	
20	137.23	136.95	136.39	137.66	138.45	138.96	138.92	136.89	137.04	136.68	136.49	136.64	
21	137.47	137.27	136.52	137.91	138.83	138.60	138.65	137.05	136.86	136.60	136.49	136.81	
22	137.34	137.08	136.61	137.44	139.35	138.45	138.54	137.34	136.77	136.59	136.48	136.74	
23	137.29	136.78	136.64	137.23	139.64	138.50	138.59	136.71	136.87	136.59	136.46	137.02	
24	137.25	136.79	136.56	137.16	140.06	138.47	138.45	137.01	136.88	136.56	136.46	137.02	
25	137.14	136.85	136.55	137.17	140.17	138.52	138.51	137.24	136.74	136.54	136.47	137.16	
26	137.03	136.76	136.61	137.06	140.18	138.41	138.35	137.15	136.69	136.54	136.61	137.10	
27	136.98	136.71	136.74	137.01	140.15	138.54	138.25	137.21	136.59	136.50	136.39	137.04	
28	136.94	136.73	136.77	137.04	139.94	138.40	138.39	136.89	136.66	136.54	136.39	137.03	
29	136.78	136.87	136.75	137.04	139.78	138.28	138.18	137.04	136.77	136.54		137.08	
30	137.12	136.90	136.79	136.74	139.63	138.16	137.99	137.28	136.79	136.54		137.09	
31		136.79		136.86	139.50		137.77		136.93	136.54		137.07	
Mean	137.02	136.76	136.85	137.68	138.30	139.27	138.15	137.26	136.92	136.57	136.48	136.93	
Max	137.47	137.27	137.81	138.54	140.18	141.15	138.92	137.92	137.32	136.68	136.61	137.45	141.15
Min	136.68	136.44	136.39	136.74	136.80	138.16	137.40	136.69	136.59	136.49	136.39	136.64	136.39

Annual Max Momentary Gage Height 141.19 M (MSL), at 18.00 Hours, on Sep 13, 1998
Zero Gage at Bottom Elevation 136.64 M (MSL), River Bed 133.77 M (MSL)
Left Bank Elevation 149.28 M (MSL)
Right Bank Elevation 149.29 M (MSL), Drainage Area 29788 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	9.60	12.40	12.40	14.80	11.20	151.00	68.60	60.60	12.70	4.40	1.60	11.20	
2	7.40	7.80	21.55	19.75	13.45	146.10	71.00	46.85	28.00	1.90	1.80	12.10	
3	7.60	8.40	18.40	14.80	9.80	146.10	62.25	46.85	23.50	1.90	1.90	10.60	
4	6.00	4.40	18.40	24.50	8.00	131.40	56.75	45.20	25.00	3.80	1.70	34.75	
5	5.60	5.20	17.50	30.50	9.80	126.50	52.35	39.15	18.40	4.40	1.50	14.80	
6	7.40	4.60	23.50	50.70	24.00	125.80	46.30	46.85	13.90	4.40	1.00	18.85	
7	9.60	3.40	22.00	68.60	23.50	136.30	34.20	22.50	16.60	3.80	1.20	27.50	
8	10.60	4.80	13.00	71.60	30.50	151.00	47.40	32.55	20.65	3.80	1.70	17.50	
9	21.10	3.80	17.05	80.00	30.00	184.40	37.50	28.50	14.80	3.80	2.40	10.30	
10	18.85	3.20	14.80	81.20	29.00	208.40	34.20	31.50	9.60	3.00	2.60	18.40	
11	17.05	1.70	14.80	81.80	34.20	245.40	32.00	31.50	13.45	3.40	2.20	5.40	
12	11.20	1.40	13.00	84.80	36.40	284.00	68.60	26.50	8.80	3.80	1.90	6.60	
13	9.80	2.40	54.55	90.20	30.00	313.00	81.80	12.10	8.60	3.80	1.60	4.80	
14	9.80	7.80	14.80	87.80	34.75	301.00	91.40	45.75	10.60	2.80	1.60	8.00	
15	9.80	9.20	7.80	97.80	46.85	270.00	95.00	21.55	11.80	2.80	1.70	7.20	
16	11.80	5.40	1.50	89.60	74.00	207.60	99.20	21.10	10.30	2.80	1.90	5.20	
17	14.80	6.80	2.00	95.00	89.60	166.80	87.80	31.00	8.20	3.00	2.20	5.60	
18	29.50	8.80	0.95	95.00	77.00	156.25	87.80	6.20	7.80	3.80	2.80	5.00	
19	26.00	12.10	1.60	78.20	92.00	128.60	104.80	5.80	9.60	4.40	2.40	5.40	
20	23.50	11.50	0.95	46.30	92.00	127.20	124.40	9.80	14.80	5.60	1.90	4.80	
21	35.85	25.50	2.40	60.05	118.10	102.00	105.50	15.25	9.20	4.00	1.90	8.20	
22	29.00	16.60	4.20	34.20	154.75	92.00	97.80	29.00	7.40	3.80	1.80	6.80	
23	26.50	7.60	4.80	23.50	177.20	95.00	101.30	6.20	9.40	3.80	1.60	13.90	
24	24.50	7.80	3.20	20.20	210.80	93.20	92.00	13.45	9.60	3.20	1.60	13.90	
25	19.30	9.00	3.00	20.65	219.95	96.40	95.70	24.00	6.80	2.80	1.70	20.20	
26	14.35	7.20	4.20	15.70	220.80	89.60	86.00	19.75	5.80	2.80	4.20	17.50	
27	12.40	6.20	6.80	13.45	218.25	97.80	80.00	22.50	3.80	2.00	0.95	14.80	
28	11.20	6.60	7.40	14.80	201.20	89.00	88.40	9.80	5.20	2.80	0.95	14.35	
29	7.60	9.40	7.00	14.80	188.40	81.80	75.80	14.80	7.40	2.80		16.60	
30	18.40	10.00	7.80	6.80	176.40	74.60	64.45	26.00	7.80	2.80		17.05	
31		7.80		9.20	166.00		52.35		10.90	2.80		16.15	
Total	466.10	238.80	341.35	1536.30	2847.90	4618.25	2322.65	792.60	370.40	105.00	52.30	393.45	14085.10 CMSDAY
Mean	15.54	7.70	11.38	49.56	91.87	153.94	74.92	26.42	11.95	3.39	1.87	12.69	38.59 CMS
Max	35.85	25.50	54.55	97.80	220.80	313.00	124.40	60.60	28.00	5.60	4.20	34.75	313.00 CMS
Min	5.60	1.40	0.95	6.80	8.00	74.60	32.00	5.80	3.80	1.90	0.95	4.80	0.95 CMS
Runoff	40.271	20.632	29.493	132.736	246.059	399.017	200.677	68.481	32.003	9.072	4.519	33.994	1216.953 MCM

Momentary Peak 317.00 CMS, at 141.19 M (MSL), at 18.00 Hours, on Sep 13, 1998

Runoff Yield 1.30 Liters/Second/Square KM, Momentary Peak Yield 10.642 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

Chi River at Ban Non Puai, Chaiyaphum (E.5)

Location — Lat. 15-46-07 N., Long. 101-49-03 E., on left bank near Ban Non Puai about 30 meters downstream from Ban Tango, Amphoe Ban Khwao, Chaiyaphum.

Drainage Area — 4,254 sq.km.

Type of Gage — Water-stage recorder.

Zero Gage at Bottom — +186.07 m. (M.S.L.)

Bench Mark — B.M.-H.D.

Location — Infront of the station office.

Elevation — +197.543 m. (M.S.L.)

Gage Reading Frequency — Recording.

Basis of Mean Daily Gage Height — Arithmetic mean of 24 readings.

Period of Available Gage Records — 1958 to date.

Rating Operation

Period of Rating — 1967-1971, 1973, 1979, 1982 to date.

Rated by Float — -

Rated by Current Meter — 1967-1971, 1973, 1979, 1982 to date.

Stability of Channel Regimes — Fairly stable because of backwater effect.

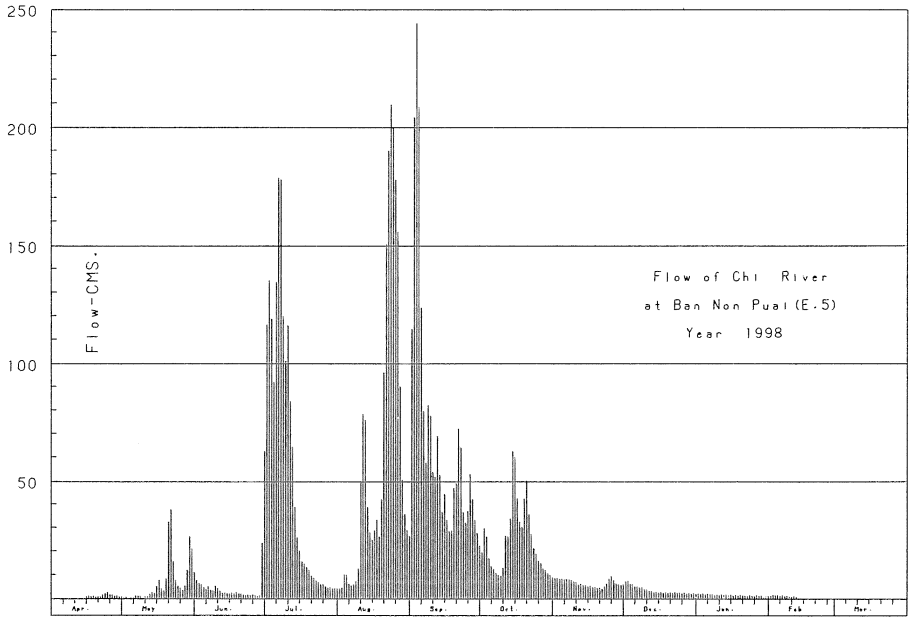
Overbank Flow Conditions — No overbank flow.

General Description — Records fair. The local weir situated about 100 meters downstream from the gage site. Stage-discharge relation defined by 20 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	189.20	189.88	190.26	192.21	190.15	192.16	190.48	190.30	190.25	190.02	189.95	189.60	
2	189.29	189.87	190.23	192.68	190.15	194.21	190.62	190.29	190.25	190.02	189.96	189.58	
3	189.34	189.86	190.20	192.28	190.33	194.97	190.58	190.29	190.22	190.02	189.97	189.55	
4	189.37	189.85	190.17	191.54	190.32	194.29	190.45	190.28	190.20	190.01	189.95	189.53	
5	189.33	189.86	190.14	192.67	190.22	192.40	190.40	190.28	190.18	190.01	189.95	189.50	
6	189.10	189.92	190.17	193.68	190.18	191.17	190.37	190.27	190.17	190.01	189.95	189.48	
7	189.00	189.92	190.13	193.67	190.21	190.88	190.34	190.28	190.17	189.99	189.94	189.46	
8	189.06	189.91	190.11	192.30	190.24	191.24	190.32	190.26	190.16	189.98	189.93	189.44	
9	189.00	189.86	190.19	191.81	190.38	191.10	190.32	190.25	190.14	189.98	189.91	189.43	
10	189.00	189.89	190.14	192.21	190.82	190.85	190.38	190.23	190.13	189.98	189.91	189.41	
11	189.04	189.92	190.11	191.31	191.11	190.83	190.58	190.21	190.12	189.98	189.91	189.39	
12	189.19	190.02	190.08	190.93	191.03	190.96	190.58	190.21	190.11	189.98	189.88	189.37	
13	189.54	190.06	190.04	190.72	190.72	190.84	190.67	190.20	190.10	189.98	189.86	189.34	
14	189.83	190.06	190.06	190.57	190.60	190.70	190.92	190.19	190.09	189.97	189.82	189.31	
15	189.92	190.17	190.04	190.49	190.56	190.77	190.90	190.18	190.09	189.97	189.81	189.29	
16	189.92	190.27	190.04	190.43	190.61	190.66	190.75	190.18	190.08	189.96	189.81	189.28	
17	189.91	190.14	190.04	190.41	190.66	190.61	190.65	190.17	190.07	189.95	189.82	189.28	
18	189.91	190.12	190.07	190.39	190.58	190.61	190.63	190.16	190.07	189.96	189.81	189.25	
19	189.90	190.28	190.03	190.36	190.75	190.79	190.75	190.16	190.07	189.96	189.78	189.21	
20	189.90	190.65	190.00	190.32	191.66	190.81	190.82	190.15	190.06	189.97	189.74	189.19	
21	189.91	190.71	189.97	190.29	193.06	190.98	190.69	190.15	190.07	189.93	189.72	189.17	
22	189.96	190.43	189.97	190.26	193.92	190.93	190.59	190.18	190.08	189.93	189.69	189.17	
23	190.04	190.26	189.95	190.23	194.31	190.70	190.51	190.21	190.08	189.95	189.67	189.15	
24	190.06	190.19	189.97	190.21	194.12	190.65	190.47	190.29	190.06	189.95	189.65	189.09	
25	190.00	190.15	189.96	190.20	193.67	190.70	190.43	190.31	190.06	189.94	189.64	189.08	
26	189.97	190.13	189.94	190.18	193.17	190.84	190.42	190.26	190.06	189.95	189.63	189.08	
27	189.94	190.18	189.93	190.16	191.50	190.75	190.38	190.22	190.05	189.95	189.63	189.03	
28	189.92	190.36	189.93	190.16	190.82	190.66	190.36	190.20	190.03	189.93	189.61	188.96	
29	189.90	190.58	190.54	190.15	190.69	190.60	190.34	190.20	190.03	189.91		188.93	
30	189.89	190.50	190.92	190.14	190.61	190.52	190.32	190.20	190.03	189.91		188.85	
31		190.35		190.14	190.58		190.30		190.02	189.91		188.76	
Mean	189.61	190.14	190.11	191.07	191.22	191.27	190.53	190.23	190.11	189.97	189.82	189.26	
Max	190.06	190.71	190.92	193.68	194.31	194.97	190.92	190.31	190.25	190.02	189.97	189.60	194.97
Min	189.00	189.85	189.93	190.14	190.15	190.52	190.30	190.15	190.02	189.91	189.61	188.76	188.76

Annual Max Momentary Gage Height 195.01 M (MSL), at 18.00 Hours, on Sep 3, 1998
Zero Gage at Bottom Elevation 186.07 M (MSL), River Bed 185.99 M (MSL)
Left Bank Elevation 199.72 M (MSL)
Right Bank Elevation 199.65 M (MSL), Drainage Area 4254 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.80	7.80	116.40	4.50	114.40	19.60	9.00	7.50	2.20	1.50	0.00	
2	0.00	0.70	6.90	135.20	4.50	204.50	29.80	8.70	7.50	2.20	1.60	0.00	
3	0.00	0.60	6.00	119.20	10.50	244.35	26.60	8.70	6.60	2.20	1.70	0.00	
4	0.00	0.50	5.10	91.90	10.00	208.50	17.50	8.40	6.00	2.10	1.50	0.00	
5	0.00	0.60	4.20	134.80	6.60	124.00	14.00	8.40	5.40	2.10	1.50	0.00	
6	0.00	1.20	5.10	178.60	5.40	80.10	12.50	8.10	5.10	2.10	1.50	0.00	
7	0.00	1.20	3.90	178.15	6.30	57.60	11.00	8.40	5.10	1.90	1.40	0.00	
8	0.00	1.10	3.30	120.00	7.20	82.20	10.00	7.80	4.80	1.80	1.30	0.00	
9	0.00	0.60	5.70	101.35	13.00	78.00	10.00	7.50	4.20	1.80	1.10	0.00	
10	0.00	0.90	4.20	116.40	50.40	54.00	13.00	6.90	3.90	1.80	1.10	0.00	
11	0.00	1.20	3.30	84.30	78.30	51.60	26.60	6.30	3.60	1.80	1.10	0.00	
12	0.00	2.20	2.80	64.50	75.90	69.00	26.60	6.30	3.30	1.80	0.80	0.00	
13	0.00	2.60	2.40	39.20	39.20	52.80	34.30	6.00	3.00	1.80	0.60	0.00	
14	0.30	2.60	2.60	25.90	28.00	37.00	63.00	5.70	2.90	1.70	0.20	0.00	
15	1.20	5.10	2.40	20.30	25.20	44.70	60.00	5.40	2.90	1.70	0.10	0.00	
16	1.20	8.10	2.40	16.10	28.90	33.40	42.50	5.40	2.80	1.60	0.10	0.00	
17	1.10	4.20	2.40	14.70	33.40	28.90	32.50	5.10	2.70	1.50	0.20	0.00	
18	1.10	3.60	2.70	13.50	26.60	28.90	30.70	4.80	2.70	1.60	0.10	0.00	
19	1.00	8.40	2.30	12.00	42.50	46.90	42.50	4.80	2.70	1.60	0.00	0.00	
20	1.00	32.50	2.00	10.00	96.10	49.20	50.40	4.50	2.60	1.70	0.00	0.00	
21	1.10	38.10	1.70	8.70	150.70	72.00	36.10	4.50	2.70	1.30	0.00	0.00	
22	1.60	16.10	1.70	7.80	190.00	64.50	27.30	5.40	2.80	1.30	0.00	0.00	
23	2.40	7.80	1.50	6.90	209.50	37.00	21.70	6.30	2.80	1.50	0.00	0.00	
24	2.60	5.70	1.70	6.30	200.00	32.50	18.90	8.70	2.60	1.50	0.00	0.00	
25	2.00	4.50	1.60	6.00	178.15	37.00	16.10	9.50	2.60	1.40	0.00	0.00	
26	1.70	3.90	1.40	5.40	155.65	52.80	15.40	7.80	2.60	1.50	0.00	0.00	
27	1.40	5.40	1.30	4.80	90.50	42.50	13.00	6.60	2.50	1.50	0.00	0.00	
28	1.20	12.00	1.30	4.80	50.40	33.40	12.00	6.00	2.30	1.30	0.00	0.00	
29	1.00	26.60	23.80	4.50	36.10	28.00	11.00	6.00	2.30	1.10		0.00	
30	0.90	21.00	63.00	4.20	28.90	22.40	10.00	6.00	2.30	1.10		0.00	
31		11.50		4.20	26.60		9.00		2.20	1.10		0.00	
Total	22.80	231.30	176.50	1656.10	1909.00	2112.15	763.60	203.00	113.00	51.60	17.40	0.00	7256.45 CMSDAY
Mean	0.76	7.46	5.88	53.42	61.58	70.40	24.63	6.77	3.65	1.66	0.62	0.00	19.88 CMS
Max	2.60	38.10	63.00	178.60	209.50	244.35	63.00	9.50	7.50	2.20	1.70	0.00	244.35 CMS
Min	0.00	0.50	1.30	4.20	4.50	22.40	9.00	4.50	2.20	1.10	0.00	0.00	0.00 CMS
Runoff	1.970	19.984	15.250	143.087	164.938	182.490	65.975	17.539	9.763	4.458	1.503	0.000	626.957 MCM

Momentary Peak 246.60 CMS, at 195.01 M (MSL), at 18.00 Hours, on Sep 3, 1998

Runoff Yield 4.67 Liters/Second/Square KM, Momentary Peak Yield 57.969 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

Huai Tat Ton at Ban Tat Ton, Chaiyaphum (E.6C).

Location — Lat. 15°57'36" N., Long. 102°01'57" E., on right bank about 5 kilometers upstream from E.6A station at Ban Tat Ton, Amphoe Muang, Chaiyaphum.

Drainage Area — 300 sq.km.

Type of Gage — Staff gage.

Zero Gage at Bottom — +192.70 m.(M.S.L.)

Bench Mark — B.M.-H.D.

Location — About 2 meters from the sling pole.

Elevation — +199.546 m.(M.S.L.)

Gage Reading Frequency — 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height — Arithmetic mean of 5 readings.

Period of Available Gage Records — 1973 to date.

Rating Operation

Period of Rating — 1973 to date.

Rated by Float — -

Rated by Current Meter — 1973 to date.

Stability of Channel Regimes — Stable.

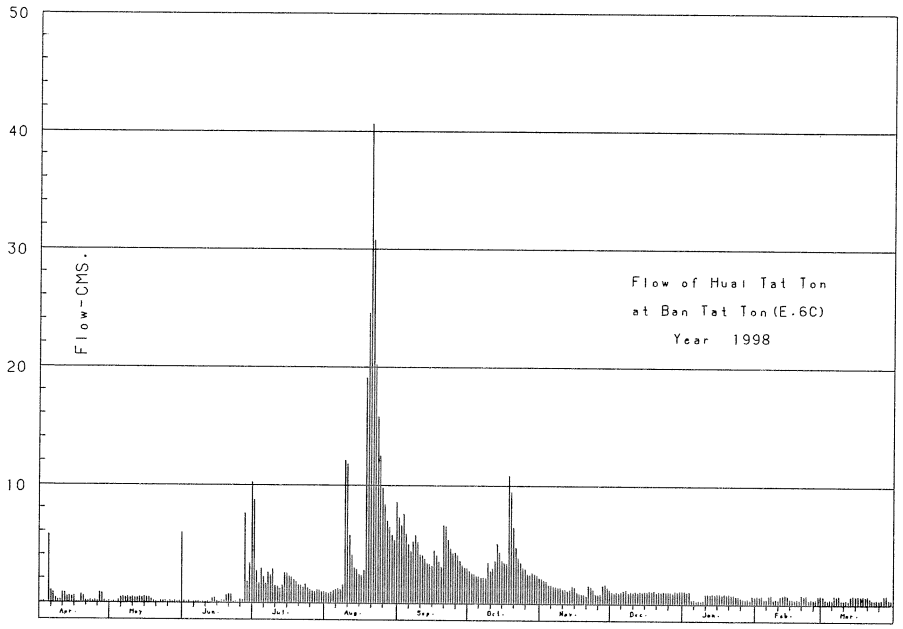
Overbank Flow Conditions — No overbank flow.

General Description — Records good. Lam Pa Thao dam situated about 5 kilometers and the weir situated about 2 kilometers upstream from the gage site. Stage-discharge relation defined by 21 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	192.46	192.46	192.48	194.37	192.69	194.10	193.18	193.02	192.71	192.76	192.63	192.65	
2	192.45	192.45	192.48	193.17	192.69	193.99	193.15	193.00	192.71	192.71	192.63	192.55	
3	192.43	192.45	192.47	192.91	192.70	194.17	193.12	192.97	192.71	192.75	192.63	192.55	
4	193.84	192.52	192.46	193.24	192.76	193.85	193.09	192.90	192.71	192.55	192.57	192.55	
5	192.75	192.58	192.46	193.07	192.78	193.69	193.07	192.88	192.71	192.54	192.56	192.55	
6	192.68	192.58	192.46	192.92	192.79	193.57	193.06	192.87	192.77	192.52	192.66	192.65	
7	192.57	192.58	192.45	193.14	192.78	193.72	193.04	192.84	192.77	192.52	192.66	192.65	
8	192.50	192.58	192.45	193.10	192.88	193.84	193.05	192.84	192.72	192.52	192.56	192.65	
9	192.52	192.57	192.45	193.21	194.95	193.71	193.35	192.82	192.72	192.52	192.56	192.55	
10	192.68	192.57	192.45	192.85	194.89	193.50	193.20	192.80	192.73	192.69	192.56	192.55	
11	192.69	192.57	192.45	192.85	193.84	193.50	193.24	192.78	192.73	192.67	192.66	192.54	
12	192.60	192.57	192.45	192.78	193.49	193.42	193.40	192.76	192.73	192.68	192.66	192.54	
13	192.60	192.57	192.56	192.88	193.26	193.35	193.70	192.77	192.73	192.68	192.66	192.65	
14	192.60	192.58	192.56	193.13	193.21	193.32	193.54	192.88	192.73	192.68	192.66	192.65	
15	192.60	192.58	192.48	193.14	193.12	193.30	193.39	192.83	192.73	192.68	192.56	192.65	
16	192.42	192.57	192.45	193.08	193.08	193.57	193.36	192.73	192.74	192.68	192.56	192.65	
17	192.42	192.57	192.50	193.04	193.21	193.50	193.33	192.68	192.75	192.68	192.56	192.65	
18	192.64	192.52	192.50	193.01	195.91	193.37	194.75	192.68	192.75	192.68	192.56	192.64	
19	192.62	192.50	192.64	192.95	196.42	193.28	194.50	192.66	192.75	192.68	192.56	192.64	
20	192.50	192.44	192.64	192.89	197.43	194.00	193.96	192.64	192.72	192.68	192.66	192.64	
21	192.50	192.44	192.64	192.86	196.89	193.97	193.64	192.87	192.73	192.67	192.65	192.61	
22	192.49	192.50	192.45	192.83	196.02	193.77	193.44	192.86	192.73	192.66	192.65	192.55	
23	192.49	192.49	192.44	192.89	195.52	193.62	193.37	192.78	192.73	192.64	192.56	192.55	
24	192.49	192.49	192.44	192.82	195.00	193.52	193.25	192.68	192.74	192.62	192.56	192.55	
25	192.49	192.48	192.52	192.76	194.57	193.55	193.24	192.67	192.74	192.60	192.56	192.55	
26	192.68	192.48	192.52	192.72	194.30	193.49	193.13	192.66	192.71	192.56	192.56	192.55	
27	192.68	192.47	194.17	192.73	194.06	193.40	193.10	192.89	192.71	192.56	192.65	192.66	
28	192.48	192.47	192.96	192.78	193.95	193.30	193.14	192.90	192.74	192.56	192.65	192.66	
29	192.48	192.46	193.33	192.75	193.84	193.27	193.13	192.84	192.74	192.55		192.57	
30	192.48	192.46	194.65	192.73	193.74	193.24	193.09	192.77	192.74	192.63		192.54	
31		193.86		192.71	194.34		193.05		192.74	192.63		192.54	
Mean	192.59	192.56	192.67	192.98	194.10	193.60	193.36	192.81	192.73	192.63	192.61	192.60	
Max	193.84	193.86	194.65	194.37	197.43	194.17	194.75	193.02	192.77	192.76	192.66	192.66	197.43
Min	192.42	192.44	192.44	192.71	192.69	193.24	193.04	192.64	192.71	192.52	192.56	192.54	192.42

Annual Max Momentary Gage Height 197.64 M (MSL), at 6.00 Hours, on Aug 20, 1998
Zero Gage at Bottom Elevation 192.70 M (MSL), River Bed 192.28 M (MSL)
Left Bank Elevation 200.31 M (MSL)
Right Bank Elevation 199.67 M (MSL), Drainage Area 300 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.13	0.13	0.16	8.73	0.87	7.25	2.72	2.08	0.94	1.11	0.66	0.72	
2	0.11	0.11	0.16	2.68	0.87	6.65	2.60	2.00	0.94	0.94	0.66	0.38	
3	0.07	0.11	0.15	1.64	0.90	7.63	2.48	1.88	0.94	1.08	0.66	0.38	
4	5.82	0.27	0.13	2.96	1.11	5.88	2.36	1.60	0.94	0.38	0.45	0.38	
5	1.08	0.48	0.13	2.28	1.18	5.05	2.28	1.53	0.94	0.34	0.41	0.38	
6	0.83	0.48	0.13	1.68	1.21	4.45	2.24	1.50	1.15	0.27	0.76	0.72	
7	0.45	0.48	0.11	2.56	1.18	5.20	2.16	1.39	1.15	0.27	0.76	0.72	
8	0.20	0.48	0.11	2.40	1.53	5.82	2.20	1.39	0.97	0.27	0.41	0.72	
9	0.27	0.45	0.11	2.84	12.17	5.15	3.43	1.32	0.97	0.27	0.41	0.38	
10	0.83	0.45	0.11	1.43	11.78	4.10	2.80	1.25	1.00	0.87	0.41	0.38	
11	0.87	0.45	0.11	1.43	5.82	4.10	2.96	1.18	1.00	0.80	0.76	0.34	
12	0.55	0.45	0.11	1.18	4.06	3.74	3.65	1.11	1.00	0.83	0.76	0.34	
13	0.55	0.45	0.41	1.53	3.04	3.43	5.10	1.15	1.00	0.83	0.76	0.72	
14	0.55	0.48	0.41	2.52	2.84	3.29	4.30	1.53	1.00	0.83	0.76	0.72	
15	0.55	0.48	0.16	2.56	2.48	3.20	3.60	1.36	1.00	0.83	0.41	0.72	
16	0.06	0.45	0.11	2.32	2.32	4.45	3.47	1.00	1.04	0.83	0.41	0.72	
17	0.06	0.45	0.20	2.16	2.84	4.10	3.33	0.83	1.08	0.83	0.41	0.72	
18	0.69	0.27	0.20	2.04	19.10	3.51	10.90	0.83	1.08	0.83	0.41	0.69	
19	0.62	0.20	0.69	1.80	24.64	3.12	9.45	0.76	1.08	0.83	0.41	0.69	
20	0.20	0.09	0.69	1.57	40.60	6.70	6.48	0.69	0.97	0.83	0.76	0.69	
21	0.20	0.09	0.69	1.46	30.85	6.53	4.80	1.50	1.00	0.80	0.72	0.59	
22	0.18	0.20	0.11	1.36	20.20	5.45	3.83	1.46	1.00	0.76	0.72	0.38	
23	0.18	0.18	0.09	1.57	15.88	4.70	3.51	1.18	1.00	0.69	0.41	0.38	
24	0.18	0.18	0.09	1.32	12.50	4.20	3.00	0.83	1.04	0.62	0.41	0.38	
25	0.18	0.16	0.27	1.11	9.84	4.35	2.96	0.80	1.04	0.55	0.41	0.38	
26	0.83	0.16	0.27	0.97	8.35	4.06	2.52	0.76	0.94	0.41	0.41	0.38	
27	0.83	0.15	7.63	1.00	7.03	3.65	2.40	1.57	0.94	0.41	0.72	0.76	
28	0.16	0.15	1.84	1.18	6.42	3.20	2.56	1.60	1.04	0.41	0.72	0.76	
29	0.16	0.13	3.33	1.08	5.82	3.08	2.52	1.39	1.04	0.38		0.45	
30	0.16	0.13	10.30	1.00	5.30	2.96	2.36	1.15	1.04	0.66		0.34	
31		5.93		0.94	8.57		2.20		1.04	0.66		0.34	
Total	17.55	14.67	29.01	61.30	271.30	139.00	111.17	38.62	31.31	20.42	15.96	16.65	766.96 CMSDAY
Mean	0.59	0.47	0.97	1.98	8.75	4.63	3.59	1.29	1.01	0.66	0.57	0.54	2.10 CMS
Max	5.82	5.93	10.30	8.73	40.60	7.63	10.90	2.08	1.15	1.11	0.76	0.76	40.60 CMS
Min	0.06	0.09	0.09	0.94	0.87	2.96	2.16	0.69	0.94	0.27	0.41	0.34	0.06 CMS
Runoff	1.516	1.267	2.506	5.296	23.440	12.010	9.605	3.337	2.705	1.764	1.379	1.439	66.265 MCM

Momentary Peak 45.00 CMS, at 197.64 M (MSL), at 6.00 Hours, on Aug 20, 1998

Runoff Yield 7.00 Liters/Second/Square KM, Momentary Peak Yield 150.000 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

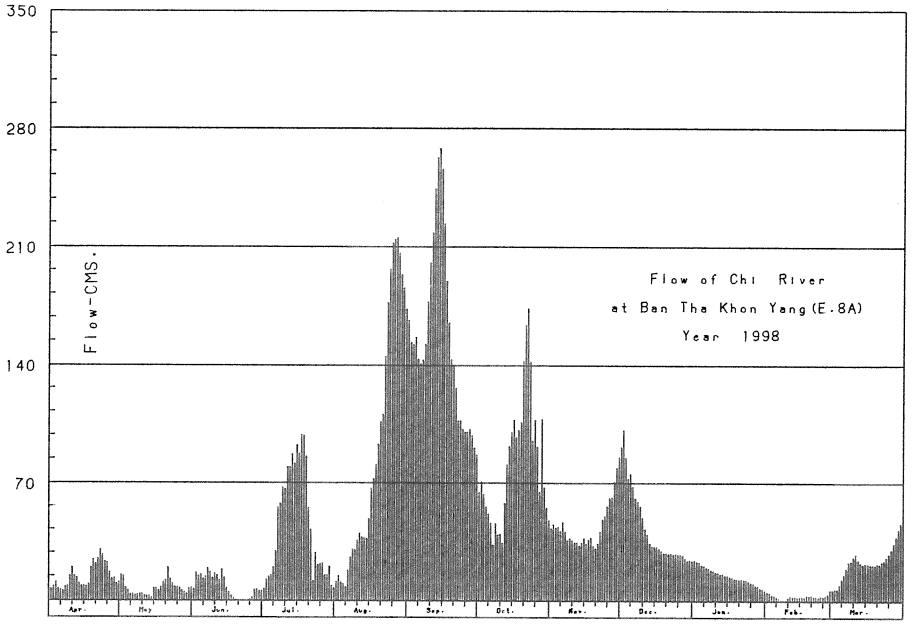
Chi River at Ban Din Dam, Maha Sarakham (E.8A)

Location	Lat. 16°13'51" N., Long. 103°16'29" E., on right bank at the bridge of Maha Sarakham-Kalasin Highway, Amphoe Muang, Maha Sarakham.
Drainage Area	30,764 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+133.21 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the automatic gage building.
Elevation	+144.420 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1955 to date.
Rating Operation	
Period of Rating	1955-1957, 1965-1976, 1982 to date.
Rated by Float	-
Rated by Current Meter	1955-1957, 1965-1976, 1982 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Wang Yang barrage situated downstream from the gage site. Stage-discharge relation defined by 41 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	133.93	134.16	133.93	133.94	134.06	136.81	134.89	136.49	136.85	135.52	133.97	134.06	
2	133.98	134.14	134.19	134.09	134.14	136.58	135.03	136.52	136.88	135.48	133.90	134.08	
3	134.05	133.97	134.14	134.14	134.06	136.55	134.87	136.50	136.83	135.42	133.83	134.10	
4	133.94	133.89	134.17	134.15	134.03	136.63	134.72	136.50	136.78	135.32	133.77	134.29	
5	133.89	133.80	134.11	134.25	133.98	136.40	134.66	136.44	136.80	135.25	133.73	134.61	
6	133.89	133.79	134.13	134.40	134.21	136.34	134.60	136.54	136.75	135.19	133.64	134.80	
7	133.99	133.78	134.24	134.70	134.35	136.39	134.45	136.44	136.71	135.12	133.60	135.13	
8	133.99	133.77	134.19	134.76	134.41	136.56	134.60	136.30	136.69	135.06	133.57	135.42	
9	134.15	133.82	134.12	134.95	134.41	137.01	134.52	136.34	136.66	135.01	133.59	135.50	
10	134.25	133.79	134.17	134.94	134.48	137.43	134.53	136.30	136.57	134.95	133.70	135.71	
11	134.14	133.76	134.15	135.20	134.53	137.76	134.46	136.27	136.48	134.89	133.74	135.81	
12	134.13	133.75	134.08	135.19	134.51	138.21	134.77	136.26	136.39	134.86	133.73	135.56	
13	134.03	133.73	134.23	135.34	134.50	138.53	135.22	136.21	136.25	134.83	133.71	135.37	
14	134.00	133.68	134.13	135.24	134.50	138.63	135.44	136.25	136.16	134.79	133.70	135.33	
15	133.99	133.95	133.96	135.45	134.63	138.42	135.59	136.34	136.17	134.75	133.69	135.34	
16	133.98	133.93	133.84	135.35	134.94	137.85	135.73	136.23	136.15	134.73	133.70	135.33	
17	134.03	133.90	133.74	135.56	135.06	137.24	135.53	136.31	136.09	134.67	133.72	135.33	
18	134.25	133.96	133.63	135.56	135.22	136.79	135.62	136.35	135.99	134.63	133.77	135.29	
19	134.32	134.06	133.55	135.32	135.46	136.39	135.71	136.18	135.90	134.59	133.80	135.30	
20	134.29	134.08	133.54	134.70	135.71	136.33	136.37	136.11	135.86	134.58	133.78	135.34	
21	134.33	134.25	133.53	134.56	135.80	136.08	136.76	136.25	135.87	134.59	133.75	135.35	
22	134.41	134.11	133.52	134.08	136.42	135.72	136.95	136.43	135.86	134.58	133.72	135.43	
23	134.36	134.03	133.52	134.38	137.01	135.73	136.95	136.56	135.84	134.54	133.71	135.53	
24	134.31	133.99	133.56	134.28	137.36	135.63	136.86	136.58	135.83	134.50	133.73	135.66	
25	134.29	133.96	133.57	134.29	137.65	135.60	136.90	136.66	135.83	134.43	133.75	135.86	
26	134.19	133.96	133.66	134.29	137.68	135.59	136.85	136.71	135.79	134.36	133.74	136.05	
27	134.11	133.89	133.92	134.16	137.71	135.63	136.73	136.71	135.78	134.29	133.86	136.23	
28	134.11	133.84	133.91	134.15	137.53	135.55	136.90	136.77	135.60	134.23	134.03	136.36	
29	134.04	133.82	133.89	134.26	137.31	135.42	136.75	136.81	135.53	134.16		136.46	
30	134.05	133.93	133.87	134.00	137.16	135.33	136.65	136.83	135.51	134.08		136.53	
31		133.95		133.96	136.94		136.55		135.52	134.02		136.62	
Mean	134.11	133.92	133.91	134.63	135.48	136.64	135.68	136.44	136.19	134.76	133.75	135.41	
Max	134.41	134.25	134.24	135.56	137.71	138.63	136.95	136.83	136.88	135.52	134.03	136.62	138.63
Min	133.89	133.68	133.52	133.94	133.98	135.33	134.45	136.11	135.51	134.02	133.57	134.06	133.52

Annual Max Momentary Gage Height 138.65 M (MSL), at 24.00 Hours, on Sep 13, 1998
Zero Gage at Bottom Elevation 133.21 M (MSL), River Bed 133.14 M (MSL)
Left Bank Elevation 147.95 M (MSL)
Right Bank Elevation 147.80 M (MSL), Drainage Area 30764 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.25	15.70	7.25	7.50	11.40	166.55	64.50	43.60	92.00	24.24	5.64	6.72	
2	8.50	14.80	17.05	12.60	14.80	153.90	71.50	45.60	101.60	23.76	4.80	6.96	
3	11.00	8.25	14.80	14.80	11.40	152.25	63.50	44.00	85.60	23.04	3.96	7.20	
4	7.50	6.25	16.15	15.25	10.20	156.65	56.40	44.00	72.80	21.84	3.24	9.48	
5	6.25	4.00	13.45	20.25	8.50	144.00	51.90	41.60	76.00	21.00	2.76	13.32	
6	6.25	3.84	14.35	30.00	18.05	140.70	46.50	47.20	68.00	20.28	1.68	15.60	
7	8.75	3.68	19.70	55.50	26.50	143.45	33.75	41.60	61.60	19.44	1.20	19.56	
8	8.75	3.52	17.05	58.20	30.75	152.80	46.50	36.00	59.20	18.72	0.84	23.04	
9	15.25	4.50	13.90	67.50	30.75	177.55	39.30	37.60	56.80	18.12	1.08	24.00	
10	20.25	3.84	16.15	67.00	36.00	200.65	40.20	36.00	49.60	17.40	2.40	26.52	
11	14.80	3.36	15.25	80.00	40.20	218.80	34.50	35.10	43.20	16.68	2.88	27.72	
12	14.35	3.20	12.20	79.50	38.40	244.18	58.65	34.80	39.60	16.32	2.76	24.72	
13	10.20	2.88	19.15	87.28	37.50	262.74	81.04	33.30	34.50	15.96	2.52	22.44	
14	9.00	2.16	14.35	82.08	37.50	268.54	92.48	34.50	32.40	15.48	2.40	21.96	
15	8.75	7.75	8.00	93.00	49.20	256.36	100.28	37.60	32.55	15.00	2.28	22.08	
16	8.50	7.25	5.00	87.80	67.00	223.75	107.59	33.90	32.25	14.76	2.40	21.96	
17	10.20	6.50	3.04	98.72	73.00	190.20	97.16	36.40	31.35	14.04	2.64	21.96	
18	20.25	8.00	1.56	98.72	81.04	165.45	101.84	38.00	29.88	13.56	3.24	21.48	
19	24.40	11.40	0.60	86.24	93.52	143.45	106.53	32.70	28.80	13.08	3.60	21.60	
20	22.45	12.20	0.48	55.50	106.53	140.15	142.35	31.65	28.32	12.96	3.36	22.08	
21	25.10	20.25	0.36	42.90	111.30	126.40	163.80	34.50	28.44	13.08	3.00	22.20	
22	30.75	13.45	0.24	12.20	145.10	107.06	174.25	41.20	28.32	12.96	2.64	23.16	
23	27.20	10.20	0.24	28.60	177.55	107.59	142.50	48.80	28.08	12.48	2.52	24.36	
24	23.70	8.75	0.72	21.90	196.80	102.36	95.20	50.40	27.96	12.00	2.76	25.92	
25	22.45	8.00	0.84	22.45	212.75	100.80	108.00	56.80	27.96	11.16	3.00	28.32	
26	17.05	8.00	1.92	22.45	214.40	100.28	92.00	61.60	27.48	10.32	2.88	30.75	
27	13.45	6.25	7.00	15.70	216.05	102.36	64.80	61.60	27.36	9.48	4.32	33.90	
28	13.45	5.00	6.75	15.25	206.15	98.20	108.00	71.20	25.20	8.76	6.36	38.40	
29	10.60	4.50	6.25	20.80	194.05	91.44	68.00	79.20	24.36	7.92		42.40	
30	11.00	7.25	5.75	9.00	185.80	86.76	56.00	85.60	24.12	6.96		46.40	
31		7.75		8.00	173.70		48.00		24.24	6.24		53.60	
Total	437.40	232.48	259.55	1416.69	2855.89	4725.37	2557.02	1356.05	1349.57	467.04	83.16	749.81	16490.03 CMSDAY
Mean	14.58	7.50	8.65	45.70	92.13	157.51	82.48	45.20	43.53	15.07	2.97	24.19	45.18 CMS
Max	30.75	20.25	19.70	98.72	216.05	268.54	174.25	85.60	101.60	24.24	6.36	53.60	268.54 CMS
Min	6.25	2.16	0.24	7.50	8.50	86.76	33.75	31.65	24.12	6.24	0.84	6.72	0.24 CMS
Runoff	37.791	20.086	22.425	122.402	246.749	408.272	220.927	117.163	116.603	40.352	7.185	64.784	1424.739 MCM

Momentary Peak 269.70 CMS, at 138.65 M (MSL), at 24.00 Hours, on Sep 13, 1998
Runoff Yield 1.47 Liters/Second/Square KM, Momentary Peak Yield 8.767 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

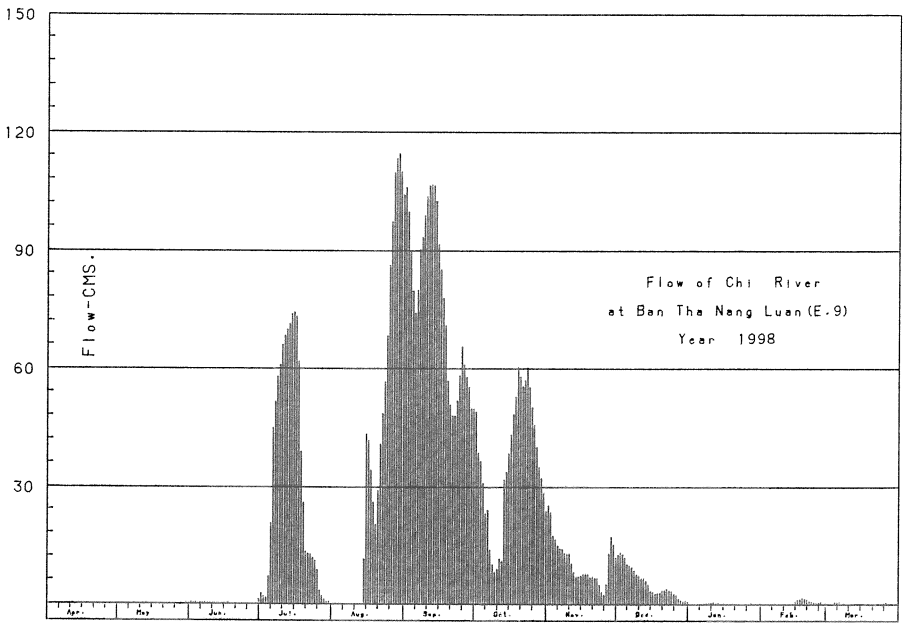
Chi River at Ban Chot, Khon Kaen (E.9)

Location	Lat. 16-05-49 N., Long. 102-34-23- E., on left bank about 80 meters downstream from the bridge on highway, Amphoe Manchakiri, Khon Kaen.
Drainage Area	11,020 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+151.11 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 25 meters from the top staff gage.
Elevation	+163.044 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1958 to date.
Rating Operation	
Period of Rating	1967 - 1973, 1986 - 1987, 1992 to date.
Rated by Float	-
Rated by Current Meter	1967 - 1980, 1983 - 1987, 1992 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	151.87	151.83	152.06	152.55	151.96	158.09	155.86	154.56	153.67	152.06	151.92	151.97	
2	151.86	151.83	152.06	152.41	151.96	157.90	155.32	154.44	153.70	151.97	151.84	151.92	
3	151.85	151.83	152.05	152.36	151.97	157.55	155.21	154.05	153.68	151.97	151.81	151.96	
4	151.84	151.81	152.05	153.12	151.94	157.19	154.89	153.97	153.59	151.96	151.79	152.06	
5	151.83	151.79	152.03	154.26	151.88	156.96	154.42	153.86	153.45	151.95	151.78	152.10	
6	151.82	151.79	152.01	155.65	151.87	157.19	154.49	153.79	153.39	151.95	151.78	152.08	
7	151.82	151.78	152.01	155.99	151.88	157.57	153.76	153.79	153.36	151.94	151.79	152.05	
8	151.83	151.76	152.00	156.26	151.89	157.68	153.43	153.69	153.26	152.06	151.81	152.03	
9	151.83	151.75	151.98	156.40	151.92	157.86	153.21	153.67	153.17	152.06	151.84	151.99	
10	151.84	151.73	151.97	156.61	151.96	158.02	153.31	153.69	153.12	152.05	151.87	151.96	
11	151.85	151.70	151.96	156.72	151.96	158.11	153.56	153.45	153.06	152.04	151.91	151.91	
12	151.85	151.69	151.91	156.78	151.90	158.11	153.51	153.22	153.04	152.03	151.93	151.84	
13	151.85	151.68	151.88	156.85	152.02	158.11	154.93	153.10	153.01	152.01	151.96	151.89	
14	151.86	151.65	151.86	156.95	153.57	157.99	155.05	153.10	152.90	151.99	152.02	151.92	
15	151.86	151.63	151.93	156.98	155.57	157.61	155.31	153.14	152.70	151.98	152.15	151.94	
16	151.87	151.59	151.96	156.93	155.49	157.39	155.56	153.16	152.63	151.97	152.23	151.96	
17	151.88	151.57	152.00	156.43	155.08	157.12	155.83	153.18	152.56	151.96	152.29	151.96	
18	151.88	151.56	151.90	155.35	154.61	156.82	156.04	153.16	152.56	151.96	152.33	151.97	
19	151.89	151.54	151.87	154.61	154.24	156.22	156.37	153.10	152.61	151.96	152.31	151.97	
20	151.89	151.53	151.87	153.72	154.77	155.94	156.26	153.09	152.67	151.96	152.26	151.98	
21	151.88	151.51	151.87	153.69	155.45	155.80	156.16	153.09	152.73	151.94	152.18	151.98	
22	151.87	151.50	151.87	153.66	155.84	155.81	156.22	153.06	152.76	151.91	152.12	151.98	
23	151.86	151.48	151.78	153.60	156.20	156.00	156.36	152.91	152.71	151.89	152.11	152.01	
24	151.85	151.47	151.71	153.51	156.72	156.27	156.15	152.63	152.68	151.89	152.10	152.03	
25	151.85	151.46	151.69	153.29	157.42	156.60	155.92	152.51	152.54	151.88	152.08	152.04	
26	151.85	151.49	151.66	152.72	157.81	156.39	155.68	152.92	152.45	151.88	152.07	152.05	
27	151.84	151.52	151.76	152.46	158.21	156.26	155.41	153.69	152.32	152.00	152.03	152.00	
28	151.84	151.56	151.89	152.24	158.31	156.14	155.11	154.01	152.20	152.00	152.01	151.98	
29	151.84	151.92	152.03	152.15	158.35	155.90	154.96	153.87	152.17	152.00		151.96	
30	151.84	151.98	152.28	152.09	158.21	155.89	154.73	153.59	152.16	152.01		151.95	
31		152.02		152.04	158.04		154.46		152.14	151.98		151.95	
Mean	151.85	151.68	151.93	154.46	154.48	157.02	155.08	153.45	152.87	151.97	152.01	151.98	
Max	151.89	152.02	152.28	156.98	158.35	158.11	156.37	154.56	153.70	152.06	152.33	152.10	158.35
Min	151.82	151.46	151.66	152.04	151.87	155.80	153.21	152.51	152.14	151.88	151.78	151.84	151.46

Annual Max Momentary Gage Height 158.35 M (MSL), at 12.00 Hours, on Aug 27, 1998
Zero Gage at Bottom Elevation 151.11 M (MSL), River Bed 150.45 M (MSL)
Left Bank Elevation 166.91 M (MSL)
Right Bank Elevation 166.57 M (MSL), Drainage Area 11020 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.07	0.03	0.58	2.75	0.28	105.97	49.20	25.36	12.84	0.58	0.16	0.31	
2	0.06	0.03	0.58	2.05	0.28	100.00	38.60	23.44	13.20	0.31	0.04	0.16	
3	0.05	0.03	0.55	1.80	0.31	89.80	36.68	17.70	12.96	0.31	0.01	0.28	
4	0.04	0.01	0.55	7.20	0.22	79.94	31.07	16.61	11.90	0.28	0.00	0.58	
5	0.03	0.00	0.49	20.64	0.08	74.08	23.12	15.18	10.50	0.25	0.00	0.70	
6	0.02	0.00	0.43	45.00	0.07	79.94	24.24	14.28	9.90	0.25	0.00	0.64	
7	0.02	0.00	0.43	51.80	0.08	90.36	13.92	14.28	9.60	0.22	0.00	0.55	
8	0.03	0.00	0.40	57.98	0.09	93.44	10.30	13.08	8.60	0.58	0.01	0.49	
9	0.03	0.00	0.34	61.20	0.16	98.80	8.10	12.84	7.70	0.58	0.04	0.37	
10	0.04	0.00	0.31	66.03	0.28	103.66	9.10	13.08	7.20	0.55	0.07	0.28	
11	0.05	0.00	0.28	68.56	0.28	106.63	11.60	10.50	6.60	0.52	0.13	0.13	
12	0.05	0.00	0.13	69.94	0.10	106.63	11.10	8.20	6.40	0.49	0.19	0.04	
13	0.05	0.00	0.08	71.55	0.46	106.63	31.77	7.00	6.10	0.43	0.28	0.09	
14	0.06	0.00	0.06	73.85	11.70	102.70	33.88	7.00	5.00	0.37	0.46	0.16	
15	0.06	0.00	0.19	74.54	43.40	91.48	38.43	7.40	3.50	0.34	0.85	0.22	
16	0.07	0.00	0.28	73.39	41.80	85.32	43.20	7.60	3.15	0.31	1.15	0.28	
17	0.08	0.00	0.40	61.89	34.40	78.12	48.60	7.80	2.80	0.28	1.45	0.28	
18	0.08	0.00	0.10	39.13	26.17	70.86	52.92	7.60	2.80	0.28	1.65	0.31	
19	0.09	0.00	0.07	26.17	20.36	57.06	60.51	7.00	3.05	0.28	1.55	0.31	
20	0.09	0.00	0.07	13.44	28.98	50.80	57.98	6.90	3.35	0.28	1.30	0.34	
21	0.08	0.00	0.07	13.08	41.00	48.00	55.68	6.90	3.72	0.22	0.94	0.34	
22	0.07	0.00	0.07	12.72	48.80	48.20	57.06	6.60	3.95	0.13	0.76	0.34	
23	0.06	0.00	0.00	12.00	56.60	52.00	60.28	5.10	3.58	0.09	0.73	0.43	
24	0.05	0.00	0.00	11.10	68.56	58.21	55.45	3.15	3.40	0.09	0.70	0.49	
25	0.05	0.00	0.00	8.90	86.16	65.80	50.40	2.55	2.70	0.08	0.64	0.52	
26	0.05	0.00	0.00	3.65	97.30	60.97	45.60	5.20	2.25	0.08	0.61	0.55	
27	0.04	0.00	0.00	2.30	109.94	57.98	40.20	13.08	1.60	0.40	0.49	0.40	
28	0.04	0.00	0.09	1.20	113.35	55.22	34.93	17.14	1.00	0.40	0.43	0.34	
29	0.04	0.16	0.49	0.85	114.75	50.00	32.30	15.31	0.91	0.40		0.28	
30	0.04	0.34	1.40	0.67	109.94	49.80	28.27	11.90	0.88	0.43		0.25	
31		0.46		0.52	104.32		23.76		0.82	0.34		0.25	
Total	1.59	1.06	8.44	955.90	1160.22	2318.40	1118.25	329.78	171.96	10.15	14.64	10.71	6101.10 CMSDAY
Mean	0.05	0.03	0.28	30.84	37.43	77.28	36.07	10.99	5.55	0.33	0.52	0.35	16.72 CMS
Max	0.09	0.46	1.40	74.54	114.75	106.63	60.51	25.36	13.20	0.58	1.65	0.70	114.75 CMS
Min	0.02	0.00	0.00	0.52	0.07	48.00	8.10	2.55	0.82	0.08	0.00	0.04	0.00 CMS
Runoff	0.137	0.092	0.729	82.590	100.243	200.310	96.617	28.493	14.857	0.877	1.265	0.925	527.135 MCM

Momentary Peak 114.75 CMS, at 158.35 M (MSL), at 12.00 Hours, on Aug 27, 1998

Runoff Yield 1.52 Liters/Second/Square KM, Momentary Peak Yield 10.413 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

Chi River at Ban Tha Phra, Khon Kaen (E.16A)

Location: Lat. 16°21'14" N., Long. 102°45'09" E., on left bank about 400 meters upstream from the bridge of Khon Kaen-Maha Sarakham Highway, Tambon Don Han, Amphoe Muang, Khon Kaen.

Drainage Area: 13,171 sq.km.

Type of Gage: Staff gage.

Zero Gage at Bottom: +142.71 m. (M.S.L.)

Bench Mark: B.M.-H.D.

Location: On left bank at the abutment of the bridge.

Elevation: +154.907 m. (M.S.L.)

Gage Reading Frequency: 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height: Arithmetic mean of 5 readings.

Period of Available Gage Records: 1957 to date.

Rating Operation

Period of Rating: 1963, 1965 to date.

Rated by Float: -

Rated by Current Meter: 1963, 1965 to date.

Stability of Channel Regimes: Fairly stable because of backwater effect.

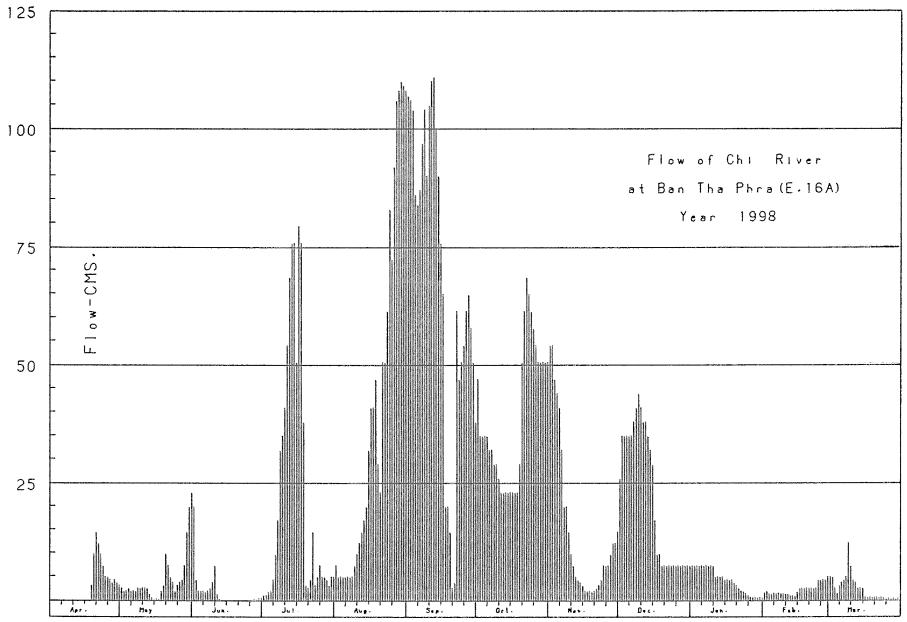
Overbank Flow Conditions: No overbank flow.

General Description: Records fair. Flow regulated by Kui Chuak barrage about 15 kilometers downstream from the gage site. Stage-discharge relation defined by 10 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	146.81	146.81	146.91	146.73	146.86	147.34	147.00	147.02	146.93	146.86	146.77	146.85	
2	146.81	146.80	146.84	146.75	146.85	147.33	146.96	147.02	146.96	146.86	146.80	146.85	
3	146.81	146.80	146.80	146.78	146.85	147.31	146.96	147.00	146.96	146.86	146.76	146.81	
4	146.81	146.81	146.80	146.80	146.85	147.13	146.96	146.99	146.96	146.86	146.76	146.77	
5	146.81	146.80	146.80	146.84	146.85	147.11	146.96	146.98	146.96	146.86	146.77	146.82	
6	146.80	146.80	146.79	146.87	146.85	147.14	146.95	146.95	146.96	146.86	146.77	146.83	
7	146.80	146.80	146.80	146.90	146.85	147.24	146.95	146.91	146.97	146.86	146.77	146.84	
8	146.80	146.81	146.81	146.95	146.85	147.31	146.94	146.91	146.98	146.86	146.77	146.85	
9	146.79	146.81	146.83	146.96	146.86	147.17	146.94	146.89	146.99	146.86	146.76	146.88	
10	146.79	146.81	146.86	146.98	146.87	147.32	146.93	146.87	146.98	146.86	146.76	146.86	
11	146.80	146.81	146.76	147.02	146.88	147.37	146.92	146.86	146.97	146.85	146.75	146.84	
12	146.80	146.81	146.56	147.06	146.89	147.38	146.92	146.85	146.97	146.85	146.74	146.83	
13	146.80	146.76	146.42	147.08	146.90	147.27	146.92	146.84	146.96	146.85	146.73	146.81	
14	146.80	146.69	146.28	147.08	146.91	147.17	146.92	146.83	146.95	146.85	146.73	146.81	
15	146.80	146.64	146.25	147.01	146.95	147.08	146.92	146.82	146.94	146.84	146.78	146.81	
16	146.81	146.61	146.27	147.09	146.98	147.05	146.92	146.80	146.90	146.84	146.81	146.71	
17	146.82	146.65	146.29	147.08	146.98	146.91	146.92	146.80	146.87	146.84	146.81	146.71	
18	146.84	146.79	146.29	146.97	147.00	146.91	146.92	146.80	146.87	146.84	146.81	146.71	
19	146.87	146.82	146.30	146.82	146.94	146.89	146.94	146.79	146.86	146.83	146.81	146.71	
20	146.89	146.87	146.35	146.81	146.92	146.81	147.01	146.80	146.86	146.82	146.81	146.71	
21	146.88	146.86	146.39	146.84	147.01	146.83	147.04	146.81	146.86	146.81	146.81	146.71	
22	146.87	146.85	146.43	146.89	147.01	147.04	147.06	146.82	146.86	146.80	146.81	146.71	
23	146.86	146.83	146.45	146.82	147.04	147.00	147.05	146.84	146.86	146.80	146.81	146.71	
24	146.85	146.80	146.49	146.85	147.10	147.01	147.04	146.86	146.86	146.77	146.84	146.69	
25	146.85	146.82	146.53	146.86	147.07	147.02	147.03	146.86	146.86	146.74	146.84	146.66	
26	146.84	146.83	146.57	146.85	147.19	147.04	147.02	146.86	146.86	146.71	146.84	146.66	
27	146.83	146.84	146.61	146.85	147.33	147.05	147.01	146.87	146.86	146.71	146.84	146.66	
28	146.84	146.86	146.65	146.84	147.35	147.03	147.01	146.88	146.86	146.71	146.85	146.66	
29	146.83	146.89	146.69	146.82	147.37	147.01	147.01	146.88	146.86	146.71		146.66	
30	146.82	146.91	146.71	146.85	147.36	146.97	147.01	146.89	146.86	146.71		146.66	
31		146.92		146.85	147.35		147.01		146.86	146.71		146.66	
Mean	146.82	146.80	146.58	146.90	147.00	147.11	146.97	146.88	146.91	146.81	146.79	146.76	
Max	146.89	146.92	146.91	147.09	147.37	147.38	147.06	147.02	146.99	146.86	146.85	146.88	147.38
Min	146.79	146.61	146.25	146.73	146.85	146.81	146.92	146.79	146.86	146.71	146.73	146.66	146.25

Annual Max Momentary Gage Height 147.40 M (MSL), at 6.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 142.71 M (MSL), River Bed 141.66 M (MSL)
Left Bank Elevation 154.75 M (MSL)
Right Bank Elevation 154.71 M (MSL), Drainage Area 13171 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	2.60	20.00	0.95	7.40	107.00	47.00	54.20	26.00	7.40	1.55	5.00	
2	0.00	2.00	4.40	1.25	5.00	106.00	35.00	54.20	35.00	7.40	2.00	5.00	
3	0.00	2.00	2.00	1.70	5.00	104.00	35.00	47.00	35.00	7.40	1.40	2.60	
4	0.00	2.60	2.00	2.00	5.00	86.00	35.00	44.00	35.00	7.40	1.40	1.55	
5	0.00	2.00	2.00	4.40	5.00	84.00	35.00	41.00	35.00	7.40	1.55	3.20	
6	0.00	2.00	1.85	9.80	5.00	87.00	32.00	32.00	35.00	7.40	1.55	3.80	
7	0.00	2.00	2.00	17.00	5.00	97.00	32.00	20.00	38.00	7.40	1.55	4.40	
8	0.00	2.60	2.60	32.00	5.00	104.00	29.00	20.00	41.00	7.40	1.55	5.00	
9	0.00	2.60	3.80	35.00	7.40	90.00	29.00	14.60	44.00	7.40	1.40	12.20	
10	0.00	2.60	7.40	41.00	9.80	105.00	26.00	9.80	41.00	7.40	1.40	7.40	
11	0.00	2.60	1.40	54.20	12.20	110.00	23.00	7.40	38.00	5.00	1.25	4.40	
12	0.00	2.60	0.22	68.60	14.60	111.00	23.00	5.00	38.00	5.00	1.10	3.80	
13	0.00	1.40	0.06	75.80	17.00	100.00	23.00	4.40	35.00	5.00	0.95	2.60	
14	0.00	0.48	0.03	75.80	20.00	90.00	23.00	3.80	32.00	5.00	0.95	2.60	
15	0.00	0.38	0.03	50.60	32.00	75.80	23.00	3.20	29.00	4.40	1.70	2.60	
16	0.00	0.32	0.03	79.40	41.00	65.00	23.00	2.00	17.00	4.40	2.60	0.65	
17	0.00	0.40	0.03	75.80	41.00	20.00	23.00	2.00	9.80	4.40	2.60	0.65	
18	3.33	1.85	0.03	38.00	47.00	20.00	23.00	2.00	9.80	4.40	2.60	0.65	
19	9.80	3.20	0.03	3.20	29.00	14.60	29.00	1.85	7.40	3.80	2.60	0.65	
20	14.60	9.80	0.04	2.60	23.00	2.60	50.60	2.00	7.40	3.20	2.60	0.65	
21	12.20	7.40	0.05	4.40	50.60	3.80	61.40	2.60	7.40	2.60	2.60	0.65	
22	9.80	5.00	0.06	14.60	50.60	61.40	68.60	3.20	7.40	2.00	2.60	0.65	
23	7.40	3.80	0.08	3.20	61.40	47.00	65.00	4.40	7.40	2.00	2.60	0.65	
24	5.00	2.00	0.10	5.00	83.00	50.60	61.40	7.40	7.40	1.55	4.40	0.48	
25	5.00	3.20	0.16	7.40	72.20	54.20	57.80	7.40	7.40	1.10	4.40	0.42	
26	4.40	3.80	0.24	5.00	92.00	61.40	54.20	7.40	7.40	0.65	4.40	0.42	
27	3.80	4.40	0.32	5.00	106.00	65.00	50.60	9.80	7.40	0.65	4.40	0.42	
28	4.40	7.40	0.40	4.40	108.00	57.80	50.60	12.20	7.40	0.65	5.00	0.42	
29	3.80	14.60	0.48	3.20	110.00	50.60	50.60	12.20	7.40	0.65		0.42	
30	3.20	20.00	0.65	5.00	109.00	38.00	50.60	14.60	7.40	0.65		0.42	
31		23.00		5.00	108.00		50.60		7.40	0.65		0.42	
Total	86.73	140.63	52.49	731.30	1287.20	2068.80	1220.00	451.65	669.80	131.75	64.70	74.77	6979.82 CMSDAY
Mean	2.89	4.54	1.75	23.59	41.52	68.96	39.35	15.06	21.61	4.25	2.31	2.41	19.12 CMS
Max	14.60	23.00	20.00	79.40	110.00	111.00	68.60	54.20	44.00	7.40	5.00	12.20	111.00 CMS
Min	0.00	0.32	0.03	0.95	5.00	2.60	23.00	1.85	7.40	0.65	0.95	0.42	0.00 CMS
Runoff	7.493	12.150	4.535	63.184	111.214	178.744	105.408	39.023	57.871	11.383	5.590	6.460	603.057 MCM

Momentary Peak 113.00 CMS, at 147.40 M (MSL), at 6.00 Hours, on Sep 12, 1998

Runoff Yield 1.45 Liters/Second/Square KM, Momentary Peak Yield 8.579 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

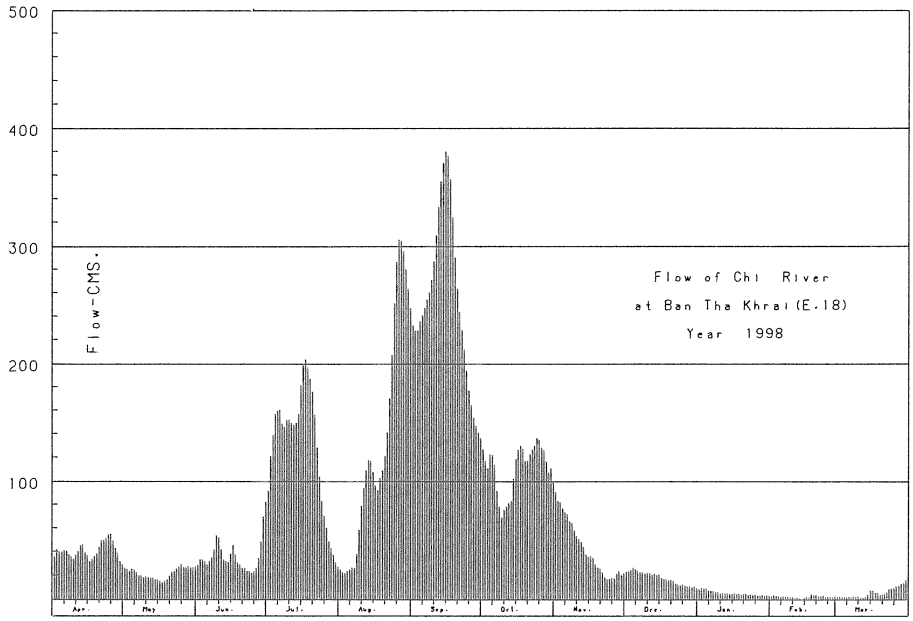
Chi River at Ban Tha Khrai, Roi Et (E.18)

Location	Lat. 16-01-59 N., Long. 103-54-38 E., on left bank at Ban Tha Khrai,Amphoe Selaphum, Roi Et.
Drainage Area	41,594 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+122.24 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+135.187 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1974 to date.
Rated by Float	-
Rated by Current Meter	1974 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 128 discharge measurements made in 1998.

Gage Height in Meter (MS), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	123.45	123.25	123.31	124.32	123.22	125.93	124.77	124.30	123.15	122.68	122.37	122.33	
2	123.55	123.21	123.39	124.69	123.14	125.88	124.64	124.20	123.18	122.70	122.39	122.32	
3	123.52	123.19	123.40	124.92	123.14	125.89	124.57	124.18	123.19	122.71	122.39	122.33	
4	123.53	123.21	123.36	125.13	123.17	125.96	124.71	124.11	123.26	122.68	122.35	122.30	
5	123.54	123.21	123.32	125.17	123.22	126.02	124.71	124.06	123.23	122.63	122.34	122.30	
6	123.54	123.14	123.36	125.17	123.24	126.10	124.60	124.03	123.18	122.62	122.32	122.29	
7	123.49	123.09	123.44	125.04	123.25	126.18	124.32	123.95	123.16	122.59	122.33	122.31	
8	123.44	123.06	123.55	125.00	123.50	126.26	124.12	123.92	123.14	122.57	122.31	122.32	
9	123.41	123.03	123.76	125.08	123.83	126.38	124.00	123.83	123.13	122.55	122.30	122.33	
10	123.47	123.03	123.72	125.07	124.13	126.56	124.09	123.74	123.13	122.53	122.28	122.32	
11	123.54	123.03	123.55	125.04	124.36	126.82	124.12	123.70	123.13	122.52	122.30	122.29	
12	123.62	123.02	123.40	125.02	124.54	127.09	124.16	123.67	123.11	122.52	122.24	122.29	
13	123.62	122.99	123.36	125.05	124.66	127.32	124.20	123.59	123.11	122.51	122.24	122.32	
14	123.52	122.97	123.36	125.14	124.64	127.50	124.45	123.49	123.10	122.50	122.25	122.42	
15	123.46	122.94	123.50	125.41	124.53	127.61	124.67	123.45	123.09	122.51	122.26	122.64	
16	123.37	122.91	123.62	125.59	124.38	127.56	124.76	123.45	123.02	122.49	122.27	122.60	
17	123.39	122.89	123.47	125.64	124.33	127.35	124.81	123.43	122.98	122.48	122.31	122.55	
18	123.44	122.91	123.35	125.56	124.46	126.98	124.77	123.31	122.96	122.47	122.44	122.51	
19	123.50	122.97	123.30	125.46	124.55	126.61	124.65	123.26	122.95	122.45	122.43	122.45	
20	123.60	123.05	123.25	125.35	124.70	126.30	124.64	123.22	122.94	122.45	122.40	122.45	
21	123.68	123.14	123.23	125.12	124.94	126.05	124.72	123.14	122.92	122.46	122.38	122.45	
22	123.69	123.18	123.19	124.79	125.29	125.89	124.77	123.04	122.86	122.43	122.37	122.58	
23	123.71	123.22	123.16	124.48	125.67	125.72	124.80	122.96	122.81	122.41	122.36	122.66	
24	123.77	123.28	123.14	124.19	126.15	125.53	124.89	122.99	122.81	122.41	122.32	122.70	
25	123.77	123.31	123.16	124.01	126.56	125.36	124.86	122.99	122.81	122.41	122.31	122.72	
26	123.67	123.26	123.23	123.87	126.77	125.22	124.79	123.01	122.80	122.40	122.29	122.76	
27	123.58	123.26	123.42	123.68	126.77	125.10	124.75	123.13	122.77	122.41	122.31	122.79	
28	123.50	123.27	123.67	123.57	126.66	125.01	124.64	123.17	122.75	122.40	122.33	122.83	
29	123.37	123.26	124.00	123.48	126.49	124.95	124.52	123.10	122.75	122.38		122.87	
30	123.30	123.24	124.18	123.34	126.29	124.88	124.56	123.12	122.74	122.37		122.94	
31		123.26		123.26	126.09		124.42		122.69	122.36		122.99	
Mean	123.53	123.12	123.44	124.73	124.73	126.20	124.56	123.52	123.00	122.50	122.33	122.51	
Max	123.77	123.31	124.18	125.64	126.77	127.61	124.89	124.30	123.26	122.71	122.44	122.99	127.61
Min	123.30	122.89	123.14	123.26	123.14	124.88	124.00	122.96	122.69	122.36	122.24	122.29	122.24

Annual Max Momentary Gage Height 127.62 M (MS), at 15.00 Hours, on Sep 15, 1998
Zero Gage at Bottom Elevation 122.24 M (MS), River Bed 120.07 M (MS)
Left Bank Elevation 133.38 M (MS)
Right Bank Elevation 132.63 M (MS), Drainage Area 41594 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	36.50	27.00	29.50	92.40	25.80	233.00	127.60	91.00	23.00	9.00	3.05	2.45	
2	42.00	25.40	33.50	121.20	22.60	228.00	117.20	84.00	24.20	9.50	3.35	2.30	
3	40.20	24.60	34.00	139.60	22.60	229.00	111.60	82.60	24.60	9.75	3.35	2.45	
4	40.80	25.40	32.00	157.05	23.80	236.00	122.80	77.70	27.40	9.00	2.75	2.00	
5	41.40	25.40	30.00	160.45	25.80	241.60	122.80	74.20	26.20	7.75	2.60	2.00	
6	41.40	22.60	32.00	160.45	26.60	248.00	114.00	72.10	24.20	7.50	2.30	1.90	
7	38.50	20.70	36.00	149.40	27.00	254.40	92.40	66.50	23.40	6.80	2.45	2.15	
8	36.00	19.80	42.00	146.00	39.00	261.10	78.40	64.40	22.60	6.40	2.15	2.30	
9	34.50	18.90	54.60	152.80	58.80	271.30	70.00	58.80	22.20	6.00	2.00	2.45	
10	37.50	18.90	52.20	151.95	79.10	286.60	76.30	53.40	22.20	5.60	1.80	2.30	
11	41.40	18.90	42.00	149.40	95.20	309.80	78.40	51.00	22.20	5.40	2.00	1.90	
12	46.20	18.60	34.00	147.70	109.20	334.10	81.20	49.20	21.40	5.40	1.40	1.90	
13	46.20	17.70	32.00	150.25	118.80	354.80	84.00	44.40	21.40	5.20	1.40	2.30	
14	40.20	17.10	32.00	157.90	117.20	371.00	102.00	38.50	21.00	5.00	1.50	3.80	
15	37.00	16.20	39.00	182.45	108.40	381.00	119.60	36.50	20.70	5.20	1.60	8.00	
16	32.50	15.30	46.20	199.55	96.60	376.40	126.80	36.50	18.60	4.85	1.70	7.00	
17	33.50	14.70	37.50	204.30	93.10	357.50	130.80	35.50	17.40	4.70	2.15	6.00	
18	36.00	15.30	31.50	196.70	102.80	324.20	127.60	29.50	16.80	4.55	4.10	5.20	
19	39.00	17.10	29.00	187.20	110.00	290.90	118.00	27.40	16.50	4.25	3.95	4.25	
20	45.00	19.50	27.00	176.75	122.00	264.50	117.20	25.80	16.20	4.25	3.50	4.25	
21	49.80	22.60	26.20	156.20	141.20	244.00	123.60	22.60	15.60	4.40	3.20	4.25	
22	50.40	24.20	24.60	129.20	171.10	229.00	127.60	19.20	13.80	3.95	3.05	6.60	
23	51.60	25.80	23.40	104.40	207.15	212.00	130.00	16.80	12.30	3.65	2.90	8.50	
24	55.20	28.20	22.60	83.30	252.00	193.85	137.20	17.70	12.30	3.65	2.30	9.50	
25	55.20	29.50	23.40	70.70	286.60	177.70	134.80	17.70	12.30	3.65	2.15	10.00	
26	49.20	27.40	26.20	61.20	305.30	164.80	129.20	18.30	12.00	3.50	1.90	11.00	
27	43.80	27.40	35.00	49.80	305.30	154.50	126.00	22.20	11.25	3.65	2.15	11.75	
28	39.00	27.80	49.20	43.20	295.40	146.85	117.20	23.80	10.75	3.50	2.45	12.90	
29	32.50	27.40	70.00	38.00	280.65	142.00	107.60	21.00	10.75	3.20		14.10	
30	29.00	26.60	82.60	31.00	263.65	136.40	110.80	21.80	10.50	3.05		16.20	
31		27.40		27.40	247.20		99.60		9.25	2.90		17.70	
Total	1241.50	693.40	1109.20	3977.90	4179.95	7654.30	3462.30	1300.10	563.00	165.20	69.20	189.40	24605.45 CMSDAY
Mean	41.38	22.37	36.97	128.32	134.84	255.14	111.69	43.34	18.16	5.33	2.47	6.11	67.41 CMS
Max	55.20	29.50	82.60	204.30	305.30	381.00	137.20	91.00	27.40	9.75	4.10	17.70	381.00 CMS
Min	29.00	14.70	22.60	27.40	22.60	136.40	70.00	16.80	9.25	2.90	1.40	1.90	1.40 CMS
Runoff	107.266	59.910	95.835	343.691	361.148	661.332	299.143	112.329	48.643	14.273	5.979	16.364	2125.911 MCM

Momentary Peak 382.00 CMS, at 127.62 M (MS), at 15.00 Hours, on Sep 15, 1998

Runoff Yield 1.62 Liters/Second/Square KM, Momentary Peak Yield 9.184 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

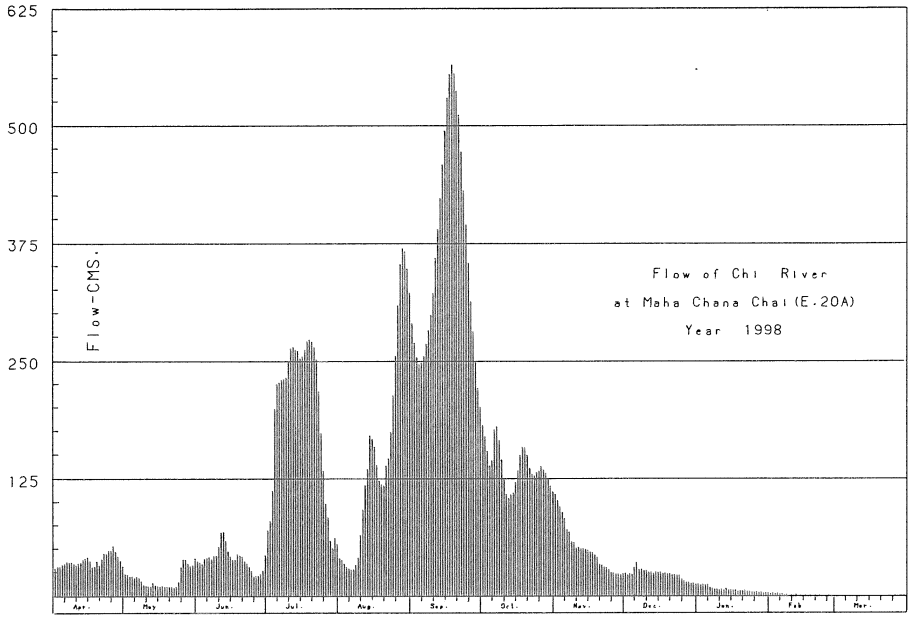
Chi River at Maha Chana Chai, Yasothon (E.20A)

Location	Lat. 15-31-59 N., Long. 104-15-24 E., on right bank about 800 meters upstream from E.20 station, Amphoe Maha Chana Chai, Yasothon.
Drainage Area	47,818 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+112.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+127.138 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00, and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1973 to date.
Rating Operation	
Period of Rating	1974 to date.
Rated by Float	-
Rated by Current Meter	1974 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Tat Noi barrage situated downstream from the gage site. Stage-discharge relation defined by 148 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	114.59	114.50	114.73	115.22	114.78	117.59	116.66	115.87	114.50	114.26	113.99	113.85	
2	114.64	114.47	114.70	115.43	114.74	117.41	116.54	115.79	114.48	114.26	114.00	113.85	
3	114.62	114.45	114.68	115.92	114.68	117.29	116.38	115.69	114.49	114.25	113.99	113.84	
4	114.67	114.44	114.76	116.81	114.61	117.22	116.22	115.61	114.49	114.26	113.98	113.82	
5	114.69	114.42	114.79	117.05	114.60	117.23	116.27	115.48	114.61	114.25	113.96	113.81	
6	114.71	114.43	114.79	117.06	114.56	117.30	116.61	115.25	114.69	114.20	113.95	113.80	
7	114.71	114.42	114.77	117.09	114.58	117.41	116.65	115.18	114.58	114.15	113.93	113.80	
8	114.70	114.33	114.81	117.09	114.65	117.52	116.51	115.05	114.58	114.14	113.92	113.80	
9	114.69	114.26	114.83	117.11	114.79	117.66	116.29	115.03	114.56	114.13	113.92	113.80	
10	114.65	114.24	114.97	117.25	115.13	117.83	116.06	114.95	114.55	114.13	113.92	113.79	
11	114.68	114.21	115.17	117.36	115.65	118.10	115.87	114.95	114.53	114.13	113.91	113.78	
12	114.71	114.22	115.19	117.38	115.98	118.32	115.82	114.94	114.52	114.12	113.91	113.77	
13	114.76	114.29	115.05	117.35	116.18	118.55	115.86	114.93	114.51	114.14	113.89	113.75	
14	114.77	114.24	114.90	117.34	116.55	118.77	115.90	114.93	114.52	114.12	113.89	113.75	
15	114.79	114.21	114.80	117.28	116.52	119.00	116.01	114.91	114.53	114.10	113.88	113.75	
16	114.74	114.22	114.74	117.29	116.43	119.22	116.15	114.89	114.52	114.11	113.88	113.74	
17	114.61	114.22	114.76	117.35	116.22	119.37	116.33	114.87	114.51	114.10	113.87	113.74	
18	114.64	114.21	114.84	117.43	116.04	119.44	116.43	114.84	114.50	114.08	113.87	113.74	
19	114.72	114.20	114.83	117.44	115.99	119.38	116.42	114.79	114.50	114.07	113.87	113.72	
20	114.66	114.21	114.80	117.42	115.98	119.26	116.34	114.68	114.49	114.09	113.90	113.71	
21	114.77	114.20	114.73	117.38	116.21	119.10	116.19	114.65	114.48	114.09	113.88	113.72	
22	114.85	114.19	114.68	117.27	116.30	118.86	116.11	114.63	114.47	114.07	113.86	113.75	
23	114.86	114.20	114.63	116.98	116.59	118.60	116.10	114.61	114.47	114.05	113.84	113.77	
24	114.90	114.33	114.54	116.58	116.94	118.36	116.13	114.59	114.46	114.05	113.84	113.78	
25	114.91	114.63	114.45	116.15	117.30	118.07	116.16	114.53	114.40	114.04	113.85	113.78	
26	114.97	114.75	114.44	115.73	117.73	117.77	116.20	114.50	114.33	114.04	113.84	113.78	
27	114.89	114.75	114.46	115.51	118.06	117.51	116.17	114.50	114.32	114.03	113.83	113.78	
28	114.80	114.69	114.48	115.06	118.18	117.25	116.12	114.48	114.30	114.02	113.83	113.80	
29	114.74	114.63	114.56	114.94	118.15	117.01	116.07	114.48	114.29	114.01		113.82	
30	114.63	114.66	114.82	115.09	118.02	116.83	115.97	114.49	114.28	114.00		113.83	
31		114.77		115.00	117.84		115.91		114.27	114.00		113.82	
Mean	114.74	114.39	114.76	116.62	116.13	118.11	116.21	114.94	114.48	114.11	113.90	113.78	
Max	114.97	114.77	115.19	117.44	118.18	119.44	116.66	115.87	114.69	114.26	114.00	113.85	119.44
Min	114.59	114.19	114.44	114.94	114.56	116.83	115.82	114.48	114.27	114.00	113.83	113.71	113.71

Annual Max Momentary Gage Height 119.44 M (MSL), at 9.00 Hours, on Sep 18, 1998
Zero Gage at Bottom Elevation 112.00 M (MSL), River Bed 112.49 M (MSL)
Left Bank Elevation 126.92 M (MSL)
Right Bank Elevation 126.94 M (MSL), Drainage Area 47818 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	29.4	24.5	37.8	70.8	40.8	290.8	182.6	108.8	24.5	12.7	3.3	1.0	
2	32.4	22.9	36.0	80.1	38.4	269.2	170.0	102.8	23.4	12.7	3.5	1.0	
3	31.2	21.7	34.8	112.8	34.8	254.8	154.2	95.4	23.9	12.3	3.3	0.9	
4	34.2	21.2	39.6	199.1	30.6	246.4	139.8	90.2	23.9	12.7	3.1	0.7	
5	35.4	20.1	41.4	226.0	30.0	247.6	144.3	82.9	30.6	12.3	2.7	0.6	
6	36.6	20.6	41.4	227.2	27.8	256.0	177.1	72.0	35.4	10.0	2.5	0.5	
7	36.6	20.1	40.2	230.8	28.9	269.2	181.5	68.5	28.9	8.3	2.1	0.5	
8	36.0	15.9	42.6	230.8	33.0	282.4	167.0	59.0	28.9	7.9	1.9	0.5	
9	35.4	12.7	43.9	233.2	41.4	299.8	146.1	57.6	27.8	7.5	1.9	0.5	
10	33.0	11.8	53.4	250.0	64.7	321.9	125.4	52.0	27.3	7.5	1.9	0.4	
11	34.8	10.5	67.8	263.2	92.8	359.0	108.8	52.0	26.1	7.5	1.7	0.4	
12	36.6	10.9	69.3	265.6	118.2	389.8	105.0	51.3	25.6	7.2	1.7	0.3	
13	39.6	14.1	59.0	262.0	136.2	423.5	108.0	50.6	25.1	7.9	1.4	0.3	
14	40.2	11.8	48.5	260.8	171.0	458.2	111.0	50.6	25.6	7.2	1.4	0.3	
15	41.4	10.5	42.0	253.6	168.0	495.0	120.9	49.2	26.1	6.5	1.3	0.3	
16	38.4	10.9	38.4	254.8	159.0	530.2	133.5	47.8	25.6	6.9	1.3	0.2	
17	30.6	10.9	39.6	262.0	139.8	554.2	149.7	46.6	25.1	6.5	1.2	0.2	
18	32.4	10.5	44.6	271.6	123.6	565.4	159.0	44.6	24.5	5.9	1.2	0.2	
19	37.2	10.0	43.9	272.8	119.1	555.8	158.0	41.4	24.5	5.6	1.2	0.1	
20	33.6	10.5	42.0	270.4	118.2	536.6	150.6	34.8	23.9	6.2	1.5	0.1	
21	40.2	10.0	37.8	265.6	138.9	511.0	137.1	33.0	23.4	6.2	1.3	0.1	
22	45.2	9.7	34.8	252.4	147.0	472.6	129.9	31.8	22.9	5.6	1.1	0.3	
23	45.9	10.0	31.8	217.8	175.0	431.0	129.0	30.6	22.9	5.0	0.9	0.3	
24	48.5	15.9	26.7	174.0	213.4	395.4	131.7	29.4	22.3	5.0	0.9	0.4	
25	49.2	31.8	21.7	133.5	256.0	354.8	134.4	26.1	19.0	4.7	1.0	0.4	
26	53.4	39.0	21.2	98.3	308.9	314.1	138.0	24.5	15.9	4.7	0.9	0.4	
27	47.8	39.0	22.3	84.6	353.4	281.2	135.3	24.5	15.4	4.4	0.8	0.4	
28	42.0	35.4	23.4	59.7	370.2	250.0	130.8	23.4	14.5	4.1	0.8	0.5	
29	38.4	31.8	27.8	51.3	366.0	221.2	126.3	23.4	14.1	3.8		0.7	
30	31.8	33.6	43.3	61.8	347.8	201.3	117.3	23.9	13.6	3.5		0.8	
31		40.2		55.5	323.2		111.9		13.1	3.5		0.7	
Total	1147.4	598.5	1197.0	5952.1	4716.1	11038.4	4314.2	1528.7	723.8	221.8	47.8	14.0	31499.8 CMSDAY
Mean	38.2	19.3	39.9	192.0	152.1	367.9	139.2	51.0	23.3	7.2	1.7	0.5	86.3 CMS
Max	53.4	40.2	69.3	272.8	370.2	565.4	182.6	108.8	35.4	12.7	3.5	1.0	565.4 CMS
Min	29.4	9.7	21.2	51.3	27.8	201.3	105.0	23.4	13.1	3.5	0.8	0.1	0.1 CMS
Runoff	99.14	51.71	103.42	514.26	407.47	953.72	372.75	132.08	62.54	19.16	4.13	1.21	2721.58 MCM

Momentary Peak 565.40 CMS, at 119.44 M (MSL), at 9.00 Hours, on Sep 18, 1998

Runoff Yield 1.80 Liters/Second/Square KM, Momentary Peak Yield 11.824 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

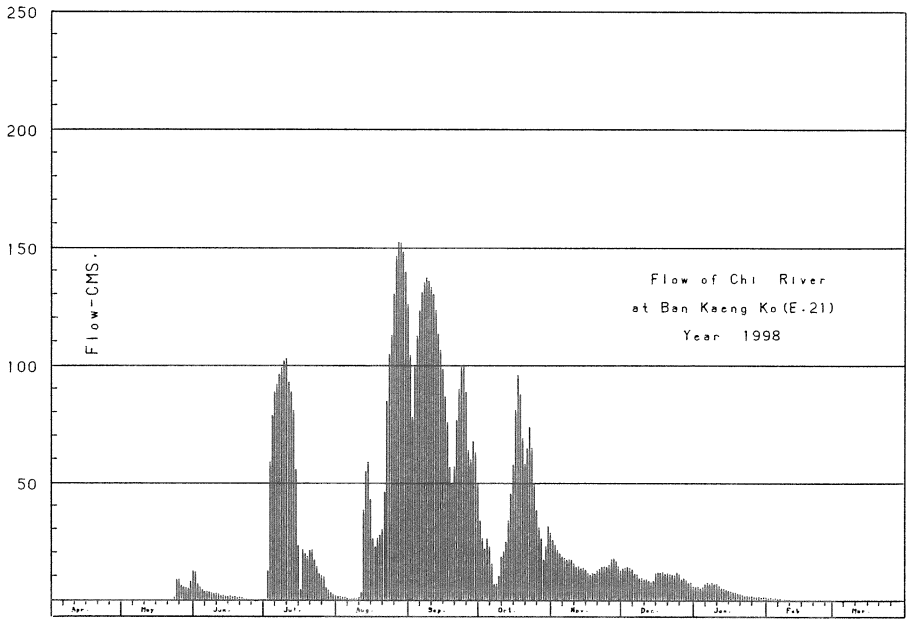
Chi River at Ban Kaeng Ko, Chaiyaphum (E.21)

Location	Lat. 15-45-07 N., Long. 102-15-24 E., on left bank about 75 meters upstream from the bridge on highway, Amphoe Muang, Chaiyaphum.
Drainage Area	8,912 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+164.98 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of the automatic gage building.
Elevation	+174.414 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1955-1957, 1967 to date.
Rating Operation	
Period of Rating	1968-1971, 1973-1974, 1982 to date.
Rated by Float	-
Rated by Current Meter	1968-1971, 1973-1974, 1982 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Kaeng Sanam Nang weir situated about 2 kilometers downstream from the gage site. Stage-discharge relation defined by 18 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	165.56	165.37	167.60	166.19	167.09	168.91	167.92	167.81	167.63	167.46	166.79	165.91	
2	165.56	165.34	167.50	167.61	167.00	168.42	167.82	167.78	167.63	167.46	166.75	165.92	
3	165.57	165.29	167.45	168.23	166.92	168.74	167.76	167.75	167.64	167.44	166.69	165.93	
4	165.58	165.24	167.42	168.43	166.80	169.20	167.82	167.73	167.63	167.45	166.66	165.94	
5	165.59	165.23	167.39	168.53	166.67	169.59	167.77	167.71	167.62	167.50	166.62	165.95	
6	165.61	165.19	167.38	168.56	166.70	169.87	167.66	167.70	167.59	167.51	166.57	165.95	
7	165.62	165.16	167.36	168.62	166.69	170.01	167.50	167.69	167.58	167.50	166.52	165.97	
8	165.62	165.20	167.32	168.72	166.64	170.08	167.50	167.69	167.55	167.51	166.48	165.95	
9	165.63	165.20	167.30	168.83	166.70	170.04	167.57	167.69	167.55	167.50	166.45	165.94	
10	165.63	165.21	167.30	168.86	166.75	169.94	167.71	167.66	167.54	167.50	166.43	165.94	
11	165.63	165.21	167.26	168.57	167.34	169.84	167.74	167.64	167.54	167.47	166.37	165.93	
12	165.63	165.21	167.21	168.53	167.98	169.59	167.80	167.64	167.53	167.44	166.29	165.91	
13	165.63	165.22	167.17	168.45	168.19	169.24	167.92	167.63	167.51	167.43	166.21	165.90	
14	165.63	165.24	167.13	168.20	168.23	168.99	168.07	167.63	167.53	167.42	166.15	165.91	
15	165.63	165.26	167.10	167.78	168.04	168.70	168.22	167.62	167.59	167.41	166.10	165.87	
16	165.63	165.28	167.06	167.42	167.82	168.51	168.45	167.59	167.60	167.37	166.06	165.88	
17	165.62	165.30	167.01	167.75	167.77	168.40	168.60	167.58	167.60	167.36	166.03	165.88	
18	165.62	165.32	166.96	167.73	167.82	168.21	168.52	167.59	167.60	167.33	165.95	165.87	
19	165.62	165.35	166.88	167.71	167.84	168.12	168.33	167.59	167.59	167.30	165.90	165.86	
20	165.62	165.37	166.81	167.75	167.87	168.21	168.22	167.61	167.59	167.26	165.91	165.86	
21	165.62	165.40	166.71	167.75	168.08	168.41	168.29	167.62	167.58	167.22	165.95	165.85	
22	165.57	165.42	166.61	167.69	168.49	168.54	168.38	167.64	167.58	167.20	165.85	165.84	
23	165.54	166.92	166.51	167.64	168.93	168.73	168.29	167.64	167.57	167.15	165.87	165.84	
24	165.53	167.54	166.40	167.59	169.21	168.77	168.12	167.64	167.60	167.13	165.90	165.84	
25	165.54	167.54	166.30	167.57	169.84	168.53	167.98	167.65	167.58	167.08	165.91	165.85	
26	165.54	167.48	166.16	167.56	170.41	168.28	167.88	167.69	167.54	167.04	165.91	165.86	
27	165.47	167.46	166.08	167.45	170.63	168.24	167.82	167.70	167.55	166.99	165.91	165.86	
28	165.45	167.44	166.14	167.41	170.61	168.32	167.69	167.68	167.53	166.94	165.91	165.85	
29	165.40	167.44	166.12	167.35	170.48	168.27	167.77	167.64	167.51	166.91		165.87	
30	165.40	167.52	166.12	167.25	170.18	168.12	167.89	167.61	167.51	166.88		165.88	
31		167.61		167.16	169.68		167.85		167.46	166.84		165.87	
Mean	165.58	165.90	166.93	167.90	168.17	168.89	167.96	167.66	167.57	167.29	166.22	165.89	
Max	165.63	167.61	167.60	168.86	170.63	170.08	168.60	167.81	167.64	167.51	166.79	165.97	170.63
Min	165.40	165.16	166.08	166.19	166.64	168.12	167.50	167.58	167.46	166.84	165.85	165.84	165.16

Annual Max Momentary Gage Height 170.65 M (MSL), at 12.00 Hours, on Aug 27, 1998
Zero Gage at Bottom Elevation 164.98 M (MSL), River Bed 163.14 M (MSL)
Left Bank Elevation 177.21 M (MSL)
Right Bank Elevation 177.59 M (MSL), Drainage Area 8912 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	12.00	0.14	1.78	104.48	34.00	25.75	13.80	5.80	1.18	0.04	
2	0.00	0.00	7.00	12.60	1.60	78.00	26.50	23.60	13.80	5.80	1.10	0.05	
3	0.00	0.00	5.50	59.00	1.44	99.78	22.20	21.50	14.40	5.20	0.98	0.05	
4	0.00	0.00	4.60	79.00	1.20	112.60	26.50	20.10	13.80	5.50	0.92	0.05	
5	0.00	0.00	3.90	89.00	0.94	123.52	22.90	18.70	13.20	7.00	0.84	0.06	
6	0.00	0.00	3.80	92.00	1.00	131.36	15.60	18.00	11.50	7.50	0.74	0.06	
7	0.00	0.00	3.60	96.54	0.98	135.28	7.00	17.40	11.00	7.00	0.64	0.06	
8	0.00	0.00	3.20	99.24	0.88	137.24	7.00	17.40	9.50	7.50	0.56	0.06	
9	0.00	0.00	3.00	102.24	1.00	136.12	10.50	17.40	9.50	7.00	0.50	0.05	
10	0.00	0.00	3.00	103.08	1.10	133.32	18.70	15.60	9.00	7.00	0.46	0.05	
11	0.00	0.00	2.60	93.00	3.40	130.52	20.80	14.40	9.00	6.10	0.34	0.05	
12	0.00	0.00	2.10	89.00	38.50	123.52	25.00	14.40	8.50	5.20	0.19	0.04	
13	0.00	0.00	1.94	81.00	55.20	113.72	34.00	13.80	7.50	4.90	0.16	0.04	
14	0.00	0.00	1.86	56.00	59.00	106.72	45.60	13.80	8.50	4.60	0.12	0.04	
15	0.00	0.00	1.80	23.60	43.20	98.70	58.00	13.20	11.50	4.30	0.10	0.03	
16	0.00	0.00	1.72	4.60	26.50	87.00	81.00	11.50	12.00	3.70	0.09	0.04	
17	0.00	0.00	1.62	21.50	22.90	76.00	96.00	11.00	12.00	3.60	0.08	0.04	
18	0.00	0.00	1.52	20.10	26.50	57.00	88.00	11.50	12.00	3.30	0.06	0.03	
19	0.00	0.00	1.36	18.70	28.00	49.60	69.00	11.50	11.50	3.00	0.04	0.03	
20	0.00	0.00	1.22	21.50	30.25	57.00	58.00	12.60	11.50	2.60	0.04	0.03	
21	0.00	0.00	1.02	21.50	46.40	77.00	65.00	13.20	11.00	2.20	0.06	0.03	
22	0.00	0.00	0.82	17.40	85.00	90.00	74.00	14.40	11.00	2.00	0.03	0.03	
23	0.00	1.44	0.62	14.40	105.04	99.51	65.00	14.40	10.50	1.90	0.03	0.03	
24	0.00	9.00	0.40	11.50	112.88	100.59	49.60	14.40	12.00	1.86	0.04	0.03	
25	0.00	9.00	0.20	10.50	130.52	89.00	38.50	15.00	11.00	1.76	0.04	0.03	
26	0.00	6.40	0.13	10.00	146.48	64.00	31.00	17.40	9.00	1.68	0.04	0.03	
27	0.00	5.80	0.09	5.50	152.64	60.00	26.50	18.00	9.50	1.58	0.04	0.03	
28	0.00	5.20	0.12	4.30	152.08	68.00	17.40	16.80	8.50	1.48	0.04	0.03	
29	0.00	5.20	0.11	3.50	148.44	63.00	22.90	14.40	7.50	1.42		0.03	
30	0.00	8.00	0.11	2.50	140.04	49.60	31.75	12.60	7.50	1.36		0.04	
31		12.60		1.92	126.04		28.75		5.80	1.28		0.03	
Total	0.00	62.64	70.96	1264.86	1690.93	2852.18	1216.70	473.75	326.80	125.12	9.46	1.24	8094.64 CMSDAY
Mean	0.00	2.02	2.37	40.80	54.55	95.07	39.25	15.79	10.54	4.04	0.34	0.04	22.18 CMS
Max	0.00	12.60	12.00	103.08	152.64	137.24	96.00	25.75	14.40	7.50	1.18	0.06	152.64 CMS
Min	0.00	0.00	0.09	0.14	0.88	49.60	7.00	11.00	5.80	1.28	0.03	0.03	0.00 CMS
Runoff	0.000	5.412	6.131	109.284	146.096	246.428	105.123	40.932	28.236	10.810	0.817	0.107	699.377 MCM

Momentary Peak 153.20 CMS, at 170.65 M (MSL), at 12.00 Hours, on Aug 27, 1998

Runoff Yield 2.49 Liters/Second/Square KM, Momentary Peak Yield 17.190 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

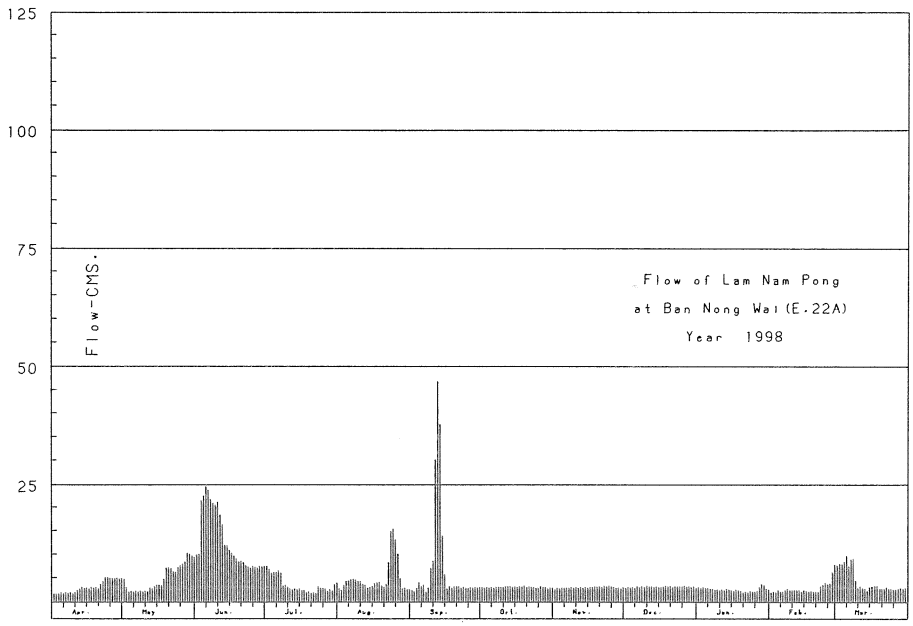
Lam Nam Phong at Ban Hin Kong Noi, Khon Kaen (E.22A)

Location	Lat. 16°43'29" N., Long. 102°48'21" E., on left bank about 500 meters downstream from the bridge of Khon Kaen-Udon Thani Highway, Amphoe Nam Phong, Khon Kaen.
Drainage Area	13,183 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+150.92 m.(M.S.L.).
Bench Mark	B.M.-H.D.
Location	On left bank at the automatic gage building.
Elevation	+162.808 m.(M.S.L.).
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithemetic mean of 3 readings.
Period of Available Gage Records	1965 to date.
Rating Operation	
Period of Rating	1966-1976, 1982-1987, 1992 to date.
Rated by Float	-
Rated by Current Meter	1966-1976, 1982-1987, 1992 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow regulated by Ubonrat Dam about 35 kilometers upstream from the gage site and Nong Wai weir situated about 5 kilometers above gage site. Stage-discharge relation defined by 17 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	153.36	153.59	153.91	153.76	153.45	153.44	153.47	153.45	153.47	153.47	153.41	153.77	
2	153.35	153.47	153.91	153.71	153.43	153.41	153.47	153.46	153.47	153.47	153.41	153.78	
3	153.38	153.42	154.39	153.67	153.51	153.47	153.47	153.46	153.47	153.47	153.41	153.79	
4	153.40	153.42	154.42	153.67	153.55	153.53	153.47	153.46	153.47	153.47	153.43	153.81	
5	153.39	153.42	154.49	153.68	153.57	153.49	153.47	153.47	153.47	153.46	153.42	153.90	
6	153.40	153.42	154.46	153.69	153.57	153.50	153.47	153.46	153.48	153.46	153.41	153.75	
7	153.39	153.42	154.40	153.67	153.59	153.41	153.47	153.47	153.48	153.45	153.44	153.85	
8	153.39	153.42	154.36	153.50	153.57	153.46	153.48	153.47	153.48	153.45	153.45	153.85	
9	153.39	153.42	154.35	153.50	153.56	153.73	153.47	153.47	153.48	153.44	153.44	153.57	
10	153.40	153.42	154.37	153.48	153.55	153.82	153.48	153.47	153.49	153.44	153.44	153.47	
11	153.44	153.42	154.27	153.45	153.52	154.65	153.48	153.47	153.49	153.44	153.43	153.48	
12	153.46	153.47	154.18	153.45	153.50	155.10	153.49	153.47	153.48	153.44	153.44	153.47	
13	153.47	153.45	154.01	153.45	153.47	154.87	153.48	153.47	153.48	153.45	153.43	153.45	
14	153.47	153.49	154.00	153.45	153.47	154.09	153.48	153.47	153.48	153.45	153.42	153.43	
15	153.46	153.50	153.96	153.45	153.49	153.64	153.48	153.47	153.48	153.43	153.43	153.47	
16	153.46	153.50	153.92	153.44	153.52	153.46	153.48	153.47	153.47	153.43	153.42	153.48	
17	153.47	153.50	153.90	153.43	153.54	153.48	153.48	153.48	153.49	153.44	153.42	153.50	
18	153.47	153.58	153.85	153.41	153.54	153.47	153.49	153.48	153.49	153.44	153.42	153.49	
19	153.47	153.74	153.82	153.41	153.50	153.48	153.49	153.48	153.49	153.42	153.42	153.46	
20	153.46	153.73	153.82	153.40	153.47	153.49	153.48	153.48	153.49	153.41	153.41	153.45	
21	153.51	153.72	153.81	153.40	153.52	153.48	153.48	153.48	153.48	153.41	153.42	153.46	
22	153.56	153.69	153.77	153.39	153.80	153.47	153.48	153.49	153.48	153.41	153.48	153.47	
23	153.60	153.67	153.74	153.48	154.13	153.47	153.47	153.49	153.49	153.42	153.51	153.46	
24	153.61	153.75	153.74	153.47	154.14	153.47	153.47	153.49	153.48	153.42	153.53	153.45	
25	153.59	153.76	153.75	153.47	154.05	153.47	153.47	153.49	153.49	153.42	153.52	153.45	
26	153.59	153.78	153.74	153.45	153.92	153.47	153.48	153.47	153.49	153.42	153.52	153.44	
27	153.60	153.82	153.74	153.43	153.60	153.47	153.48	153.47	153.49	153.48	153.68	153.46	
28	153.59	153.93	153.75	153.44	153.45	153.47	153.47	153.46	153.48	153.51	153.77	153.46	
29	153.59	153.91	153.75	153.43	153.46	153.47	153.46	153.46	153.48	153.51		153.46	
30	153.59	153.90	153.75	153.51	153.45	153.47	153.46	153.47	153.48	153.45		153.46	
31		153.87		153.54	153.44		153.46		153.47	153.44		153.46	
Mean	153.48	153.60	154.01	153.51	153.59	153.66	153.48	153.47	153.48	153.45	153.46	153.56	
Max	153.61	153.93	154.49	153.76	154.14	155.10	153.49	153.49	153.49	153.51	153.77	153.90	155.10
Min	153.35	153.42	153.74	153.39	153.43	153.41	153.46	153.45	153.47	153.41	153.41	153.43	153.35

Annual Max Momentary Gage Height 155.12 M (MSL), at 12.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 150.92 M (MSL), River Bed 150.80 M (MSL)
Left Bank Elevation 163.90 M (MSL)
Right Bank Elevation 163.83 M (MSL), Drainage Area 13183 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.90	5.04	10.20	7.76	2.80	2.64	3.12	2.80	3.12	3.12	2.16	7.92	
2	1.66	3.12	10.20	6.96	2.48	2.16	3.12	2.96	3.12	3.12	2.16	8.08	
3	1.94	2.32	21.75	6.32	3.76	3.12	3.12	2.96	3.12	3.12	2.16	8.24	
4	2.00	2.32	22.60	6.32	4.40	4.08	3.12	2.96	3.12	3.12	2.48	8.56	
5	1.97	2.32	24.70	6.48	4.72	3.44	3.12	3.12	3.12	2.96	2.32	10.00	
6	2.00	2.32	23.80	6.64	4.72	3.60	3.12	2.96	3.28	2.96	2.16	7.60	
7	1.97	2.32	22.00	6.32	5.04	2.16	3.12	3.12	3.28	2.80	2.64	9.20	
8	1.97	2.32	21.00	3.60	4.72	2.96	3.28	3.12	3.28	2.80	2.80	9.20	
9	1.97	2.32	20.75	3.60	4.56	7.28	3.12	3.12	3.28	2.64	2.64	4.72	
10	2.00	2.32	21.25	3.28	4.40	8.72	3.28	3.12	3.44	2.64	2.64	3.12	
11	2.64	2.32	18.75	2.80	3.92	30.25	3.28	3.12	3.44	2.64	2.48	3.28	
12	2.96	3.12	16.50	2.80	3.60	47.00	3.44	3.12	3.28	2.64	2.64	3.12	
13	3.12	2.80	12.25	2.80	3.12	37.95	3.28	3.12	3.28	2.80	2.48	2.80	
14	3.12	3.44	12.00	2.80	3.12	14.25	3.28	3.12	3.28	2.80	2.32	2.48	
15	2.96	3.60	11.20	2.80	3.44	5.84	3.28	3.12	3.28	2.48	2.48	3.12	
16	2.96	3.60	10.40	2.64	3.92	2.96	3.28	3.12	3.12	2.48	2.32	3.28	
17	3.12	3.60	10.00	2.48	4.24	3.28	3.28	3.28	3.44	2.64	2.32	3.60	
18	3.12	4.88	9.20	2.16	4.24	3.12	3.44	3.28	3.44	2.64	2.32	3.44	
19	3.12	7.44	8.72	2.16	3.60	3.28	3.44	3.28	3.44	2.32	2.32	2.96	
20	2.96	7.28	8.72	2.00	3.12	3.44	3.28	3.28	3.44	2.16	2.16	2.80	
21	3.76	7.12	8.56	2.00	3.92	3.28	3.28	3.28	3.28	2.16	2.32	2.96	
22	4.56	6.64	7.92	1.97	8.40	3.12	3.28	3.44	3.28	2.16	3.28	3.12	
23	5.20	6.32	7.44	3.28	15.25	3.12	3.12	3.44	3.44	2.32	3.76	2.96	
24	5.36	7.60	7.44	3.12	15.50	3.12	3.12	3.44	3.28	2.32	4.08	2.80	
25	5.04	7.76	7.60	3.12	13.25	3.12	3.12	3.44	3.44	2.32	3.92	2.80	
26	5.04	8.08	7.44	2.80	10.40	3.12	3.28	3.12	3.44	2.32	3.92	2.64	
27	5.20	8.72	7.44	2.48	5.20	3.12	3.28	3.12	3.44	3.28	6.48	2.96	
28	5.04	10.60	7.60	2.64	2.80	3.12	3.12	2.96	3.28	3.76	7.92	2.96	
29	5.04	10.20	7.60	2.48	2.96	3.12	2.96	2.96	3.28	3.76		2.96	
30	5.04	10.00	7.60	3.76	2.80	3.12	2.96	3.12	3.28	2.80		2.96	
31		9.52		4.24	2.64		2.96		3.12	2.64		2.96	
Total	98.74	161.36	392.63	114.61	161.04	222.89	99.28	94.40	102.16	84.72	83.68	139.60	1755.11 CMSDAY
Mean	3.29	5.21	13.09	3.70	5.19	7.43	3.20	3.15	3.30	2.73	2.99	4.50	4.81 CMS
Max	5.36	10.60	24.70	7.76	15.50	47.00	3.44	3.44	3.44	3.76	7.92	10.00	47.00 CMS
Min	1.66	2.32	7.44	1.97	2.48	2.16	2.96	2.80	3.12	2.16	2.16	2.48	1.66 CMS
Runoff	8.531	13.942	33.923	9.902	13.914	19.258	8.578	8.156	8.827	7.320	7.230	12.061	151.642 MCM

Momentary Peak 47.80 CMS, at 155.12 M (MSL), at 12.00 Hours, on Sep 12, 1998
Runoff Yield 0.36 Liters/Second/Square KM, Momentary Peak Yield 3.626 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

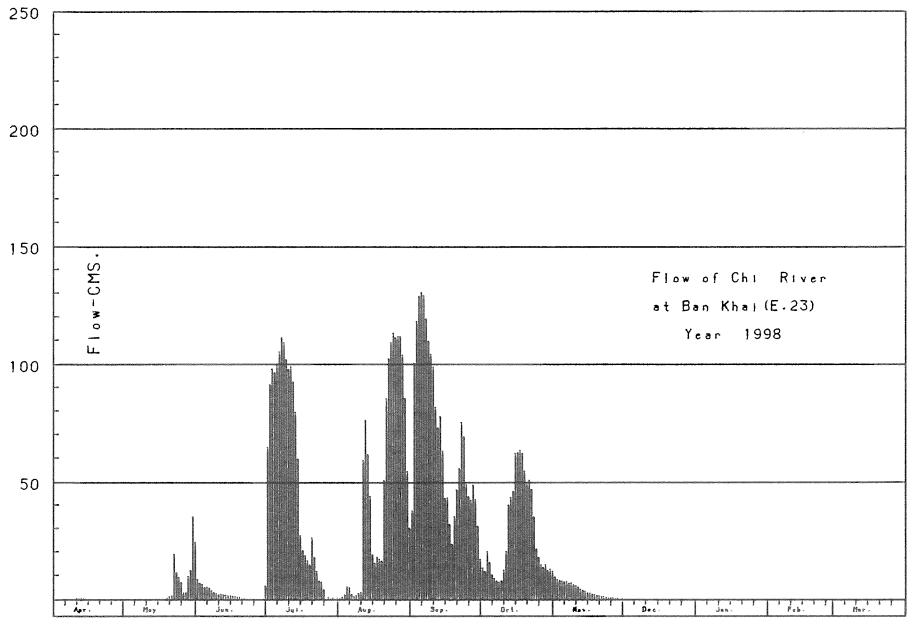
Chi River at Ban Khai, Chaiyaphum (E.23)

Location	Lat. 15°-40'-49" N., Long. 102°-00'-47" E., on left bank at the bridge on highway, Amphoe Muang, Chaiyaphum.
Drainage Area	6,835 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+174.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 20 meters from the automatic gage building.
Elevation	+185.263 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1954-1956, 1967 to date.
Rating Operation	
Period of Rating	1968-1974,1982 to date.
Rated by Float	-
Rated by Current Meter	1968-1974,1982 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the local weir during Nov.17,98-Mar.31,99 discharge estimated by recession equation. Stage-discharge relation defined by 17 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	176.51	176.85	177.66	179.30	177.29	178.25	177.78	177.70	177.70	177.57	177.34	177.10	
2	176.51	176.81	177.61	180.28	177.32	180.60	177.75	177.66	177.77	177.68	177.32	177.10	
3	176.56	176.67	177.59	180.51	177.42	181.23	177.91	177.65	177.73	177.72	177.30	177.09	
4	176.73	176.64	177.55	180.46	177.55	181.62	177.83	177.64	177.70	177.79	177.29	177.01	
5	176.81	176.64	177.55	180.56	177.54	181.68	177.72	177.63	177.65	177.71	177.28	177.00	
6	176.93	176.60	177.54	180.77	177.43	181.62	177.67	177.63	177.62	177.57	177.25	176.99	
7	176.95	176.55	177.50	180.99	177.36	181.28	177.64	177.61	177.57	177.51	177.24	176.99	
8	176.94	176.49	177.47	180.91	177.39	180.94	177.62	177.61	177.50	177.49	177.22	176.99	
9	177.11	176.48	177.44	180.66	177.45	180.73	177.64	177.59	177.43	177.47	177.19	176.98	
10	177.25	176.47	177.42	180.51	177.46	180.54	177.76	177.57	177.42	177.47	177.16	176.98	
11	177.28	176.48	177.42	180.54	179.09	179.93	177.91	177.56	177.40	177.47	177.15	177.00	
12	177.29	176.49	177.42	180.32	179.73	179.61	178.37	177.52	177.37	177.47	177.06	177.02	
13	177.25	176.59	177.40	179.85	179.19	179.79	178.49	177.51	177.37	177.47	176.98	177.04	
14	177.20	176.62	177.39	179.12	178.51	179.24	178.60	177.49	177.38	177.47	176.93	177.05	
15	177.14	176.67	177.38	178.01	177.89	178.48	179.20	177.46	177.42	177.47	176.88	177.09	
16	177.08	176.71	177.38	177.92	177.82	178.48	179.22	177.45	177.48	177.45	176.85	177.11	
17	177.05	176.73	177.35	177.88	177.87	178.07	179.25	177.50	177.53	177.44	176.83	177.11	
18	177.01	176.81	177.34	177.84	177.85	177.96	179.21	177.50	177.61	177.43	176.80	177.10	
19	176.96	177.30	177.32	177.81	177.84	178.13	178.92	177.59	177.65	177.41	176.79	177.10	
20	176.95	177.34	177.27	178.00	178.77	178.62	178.73	177.61	177.68	177.40	176.78	177.10	
21	176.91	177.39	177.24	177.87	180.06	178.97	178.77	177.62	177.68	177.39	176.77	177.09	
22	176.86	177.89	177.19	177.75	180.67	179.69	178.63	177.61	177.70	177.38	176.77	177.10	
23	176.86	177.74	177.14	177.64	180.91	179.47	178.13	177.62	177.68	177.38	176.76	177.12	
24	176.84	177.69	177.07	177.62	181.05	178.70	177.93	177.64	177.65	177.38	176.74	177.12	
25	176.84	177.62	177.02	177.52	180.99	178.51	177.87	177.65	177.65	177.37	176.73	177.14	
26	176.83	177.48	176.97	177.18	181.00	178.44	177.81	177.66	177.64	177.36	176.71	177.15	
27	176.82	177.46	176.91	177.31	181.01	178.70	177.79	177.68	177.63	177.37	176.82	177.15	
28	176.82	177.70	176.87	177.26	180.72	178.45	177.81	177.67	177.58	177.36	176.99	177.15	
29	176.86	177.76	176.84	177.28	180.07	178.06	177.76	177.67	177.55	177.36		177.16	
30	176.88	178.13	177.57	177.24	178.91	177.85	177.77	177.67	177.54	177.36		177.17	
31		177.97		177.30	178.05		177.75		177.54	177.36		177.19	
Mean	176.93	177.06	177.33	178.85	178.78	179.45	178.17	177.60	177.57	177.47	177.00	177.08	
Max	177.29	178.13	177.66	180.99	181.05	181.68	179.25	177.70	177.77	177.79	177.34	177.19	181.68
Min	176.51	176.47	176.84	177.18	177.29	177.85	177.62	177.45	177.37	177.36	176.71	176.98	176.47

Annual Max Momentary Gage Height 181.72 M (MSL), at 12.00 Hours, on Sep 5, 1998
Zero Gage at Bottom Elevation 174.00 M (MSL), River Bed 174.92 M (MSL)
Left Bank Elevation 185.03 M (MSL)
Right Bank Elevation 185.02 M (MSL), Drainage Area 6835 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.05	8.80	65.10	0.94	38.00	13.60	10.00	0.57	0.02	0.00	0.00	
2	0.00	0.04	7.30	91.84	1.20	100.80	12.25	8.80	0.51	0.02	0.00	0.00	
3	0.01	0.02	6.70	98.28	2.40	118.44	20.65	8.50	0.45	0.01	0.00	0.00	
4	0.03	0.01	5.50	96.88	5.50	129.36	16.15	8.20	0.41	0.01	0.00	0.00	
5	0.04	0.01	5.50	99.68	5.20	131.04	10.90	7.90	0.36	0.01	0.00	0.00	
6	0.07	0.01	5.20	105.56	2.60	129.36	9.10	7.90	0.33	0.01	0.00	0.00	
7	0.07	0.01	4.00	111.72	1.60	119.84	8.20	7.30	0.29	0.01	0.00	0.00	
8	0.07	0.00	3.40	109.48	1.90	110.32	7.60	7.30	0.26	0.01	0.00	0.00	
9	0.13	0.00	2.80	102.48	3.00	104.44	8.20	6.70	0.23	0.01	0.00	0.00	
10	0.70	0.00	2.40	98.28	3.20	99.12	12.70	6.10	0.21	0.01	0.00	0.00	
11	0.88	0.00	2.40	99.12	59.43	82.11	20.65	5.80	0.19	0.00	0.00	0.00	
12	0.94	0.00	2.40	92.96	76.71	73.47	40.75	4.60	0.17	0.00	0.00	0.00	
13	0.70	0.01	2.00	79.95	62.13	78.33	43.75	4.30	0.15	0.00	0.00	0.00	
14	0.40	0.01	1.90	60.24	44.26	63.48	46.60	3.80	0.13	0.00	0.00	0.00	
15	0.22	0.02	1.80	27.35	19.45	43.50	62.40	3.20	0.12	0.00	0.00	0.00	
16	0.10	0.02	1.80	21.30	15.60	43.50	62.94	3.00	0.11	0.00	0.00	0.00	
17	0.09	0.03	1.50	18.90	18.35	32.45	63.75	2.68	0.10	0.00	0.00	0.00	
18	0.08	0.04	1.40	16.70	17.25	23.90	62.67	2.40	0.09	0.00	0.00	0.00	
19	0.07	1.00	1.20	15.05	16.70	35.60	54.92	2.15	0.08	0.00	0.00	0.00	
20	0.07	1.40	0.82	26.50	51.02	47.12	49.98	1.92	0.07	0.00	0.00	0.00	
21	0.06	1.90	0.64	18.35	85.68	56.22	51.02	1.72	0.06	0.00	0.00	0.00	
22	0.05	19.45	0.37	12.25	102.76	75.63	47.38	1.54	0.05	0.00	0.00	0.00	
23	0.05	11.80	0.22	8.20	109.48	69.69	35.60	1.38	0.05	0.00	0.00	0.00	
24	0.05	9.70	0.09	7.60	113.40	49.20	21.95	1.23	0.04	0.00	0.00	0.00	
25	0.05	7.60	0.08	4.60	111.72	44.26	18.35	1.10	0.04	0.00	0.00	0.00	
26	0.05	3.60	0.07	0.34	112.00	42.50	15.05	0.99	0.03	0.00	0.00	0.00	
27	0.04	3.20	0.06	1.10	112.28	49.20	14.05	0.88	0.03	0.00	0.00	0.00	
28	0.04	10.00	0.05	0.76	104.16	42.75	15.05	0.79	0.03	0.00	0.00	0.00	
29	0.05	12.70	0.05	0.88	85.96	31.60	12.70	0.71	0.02	0.00		0.00	
30	0.06	35.60	6.10	0.64	54.66	17.25	13.15	0.63	0.02	0.00		0.00	
31		24.55		1.00	30.75		12.25		0.02	0.00		0.00	
Total	5.17	142.78	76.55	1493.09	1431.29	2082.48	884.31	123.52	5.22	0.12	0.00	0.00	6244.53 CMSDAY
Mean	0.17	4.61	2.55	48.16	46.17	69.42	28.53	4.12	0.17	0.00	0.00	0.00	17.11 CMS
Max	0.94	35.60	8.80	111.72	113.40	131.04	63.75	10.00	0.57	0.02	0.00	0.00	131.04 CMS
Min	0.00	0.00	0.05	0.34	0.94	17.25	7.60	0.63	0.02	0.00	0.00	0.00	0.00 CMS
Runoff	0.447	12.336	6.614	129.003	123.663	179.926	76.404	10.672	0.451	0.010	0.000	0.000	539.527 MCM

Momentary Peak 132.16 CMS, at 181.72 M (MSL), at 12.00 Hours, on Sep 5, 1998

Runoff Yield 2.50 Liters/Second/Square KM, Momentary Peak Yield 19.336 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

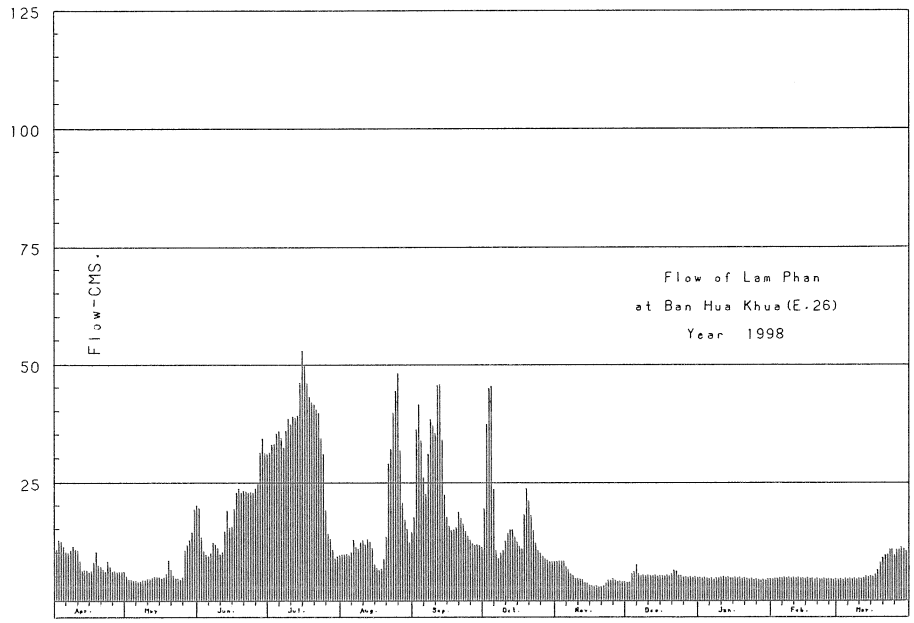
Lam Phan at Ban Hua Khua, Kalasin (E.26)

Location	Lat. 16°-24'-36" N., Long. 103°-28'-15" E., on right bank at the bridge on the road, Amphoe Yang Talat, Kalasin.
Drainage Area	6,565 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+134.63 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank upstream side at the abutment of the bridge.
Elevation	+145.395 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1971-1976, 1982 to date.
Rated by Float	-
Rated by Current Meter	1971-1976, 1982 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Lam Pao Dam. Stage-discharge relation defined by 17 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	134.94	134.57	135.36	135.84	134.87	135.27	135.35	134.79	134.47	134.55	134.53	134.52	
2	135.04	134.52	135.07	135.90	134.88	136.01	136.05	134.79	134.46	134.55	134.53	134.52	
3	135.03	134.51	134.92	135.91	134.88	136.19	136.30	134.80	134.62	134.55	134.54	134.52	
4	134.97	134.50	134.87	135.98	134.87	135.93	136.32	134.79	134.64	134.55	134.54	134.53	
5	134.91	134.49	134.86	136.00	134.90	135.63	135.53	134.72	134.75	134.54	134.55	134.53	
6	134.89	134.48	134.89	135.95	135.04	135.48	134.92	134.67	134.61	134.54	134.55	134.53	
7	134.93	134.49	135.02	135.88	134.97	135.83	134.83	134.62	134.59	134.53	134.55	134.53	
8	134.97	134.50	134.99	136.00	134.94	136.08	134.89	134.58	134.59	134.54	134.55	134.53	
9	134.94	134.51	134.96	136.09	135.02	136.04	134.93	134.54	134.59	134.55	134.55	134.53	
10	134.92	134.52	134.88	136.05	135.04	135.98	135.03	134.53	134.59	134.55	134.55	134.53	
11	134.80	134.53	134.90	136.10	135.00	136.32	135.12	134.53	134.59	134.56	134.55	134.54	
12	134.66	134.55	135.13	136.09	135.05	136.33	135.16	134.51	134.59	134.56	134.55	134.55	
13	134.66	134.56	135.34	136.11	135.03	135.94	135.15	134.47	134.59	134.56	134.55	134.57	
14	134.66	134.57	135.17	136.34	134.95	135.48	135.08	134.45	134.58	134.55	134.54	134.57	
15	134.64	134.55	135.19	136.57	134.75	135.28	135.02	134.42	134.58	134.55	134.54	134.57	
16	134.65	134.53	135.35	136.46	134.69	135.19	134.97	134.40	134.58	134.55	134.54	134.56	
17	134.78	134.56	135.50	136.34	134.67	135.15	134.95	134.40	134.58	134.55	134.54	134.61	
18	134.91	134.61	135.53	136.24	134.68	135.15	135.30	134.40	134.59	134.55	134.53	134.66	
19	134.73	134.81	135.50	136.20	134.82	135.18	135.53	134.39	134.59	134.54	134.53	134.78	
20	134.72	134.67	135.51	136.19	135.08	135.32	135.43	134.38	134.61	134.54	134.53	134.83	
21	134.67	134.58	135.51	136.15	135.74	135.27	135.29	134.41	134.66	134.53	134.53	134.86	
22	134.65	134.54	135.50	136.13	135.87	135.21	135.15	134.46	134.66	134.53	134.53	134.88	
23	134.78	134.53	135.50	135.95	136.13	135.14	135.01	134.50	134.60	134.53	134.53	134.94	
24	134.71	134.52	135.50	135.82	136.28	135.08	134.92	134.51	134.58	134.52	134.53	134.93	
25	134.65	134.55	135.53	135.34	136.41	135.04	134.89	134.53	134.57	134.52	134.52	134.87	
26	134.65	134.92	135.58	135.11	135.85	135.01	134.86	134.50	134.56	134.52	134.52	134.93	
27	134.64	134.99	135.84	135.06	135.41	134.99	134.83	134.49	134.56	134.51	134.52	134.94	
28	134.64	135.04	135.95	134.93	135.25	134.99	134.80	134.48	134.56	134.51	134.52	134.96	
29	134.64	135.13	135.83	134.83	135.16	134.99	134.79	134.48	134.56	134.51		134.95	
30	134.64	135.35	135.82	134.85	135.02	134.96	134.78	134.47	134.56	134.52		134.91	
31		135.38		134.87	135.13		134.78		134.56	134.52		134.75	
Mean	134.78	134.66	135.32	135.85	135.17	135.48	135.16	134.53	134.59	134.54	134.54	134.69	
Max	135.04	135.38	135.95	136.57	136.41	136.33	136.32	134.80	134.75	134.56	134.55	134.96	136.57
Min	134.64	134.48	134.86	134.83	134.67	134.96	134.78	134.38	134.46	134.51	134.52	134.52	134.38

Annual Max Momentary Gage Height 136.59 M (MSL), at 6.00 Hours, on Jul 15, 1998
Zero Gage at Bottom Elevation 134.63 M (MSL), River Bed 132.73 M (MSL)
Left Bank Elevation 145.18 M (MSL)
Right Bank Elevation 145.16 M (MSL), Drainage Area 6565 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	10.92	5.14	19.68	31.50	9.69	17.61	19.45	8.35	3.94	4.90	4.66	4.54	
2	12.80	4.54	13.40	33.00	9.86	36.30	37.50	8.35	3.82	4.90	4.66	4.54	
3	12.60	4.42	10.56	33.30	9.86	41.70	45.00	8.50	5.80	4.90	4.78	4.54	
4	11.46	4.30	9.69	35.40	9.69	33.90	45.60	8.35	6.10	4.90	4.78	4.66	
5	10.38	4.18	9.52	36.00	10.20	26.25	23.75	7.30	7.75	4.78	4.90	4.66	
6	10.03	4.06	10.03	34.50	12.80	22.52	10.56	6.55	5.65	4.78	4.90	4.66	
7	10.74	4.18	12.40	32.50	11.46	31.25	9.01	5.80	5.38	4.66	4.90	4.66	
8	11.46	4.30	11.82	36.00	10.92	38.40	10.03	5.26	5.38	4.78	4.90	4.66	
9	10.92	4.42	11.28	38.70	12.40	37.20	10.74	4.78	5.38	4.90	4.90	4.66	
10	10.56	4.54	9.86	37.50	12.80	35.40	12.60	4.66	5.38	4.90	4.90	4.66	
11	8.50	4.66	10.20	39.00	12.00	45.60	14.40	4.66	5.38	5.02	4.90	4.78	
12	6.40	4.90	14.60	38.70	13.00	45.90	15.20	4.42	5.38	5.02	4.90	4.90	
13	6.40	5.02	19.22	39.30	12.60	34.20	15.00	3.94	5.38	5.02	4.90	5.14	
14	6.40	5.14	15.40	46.20	11.10	22.52	13.60	3.70	5.26	4.90	4.78	5.14	
15	6.10	4.90	15.80	53.10	7.75	17.84	12.40	3.34	5.26	4.90	4.78	5.14	
16	6.25	4.66	19.45	49.80	6.85	15.80	11.46	3.10	5.26	4.90	4.78	5.02	
17	8.20	5.02	23.00	46.20	6.55	15.00	11.10	3.10	5.26	4.90	4.78	5.65	
18	10.38	5.65	23.75	43.20	6.70	15.00	18.30	3.10	5.38	4.90	4.66	6.40	
19	7.45	8.67	23.00	42.00	8.84	15.60	23.75	2.99	5.38	4.78	4.66	8.20	
20	7.30	6.55	23.25	41.70	13.60	18.76	21.32	2.88	5.65	4.78	4.66	9.01	
21	6.55	5.26	23.25	40.50	29.00	17.61	18.07	3.22	6.40	4.66	4.66	9.52	
22	6.25	4.78	23.00	39.90	32.25	16.23	15.00	3.82	6.40	4.66	4.66	9.86	
23	8.20	4.66	23.00	34.50	39.90	14.80	12.20	4.30	5.50	4.66	4.66	10.92	
24	7.15	4.54	23.00	31.00	44.40	13.60	10.56	4.42	5.26	4.54	4.66	10.74	
25	6.25	4.90	23.75	19.22	48.30	12.80	10.03	4.66	5.14	4.54	4.54	9.69	
26	6.25	10.56	25.00	14.20	31.75	12.20	9.52	4.30	5.02	4.54	4.54	10.74	
27	6.10	11.82	31.50	13.20	20.84	11.82	9.01	4.18	5.02	4.42	4.54	10.92	
28	6.10	12.80	34.50	10.74	17.15	11.82	8.50	4.06	5.02	4.42	4.54	11.28	
29	6.10	14.60	31.25	9.01	15.20	11.82	8.35	4.06	5.02	4.42		11.10	
30	6.10	19.45	31.00	9.35	12.40	11.28	8.20	3.94	5.02	4.54		10.38	
31		20.14		9.69	14.60		8.20		5.02	4.54		7.75	
Total	250.30	212.76	575.16	1018.91	514.46	700.73	498.41	144.09	166.99	147.46	132.88	218.52	4580.67 CMSDAY
Mean	8.34	6.86	19.17	32.87	16.60	23.36	16.08	4.80	5.39	4.76	4.75	7.05	12.55 CMS
Max	12.80	20.14	34.50	53.10	48.30	45.90	45.60	8.50	7.75	5.02	4.90	11.28	53.10 CMS
Min	6.10	4.06	9.52	9.01	6.55	11.28	8.20	2.88	3.82	4.42	4.54	4.54	2.88 CMS
Runoff	21.626	18.382	49.694	88.034	44.449	60.543	43.063	12.449	14.428	12.741	11.481	18.880	395.770 MCM

Momentary Peak 53.70 CMS, at 136.59 M (MSL), at 6.00 Hours, on Jul 15, 1998
Runoff Yield 1.91 Liters/Second/Square KM, Momentary Peak Yield 8.180 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

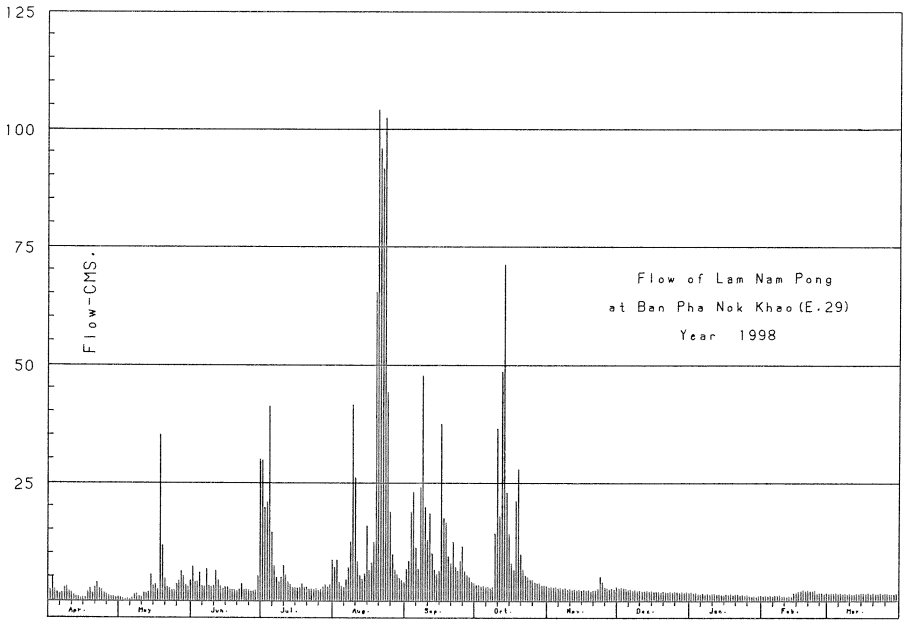
Lam Nam Phong at Ban Pha Nok Khao, Loei (E.29)

Location	Lat. 16-50-45 N., Long. 101-56-54 E., on right bank in the vicinity of the forestry office about 400 meters from the bridge on highway, Ban Pha Nok Khao, Amphoe Phu Kradung, Loei.
Drainage Area	945 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+225.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of the automatic gage building.
Elevation	+236.945 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1956-1958, 1967 to date.
Rating Operation	
Period of Rating	1978 to date.
Rated by Float	-
Rated by Current Meter	1978 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records very good. Flow effected by Ubonrat Dam. Stage-discharge relation defined by 82 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	226.09	225.73	227.08	229.12	227.05	226.94	226.28	226.18	226.15	225.94	225.81	225.91	
2	226.69	225.70	226.42	228.34	227.28	227.24	226.25	226.18	226.15	225.93	225.80	225.90	
3	226.08	225.70	226.41	228.45	226.43	228.28	226.22	226.18	226.15	225.92	225.80	225.92	
4	225.99	225.69	226.79	229.89	226.23	228.60	226.22	226.17	226.11	225.91	225.81	225.92	
5	225.93	225.69	226.26	227.87	226.20	227.54	226.20	226.15	226.08	225.90	225.81	225.91	
6	225.93	225.71	226.20	227.08	226.49	226.99	226.18	226.14	226.07	225.90	225.81	225.90	
7	226.20	225.89	226.98	226.62	227.04	228.70	226.15	226.13	226.06	225.89	225.83	225.90	
8	226.20	225.88	226.27	226.42	227.65	230.27	226.17	226.12	226.05	225.88	225.83	225.89	
9	226.03	225.81	226.19	226.58	229.90	228.36	227.84	226.10	226.04	225.88	225.79	225.89	
10	225.95	225.75	226.28	227.13	228.86	227.69	229.58	226.09	226.03	225.88	225.78	225.89	
11	225.87	225.97	226.86	226.69	227.23	228.24	228.19	226.08	226.02	225.88	225.78	225.89	
12	225.81	225.95	226.50	226.43	226.70	227.42	230.33	226.07	226.02	225.88	225.78	225.89	
13	225.76	225.96	226.21	226.28	226.51	226.94	231.52	226.07	226.01	225.86	225.79	225.89	
14	225.74	226.74	226.14	226.19	226.77	226.71	228.61	226.06	226.00	225.85	225.91	225.91	
15	225.74	226.27	226.17	226.14	228.01	226.90	227.81	226.06	226.00	225.86	225.96	225.91	
16	225.72	226.28	226.17	226.13	226.89	229.63	227.18	226.05	225.99	225.86	225.97	225.91	
17	225.99	226.08	226.11	226.19	227.22	228.17	226.93	226.05	225.99	225.86	226.04	225.92	
18	226.11	229.49	226.07	226.31	227.64	228.06	228.45	226.05	225.97	225.86	226.05	225.92	
19	225.96	227.59	226.05	226.19	231.22	227.34	228.99	226.03	225.97	225.86	226.04	225.91	
20	226.19	226.54	226.04	226.17	232.96	227.18	227.40	226.03	225.97	225.86	226.03	225.91	
21	226.37	226.22	226.07	226.13	232.63	227.66	226.91	226.03	225.96	225.85	226.03	225.91	
22	226.14	226.13	226.35	226.10	232.47	227.06	226.70	226.13	225.96	225.84	226.03	225.91	
23	226.06	226.08	226.10	226.10	232.90	226.86	226.59	226.65	225.97	225.84	226.02	225.91	
24	225.96	226.06	226.07	226.12	230.07	227.26	226.52	226.38	225.97	225.84	225.92	225.91	
25	225.88	226.34	226.06	226.07	228.27	227.55	226.46	226.19	225.96	225.84	225.91	225.90	
26	225.84	226.45	226.03	226.08	227.40	226.85	226.40	226.12	225.96	225.82	225.91	225.90	
27	225.81	226.88	226.03	226.22	226.95	226.71	226.36	226.10	225.96	225.79	225.91	225.90	
28	225.77	226.64	226.04	226.28	226.71	226.58	226.33	226.10	225.95	225.78	225.91	225.86	
29	225.76	226.30	226.67	226.22	226.59	226.42	226.27	226.10	225.95	225.77		225.90	
30	225.76	226.19	229.13	226.28	226.46	226.33	226.24	226.18	225.95	225.79		225.90	
31		226.46		227.26	226.41		226.21		225.95	225.81		225.90	
Mean	225.98	226.26	226.39	226.74	228.10	227.55	227.21	226.13	226.01	225.86	225.90	225.90	
Max	226.69	229.49	229.13	229.89	232.96	230.27	231.52	226.65	226.15	225.94	226.05	225.92	232.96
Min	225.72	225.69	226.03	226.07	226.20	226.33	226.15	226.03	225.95	225.77	225.78	225.86	225.69

Annual Max Momentary Gage Height 233.83 M (MSL), at 3.00 Hours, on Aug 20, 1998
Zero Gage at Bottom Elevation 225.00 M (MSL), River Bed 225.48 M (MSL)
Left Bank Elevation 237.39 M (MSL)
Right Bank Elevation 237.56 M (MSL), Drainage Area 945 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.45	0.65	7.40	29.80	7.25	6.70	3.40	2.90	2.75	1.70	1.05	1.55	
2	5.45	0.50	4.10	19.75	8.80	8.40	3.25	2.90	2.75	1.65	1.00	1.50	
3	2.40	0.50	4.05	21.12	4.15	19.00	3.10	2.90	2.75	1.60	1.00	1.60	
4	1.95	0.45	5.95	41.35	3.15	23.00	3.10	2.85	2.55	1.55	1.05	1.60	
5	1.65	0.45	3.30	14.70	3.00	11.40	3.00	2.75	2.40	1.50	1.05	1.55	
6	1.65	0.55	3.00	7.40	4.45	6.95	2.90	2.70	2.35	1.50	1.05	1.50	
7	3.00	1.45	6.90	5.10	7.20	24.25	2.75	2.65	2.30	1.45	1.15	1.50	
8	3.00	1.40	3.35	4.10	12.50	47.66	2.85	2.60	2.25	1.40	1.15	1.45	
9	2.15	1.05	2.95	4.90	41.50	20.00	14.40	2.50	2.20	1.40	0.95	1.45	
10	1.75	0.75	3.40	7.65	26.25	12.90	36.70	2.45	2.15	1.40	0.90	1.45	
11	1.35	1.85	6.30	5.45	8.30	18.50	17.90	2.40	2.10	1.40	0.90	1.45	
12	1.05	1.75	4.50	4.15	5.50	10.20	48.74	2.35	2.10	1.40	0.90	1.45	
13	0.80	1.80	3.05	3.40	4.55	6.70	71.18	2.35	2.05	1.30	0.95	1.45	
14	0.70	5.70	2.70	2.95	5.85	5.55	23.13	2.30	2.00	1.25	1.55	1.55	
15	0.70	3.35	2.85	2.70	16.10	6.50	14.10	2.30	2.00	1.30	1.80	1.55	
16	0.60	3.40	2.85	2.65	6.45	37.45	7.90	2.25	1.95	1.30	1.85	1.55	
17	1.95	2.40	2.55	2.95	8.20	17.70	6.65	2.25	1.95	1.30	2.20	1.60	
18	2.55	35.35	2.35	3.55	12.40	16.60	21.12	2.25	1.85	1.30	2.25	1.60	
19	1.80	11.90	2.25	2.95	65.48	9.40	27.88	2.15	1.85	1.30	2.20	1.55	
20	2.95	4.70	2.20	2.85	104.00	7.90	10.00	2.15	1.85	1.30	2.15	1.55	
21	3.85	3.10	2.35	2.65	95.75	12.60	6.55	2.15	1.80	1.25	2.15	1.55	
22	2.70	2.65	3.75	2.50	91.75	7.30	5.50	2.65	1.80	1.20	2.15	1.55	
23	2.30	2.40	2.50	2.50	102.50	6.30	4.95	5.25	1.85	1.20	2.10	1.55	
24	1.80	2.30	2.35	2.60	44.19	8.60	4.60	3.90	1.85	1.20	1.60	1.55	
25	1.40	3.70	2.30	2.35	18.88	11.50	4.30	2.95	1.80	1.20	1.55	1.50	
26	1.20	4.25	2.15	2.40	10.00	6.25	4.00	2.60	1.80	1.10	1.55	1.50	
27	1.05	6.40	2.15	3.10	6.75	5.55	3.80	2.50	1.80	0.95	1.55	1.50	
28	0.85	5.20	2.20	3.40	5.55	4.90	3.65	2.50	1.75	0.90	1.55	1.30	
29	0.80	3.50	5.35	3.10	4.95	4.10	3.35	2.50	1.75	0.85		1.50	
30	0.80	2.95	29.95	3.40	4.30	3.65	3.20	2.90	1.75	0.95		1.50	
31		4.30		8.60	4.05		3.05		1.75	1.05		1.50	
Total	56.65	120.70	131.05	226.07	743.75	387.51	371.00	79.85	63.85	40.15	41.30	46.95	2308.83 CMSDAY
Mean	1.89	3.89	4.37	7.29	23.99	12.92	11.97	2.66	2.06	1.30	1.47	1.51	6.33 CMS
Max	5.45	35.35	29.95	41.35	104.00	47.66	71.18	5.25	2.75	1.70	2.25	1.60	104.00 CMS
Min	0.60	0.45	2.15	2.35	3.00	3.65	2.75	2.15	1.75	0.85	0.90	1.30	0.45 CMS
Runoff	4.895	10.428	11.323	19.532	64.260	33.481	32.054	6.899	5.517	3.469	3.568	4.056	199.483 MCM

Momentary Peak 129.56 CMS, at 233.83 M (MSL), at 3.00 Hours, on Aug 20, 1998

Runoff Yield 6.69 Liters/Second/Square KM, Momentary Peak Yield 137.101 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

Chi River at Ban Nong O, Chaiyaphum (E.32A)

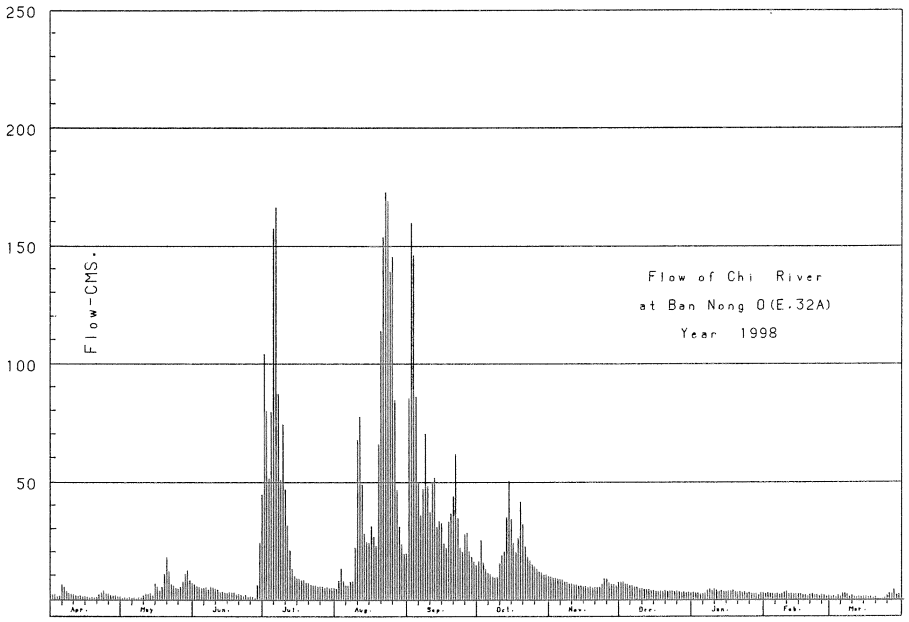
Location — Lat. 15-54-40 N., Long. 101-42-40 E., on left bank about 500 meters north of Ban Nong O, about 600 meters upstream from E.32 gaging station, Amphoe Ban Khwao, Chaiyaphum.

Drainage Area	2,905 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+198.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the measuring line.
Elevation	+210.661 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1966 to date.
Rating Operation	
Period of Rating	1968 to date.
Rated by Float	-
Rated by Current Meter	1968 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 19 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	198.53	198.37	199.05	204.10	198.78	202.62	199.61	199.18	199.04	198.60	198.58	198.45	
2	198.51	198.37	198.96	203.50	199.06	205.00	200.12	199.17	199.03	198.60	198.57	198.45	
3	198.45	198.37	198.84	202.66	199.43	204.58	199.59	199.14	198.99	198.58	198.58	198.44	
4	198.45	198.37	198.80	203.49	199.07	202.66	199.39	199.13	198.94	198.57	198.55	198.48	
5	199.13	198.36	198.83	205.15	198.92	201.24	199.30	199.12	198.91	198.58	198.55	198.45	
6	198.83	198.35	198.81	205.31	198.88	200.61	199.24	199.09	198.89	198.56	198.54	198.58	
7	198.68	198.34	198.74	203.69	199.05	201.12	199.19	199.05	198.86	198.72	198.54	198.59	
8	198.55	198.37	198.87	202.63	199.04	202.07	199.14	199.02	198.82	198.74	198.53	198.50	
9	198.54	198.38	198.85	203.37	199.97	201.17	199.18	198.99	198.79	198.71	198.63	198.44	
10	198.51	198.45	198.75	202.51	201.95	200.69	199.57	198.96	198.76	198.74	198.63	198.48	
11	198.49	198.56	198.70	201.77	202.34	201.23	199.78	198.95	198.76	198.70	198.56	198.44	
12	198.47	198.55	198.62	201.02	201.21	201.31	199.89	198.92	198.75	198.66	198.54	198.42	
13	198.45	198.55	198.61	200.22	200.24	200.39	200.57	198.90	198.71	198.67	198.57	198.43	
14	198.44	198.49	198.61	199.82	200.07	200.49	201.27	198.88	198.70	198.67	198.53	198.43	
15	198.44	199.21	198.60	199.63	200.05	200.45	200.55	198.87	198.67	198.66	198.56	198.43	
16	198.40	198.86	198.60	199.54	200.41	200.04	200.05	198.85	198.65	198.65	198.52	198.43	
17	198.39	198.70	198.62	199.49	200.19	199.96	199.87	198.84	198.66	198.68	198.52	198.42	
18	198.40	198.85	198.58	199.42	199.99	200.50	200.15	198.83	198.66	198.69	198.48	198.41	
19	198.40	199.95	198.53	199.28	201.89	200.65	200.88	198.82	198.66	198.66	198.47	198.40	
20	198.43	200.72	198.53	199.18	203.60	201.01	200.43	198.81	198.68	198.60	198.50	198.39	
21	198.49	200.07	198.49	199.10	204.81	201.71	199.99	198.80	198.68	198.64	198.57	198.30	
22	198.61	199.15	198.46	199.02	205.36	200.57	199.76	198.85	198.68	198.62	198.51	198.28	
23	198.66	198.94	198.49	198.96	205.25	199.95	199.63	198.98	198.65	198.61	198.49	198.34	
24	198.58	198.84	198.43	198.93	204.38	199.87	199.54	199.12	198.66	198.58	198.47	198.34	
25	198.52	198.74	198.43	198.88	204.56	200.24	199.46	199.14	198.65	198.59	198.50	198.49	
26	198.48	198.84	198.40	198.87	202.61	200.26	199.40	199.01	198.63	198.58	198.47	198.55	
27	198.48	199.36	198.35	198.84	201.10	199.87	199.34	198.96	198.62	198.56	198.45	198.56	
28	198.46	199.94	199.08	198.82	200.40	199.76	199.29	198.93	198.61	198.54	198.46	198.71	
29	198.45	200.12	201.29	198.80	200.02	199.60	199.25	198.91	198.61	198.52		198.52	
30	198.42	199.49	202.42	198.79	199.83	199.50	199.23	199.02	198.60	198.58		198.51	
31		199.16		198.78	199.82		199.21		198.61	198.59		198.46	
Mean	198.52	198.93	198.88	200.76	201.04	200.97	199.74	198.97	198.74	198.63	198.53	198.46	
Max	199.13	200.72	202.42	205.31	205.36	205.00	201.27	199.18	199.04	198.74	198.63	198.71	205.36
Min	198.39	198.34	198.35	198.78	198.78	199.50	199.14	198.80	198.60	198.52	198.45	198.28	198.28

Annual Max Momentary Gage Height 205.48 M (MSL), at 3.00 Hours, on Jul 6, 1998
Zero Gage at Bottom Elevation 198.00 M (MSL), River Bed 197.81 M (MSL)
Left Bank Elevation 210.63 M (MSL)
Right Bank Elevation 211.13 M (MSL), Drainage Area 2905 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.30	0.85	6.25	104.50	4.80	85.36	16.15	9.70	7.60	3.00	2.80	1.50	
2	2.10	0.85	5.80	80.00	7.90	160.00	25.52	9.55	7.45	3.00	2.70	1.50	
3	1.50	0.85	5.20	51.80	13.45	145.94	15.85	9.10	6.90	2.80	2.80	1.40	
4	1.50	0.85	5.00	79.60	8.05	86.48	12.85	8.95	6.40	2.70	2.50	1.80	
5	6.65	0.80	5.15	157.25	6.20	50.00	11.50	8.80	6.10	2.80	2.50	1.50	
6	5.15	0.75	5.05	166.60	5.80	35.81	10.60	8.35	5.90	2.60	2.40	2.80	
7	3.80	0.70	4.40	87.60	7.75	47.00	9.85	7.75	5.60	4.20	2.40	2.90	
8	2.50	0.85	5.35	50.90	7.60	70.75	9.10	7.30	5.20	4.40	2.30	2.00	
9	2.40	0.90	5.25	74.80	22.40	48.25	9.70	6.90	4.90	4.10	3.30	1.40	
10	2.10	1.50	4.50	47.30	67.75	37.49	15.55	6.60	4.60	4.40	3.30	1.80	
11	1.90	2.60	4.00	31.55	77.58	49.75	18.70	6.50	4.60	4.00	2.60	1.40	
12	1.70	2.50	3.20	21.24	49.25	51.75	20.80	6.20	4.50	3.60	2.40	1.20	
13	1.50	2.50	3.10	13.08	28.04	31.19	34.97	6.00	4.10	3.70	2.70	1.30	
14	1.40	1.90	3.10	10.32	24.47	33.29	50.75	5.80	4.00	3.70	2.30	1.30	
15	1.40	7.05	3.00	9.18	24.05	32.45	34.55	5.70	3.70	3.60	2.60	1.30	
16	1.00	5.30	3.00	8.70	31.61	23.84	24.05	5.50	3.50	3.50	2.20	1.30	
17	0.95	4.00	3.20	8.45	26.99	22.20	20.40	5.40	3.60	3.80	2.20	1.20	
18	1.00	5.25	2.80	8.10	22.80	33.50	26.15	5.30	3.60	3.90	1.80	1.10	
19	1.00	11.15	2.30	7.40	66.25	36.65	41.48	5.20	3.60	3.60	1.70	1.00	
20	1.30	17.80	2.30	6.90	114.20	44.25	32.03	5.10	3.80	3.00	2.00	0.95	
21	1.90	11.99	1.90	6.50	153.54	61.75	22.80	5.00	3.80	3.40	2.70	0.50	
22	3.10	6.75	1.60	6.10	172.96	34.97	18.40	5.50	3.80	3.20	2.10	0.40	
23	3.60	5.70	1.90	5.80	169.00	22.00	16.45	6.80	3.50	3.10	1.90	0.70	
24	2.80	5.20	1.30	5.65	139.34	20.40	15.10	8.80	3.60	2.80	1.70	0.70	
25	2.20	4.40	1.30	5.40	145.28	28.04	13.90	9.10	3.50	2.90	2.00	1.90	
26	1.80	5.20	1.00	5.35	85.08	28.46	13.00	7.15	3.30	2.80	1.70	2.50	
27	1.80	7.80	0.75	5.20	46.50	20.40	12.10	6.60	3.20	2.60	1.50	2.60	
28	1.60	11.08	6.40	5.10	31.40	18.40	11.35	6.30	3.10	2.40	1.60	4.10	
29	1.50	12.34	24.48	5.00	23.42	16.00	10.75	6.10	3.10	2.20		2.20	
30	1.20	8.45	44.60	4.90	19.60	14.50	10.45	7.30	3.00	2.80		2.10	
31		6.80		4.80	19.40		10.15		3.10	2.90		1.60	
Total	64.65	154.66	167.18	1085.07	1622.46	1390.87	595.00	208.35	136.65	101.50	64.70	49.95	5641.04 CMSDAY
Mean	2.15	4.99	5.57	35.00	52.34	46.36	19.19	6.95	4.41	3.27	2.31	1.61	15.45 CMS
Max	6.65	17.80	44.60	166.60	172.96	160.00	50.75	9.70	7.60	4.40	3.30	4.10	172.96 CMS
Min	0.95	0.70	0.75	4.80	4.80	14.50	9.10	5.00	3.00	2.20	1.50	0.40	0.40 CMS
Runoff	5.586	13.363	14.444	93.750	140.181	120.171	51.408	18.001	11.807	8.770	5.590	4.316	487.386 MCM

Momentary Peak 176.80 CMS, at 205.48 M (MSL), at 3.00 Hours, on Jul 6, 1998

Runoff Yield 5.32 Liters/Second/Square KM, Momentary Peak Yield 60.861 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

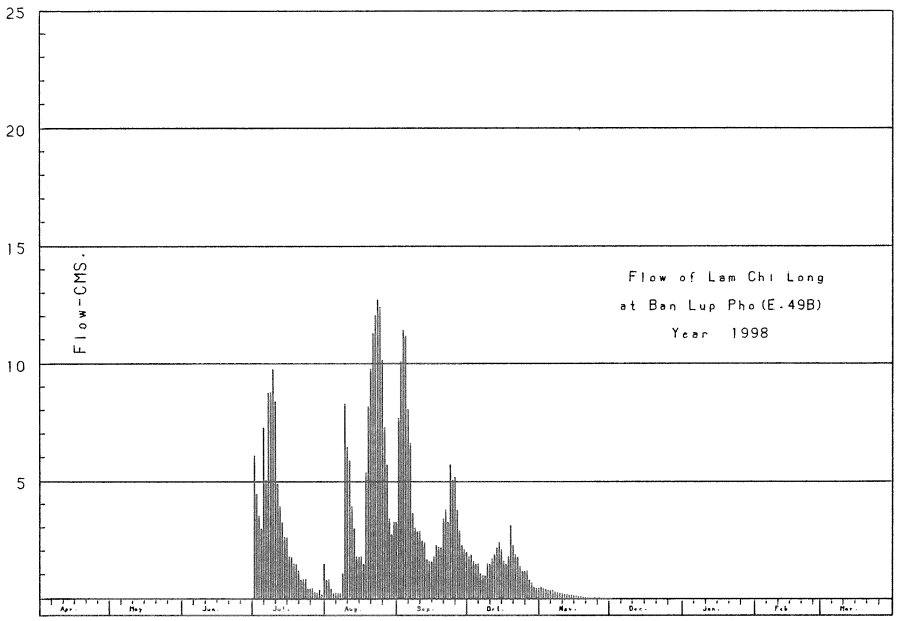
Lam Chi Long at Ban Lup Pho, Chaiyaphum (E.49B)

Location	Lat. 15°-47'-28" N., Long. 101°-52'-20" E., on right bank at the bridge on road, Ban Lup Pho, Tambon Talat Raeng, Amphoe Ban Khwao, Chaiyaphum.
Drainage Area	331 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+196.18 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank upstream side at the abutment of the bridge.
Elevation	+200.251 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the local weir during Nov.6,98-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 16 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	196.77	196.77	196.77	197.55	197.13	197.67	197.23	197.09	197.13	196.98	196.98	196.98	
2	196.77	196.77	196.77	197.45	197.13	197.91	197.24	197.08	197.13	196.98	196.98	196.98	
3	196.77	196.77	196.77	197.38	197.08	198.04	197.21	197.08	197.08	196.98	196.98	196.98	
4	196.77	196.77	196.77	197.34	197.05	198.02	197.20	197.07	197.08	196.98	196.98	196.98	
5	196.77	196.77	196.77	197.63	197.05	197.71	197.20	197.07	197.08	196.98	196.98	196.98	
6	196.77	196.77	196.77	197.49	197.05	197.58	197.16	197.07	197.08	196.98	196.98	196.98	
7	196.77	196.77	196.77	197.78	197.05	197.39	197.15	197.08	197.08	196.98	196.98	196.98	
8	196.77	196.77	196.77	197.78	197.16	197.34	197.15	197.08	197.08	196.98	196.98	196.98	
9	196.77	196.77	196.77	197.88	197.73	197.33	197.20	197.08	197.08	196.98	196.98	196.98	
10	196.77	196.77	196.77	197.74	197.57	197.33	197.20	197.08	197.08	196.98	196.98	196.98	
11	196.77	196.77	196.77	197.48	197.54	197.30	197.22	197.08	197.08	196.98	196.98	196.98	
12	196.77	196.77	196.77	197.41	197.41	197.29	197.24	197.08	197.08	196.98	196.98	196.98	
13	196.77	196.77	196.77	197.36	197.34	197.22	197.27	197.08	197.08	196.98	196.98	196.98	
14	196.77	196.77	196.77	197.31	197.23	197.21	197.29	197.09	197.08	196.98	196.98	196.98	
15	196.77	196.77	196.77	197.31	197.23	197.21	197.26	197.09	197.07	196.98	196.98	196.98	
16	196.77	196.77	196.77	197.23	197.23	197.23	197.21	197.09	197.07	196.98	196.98	196.98	
17	196.77	196.77	196.77	197.23	197.20	197.28	197.20	197.09	197.07	196.98	196.98	196.98	
18	196.77	196.77	196.77	197.20	197.51	197.27	197.23	197.10	197.07	196.98	196.98	196.98	
19	196.77	196.77	196.77	197.20	197.72	197.27	197.35	197.10	197.06	196.98	196.98	196.98	
20	196.77	196.77	196.77	197.17	197.88	197.37	197.28	197.10	197.06	196.98	196.98	196.98	
21	196.77	196.77	196.77	197.13	198.03	197.40	197.24	197.11	197.06	196.98	196.98	196.98	
22	196.77	196.77	196.77	197.13	198.10	197.36	197.23	197.11	197.03	196.98	196.98	196.98	
23	196.77	196.77	196.77	197.13	198.16	197.53	197.19	197.11	197.03	196.98	196.98	196.98	
24	196.77	196.77	196.77	197.08	198.13	197.49	197.17	197.11	197.01	196.98	196.98	196.98	
25	196.77	196.77	196.77	197.08	197.92	197.50	197.17	197.11	197.01	196.98	196.98	196.98	
26	196.77	196.77	196.77	197.08	197.63	197.40	197.17	197.12	196.99	196.98	196.98	196.98	
27	196.77	196.77	196.77	197.06	197.53	197.33	197.13	197.12	196.99	196.98	196.98	196.98	
28	196.77	196.77	196.77	197.05	197.37	197.28	197.11	197.12	196.99	196.98	196.98	196.98	
29	196.77	196.77	196.77	197.07	197.32	197.26	197.09	197.13	196.99	196.98		196.98	
30	196.77	196.77	196.77	197.04	197.36	197.25	197.08	197.13	196.99	196.98		196.98	
31		196.77		197.20	197.36		197.08		196.98	196.98		196.98	
Mean	196.77	196.77	196.77	197.32	197.46	197.43	197.20	197.10	197.05	196.98	196.98	196.98	
Max	196.77	196.77	196.77	197.88	198.16	198.04	197.35	197.13	197.13	196.98	196.98	196.98	198.16
Min	196.77	196.77	196.77	197.04	197.05	197.21	197.08	197.07	196.98	196.98	196.98	196.98	196.77

Annual Max Momentary Gage Height 198.16 M (MSL), at 12.00 Hours, on Aug 23, 1998
Zero Gage at Bottom Elevation 196.18 M (MSL), River Bed 196.64 M (MSL)
Left Bank Elevation 200.30 M (MSL)
Right Bank Elevation 200.25 M (MSL), Drainage Area 331 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	6.10	0.83	7.70	1.80	0.52	0.04	0.00	0.00	0.00	
2	0.00	0.00	0.00	4.50	0.83	10.10	1.90	0.45	0.04	0.00	0.00	0.00	
3	0.00	0.00	0.00	3.54	0.45	11.44	1.60	0.45	0.03	0.00	0.00	0.00	
4	0.00	0.00	0.00	3.02	0.25	11.22	1.50	0.38	0.03	0.00	0.00	0.00	
5	0.00	0.00	0.00	7.30	0.25	8.10	1.50	0.38	0.03	0.00	0.00	0.00	
6	0.00	0.00	0.00	5.06	0.25	6.64	1.10	0.38	0.03	0.00	0.00	0.00	
7	0.00	0.00	0.00	8.80	0.25	3.67	1.00	0.32	0.02	0.00	0.00	0.00	
8	0.00	0.00	0.00	8.80	1.10	3.02	1.00	0.29	0.02	0.00	0.00	0.00	
9	0.00	0.00	0.00	9.80	8.30	2.89	1.50	0.27	0.02	0.00	0.00	0.00	
10	0.00	0.00	0.00	8.40	6.46	2.89	1.50	0.24	0.02	0.00	0.00	0.00	
11	0.00	0.00	0.00	4.92	5.92	2.50	1.70	0.22	0.02	0.00	0.00	0.00	
12	0.00	0.00	0.00	3.94	3.94	2.40	1.90	0.20	0.02	0.00	0.00	0.00	
13	0.00	0.00	0.00	3.28	3.02	1.70	2.20	0.19	0.01	0.00	0.00	0.00	
14	0.00	0.00	0.00	2.63	1.80	1.60	2.40	0.17	0.01	0.00	0.00	0.00	
15	0.00	0.00	0.00	2.63	1.80	1.60	2.10	0.16	0.01	0.00	0.00	0.00	
16	0.00	0.00	0.00	1.80	1.80	1.80	1.60	0.14	0.01	0.00	0.00	0.00	
17	0.00	0.00	0.00	1.80	1.50	2.30	1.50	0.13	0.01	0.00	0.00	0.00	
18	0.00	0.00	0.00	1.50	5.38	2.20	1.80	0.12	0.01	0.00	0.00	0.00	
19	0.00	0.00	0.00	1.50	8.20	2.20	3.15	0.11	0.01	0.00	0.00	0.00	
20	0.00	0.00	0.00	1.20	9.80	3.41	2.30	0.10	0.01	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.83	11.33	3.80	1.90	0.09	0.01	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.83	12.10	3.28	1.80	0.08	0.01	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.83	12.76	5.74	1.40	0.08	0.01	0.00	0.00	0.00	
24	0.00	0.00	0.00	0.45	12.43	5.06	1.20	0.07	0.01	0.00	0.00	0.00	
25	0.00	0.00	0.00	0.45	10.20	5.20	1.20	0.06	0.01	0.00	0.00	0.00	
26	0.00	0.00	0.00	0.45	7.30	3.80	1.20	0.06	0.00	0.00	0.00	0.00	
27	0.00	0.00	0.00	0.30	5.74	2.89	0.83	0.06	0.00	0.00	0.00	0.00	
28	0.00	0.00	0.00	0.25	3.41	2.30	0.68	0.05	0.00	0.00	0.00	0.00	
29	0.00	0.00	0.00	0.38	2.76	2.10	0.52	0.05	0.00	0.00		0.00	
30	0.00	0.00	0.00	0.20	3.28	2.00	0.45	0.05	0.00	0.00		0.00	
31		0.00		1.50	3.28		0.45		0.00	0.00		0.00	
Total	0.00	0.00	0.00	96.99	146.72	125.55	46.68	5.87	0.45	0.00	0.00	0.00	422.26 CMSDAY
Mean	0.00	0.00	0.00	3.13	4.73	4.18	1.51	0.20	0.01	0.00	0.00	0.00	1.16 CMS
Max	0.00	0.00	0.00	9.80	12.76	11.44	3.15	0.52	0.04	0.00	0.00	0.00	12.76 CMS
Min	0.00	0.00	0.00	0.20	0.25	1.60	0.45	0.05	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	8.380	12.677	10.848	4.033	0.507	0.039	0.000	0.000	0.000	36.483 MCM

Momentary Peak 12.76 CMS, at 198.16 M (MSL), at 12.00 Hours, on Aug 23, 1998
Runoff Yield 3.50 Liters/Second/Square KM, Momentary Peak Yield 38.550 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

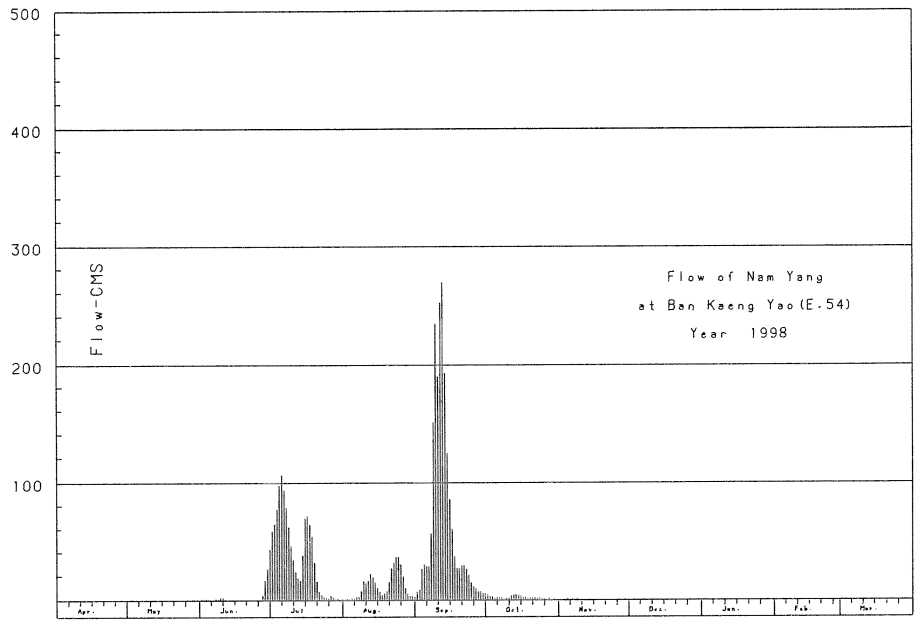
Nam Yang at Ban Kaeng Yao, Kalasin (E.54)

Location	Lat. 16°-26'-29" N., Long. 104°-02'-07" E., on left bank at Ban Kaeng Yao about 2 kilometers downstream from proposed of USBR Damsite, Amphoe Kuchinarai, Kalasin.
Drainage Area	1,511 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+138.34 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+149.988 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1969 to date.
Rating Operation	
Period of Rating	1969 - 1977, 1983 to date.
Rated by Float	-
Rated by Current Meter	1969 - 1977, 1983 to date.
Stability of Channel Regimes	Stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The weir situated about 100 meters downstream from the gage site. Stage-discharge relation defined by 66 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	138.67	139.34	140.39	141.27	140.40	140.57	140.52	140.34	140.34	140.27	138.95	138.65	
2	138.68	139.34	140.39	141.38	140.38	140.62	140.50	140.34	140.34	140.29	138.93	138.65	
3	138.67	139.34	140.39	141.63	140.42	140.85	140.47	140.37	140.34	140.27	138.82	138.64	
4	138.69	139.34	140.37	141.96	140.43	140.91	140.44	140.41	140.34	140.26	138.73	138.64	
5	138.67	139.34	140.36	142.12	140.44	140.89	140.44	140.39	140.34	140.25	138.68	138.65	
6	138.66	139.33	140.37	141.91	140.47	140.88	140.46	140.39	140.33	140.25	138.69	138.65	
7	138.66	139.32	140.39	141.64	140.49	141.23	140.44	140.39	140.32	140.21	138.64	138.65	
8	138.68	139.31	140.42	141.35	140.59	142.86	140.42	140.38	140.32	140.14	138.56	138.65	
9	138.70	139.31	140.45	141.10	140.72	144.16	140.41	140.38	140.32	140.13	138.54	138.65	
10	138.70	139.30	140.43	140.95	140.69	143.46	140.44	140.37	140.32	140.06	138.54	138.65	
11	138.68	139.31	140.39	140.83	140.73	144.44	140.50	140.36	140.31	140.05	138.54	138.65	
12	138.68	139.34	140.36	140.75	140.80	144.70	140.53	140.37	140.30	140.01	138.54	138.65	
13	138.68	139.35	140.34	140.72	140.77	143.52	140.52	140.36	140.29	139.96	138.54	138.63	
14	138.67	139.36	140.33	141.01	140.70	142.41	140.52	140.36	140.27	139.90	138.54	138.63	
15	138.67	139.36	140.33	141.49	140.64	141.77	140.50	140.35	140.26	139.90	138.54	138.63	
16	138.66	139.37	140.31	141.51	140.58	141.32	140.47	140.34	140.28	139.87	138.58	138.63	
17	138.67	139.37	140.30	141.39	140.53	140.99	140.45	140.34	140.27	139.80	138.58	138.63	
18	138.67	139.35	140.30	141.19	140.54	140.87	140.43	140.34	140.25	139.74	138.60	138.63	
19	138.66	139.35	140.34	140.93	140.60	140.86	140.43	140.34	140.22	139.66	138.62	138.63	
20	138.66	140.14	140.32	140.72	140.70	140.90	140.44	140.34	140.27	139.58	138.62	138.63	
21	138.66	140.30	140.30	140.58	140.86	140.89	140.44	140.34	140.29	139.49	138.62	138.63	
22	138.66	140.30	140.30	140.53	140.93	140.86	140.44	140.34	140.29	139.35	138.63	138.63	
23	138.67	140.27	140.29	140.47	140.98	140.79	140.43	140.34	140.29	139.23	138.63	138.63	
24	138.68	140.26	140.30	140.45	140.98	140.71	140.43	140.34	140.31	139.08	138.63	138.63	
25	138.69	140.30	140.33	140.43	140.91	140.66	140.41	140.34	140.29	138.89	138.64	138.63	
26	138.87	140.31	140.34	140.52	140.78	140.62	140.40	140.34	140.30	138.78	138.65	138.63	
27	139.03	140.34	140.52	140.44	140.64	140.59	140.43	140.34	140.28	138.94	138.65	138.63	
28	139.17	140.38	140.72	140.42	140.54	140.58	140.38	140.34	140.31	139.02	138.65	138.63	
29	139.27	140.37	140.86	140.40	140.51	140.56	140.36	140.34	140.33	139.05		138.63	
30	139.32	140.36	141.07	140.40	140.49	140.54	140.36	140.34	140.32	139.05		138.63	
31		140.37		140.39	140.49		140.35		140.31	139.02		138.63	
Mean	138.75	139.71	140.41	141.00	140.64	141.50	140.44	140.36	140.30	139.69	138.64	138.64	
Max	139.32	140.38	141.07	142.12	140.98	144.70	140.53	140.41	140.34	140.29	138.95	138.65	144.70
Min	138.66	139.30	140.29	140.39	140.38	140.54	140.35	140.34	140.22	138.78	138.54	138.63	138.54

Annual Max Momentary Gage Height 144.88 M (MSL), at 6.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 138.34 M (MSL), River Bed 138.35 M (MSL)
Left Bank Elevation 150.02 M (MSL)
Right Bank Elevation 150.02 M (MSL), Drainage Area 1511 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.17	0.20	1.11	58.50	1.20	6.65	4.40	0.63	0.63	0.18	0.00	0.00	
2	0.17	0.20	1.11	64.40	1.01	9.40	3.50	0.63	0.63	0.22	0.00	0.00	
3	0.17	0.20	1.11	78.15	1.66	26.00	2.81	0.91	0.63	0.18	0.00	0.00	
4	0.17	0.20	0.91	97.60	1.89	30.80	2.12	1.43	0.63	0.15	0.00	0.00	
5	0.17	0.20	0.82	107.20	2.12	29.20	2.12	1.11	0.63	0.13	0.00	0.00	
6	0.16	0.20	0.91	94.60	2.81	28.40	2.58	1.11	0.54	0.13	0.00	0.00	
7	0.16	0.20	1.11	78.70	3.27	56.50	2.12	1.11	0.44	0.03	0.00	0.00	
8	0.17	0.20	1.66	62.75	7.55	151.60	1.66	1.01	0.44	0.00	0.00	0.00	
9	0.17	0.20	2.35	46.00	16.40	234.56	1.43	1.01	0.44	0.00	0.00	0.00	
10	0.17	0.20	1.89	34.00	14.30	189.44	2.12	0.91	0.44	0.00	0.00	0.00	
11	0.17	0.20	1.11	24.40	17.10	253.04	3.50	0.82	0.34	0.00	0.00	0.00	
12	0.17	0.20	0.82	18.50	22.00	270.20	4.85	0.91	0.25	0.00	0.00	0.00	
13	0.17	0.20	0.63	16.40	19.90	193.28	4.40	0.82	0.22	0.00	0.00	0.00	
14	0.17	0.20	0.54	38.80	15.00	124.60	4.40	0.82	0.18	0.00	0.00	0.00	
15	0.17	0.20	0.54	70.45	10.80	86.20	3.50	0.73	0.15	0.00	0.00	0.00	
16	0.16	0.20	0.34	71.55	7.10	61.10	2.81	0.63	0.20	0.00	0.00	0.00	
17	0.17	0.20	0.25	64.95	4.85	37.20	2.35	0.63	0.18	0.00	0.00	0.00	
18	0.17	0.20	0.25	54.10	5.30	27.60	1.89	0.63	0.13	0.00	0.00	0.00	
19	0.16	0.20	0.63	32.40	8.00	26.80	1.89	0.63	0.05	0.00	0.00	0.00	
20	0.16	0.24	0.44	16.40	15.00	30.00	2.12	0.63	0.18	0.00	0.00	0.00	
21	0.16	0.25	0.25	7.10	26.80	29.20	2.12	0.63	0.22	0.00	0.00	0.00	
22	0.16	0.25	0.25	4.85	32.40	26.80	2.12	0.63	0.22	0.00	0.00	0.00	
23	0.17	0.18	0.22	2.81	36.40	21.30	1.89	0.63	0.22	0.00	0.00	0.00	
24	0.17	0.15	0.25	2.35	36.40	15.70	1.89	0.63	0.34	0.00	0.00	0.00	
25	0.17	0.25	0.54	1.89	30.80	12.20	1.43	0.63	0.22	0.00	0.00	0.00	
26	0.18	0.34	0.63	4.40	20.60	9.40	1.20	0.63	0.25	0.00	0.00	0.00	
27	0.19	0.63	4.40	2.12	10.80	7.55	1.89	0.63	0.20	0.00	0.00	0.00	
28	0.19	1.01	16.40	1.66	5.30	7.10	1.01	0.63	0.34	0.00	0.00	0.00	
29	0.20	0.91	26.80	1.20	3.95	6.20	0.82	0.63	0.54	0.00		0.00	
30	0.20	0.82	43.60	1.20	3.27	5.30	0.82	0.63	0.44	0.00		0.00	
31		0.91		1.11	3.27		0.73		0.34	0.00		0.00	
Total	5.14	9.74	111.87	1160.54	387.25	2013.32	72.49	23.41	10.66	1.02	0.00	0.00	3795.44 CMSDAY
Mean	0.17	0.31	3.73	37.44	12.49	67.11	2.34	0.78	0.34	0.03	0.00	0.00	10.40 CMS
Max	0.20	1.01	43.60	107.20	36.40	270.20	4.85	1.43	0.63	0.22	0.00	0.00	270.20 CMS
Min	0.16	0.15	0.22	1.11	1.01	5.30	0.73	0.63	0.05	0.00	0.00	0.00	0.00 CMS
Runoff	0.444	0.842	9.666	100.271	33.458	173.951	6.263	2.023	0.921	0.088	0.000	0.000	327.926 MCM

Momentary Peak 282.08 CMS, at 144.88 M (MSL), at 6.00 Hours, on Sep 12, 1998
Runoff Yield 6.88 Liters/Second/Square KM, Momentary Peak Yield 186.684 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

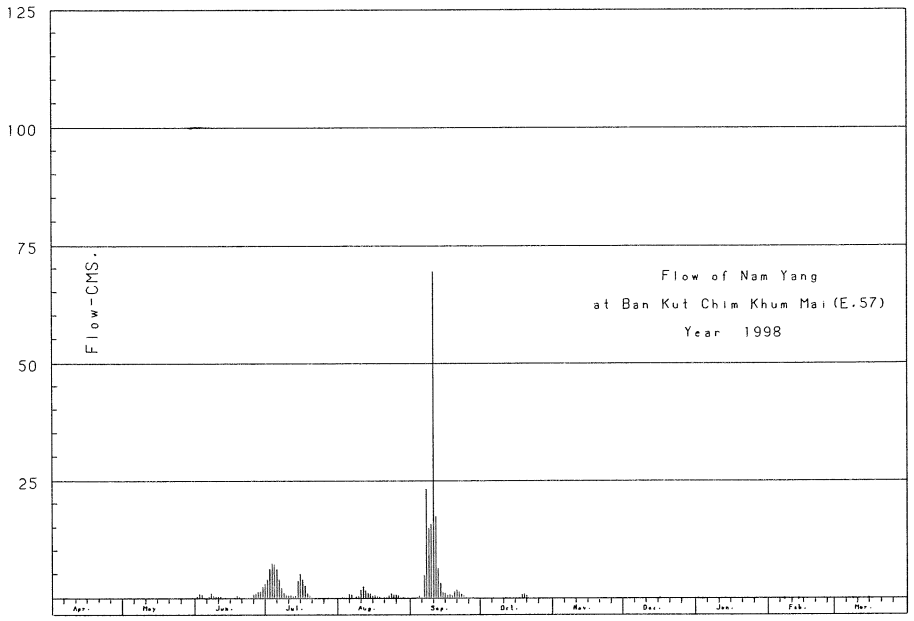
Nam Yang at Ban Kut Chim Khum Mai, Kalasin (E.57)

Location	Lat. 16°-41'-05" N., Long. 104°-05'-10" E., on right bank at the bridge on highway Ban Kut Chim Khum Mai, Amphoe Khao Wong, Kalasin.
Drainage Area	98 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+170.10 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the footpath of the bridge.
Elevation	+177.855 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1969-1971, 1983 to date.
Rating Operation	
Period of Rating	1969-1970, 1984 to date.
Rated by Float	-
Rated by Current Meter	1969-1970, 1984 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the local weir during Nov.14,98-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	169.50	169.50	170.51	171.03	170.24	170.35	170.36	170.25	170.58	170.50	170.31	170.07	
2	169.50	169.50	170.64	171.18	170.38	170.38	170.33	170.24	170.57	170.49	170.27	170.07	
3	169.50	169.50	170.64	171.25	170.46	170.41	170.31	170.24	170.57	170.48	170.26	170.07	
4	169.50	169.50	170.50	171.23	170.45	170.54	170.29	170.25	170.56	170.47	170.26	170.06	
5	169.50	169.50	170.42	171.19	170.63	170.50	170.28	170.25	170.56	170.46	170.25	170.05	
6	169.50	169.50	170.54	171.04	170.64	171.10	170.27	170.24	170.55	170.46	170.25	170.05	
7	169.50	169.50	170.68	170.86	170.50	171.93	170.26	170.23	170.55	170.45	170.24	170.04	
8	169.50	169.50	170.57	170.74	170.49	171.59	170.25	170.22	170.55	170.45	170.23	170.04	
9	169.50	169.50	170.56	170.65	170.56	171.62	170.25	170.21	170.55	170.45	170.23	170.03	
10	169.50	169.50	170.54	170.59	170.82	173.34	170.36	170.20	170.55	170.44	170.22	170.03	
11	169.50	169.50	170.48	170.57	170.91	171.70	170.37	170.19	170.54	170.44	170.22	170.03	
12	169.50	169.50	170.44	170.55	170.81	171.19	170.39	170.18	170.53	170.43	170.21	170.01	
13	169.50	169.50	170.43	170.54	170.73	170.99	170.37	170.17	170.52	170.42	170.20	170.00	
14	169.50	169.50	170.38	171.02	170.66	170.77	170.35	170.22	170.51	170.41	170.19	169.99	
15	169.50	169.50	170.35	171.11	170.56	170.69	170.31	170.40	170.50	170.41	170.18	169.98	
16	169.50	169.50	170.33	171.03	170.57	170.62	170.31	170.42	170.50	170.40	170.17	169.97	
17	169.50	169.50	170.32	170.93	170.55	170.62	170.29	170.46	170.50	170.40	170.16	169.96	
18	169.50	169.50	170.57	170.72	170.48	170.60	170.66	170.48	170.50	170.39	170.16	169.96	
19	169.50	169.50	170.45	170.57	170.41	170.76	170.64	170.51	170.50	170.38	170.15	169.96	
20	169.50	169.50	170.36	170.48	170.52	170.84	170.60	170.52	170.51	170.38	170.14	169.96	
21	169.50	169.50	170.35	170.42	170.53	170.76	170.51	170.55	170.53	170.37	170.13	169.95	
22	169.50	169.50	170.32	170.40	170.55	170.68	170.46	170.56	170.55	170.36	170.12	169.95	
23	169.50	169.50	170.30	170.35	170.71	170.56	170.38	170.56	170.56	170.36	170.11	169.95	
24	169.50	169.50	170.45	170.29	170.70	170.51	170.36	170.56	170.56	170.35	170.11	169.94	
25	169.50	169.50	170.66	170.42	170.64	170.44	170.33	170.57	170.55	170.35	170.10	169.93	
26	169.50	169.50	170.65	170.34	170.56	170.40	170.29	170.57	170.54	170.35	170.09	169.93	
27	169.50	170.17	170.79	170.29	170.48	170.41	170.26	170.57	170.53	170.35	170.08	169.92	
28	169.50	170.29	170.76	170.27	170.43	170.40	170.25	170.57	170.53	170.34	170.07	169.91	
29	169.50	170.36	170.90	170.26	170.36	170.39	170.24	170.58	170.52	170.34		169.93	
30	169.50	170.36	170.95	170.25	170.30	170.38	170.23	170.57	170.51	170.33		169.98	
31		170.40		170.24	170.35		170.23		170.51	170.33		169.97	
Mean	169.50	169.63	170.53	170.67	170.55	170.85	170.35	170.38	170.54	170.40	170.18	169.99	
Max	169.50	170.40	170.95	171.25	170.91	173.34	170.66	170.58	170.58	170.50	170.31	170.07	173.34
Min	169.50	169.50	170.30	170.24	170.24	170.35	170.23	170.17	170.50	170.33	170.07	169.91	169.50

Annual Max Momentary Gage Height 174.00 M (MSL), at 13.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 170.10 M (MSL), River Bed 169.79 M (MSL)
Left Bank Elevation 177.67 M (MSL)
Right Bank Elevation 177.61 M (MSL), Drainage Area 98 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.34	3.95	0.04	0.15	0.16	0.05	0.00	0.00	0.00	0.00	
2	0.00	0.00	0.86	6.20	0.18	0.18	0.13	0.04	0.00	0.00	0.00	0.00	
3	0.00	0.00	0.86	7.55	0.26	0.21	0.11	0.04	0.00	0.00	0.00	0.00	
4	0.00	0.00	0.30	7.13	0.25	0.46	0.09	0.05	0.00	0.00	0.00	0.00	
5	0.00	0.00	0.22	6.35	0.82	0.30	0.08	0.05	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.46	4.10	0.86	5.00	0.07	0.04	0.00	0.00	0.00	0.00	
7	0.00	0.00	1.02	2.10	0.30	23.25	0.06	0.03	0.00	0.00	0.00	0.00	
8	0.00	0.00	0.58	1.26	0.29	15.07	0.05	0.02	0.00	0.00	0.00	0.00	
9	0.00	0.00	0.54	0.90	0.54	15.76	0.05	0.01	0.00	0.00	0.00	0.00	
10	0.00	0.00	0.46	0.66	1.70	69.60	0.16	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.28	0.58	2.60	17.60	0.17	0.00	0.00	0.00	0.00	0.00	
12	0.00	0.00	0.24	0.50	1.60	6.35	0.19	0.00	0.00	0.00	0.00	0.00	
13	0.00	0.00	0.23	0.46	1.22	3.40	0.17	0.00	0.00	0.00	0.00	0.00	
14	0.00	0.00	0.18	3.80	0.94	1.38	0.15	0.00	0.00	0.00	0.00	0.00	
15	0.00	0.00	0.15	5.15	0.54	1.06	0.11	0.00	0.00	0.00	0.00	0.00	
16	0.00	0.00	0.13	3.95	0.58	0.78	0.11	0.00	0.00	0.00	0.00	0.00	
17	0.00	0.00	0.12	2.80	0.50	0.78	0.09	0.00	0.00	0.00	0.00	0.00	
18	0.00	0.00	0.58	1.18	0.28	0.70	0.94	0.00	0.00	0.00	0.00	0.00	
19	0.00	0.00	0.25	0.58	0.21	1.34	0.86	0.00	0.00	0.00	0.00	0.00	
20	0.00	0.00	0.16	0.28	0.38	1.90	0.70	0.00	0.00	0.00	0.00	0.00	
21	0.00	0.00	0.15	0.22	0.42	1.34	0.34	0.00	0.00	0.00	0.00	0.00	
22	0.00	0.00	0.12	0.20	0.50	1.02	0.26	0.00	0.00	0.00	0.00	0.00	
23	0.00	0.00	0.10	0.15	1.14	0.54	0.18	0.00	0.00	0.00	0.00	0.00	
24	0.00	0.00	0.25	0.09	1.10	0.34	0.16	0.00	0.00	0.00	0.00	0.00	
25	0.00	0.00	0.94	0.22	0.86	0.24	0.13	0.00	0.00	0.00	0.00	0.00	
26	0.00	0.00	0.90	0.14	0.54	0.20	0.09	0.00	0.00	0.00	0.00	0.00	
27	0.00	0.00	1.46	0.09	0.28	0.21	0.06	0.00	0.00	0.00	0.00	0.00	
28	0.00	0.09	1.34	0.07	0.23	0.20	0.05	0.00	0.00	0.00	0.00	0.00	
29	0.00	0.16	2.50	0.06	0.16	0.19	0.04	0.00	0.00	0.00		0.00	
30	0.00	0.16	3.00	0.05	0.10	0.18	0.03	0.00	0.00	0.00		0.00	
31		0.20		0.04	0.15		0.03		0.00	0.00		0.00	
Total	0.00	0.61	18.72	60.81	19.57	169.73	5.82	0.33	0.00	0.00	0.00	0.00	275.59 CMSDAY
Mean	0.00	0.02	0.62	1.96	0.63	5.66	0.19	0.01	0.00	0.00	0.00	0.00	0.76 CMS
Max	0.00	0.20	3.00	7.55	2.60	69.60	0.94	0.05	0.00	0.00	0.00	0.00	69.60 CMS
Min	0.00	0.00	0.10	0.04	0.04	0.15	0.03	0.00	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.053	1.617	5.254	1.691	14.665	0.503	0.029	0.000	0.000	0.000	0.000	23.811 MCM

Momentary Peak 98.00 CMS, at 174.00 M (MSL), at 13.00 Hours, on Sep 10, 1998
Runoff Yield 7.70 Liters/Second/Square KM, Momentary Peak Yield 1000.000 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

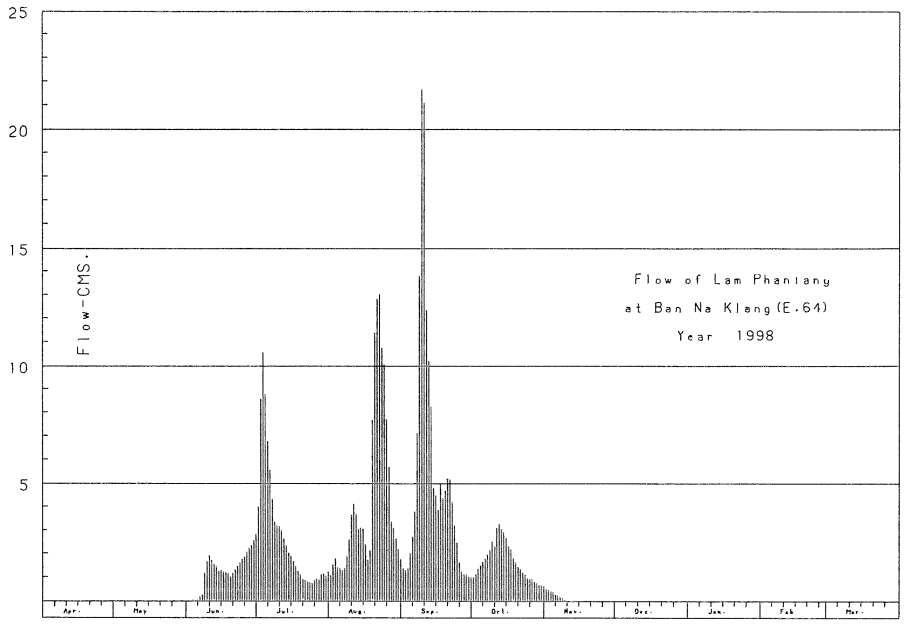
Lam Phaniang at Ban Na Klang, Nong Bua Lamphu (E.64)

Location	Lat. 17°-19'-16" N., Long. 102°-25'-29" E., on right bank at the bridge of Udon Thani-Loei highway, Amphoe Na Klang, Nong Bua Lamphu.
Drainage Area	358 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+254.47 m.(M.S.L.)
Bench Mark	B.M.-Highways Dept.
Location	On right bank downstream side at the footpath of the bridge.
Elevation	+261.680 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979-1980, 1997 to date.
Rated by Float	-
Rated by Current Meter	1979-1980, 1997 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the local weir during Nov.8,98-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	256.81	256.81	256.85	257.90	257.52	257.57	257.50	257.32	256.84	257.11	257.11	256.59	
2	256.81	256.81	256.86	258.19	257.59	257.55	257.53	257.29	256.84	257.19	257.09	256.57	
3	256.81	256.81	256.90	258.30	257.64	257.57	257.56	257.27	256.83	257.21	257.06	256.56	
4	256.80	256.81	256.93	258.20	257.57	257.67	257.59	257.24	256.83	257.22	257.03	256.54	
5	256.80	256.81	256.97	258.09	257.57	257.77	257.61	257.19	256.82	257.23	257.00	256.52	
6	256.79	256.81	257.08	258.02	257.55	257.88	257.64	257.14	256.82	257.24	256.98	256.50	
7	256.79	256.81	257.19	257.93	257.57	258.11	257.66	257.09	256.82	257.25	256.94	256.48	
8	256.79	256.81	257.53	257.84	257.65	258.45	257.70	257.04	256.82	257.26	256.91	256.44	
9	256.80	256.81	257.62	257.82	257.75	258.74	257.74	256.99	256.82	257.26	256.89	256.42	
10	256.81	256.81	257.66	257.82	257.87	258.72	257.72	256.94	256.82	257.27	256.86	256.42	
11	256.81	256.80	257.62	257.80	257.91	258.39	257.81	256.91	256.82	257.28	256.84	256.41	
12	256.81	256.80	257.60	257.76	257.87	258.28	257.83	256.89	256.82	257.28	256.82	256.43	
13	256.81	256.80	257.58	257.72	257.81	258.17	257.81	256.89	256.82	257.27	256.82	256.48	
14	256.81	256.79	257.55	257.68	257.81	257.97	257.79	256.88	256.82	257.26	256.81	256.57	
15	256.81	256.79	257.55	257.65	257.81	257.94	257.76	256.87	256.82	257.25	256.81	256.66	
16	256.82	256.79	257.54	257.62	257.73	257.89	257.72	256.89	256.80	257.25	256.80	256.76	
17	256.82	256.79	257.54	257.58	257.63	257.98	257.70	256.90	256.77	257.24	256.79	256.84	
18	256.83	256.81	257.53	257.55	257.69	257.93	257.66	256.92	256.75	257.23	256.79	256.92	
19	256.83	256.81	257.51	257.52	258.14	257.96	257.61	256.94	256.72	257.23	256.79	256.99	
20	256.84	256.82	257.53	257.49	258.34	258.00	257.58	256.95	256.70	257.23	256.78	257.07	
21	256.84	256.82	257.56	257.46	258.41	258.00	257.56	256.95	256.69	257.24	256.78	257.15	
22	256.84	256.82	257.58	257.45	258.42	257.92	257.54	256.95	256.66	257.25	256.78	257.19	
23	256.84	256.83	257.61	257.43	258.31	257.82	257.52	256.95	256.64	257.22	256.75	257.24	
24	256.83	256.83	257.63	257.43	258.27	257.74	257.50	256.95	256.62	257.20	256.71	257.28	
25	256.83	256.83	257.65	257.47	258.14	257.61	257.49	256.95	256.63	257.18	256.66	257.30	
26	256.83	256.84	257.68	257.48	258.03	257.54	257.48	256.95	256.65	257.17	256.62	257.31	
27	256.83	256.84	257.71	257.48	257.84	257.53	257.45	256.94	256.70	257.16	256.61	257.33	
28	256.82	256.84	257.72	257.52	257.81	257.52	257.42	256.94	256.75	257.15	256.61	257.35	
29	256.81	256.85	257.75	257.53	257.76	257.51	257.40	256.94	256.81	257.14		257.37	
30	256.81	256.85	257.78	257.51	257.70	257.50	257.38	256.94	256.90	257.14		257.39	
31		256.85		257.54	257.63		257.37		257.02	257.14		257.41	
Mean	256.82	256.82	257.46	257.70	257.85	257.91	257.60	257.00	256.78	257.22	256.84	256.85	
Max	256.84	256.85	257.78	258.30	258.42	258.74	257.83	257.32	257.02	257.28	257.11	257.41	258.74
Min	256.79	256.79	256.85	257.43	257.52	257.50	257.37	256.87	256.62	257.11	256.61	256.41	256.41

Annual Max Momentary Gage Height 258.76 M (MSL), at 6.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 254.47 M (MSL), River Bed 255.02 M (MSL)
Left Bank Elevation 261.50 M (MSL)
Right Bank Elevation 261.46 M (MSL), Drainage Area 358 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.023	0.023	0.035	4.000	1.120	1.420	1.000	0.540	0.000	0.000	0.000	0.000	
2	0.023	0.023	0.038	8.620	1.540	1.300	1.180	0.480	0.000	0.000	0.000	0.000	
3	0.023	0.023	0.050	10.600	1.840	1.420	1.360	0.440	0.000	0.000	0.000	0.000	
4	0.020	0.023	0.065	8.800	1.420	2.020	1.540	0.380	0.000	0.000	0.000	0.000	
5	0.020	0.023	0.085	6.820	1.420	2.760	1.660	0.290	0.000	0.000	0.000	0.000	
6	0.019	0.023	0.180	5.560	1.300	3.800	1.840	0.240	0.000	0.000	0.000	0.000	
7	0.019	0.023	0.290	4.360	1.420	7.180	1.960	0.190	0.000	0.000	0.000	0.000	
8	0.019	0.023	1.180	3.400	1.900	13.800	2.200	0.140	0.000	0.000	0.000	0.000	
9	0.020	0.023	1.720	3.200	2.600	21.700	2.520	0.090	0.000	0.000	0.000	0.000	
10	0.023	0.023	1.960	3.200	3.700	21.100	2.360	0.040	0.000	0.000	0.000	0.000	
11	0.023	0.020	1.720	3.000	4.120	12.400	3.100	0.010	0.000	0.000	0.000	0.000	
12	0.023	0.020	1.600	2.680	3.700	10.240	3.300	0.000	0.000	0.000	0.000	0.000	
13	0.023	0.020	1.480	2.360	3.100	8.260	3.100	0.000	0.000	0.000	0.000	0.000	
14	0.023	0.019	1.300	2.080	3.100	4.840	2.920	0.000	0.000	0.000	0.000	0.000	
15	0.023	0.019	1.300	1.900	3.100	4.480	2.680	0.000	0.000	0.000	0.000	0.000	
16	0.026	0.019	1.240	1.720	2.440	3.900	2.360	0.000	0.000	0.000	0.000	0.000	
17	0.026	0.019	1.240	1.480	1.780	4.960	2.200	0.000	0.000	0.000	0.000	0.000	
18	0.029	0.023	1.180	1.300	2.140	4.360	1.960	0.000	0.000	0.000	0.000	0.000	
19	0.029	0.023	1.060	1.120	7.720	4.720	1.660	0.000	0.000	0.000	0.000	0.000	
20	0.032	0.026	1.180	0.970	11.400	5.200	1.480	0.000	0.000	0.000	0.000	0.000	
21	0.032	0.026	1.360	0.880	12.840	5.200	1.360	0.000	0.000	0.000	0.000	0.000	
22	0.032	0.026	1.480	0.850	13.080	4.240	1.240	0.000	0.000	0.000	0.000	0.000	
23	0.032	0.029	1.660	0.790	10.800	3.200	1.120	0.000	0.000	0.000	0.000	0.000	
24	0.029	0.029	1.780	0.790	10.060	2.520	1.000	0.000	0.000	0.000	0.000	0.000	
25	0.029	0.029	1.900	0.910	7.720	1.660	0.970	0.000	0.000	0.000	0.000	0.000	
26	0.029	0.032	2.080	0.940	5.740	1.240	0.940	0.000	0.000	0.000	0.000	0.000	
27	0.029	0.032	2.280	0.940	3.400	1.180	0.850	0.000	0.000	0.000	0.000	0.000	
28	0.026	0.032	2.360	1.120	3.100	1.120	0.760	0.000	0.000	0.000	0.000	0.000	
29	0.023	0.035	2.600	1.180	2.680	1.060	0.700	0.000	0.000	0.000		0.000	
30	0.023	0.035	2.840	1.060	2.200	1.000	0.660	0.000	0.000	0.000		0.000	
31		0.035		1.240	1.780		0.640		0.000	0.000		0.000	
Total	0.750	0.778	39.243	87.870	134.260	162.280	52.620	2.840	0.000	0.000	0.000	0.000	480.641 CMSDAY
Mean	0.025	0.025	1.308	2.835	4.331	5.409	1.697	0.095	0.000	0.000	0.000	0.000	1.317 CMS
Max	0.032	0.035	2.840	10.600	13.080	21.700	3.300	0.540	0.000	0.000	0.000	0.000	21.700 CMS
Min	0.019	0.019	0.035	0.790	1.120	1.000	0.640	0.000	0.000	0.000	0.000	0.000	0.000 CMS
Runoff	0.065	0.067	3.391	7.592	11.600	14.021	4.546	0.245	0.000	0.000	0.000	0.000	41.527 MCM

Momentary Peak 22.30 CMS, at 258.76 M (MSL), at 6.00 Hours, on Sep 10, 1998
Runoff Yield 3.68 Liters/Second/Square KM, Momentary Peak Yield 62.291 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

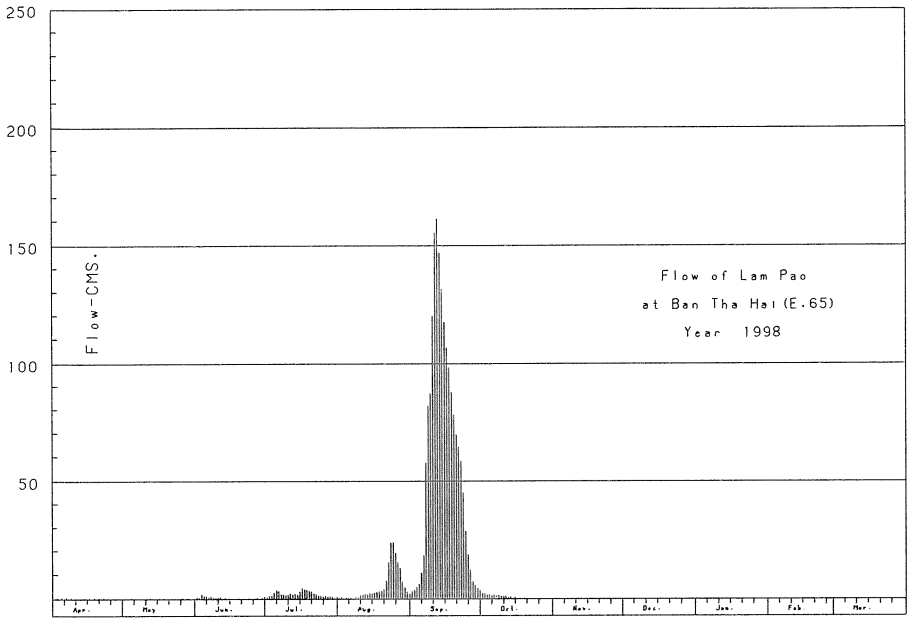
Lam Pao at Ban Tha Hai, Udon Thani (E.65)

Location	Lat. 16°-56'-54" N., Long. 103°-10'-16" E., on left bank at the bridge on highway, Ban Tha Hai, Amphoe Si That, Udon Thani.
Drainage Area	1,949 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+158.99 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+169.686 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1983 to date.
Rated by Float	-
Rated by Current Meter	1983 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by Lam Pao Dam during Oct.10,98-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 11 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	160.23	160.10	160.39	160.41	160.31	161.05	160.98	160.95	161.75	161.44	161.35	161.23	
2	160.22	160.10	160.34	160.46	160.33	161.17	160.89	160.89	161.77	161.43	161.35	161.23	
3	160.22	160.10	160.73	160.65	160.24	161.29	160.79	160.73	161.77	161.42	161.35	161.23	
4	160.23	160.09	160.64	160.93	160.23	161.50	160.72	160.69	161.75	161.42	161.35	161.23	
5	160.23	160.09	160.46	161.16	160.26	161.83	160.66	160.73	161.72	161.41	161.34	161.23	
6	160.23	160.09	160.42	161.06	160.25	162.31	160.64	160.63	161.69	161.41	161.33	161.21	
7	160.23	160.09	160.42	160.85	160.21	163.69	160.59	160.57	161.65	161.40	161.32	161.21	
8	160.23	160.09	160.39	160.73	160.27	164.27	160.58	160.55	161.61	161.40	161.32	161.21	
9	160.22	160.10	160.33	160.74	160.34	164.38	160.56	160.83	161.60	161.41	161.32	161.21	
10	160.21	160.10	160.33	160.79	160.56	165.00	160.64	161.13	161.57	161.41	161.32	161.21	
11	160.20	160.13	160.29	160.87	160.80	165.58	160.59	161.36	161.60	161.40	161.32	161.21	
12	160.20	160.16	160.24	160.84	160.83	165.66	160.60	161.51	161.66	161.39	161.31	161.21	
13	160.19	160.15	160.20	160.79	160.85	165.45	160.59	161.59	161.67	161.39	161.31	161.19	
14	160.19	160.13	160.18	160.80	160.93	165.19	160.54	161.66	161.66	161.39	161.30	161.19	
15	160.19	160.13	160.16	161.04	160.94	164.96	160.99	161.68	161.63	161.38	161.30	161.18	
16	160.19	160.14	160.16	161.23	160.93	164.76	161.26	161.69	161.58	161.38	161.29	161.17	
17	160.20	160.14	160.13	161.20	161.06	164.60	161.13	161.69	161.56	161.38	161.29	161.17	
18	160.20	160.15	160.13	161.14	161.05	164.40	161.04	161.67	161.55	161.38	161.27	161.17	
19	160.20	160.15	160.14	161.12	161.12	164.18	161.47	161.65	161.55	161.38	161.27	161.15	
20	160.20	160.15	160.13	161.05	161.17	164.00	162.12	161.63	161.56	161.39	161.25	161.14	
21	160.21	160.14	160.12	160.96	161.63	163.86	162.32	161.62	161.55	161.39	161.25	161.13	
22	160.21	160.13	160.14	160.79	162.13	163.72	162.46	161.62	161.54	161.38	161.23	161.13	
23	160.18	160.12	160.14	160.67	162.55	163.33	162.57	161.60	161.54	161.37	161.22	161.14	
24	160.16	160.12	160.14	160.58	162.57	162.76	162.56	161.60	161.53	161.37	161.22	161.14	
25	160.15	160.14	160.15	160.51	162.36	162.33	162.29	161.59	161.52	161.37	161.22	161.14	
26	160.14	160.15	160.13	160.49	162.13	161.92	161.88	161.57	161.51	161.37	161.22	161.13	
27	160.12	160.19	160.27	160.48	161.99	161.61	161.55	161.56	161.49	161.36	161.22	161.13	
28	160.11	160.18	160.22	160.42	161.57	161.39	161.65	161.56	161.49	161.36	161.23	161.22	
29	160.11	160.17	160.24	160.34	161.30	161.27	161.66	161.60	161.48	161.35		161.38	
30	160.11	160.16	160.34	160.30	161.02	161.12	161.41	161.69	161.46	161.35		161.40	
31		160.17		160.31	160.93		161.18		161.45	161.35		161.39	
Mean	160.19	160.13	160.27	160.76	161.06	163.29	161.26	161.33	161.60	161.39	161.29	161.20	
Max	160.23	160.19	160.73	161.23	162.57	165.66	162.57	161.69	161.77	161.44	161.35	161.40	165.66
Min	160.11	160.09	160.12	160.30	160.21	161.05	160.54	160.55	161.45	161.35	161.22	161.13	160.09

Annual Max Momentary Gage Height 165.69 M (MSL), at 6.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 158.99 M (MSL), River Bed 159.35 M (MSL)
Left Bank Elevation 169.45 M (MSL)
Right Bank Elevation 169.43 M (MSL), Drainage Area 1949 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.57	0.25	0.98	1.03	0.77	3.13	2.65	0.06	0.00	0.00	0.00	0.00	
2	0.55	0.25	0.85	1.15	0.83	4.02	2.23	0.06	0.00	0.00	0.00	0.00	
3	0.55	0.25	1.83	1.62	0.60	4.92	1.97	0.05	0.00	0.00	0.00	0.00	
4	0.57	0.22	1.60	2.40	0.57	6.50	1.80	0.04	0.00	0.00	0.00	0.00	
5	0.57	0.22	1.15	3.95	0.65	10.95	1.65	0.04	0.00	0.00	0.00	0.00	
6	0.57	0.22	1.05	3.20	0.63	18.70	1.60	0.03	0.00	0.00	0.00	0.00	
7	0.57	0.22	1.05	2.13	0.53	57.65	1.48	0.03	0.00	0.00	0.00	0.00	
8	0.57	0.22	0.98	1.83	0.68	82.15	1.45	0.02	0.00	0.00	0.00	0.00	
9	0.55	0.25	0.83	1.85	0.85	87.10	1.40	0.02	0.00	0.00	0.00	0.00	
10	0.53	0.25	0.83	1.97	1.40	120.00	1.22	0.02	0.00	0.00	0.00	0.00	
11	0.50	0.33	0.72	2.18	2.00	155.70	1.07	0.02	0.00	0.00	0.00	0.00	
12	0.50	0.40	0.60	2.10	2.08	161.20	0.94	0.01	0.00	0.00	0.00	0.00	
13	0.48	0.37	0.50	1.97	2.13	147.25	0.82	0.01	0.00	0.00	0.00	0.00	
14	0.48	0.33	0.45	2.00	2.40	131.40	0.72	0.01	0.00	0.00	0.00	0.00	
15	0.48	0.33	0.40	3.05	2.45	117.80	0.63	0.01	0.00	0.00	0.00	0.00	
16	0.48	0.35	0.40	4.47	2.40	106.80	0.55	0.01	0.00	0.00	0.00	0.00	
17	0.50	0.35	0.33	4.25	3.20	98.00	0.48	0.01	0.00	0.00	0.00	0.00	
18	0.50	0.37	0.33	3.80	3.13	88.00	0.42	0.01	0.00	0.00	0.00	0.00	
19	0.50	0.37	0.35	3.65	3.65	78.10	0.37	0.00	0.00	0.00	0.00	0.00	
20	0.50	0.37	0.33	3.13	4.02	70.00	0.32	0.00	0.00	0.00	0.00	0.00	
21	0.53	0.35	0.30	2.55	7.95	64.40	0.28	0.00	0.00	0.00	0.00	0.00	
22	0.53	0.33	0.35	1.97	15.45	58.80	0.25	0.00	0.00	0.00	0.00	0.00	
23	0.45	0.30	0.35	1.68	23.75	45.05	0.21	0.00	0.00	0.00	0.00	0.00	
24	0.40	0.30	0.35	1.45	24.25	29.00	0.19	0.00	0.00	0.00	0.00	0.00	
25	0.37	0.35	0.37	1.27	19.70	19.10	0.16	0.00	0.00	0.00	0.00	0.00	
26	0.35	0.37	0.33	1.23	15.45	12.30	0.14	0.00	0.00	0.00	0.00	0.00	
27	0.30	0.48	0.68	1.20	13.35	7.65	0.13	0.00	0.00	0.00	0.00	0.00	
28	0.28	0.45	0.55	1.05	7.20	5.67	0.11	0.00	0.00	0.00	0.00	0.00	
29	0.28	0.42	0.60	0.85	5.00	4.78	0.10	0.00	0.00	0.00		0.00	
30	0.28	0.40	0.85	0.75	2.90	3.65	0.08	0.00	0.00	0.00		0.00	
31		0.42		0.77	2.40		0.07		0.00	0.00		0.00	
Total	14.29	10.09	20.29	66.50	172.37	1799.77	25.49	0.46	0.00	0.00	0.00	0.00	2109.26 CMSDAY
Mean	0.48	0.33	0.68	2.15	5.56	59.99	0.82	0.02	0.00	0.00	0.00	0.00	5.78 CMS
Max	0.57	0.48	1.83	4.47	24.25	161.20	2.65	0.06	0.00	0.00	0.00	0.00	161.20 CMS
Min	0.28	0.22	0.30	0.75	0.53	3.13	0.07	0.00	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	1.235	0.872	1.753	5.746	14.893	155.500	2.202	0.040	0.000	0.000	0.000	0.000	182.240 MCM

Momentary Peak 163.30 CMS, at 165.69 M (MSL), at 6.00 Hours, on Sep 12, 1998

Runoff Yield 2.97 Liters/Second/Square KM, Momentary Peak Yield 83.787 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

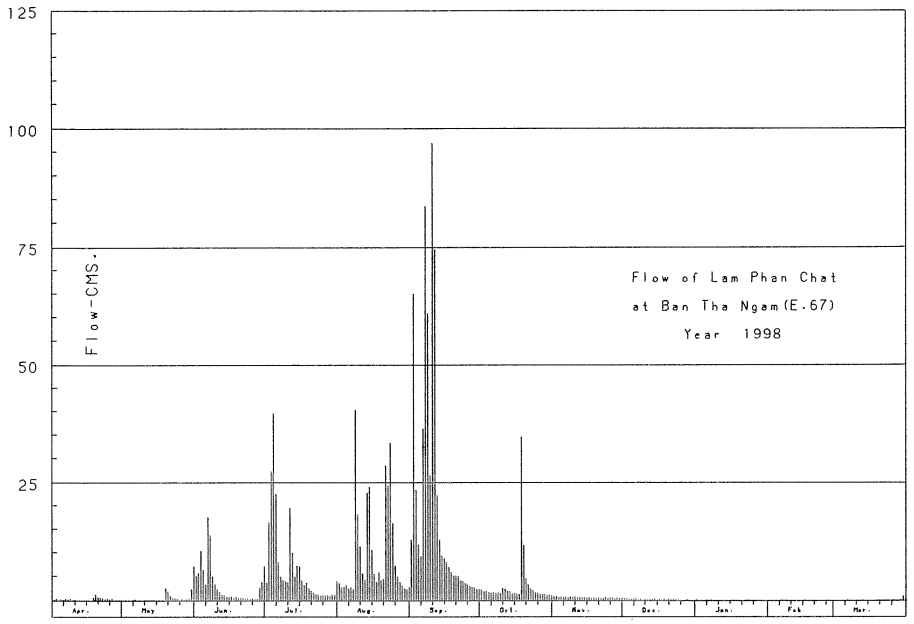
Lam Phan Chat at Ban Tha Ngam, Kalasin (E.67)

Location	Lat. 16°-57'-17" N., Long. 103°-29'-40" E., on left bank at the bridge on road, Ban Tha Ngam, Amphoe Wang Sam Mo, Kalasin.
Drainage Area	420 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+158.87 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the abutment of the bridge.
Elevation	+172.518 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Lam Pao Dam. Stage-discharge relation defined by 106 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	159.55	159.46	160.23	160.10	160.08	160.63	159.91	159.70	159.61	159.52	159.45	159.38	
2	159.54	159.47	160.26	160.78	159.96	162.34	159.88	159.69	159.58	159.53	159.42	159.37	
3	159.53	159.49	160.53	161.22	160.00	161.06	159.87	159.68	159.57	159.51	159.42	159.37	
4	159.52	159.48	160.31	161.64	160.02	160.59	159.86	159.67	159.57	159.49	159.42	159.39	
5	159.52	159.49	160.05	161.03	159.96	160.47	159.84	159.67	159.55	159.49	159.42	159.39	
6	159.53	159.48	160.83	160.40	159.97	161.53	159.83	159.65	159.55	159.47	159.42	159.39	
7	159.54	159.45	160.67	160.22	159.94	162.78	159.83	159.65	159.54	159.44	159.42	159.39	
8	159.55	159.45	160.21	160.13	161.67	162.24	159.83	159.65	159.53	159.48	159.41	159.39	
9	159.52	159.44	160.06	160.12	160.85	161.18	159.83	159.67	159.53	159.45	159.41	159.39	
10	159.49	159.43	159.92	160.08	160.57	163.06	159.95	159.66	159.51	159.46	159.40	159.39	
11	159.49	159.45	159.84	160.90	160.27	162.58	159.95	159.66	159.52	159.45	159.40	159.38	
12	159.48	159.45	159.77	160.51	160.14	161.01	159.90	159.64	159.53	159.45	159.39	159.36	
13	159.48	159.45	159.72	160.22	161.04	160.64	159.86	159.64	159.54	159.44	159.38	159.35	
14	159.48	159.45	159.70	160.36	161.08	160.47	159.82	159.64	159.53	159.47	159.38	159.34	
15	159.49	159.44	159.68	160.36	160.54	160.45	159.81	159.64	159.53	159.44	159.38	159.34	
16	159.49	159.44	159.66	160.13	160.25	160.40	159.78	159.62	159.53	159.43	159.38	159.35	
17	159.49	159.43	159.64	160.04	160.11	160.35	159.80	159.61	159.53	159.42	159.38	159.34	
18	159.66	159.47	159.63	160.07	160.29	160.28	161.48	159.61	159.54	159.42	159.38	159.35	
19	159.77	159.95	159.61	159.96	160.13	160.23	160.59	159.61	159.54	159.42	159.38	159.35	
20	159.66	159.86	159.58	159.88	160.16	160.22	160.17	159.60	159.54	159.42	159.38	159.34	
21	159.61	159.73	159.57	159.83	161.27	160.21	160.03	159.61	159.53	159.42	159.38	159.35	
22	159.58	159.62	159.57	159.79	161.10	160.14	159.95	159.62	159.53	159.42	159.38	159.35	
23	159.57	159.56	159.57	159.76	161.43	160.11	159.89	159.63	159.52	159.42	159.38	159.40	
24	159.57	159.53	159.57	159.73	160.78	160.08	159.85	159.62	159.53	159.40	159.38	159.39	
25	159.56	159.50	159.57	159.71	160.37	160.03	159.82	159.61	159.53	159.42	159.39	159.39	
26	159.54	159.49	159.57	159.71	160.21	160.01	159.81	159.61	159.52	159.44	159.40	159.44	
27	159.46	159.51	159.59	159.76	160.11	159.99	159.80	159.60	159.51	159.43	159.38	159.44	
28	159.41	159.50	159.98	159.72	160.01	159.96	159.76	159.60	159.50	159.42	159.38	159.43	
29	159.51	159.59	160.09	159.74	159.96	159.94	159.74	159.60	159.49	159.45		159.55	
30	159.47	159.94	160.36	159.77	159.92	159.92	159.73	159.60	159.49	159.45		159.70	
31		160.36		160.11	159.99		159.73		159.49	159.46		159.59	
Mean	159.54	159.56	159.91	160.19	160.39	160.76	159.93	159.64	159.53	159.45	159.40	159.40	
Max	159.77	160.36	160.83	161.64	161.67	163.06	161.48	159.70	159.61	159.53	159.45	159.70	163.06
Min	159.41	159.43	159.57	159.71	159.92	159.92	159.73	159.60	159.49	159.40	159.38	159.34	159.34

Annual Max Momentary Gage Height 164.21 M (MSL), at 19.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 158.87 M (MSL), River Bed 159.22 M (MSL)
Left Bank Elevation 172.54 M (MSL)
Right Bank Elevation 172.53 M (MSL), Drainage Area 420 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.35	0.14	5.29	3.90	3.72	12.75	2.19	0.90	0.54	0.26	0.13	0.04	
2	0.32	0.16	5.68	16.50	2.64	65.10	1.96	0.86	0.44	0.29	0.08	0.03	
3	0.29	0.19	10.60	27.50	3.00	23.50	1.89	0.82	0.41	0.23	0.08	0.03	
4	0.26	0.17	6.38	39.70	3.18	11.80	1.82	0.78	0.41	0.19	0.08	0.05	
5	0.26	0.19	3.45	22.75	2.64	9.40	1.68	0.78	0.35	0.19	0.08	0.05	
6	0.29	0.17	17.75	8.00	2.73	36.40	1.61	0.70	0.35	0.16	0.08	0.05	
7	0.32	0.13	13.75	5.16	2.46	83.60	1.61	0.70	0.32	0.11	0.08	0.05	
8	0.35	0.13	5.03	4.20	40.60	61.10	1.61	0.70	0.29	0.17	0.07	0.05	
9	0.26	0.11	3.54	4.10	18.25	26.50	1.61	0.78	0.29	0.13	0.07	0.05	
10	0.19	0.09	2.28	3.72	11.40	97.00	2.55	0.74	0.23	0.14	0.05	0.05	
11	0.19	0.13	1.68	19.50	5.81	74.70	2.55	0.74	0.26	0.13	0.05	0.04	
12	0.17	0.13	1.25	10.20	4.30	22.25	2.10	0.66	0.29	0.13	0.05	0.03	
13	0.17	0.13	1.00	5.16	23.00	13.00	1.82	0.66	0.32	0.11	0.04	0.03	
14	0.17	0.13	0.90	7.28	24.00	9.40	1.54	0.66	0.29	0.16	0.04	0.02	
15	0.19	0.11	0.82	7.28	10.80	9.00	1.47	0.66	0.29	0.11	0.04	0.02	
16	0.19	0.11	0.74	4.20	5.55	8.00	1.30	0.58	0.29	0.09	0.04	0.03	
17	0.19	0.09	0.66	3.36	4.00	7.10	1.40	0.54	0.29	0.08	0.04	0.02	
18	0.74	0.16	0.62	3.63	6.07	5.94	34.90	0.54	0.32	0.08	0.04	0.03	
19	1.25	2.55	0.54	2.64	4.20	5.29	11.80	0.54	0.32	0.08	0.04	0.03	
20	0.74	1.82	0.44	1.96	4.50	5.16	4.60	0.50	0.32	0.08	0.04	0.02	
21	0.54	1.05	0.41	1.61	28.75	5.03	3.27	0.54	0.29	0.08	0.04	0.03	
22	0.44	0.58	0.41	1.35	24.50	4.30	2.55	0.58	0.29	0.08	0.04	0.03	
23	0.41	0.38	0.41	1.20	33.40	4.00	2.03	0.62	0.26	0.08	0.04	0.05	
24	0.41	0.29	0.41	1.05	16.50	3.72	1.75	0.58	0.29	0.05	0.04	0.05	
25	0.38	0.20	0.41	0.95	7.46	3.27	1.54	0.54	0.29	0.08	0.05	0.05	
26	0.32	0.19	0.41	0.95	5.03	3.09	1.47	0.54	0.26	0.11	0.05	0.11	
27	0.14	0.23	0.47	1.20	4.00	2.91	1.40	0.50	0.23	0.09	0.04	0.11	
28	0.07	0.20	2.82	1.00	3.09	2.64	1.20	0.50	0.20	0.08	0.04	0.09	
29	0.23	0.47	3.81	1.10	2.64	2.46	1.10	0.50	0.19	0.13		0.35	
30	0.16	2.46	7.28	1.25	2.28	2.28	1.05	0.50	0.19	0.13		0.90	
31		7.28		4.00	2.91		1.05		0.19	0.14		0.47	
Total	9.99	20.17	99.24	216.40	313.41	620.69	100.42	19.24	9.30	3.97	1.56	2.96	1417.35 CMSDAY
Mean	0.33	0.65	3.31	6.98	10.11	20.69	3.24	0.64	0.30	0.13	0.06	0.10	3.88 CMS
Max	1.25	7.28	17.75	39.70	40.60	97.00	34.90	0.90	0.54	0.29	0.13	0.90	97.00 CMS
Min	0.07	0.09	0.41	0.95	2.28	2.28	1.05	0.50	0.19	0.05	0.04	0.02	0.02 CMS
Runoff	0.863	1.743	8.574	18.697	27.079	53.628	8.676	1.662	0.804	0.343	0.135	0.256	122.459 MCM

Momentary Peak 159.60 CMS, at 164.21 M (MSL), at 19.00 Hours, on Sep 10, 1998
Runoff Yield 9.25 Liters/Second/Square KM, Momentary Peak Yield 380.000 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

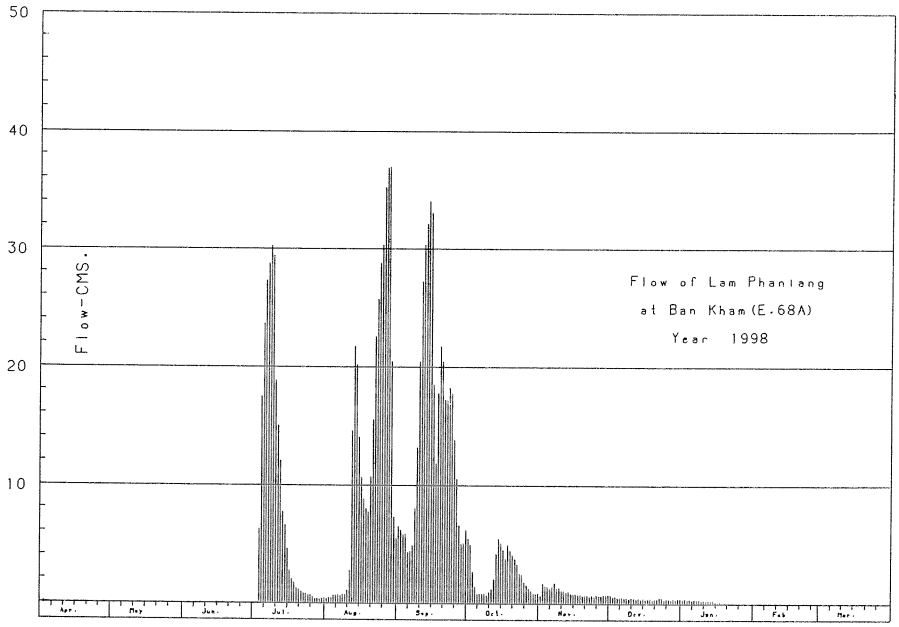
Lam Phaniang at Ban Khong Po, Nong Bua Lamphu (E.68A)

Location	Lat. 17°-04'-48" N., Long. 102°-32'-47" E., on left bank at the bridge of Nong Bua Lamphu-Amphoe Non Sang highway, Amphoe Muang, Nong Bua Lamphu.
Drainage Area	1,342 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+194.73 m.(M.S.L.)
Bench Mark	B.M.-Highways Dept.
Location	On left bank downstream side at the footpath of the bridge.
Elevation	+201.740 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The local weir situated downstream from the gage site. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	196.12	195.92	195.43	194.90	196.82	197.48	197.42	196.89	196.89	196.81	196.61	196.37	
2	196.11	195.90	195.42	196.33	196.83	197.46	197.38	197.07	196.87	196.81	196.60	196.36	
3	196.11	195.88	195.53	197.47	196.84	197.44	197.20	197.03	196.86	196.81	196.60	196.35	
4	196.11	195.88	195.53	197.98	196.88	197.44	197.02	197.03	196.85	196.80	196.59	196.34	
5	196.11	195.87	195.53	198.21	196.90	197.34	196.92	197.01	196.85	196.80	196.58	196.33	
6	196.11	195.86	195.53	198.33	196.89	197.34	196.91	197.02	196.84	196.80	196.57	196.33	
7	196.11	195.85	195.53	198.38	196.89	197.38	196.92	197.08	196.84	196.80	196.56	196.32	
8	196.10	195.85	195.53	198.43	196.90	197.57	196.91	197.00	196.83	196.79	196.56	196.31	
9	196.09	195.84	195.52	198.40	196.91	197.81	196.90	197.01	196.83	196.78	196.55	196.31	
10	196.09	195.83	195.51	198.03	196.97	198.09	196.94	196.98	196.83	196.78	196.54	196.30	
11	196.08	195.82	195.49	197.89	197.21	198.33	196.99	196.96	196.82	196.78	196.53	196.29	
12	196.07	195.81	195.48	197.76	197.87	198.43	197.12	196.95	196.82	196.77	196.52	196.28	
13	196.06	195.80	195.47	197.55	198.14	198.49	197.33	196.95	196.82	196.77	196.51	196.27	
14	196.05	195.80	195.45	197.49	198.08	198.55	197.42	196.93	196.81	196.75	196.50	196.26	
15	196.04	195.79	195.37	197.36	197.85	198.52	197.39	196.92	196.81	196.75	196.49	196.25	
16	196.02	195.79	195.33	197.20	197.70	198.02	197.35	196.91	196.81	196.74	196.49	196.25	
17	196.01	195.78	195.27	197.12	197.61	197.75	197.30	196.91	196.81	196.73	196.48	196.23	
18	196.01	195.78	195.22	197.07	197.57	197.99	197.38	196.90	196.81	196.72	196.48	196.22	
19	196.00	195.77	195.15	197.01	197.55	198.14	197.35	196.89	196.80	196.72	196.47	196.21	
20	196.00	195.81	195.11	196.98	197.70	198.09	197.32	196.88	196.80	196.71	196.46	196.21	
21	196.00	195.81	195.06	196.96	197.91	197.97	197.30	196.88	196.81	196.71	196.45	196.20	
22	195.99	195.80	195.03	196.93	198.17	197.97	197.25	196.87	196.85	196.70	196.43	196.19	
23	195.99	195.79	194.97	196.91	198.28	198.01	197.18	196.88	196.83	196.69	196.42	196.18	
24	195.98	195.78	194.92	196.90	198.38	197.99	197.16	196.87	196.81	196.68	196.41	196.17	
25	195.98	195.77	194.86	196.88	198.43	197.84	197.08	196.89	196.81	196.68	196.40	196.16	
26	195.97	195.76	194.84	196.85	198.59	197.69	197.05	196.89	196.81	196.68	196.39	196.15	
27	195.96	195.75	194.84	196.82	198.64	197.49	197.01	196.89	196.81	196.66	196.39	196.15	
28	195.96	195.73	194.83	196.81	198.64	197.39	196.96	196.89	196.81	196.65	196.38	196.14	
29	195.95	195.73	194.83	196.81	198.09	197.39	196.93	196.90	196.81	196.64		196.25	
30	195.93	195.66	194.88	196.81	197.53	197.46	196.91	196.89	196.81	196.63		196.24	
31		195.58		196.82	197.42		196.92		196.81	196.62		196.23	
Mean	196.04	195.80	195.25	197.27	197.62	197.83	197.14	196.94	196.82	196.73	196.50	196.25	
Max	196.12	195.92	195.53	198.43	198.64	198.55	197.42	197.08	196.89	196.81	196.61	196.37	198.64
Min	195.93	195.58	194.83	194.90	196.82	197.34	196.90	196.87	196.80	196.62	196.38	196.14	194.83

Annual Max Momentary Gage Height 198.69 M (MSL), at 6.00 Hours, on Aug 28, 1998
Zero Gage at Bottom Elevation 194.73 M (MSL), River Bed 194.75 M (MSL)
Left Bank Elevation 201.50 M (MSL)
Right Bank Elevation 201.47 M (MSL), Drainage Area 1342 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.38	6.48	5.52	0.66	0.66	0.34	0.00	0.00	
2	0.00	0.00	0.00	0.00	0.42	6.16	4.92	1.69	0.58	0.34	0.00	0.00	
3	0.00	0.00	0.00	6.32	0.46	5.84	2.70	1.41	0.54	0.34	0.00	0.00	
4	0.00	0.00	0.00	17.46	0.62	5.84	1.34	1.41	0.50	0.30	0.00	0.00	
5	0.00	0.00	0.00	23.70	0.70	4.36	0.80	1.27	0.50	0.30	0.00	0.00	
6	0.00	0.00	0.00	27.30	0.66	4.36	0.75	1.34	0.46	0.30	0.00	0.00	
7	0.00	0.00	0.00	28.80	0.66	4.92	0.80	1.76	0.46	0.30	0.00	0.00	
8	0.00	0.00	0.00	30.33	0.70	8.06	0.75	1.20	0.42	0.27	0.00	0.00	
9	0.00	0.00	0.00	29.40	0.75	13.14	0.70	1.27	0.42	0.24	0.00	0.00	
10	0.00	0.00	0.00	18.81	1.05	20.43	0.90	1.10	0.42	0.24	0.00	0.00	
11	0.00	0.00	0.00	15.06	2.81	27.30	1.15	1.00	0.38	0.24	0.00	0.00	
12	0.00	0.00	0.00	12.02	14.58	30.33	2.06	0.95	0.38	0.21	0.00	0.00	
13	0.00	0.00	0.00	7.70	21.78	32.19	4.22	0.95	0.38	0.21	0.00	0.00	
14	0.00	0.00	0.00	6.64	20.16	34.05	5.52	0.85	0.34	0.15	0.00	0.00	
15	0.00	0.00	0.00	4.64	14.10	33.12	5.06	0.80	0.34	0.15	0.00	0.00	
16	0.00	0.00	0.00	2.70	10.70	18.54	4.50	0.75	0.34	0.12	0.00	0.00	
17	0.00	0.00	0.00	2.06	8.81	11.80	3.80	0.75	0.34	0.09	0.00	0.00	
18	0.00	0.00	0.00	1.69	8.06	17.73	4.92	0.70	0.34	0.06	0.00	0.00	
19	0.00	0.00	0.00	1.27	7.70	21.78	4.50	0.66	0.30	0.06	0.00	0.00	
20	0.00	0.00	0.00	1.10	10.70	20.43	4.08	0.62	0.30	0.03	0.00	0.00	
21	0.00	0.00	0.00	1.00	15.57	17.19	3.80	0.62	0.34	0.03	0.00	0.00	
22	0.00	0.00	0.00	0.85	22.59	17.19	3.25	0.58	0.50	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.75	25.80	18.27	2.54	0.62	0.42	0.00	0.00	0.00	
24	0.00	0.00	0.00	0.70	28.80	17.73	2.38	0.58	0.34	0.00	0.00	0.00	
25	0.00	0.00	0.00	0.62	30.33	13.86	1.76	0.66	0.34	0.00	0.00	0.00	
26	0.00	0.00	0.00	0.50	35.29	10.49	1.55	0.66	0.34	0.00	0.00	0.00	
27	0.00	0.00	0.00	0.38	36.96	6.64	1.27	0.66	0.34	0.00	0.00	0.00	
28	0.00	0.00	0.00	0.34	36.96	5.06	1.00	0.66	0.34	0.00	0.00	0.00	
29	0.00	0.00	0.00	0.34	20.43	5.06	0.85	0.70	0.34	0.00		0.00	
30	0.00	0.00	0.00	0.34	7.34	6.16	0.75	0.66	0.34	0.00		0.00	
31		0.00		0.38	5.52		0.80		0.34	0.00		0.00	
Total	0.00	0.00	0.00	243.20	391.39	444.51	78.94	27.54	12.38	4.32	0.00	0.00	1202.28 CMSDAY
Mean	0.00	0.00	0.00	7.85	12.63	14.82	2.55	0.92	0.40	0.14	0.00	0.00	3.29 CMS
Max	0.00	0.00	0.00	30.33	36.96	34.05	5.52	1.76	0.66	0.34	0.00	0.00	36.96 CMS
Min	0.00	0.00	0.00	0.00	0.38	4.36	0.70	0.58	0.30	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	21.012	33.816	38.406	6.820	2.379	1.070	0.373	0.000	0.000	103.877 MCM

Momentary Peak 38.66 CMS, at 198.69 M (MSL), at 6.00 Hours, on Aug 28, 1998
Runoff Yield 2.45 Liters/Second/Square KM, Momentary Peak Yield 28.808 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

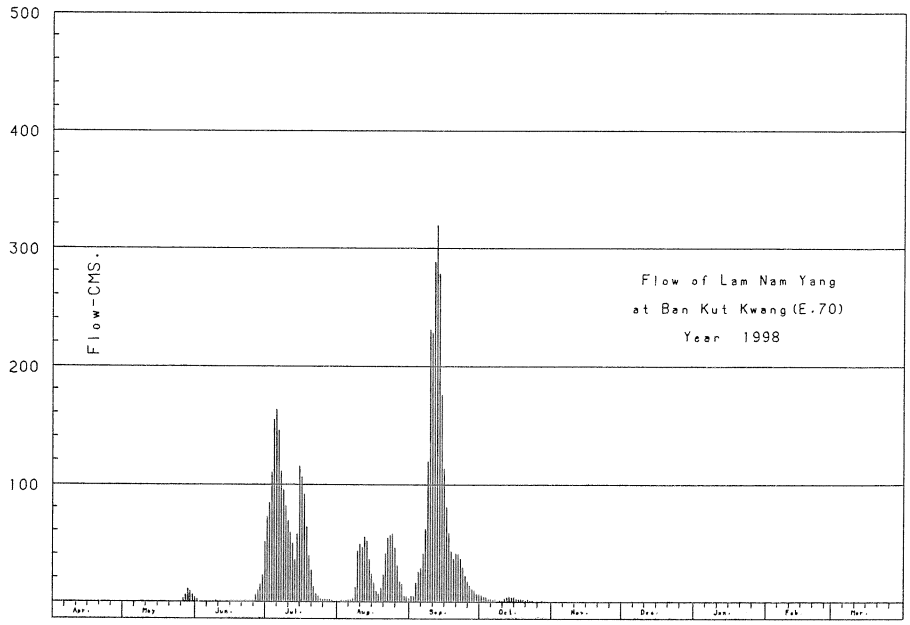
Lam Nam Yang at Ban Kut Kwang, Roi Et (E.70)

Location	Lat. 16°-17'-15" N., Long. 104°-00'-33" E., on right bank at bridge on highway, Ban Kut Kwang, Amphoe Phon Thong, Roi Et.
Drainage Area	3,168 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+132.12 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+144.037 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date
Rating Operation	
Period of Rating	1984 to date
Rated by Float	-
Rated by Current Meter	1984 to date
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	131.93	131.92	132.38	134.34	132.27	132.54	132.60	132.06	131.92	131.99	132.03	131.80	
2	131.93	131.92	132.28	134.62	132.27	132.58	132.55	132.06	131.91	131.98	132.03	131.74	
3	131.93	131.92	132.20	135.17	132.31	133.00	132.48	132.07	131.89	131.97	132.04	131.67	
4	131.93	131.91	132.16	135.91	132.35	133.30	132.42	132.08	131.87	131.97	132.04	131.66	
5	131.92	131.91	132.15	136.06	132.30	133.36	132.36	132.08	131.87	131.97	132.05	131.66	
6	131.92	131.91	132.14	135.77	132.37	133.64	132.37	132.09	131.87	131.96	132.06	131.66	
7	131.92	131.90	132.14	135.17	132.40	134.09	132.37	132.09	131.85	131.94	132.06	131.66	
8	131.92	131.90	132.13	134.88	132.89	135.33	132.27	132.09	131.83	131.94	132.06	131.66	
9	131.92	131.90	132.38	134.55	133.68	137.05	132.26	132.08	131.82	131.96	132.07	131.66	
10	131.92	131.92	132.27	134.27	133.81	137.02	132.29	132.06	131.81	131.98	132.07	131.66	
11	131.91	131.92	132.26	134.02	133.76	137.74	132.40	132.04	131.82	131.98	132.07	131.65	
12	131.91	131.93	132.25	133.83	133.94	138.10	132.50	132.02	131.85	131.97	132.07	131.64	
13	131.91	131.94	132.16	133.51	133.88	137.63	132.50	132.02	131.86	131.96	132.07	131.64	
14	131.91	131.94	132.07	133.99	133.54	136.25	132.51	132.00	131.79	131.97	132.07	131.64	
15	131.91	131.93	132.01	135.25	133.24	135.21	132.47	131.99	131.80	132.00	132.02	131.64	
16	131.91	131.93	132.02	135.09	133.00	134.55	132.43	131.98	131.80	131.99	131.96	131.64	
17	131.91	131.92	132.01	134.80	132.78	134.01	132.35	131.98	131.93	131.98	131.90	131.64	
18	131.99	131.91	132.06	134.15	132.67	133.67	132.38	131.97	131.97	131.99	131.87	131.63	
19	132.00	131.91	132.08	133.59	132.87	133.55	132.33	131.96	131.97	131.98	131.84	131.63	
20	132.00	131.90	132.10	133.34	133.24	133.65	132.33	131.96	131.96	131.98	131.83	131.63	
21	131.99	131.89	132.08	132.89	133.63	133.62	132.34	131.96	131.97	131.98	131.82	131.63	
22	131.99	131.89	132.00	132.71	133.92	133.55	132.31	131.95	131.94	132.01	131.81	131.68	
23	131.98	131.89	131.97	132.55	133.99	133.38	132.28	131.95	131.94	132.02	131.81	131.75	
24	131.97	131.89	131.96	132.44	134.00	133.21	132.27	131.94	131.94	132.04	131.81	131.77	
25	131.97	131.99	132.08	132.40	133.75	133.06	132.25	131.94	131.95	132.03	131.81	131.78	
26	131.96	132.41	132.59	132.36	133.43	132.92	132.22	131.93	131.95	132.03	131.81	131.81	
27	131.95	132.64	132.81	132.39	133.05	132.84	132.22	131.93	131.95	132.03	131.81	131.82	
28	131.94	132.85	132.95	132.34	132.96	132.78	132.18	131.93	131.94	132.03	131.81	131.82	
29	131.93	132.76	133.23	132.29	132.58	132.70	132.10	131.92	131.98	132.03		131.82	
30	131.93	132.65	133.86	132.24	132.52	132.65	132.07	131.92	132.01	132.03		131.82	
31		132.48		132.24	132.46		132.07		132.04	132.03		131.82	
Mean	131.94	132.05	132.29	133.84	133.09	134.23	132.34	132.00	131.90	131.99	131.95	131.70	
Max	132.00	132.85	133.86	136.06	134.00	138.10	132.60	132.09	132.04	132.04	132.07	131.82	138.10
Min	131.91	131.89	131.96	132.24	132.27	132.54	132.07	131.92	131.79	131.94	131.81	131.63	131.63

Annual Max Momentary Gage Height 138.15 M (MSL), at 15.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 132.12 M (MSL), River Bed 130.01 M (MSL)
Left Bank Elevation 144.60 M (MSL)
Right Bank Elevation 144.05 M (MSL), Drainage Area 3168 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.06	0.06	2.30	72.28	1.20	4.60	5.50	0.16	0.06	0.10	0.13	0.00	
2	0.06	0.06	1.30	84.18	1.20	5.20	4.75	0.16	0.06	0.09	0.13	0.00	
3	0.06	0.06	0.50	110.63	1.60	16.00	3.70	0.17	0.04	0.09	0.14	0.00	
4	0.06	0.06	0.38	154.60	2.00	26.00	2.80	0.18	0.03	0.09	0.14	0.00	
5	0.06	0.06	0.35	163.96	1.50	28.40	2.10	0.18	0.03	0.09	0.15	0.00	
6	0.06	0.06	0.32	146.20	2.20	41.44	2.20	0.19	0.03	0.08	0.16	0.00	
7	0.06	0.05	0.32	110.63	2.50	61.78	2.20	0.19	0.03	0.07	0.16	0.00	
8	0.06	0.05	0.29	95.42	12.70	120.07	1.20	0.19	0.01	0.07	0.16	0.00	
9	0.06	0.05	2.30	81.16	43.28	230.95	1.10	0.18	0.01	0.08	0.17	0.00	
10	0.06	0.06	1.20	69.34	49.26	228.46	1.40	0.16	0.00	0.09	0.17	0.00	
11	0.06	0.06	1.10	58.84	46.96	288.22	2.50	0.14	0.01	0.09	0.17	0.00	
12	0.06	0.06	1.00	50.18	55.24	320.00	4.00	0.12	0.03	0.09	0.17	0.00	
13	0.06	0.07	0.38	35.46	52.48	279.09	4.00	0.12	0.03	0.08	0.17	0.00	
14	0.06	0.07	0.17	57.54	36.84	176.50	4.15	0.10	0.00	0.09	0.17	0.00	
15	0.06	0.06	0.11	115.35	23.60	112.99	3.55	0.10	0.00	0.10	0.12	0.00	
16	0.06	0.06	0.12	105.91	16.00	81.16	2.95	0.09	0.00	0.10	0.08	0.00	
17	0.06	0.06	0.11	91.96	9.40	58.42	2.00	0.09	0.06	0.09	0.05	0.00	
18	0.10	0.06	0.16	64.30	6.55	42.82	2.30	0.09	0.09	0.10	0.03	0.00	
19	0.10	0.06	0.18	39.14	12.10	37.30	1.80	0.08	0.09	0.09	0.02	0.00	
20	0.10	0.05	0.20	27.60	23.60	41.90	1.80	0.08	0.08	0.09	0.01	0.00	
21	0.10	0.04	0.18	12.70	40.98	40.52	1.90	0.08	0.09	0.09	0.01	0.00	
22	0.10	0.04	0.10	7.30	54.32	37.30	1.60	0.07	0.07	0.11	0.00	0.00	
23	0.09	0.04	0.09	4.75	57.54	29.20	1.30	0.07	0.07	0.12	0.00	0.00	
24	0.09	0.04	0.08	3.10	58.00	22.40	1.20	0.07	0.07	0.14	0.00	0.00	
25	0.09	0.10	0.18	2.50	46.50	17.80	1.00	0.07	0.07	0.13	0.00	0.00	
26	0.08	2.65	5.35	2.10	31.50	13.60	0.70	0.06	0.07	0.13	0.00	0.00	
27	0.07	6.10	10.30	2.40	17.50	11.20	0.70	0.06	0.07	0.13	0.00	0.01	
28	0.07	11.50	14.50	1.90	14.80	9.40	0.44	0.06	0.07	0.13	0.00	0.01	
29	0.06	8.80	23.20	1.40	5.20	7.00	0.20	0.06	0.09	0.13		0.01	
30	0.06	6.25	51.56	0.90	4.30	6.25	0.17	0.06	0.11	0.13		0.01	
31		3.70		0.90	3.40		0.17		0.14	0.13		0.01	
Total	2.13	40.44	118.33	1774.63	734.25	2395.97	65.38	3.43	1.61	3.14	2.51	0.05	5141.87 CMSDAY
Mean	0.07	1.30	3.94	57.25	23.69	79.87	2.11	0.11	0.05	0.10	0.09	0.00	14.09 CMS
Max	0.10	11.50	51.56	163.96	58.00	320.00	5.50	0.19	0.14	0.14	0.17	0.01	320.00 CMS
Min	0.06	0.04	0.08	0.90	1.20	4.60	0.17	0.06	0.00	0.07	0.00	0.00	0.00 CMS
Runoff	0.184	3.494	10.224	153.328	63.439	207.012	5.649	0.296	0.139	0.271	0.217	0.004	444.258 MCM

Momentary Peak 325.00 CMS, at 138.15 M (MSL), at 15.00 Hours, on Sep 12, 1998

Runoff Yield 4.45 Liters/Second/Square KM, Momentary Peak Yield 102.588 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

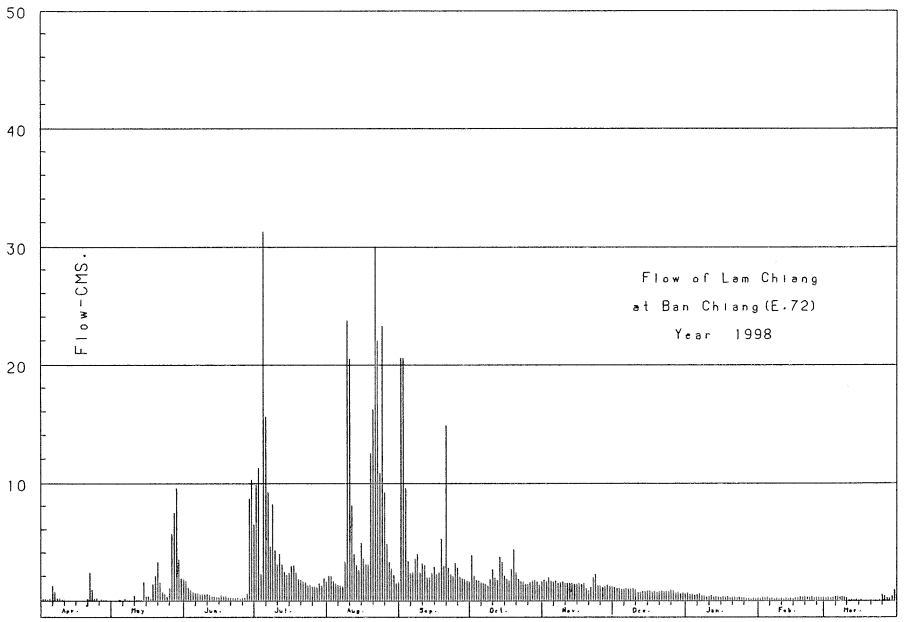
Lam Chiang at Ban Chiang, Chaiyaphum (E.72)

Location	Lat. 16-01-28 N., Long. 101-30-10 E., on left bank at Ban Chiang School, Amphoe Phak Di Chumphon, Chaiyaphum.
Drainage Area	325 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+234.12 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream at the footpath of the bridge.
Elevation	+243.534 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 48 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	234.49	234.40	234.72	235.63	234.79	236.51	235.04	234.73	234.64	234.57	234.50	234.51	
2	234.46	234.40	234.65	235.76	234.78	236.51	234.78	234.72	234.64	234.56	234.51	234.51	
3	234.47	234.39	234.61	234.81	234.73	235.61	234.74	234.76	234.63	234.55	234.51	234.51	
4	234.47	234.39	234.59	237.27	234.69	234.97	234.72	234.73	234.63	234.55	234.51	234.51	
5	234.67	234.39	234.58	236.14	234.68	234.82	234.71	234.72	234.63	234.56	234.50	234.53	
6	234.58	234.46	234.56	235.58	234.66	234.82	234.70	234.72	234.63	234.56	234.49	234.52	
7	234.50	234.44	234.56	235.12	234.66	235.00	234.68	234.70	234.63	234.54	234.49	234.52	
8	234.48	234.43	234.55	235.48	234.96	235.04	234.67	234.70	234.62	234.53	234.49	234.52	
9	234.47	234.46	234.56	235.09	236.75	234.83	234.74	234.72	234.64	234.52	234.49	234.52	
10	234.45	234.54	234.55	234.92	236.51	234.93	234.87	234.69	234.61	234.52	234.49	234.50	
11	234.43	234.45	234.54	235.04	235.47	234.91	234.76	234.69	234.59	234.53	234.49	234.47	
12	234.42	234.43	234.53	234.93	235.04	234.77	234.74	234.70	234.59	234.52	234.49	234.47	
13	234.42	234.45	234.52	234.84	234.92	234.76	235.02	234.69	234.59	234.52	234.49	234.46	
14	234.41	234.71	234.52	234.79	234.85	234.82	234.95	234.69	234.60	234.52	234.49	234.44	
15	234.40	234.53	234.51	234.83	235.16	234.90	234.78	234.69	234.60	234.52	234.50	234.45	
16	234.39	234.52	234.54	234.90	234.99	234.80	234.75	234.69	234.60	234.52	234.50	234.44	
17	234.39	234.50	234.53	234.92	234.93	234.82	234.72	234.69	234.59	234.52	234.51	234.44	
18	234.40	234.68	234.52	234.82	234.92	235.20	234.86	234.69	234.59	234.52	234.52	234.44	
19	234.40	234.79	234.51	234.75	235.88	234.91	235.10	234.64	234.59	234.51	234.52	234.43	
20	234.46	234.96	234.50	234.73	236.19	236.08	234.82	234.60	234.59	234.51	234.52	234.43	
21	234.83	234.70	234.50	234.71	237.20	234.88	234.75	234.64	234.61	234.51	234.52	234.43	
22	234.61	234.59	234.50	234.71	236.62	234.81	234.72	234.77	234.60	234.51	234.52	234.43	
23	234.50	234.55	234.50	234.67	235.72	234.78	234.71	234.80	234.59	234.51	234.52	234.43	
24	234.47	234.52	234.49	234.67	236.72	234.94	234.69	234.67	234.60	234.51	234.51	234.43	
25	234.45	234.64	234.49	234.66	235.57	234.88	234.68	234.66	234.61	234.50	234.51	234.56	
26	234.44	235.24	234.50	234.65	235.15	234.78	234.70	234.65	234.60	234.50	234.51	234.53	
27	234.43	235.42	234.57	234.65	234.96	234.76	234.73	234.66	234.58	234.50	234.51	234.51	
28	234.42	235.61	235.53	234.69	234.87	234.74	234.73	234.67	234.58	234.49	234.51	234.49	
29	234.41	234.98	235.67	234.67	234.80	234.73	234.72	234.66	234.57	234.49		234.54	
30	234.41	234.75	235.33	234.75	234.70	234.71	234.67	234.65	234.57	234.49		234.62	
31		234.75		234.71	234.70		234.72		234.57	234.49		234.54	
Mean	234.47	234.65	234.64	235.03	235.31	235.03	234.77	234.69	234.60	234.52	234.50	234.49	
Max	234.83	235.61	235.67	237.27	237.20	236.51	235.10	234.80	234.64	234.57	234.52	234.62	237.27
Min	234.39	234.39	234.49	234.65	234.66	234.71	234.67	234.60	234.57	234.49	234.49	234.43	234.39

Annual Max Momentary Gage Height 238.32 M (MSL), at 6.00 Hours, on Sep 2, 1998
Zero Gage at Bottom Elevation 234.12 M (MSL), River Bed 234.39 M (MSL)
Left Bank Elevation 243.28 M (MSL)
Right Bank Elevation 243.25 M (MSL), Drainage Area 325 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.18	0.00	1.64	9.83	2.13	20.58	3.92	1.71	1.08	0.62	0.20	0.26	
2	0.12	0.00	1.15	11.26	2.06	20.58	2.06	1.64	1.08	0.56	0.26	0.26	
3	0.14	0.00	0.87	2.27	1.71	9.61	1.78	1.92	1.01	0.50	0.26	0.26	
4	0.14	0.00	0.74	31.27	1.43	3.39	1.64	1.71	1.01	0.50	0.26	0.26	
5	1.29	0.00	0.68	15.68	1.36	2.34	1.57	1.64	1.01	0.56	0.20	0.38	
6	0.68	0.12	0.56	9.28	1.22	2.34	1.50	1.64	1.01	0.56	0.18	0.32	
7	0.20	0.08	0.56	4.58	1.22	3.60	1.36	1.50	1.01	0.44	0.18	0.32	
8	0.16	0.06	0.50	8.18	3.32	3.92	1.29	1.50	0.94	0.38	0.18	0.32	
9	0.14	0.12	0.56	4.32	23.74	2.41	1.78	1.64	1.08	0.32	0.18	0.32	
10	0.10	0.44	0.50	3.04	20.58	3.11	2.69	1.43	0.87	0.32	0.18	0.20	
11	0.06	0.10	0.44	3.92	8.07	2.97	1.92	1.43	0.74	0.38	0.18	0.14	
12	0.04	0.06	0.38	3.11	3.92	1.99	1.78	1.50	0.74	0.32	0.18	0.14	
13	0.04	0.10	0.32	2.48	3.04	1.92	3.76	1.43	0.74	0.32	0.18	0.12	
14	0.02	1.57	0.32	2.13	2.55	2.34	3.25	1.43	0.80	0.32	0.18	0.08	
15	0.00	0.38	0.26	2.41	4.94	2.90	2.06	1.43	0.80	0.32	0.20	0.10	
16	0.00	0.32	0.44	2.90	3.53	2.20	1.85	1.43	0.80	0.32	0.20	0.08	
17	0.00	0.20	0.38	3.04	3.11	2.34	1.64	1.43	0.74	0.32	0.26	0.08	
18	0.00	1.36	0.32	2.34	3.04	5.30	2.62	1.43	0.74	0.32	0.32	0.08	
19	0.00	2.13	0.26	1.85	12.58	2.97	4.40	1.08	0.74	0.26	0.32	0.06	
20	0.12	3.32	0.20	1.71	16.28	14.96	2.34	0.80	0.74	0.26	0.32	0.06	
21	2.41	1.50	0.20	1.57	30.04	2.76	1.85	1.08	0.87	0.26	0.32	0.06	
22	0.87	0.74	0.20	1.57	22.06	2.27	1.64	1.99	0.80	0.26	0.32	0.06	
23	0.20	0.50	0.20	1.29	10.82	2.06	1.57	2.20	0.74	0.26	0.32	0.06	
24	0.14	0.32	0.18	1.29	23.36	3.18	1.43	1.29	0.80	0.26	0.26	0.06	
25	0.10	1.08	0.18	1.22	9.17	2.76	1.36	1.22	0.87	0.20	0.26	0.56	
26	0.08	5.66	0.20	1.15	4.85	2.06	1.50	1.15	0.80	0.20	0.26	0.38	
27	0.06	7.52	0.62	1.15	3.32	1.92	1.71	1.22	0.68	0.20	0.26	0.26	
28	0.04	9.61	8.73	1.43	2.69	1.78	1.71	1.29	0.68	0.18	0.26	0.18	
29	0.02	3.46	10.27	1.29	2.20	1.71	1.64	1.22	0.62	0.18		0.44	
30	0.02	1.85	6.53	1.85	1.50	1.57	1.29	1.15	0.62	0.18		0.94	
31		1.85		1.57	1.50		1.64		0.62	0.18		0.44	
Total	7.37	44.45	38.39	140.98	231.34	133.84	62.55	43.53	25.78	10.26	6.68	7.28	752.45 CMSDAY
Mean	0.25	1.43	1.28	4.55	7.46	4.46	2.02	1.45	0.83	0.33	0.24	0.23	2.06 CMS
Max	2.41	9.61	10.27	31.27	30.04	20.58	4.40	2.20	1.08	0.62	0.32	0.94	31.27 CMS
Min	0.00	0.00	0.18	1.15	1.22	1.57	1.29	0.80	0.62	0.18	0.18	0.06	0.00 CMS
Runoff	0.637	3.840	3.317	12.181	19.988	11.564	5.404	3.761	2.227	0.886	0.577	0.629	65.012 MCM

Momentary Peak 48.44 CMS, at 238.32 M (MSL), at 6.00 Hours, on Sep 2, 1998

Runoff Yield 6.34 Liters/Second/Square KM, Momentary Peak Yield 149.046 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

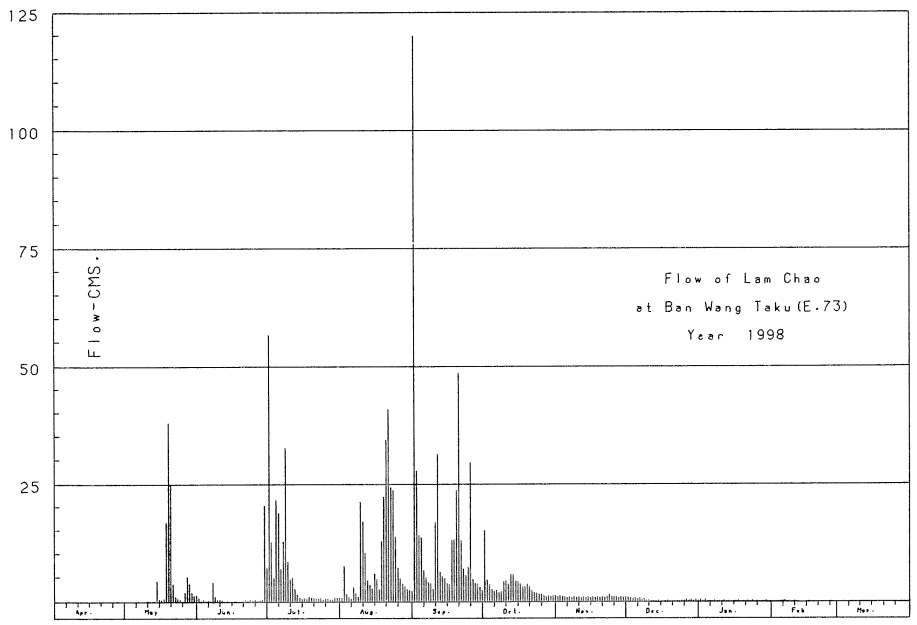
Lam Chao at Ban Wang Taku, Chaiyaphum (E.73)

Location	Lat. 15-57-02 N., Long. 101-26-46 E., on left bank at Ban Wang Taku, Tambon Ban Chiang, King Amphoe Phak Di Chumphon, Chaiyaphum.
Drainage Area	267 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+247.24 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 2.00 meters from the top staff gage.
Elevation	+254.832 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	Overbank flow starts at elevation +255.66 m.(M.S.L.),records are channel flow only.
General Description	Records fair. The local weir situated about 4 kilometers downstream from the gage site. Stage-discharge relation defined by 51 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	249.46	249.32	249.66	252.29	249.66	254.38	250.45	249.68	249.67	249.64	249.62	249.48	
2	249.46	249.31	249.64	250.32	250.06	251.09	249.85	249.68	249.66	249.64	249.63	249.47	
3	249.46	249.30	249.64	249.89	249.70	250.40	249.75	249.68	249.66	249.64	249.63	249.45	
4	249.49	249.29	249.64	250.78	249.67	250.38	249.73	249.67	249.66	249.63	249.63	249.45	
5	249.49	249.28	249.64	250.65	249.66	250.01	249.72	249.67	249.66	249.63	249.63	249.44	
6	249.48	249.29	249.63	250.02	249.74	249.88	249.72	249.67	249.66	249.63	249.63	249.43	
7	249.49	249.31	249.81	250.34	249.70	249.81	249.71	249.67	249.65	249.63	249.63	249.42	
8	249.51	249.33	249.67	251.30	249.68	249.77	249.71	249.67	249.65	249.63	249.63	249.41	
9	249.52	249.35	249.65	250.10	250.76	249.73	249.82	249.67	249.64	249.63	249.63	249.39	
10	249.52	249.36	249.64	249.86	250.56	250.54	249.82	249.67	249.64	249.63	249.63	249.37	
11	249.52	249.35	249.63	249.88	250.20	251.24	249.78	249.67	249.63	249.63	249.62	249.35	
12	249.51	249.34	249.63	249.73	249.83	249.99	249.95	249.67	249.63	249.63	249.61	249.33	
13	249.50	249.34	249.63	249.69	249.76	249.90	249.93	249.67	249.63	249.63	249.61	249.32	
14	249.49	249.83	249.63	249.67	249.73	249.87	249.83	249.67	249.63	249.63	249.60	249.31	
15	249.48	249.65	249.62	249.66	249.96	249.79	249.80	249.67	249.63	249.63	249.60	249.30	
16	249.47	249.63	249.62	249.66	249.85	249.75	249.76	249.67	249.63	249.63	249.60	249.28	
17	249.45	249.66	249.62	249.66	249.73	250.35	249.74	249.67	249.63	249.63	249.59	249.25	
18	249.45	250.55	249.62	249.67	250.34	250.35	249.74	249.67	249.63	249.63	249.59	249.25	
19	249.44	251.55	249.63	249.67	250.81	250.89	249.77	249.67	249.63	249.63	249.59	249.24	
20	249.44	250.94	249.63	249.66	251.39	251.99	249.74	249.67	249.63	249.63	249.58	249.22	
21	249.44	249.76	249.64	249.66	251.66	250.35	249.72	249.67	249.63	249.63	249.57	249.21	
22	249.44	249.68	249.63	249.66	250.92	250.02	249.71	249.68	249.63	249.63	249.56	249.20	
23	249.43	249.65	249.64	249.66	250.88	249.92	249.70	249.69	249.63	249.63	249.55	249.19	
24	249.41	249.64	249.64	249.65	250.38	250.05	249.70	249.68	249.63	249.63	249.54	249.20	
25	249.40	249.63	249.64	249.65	250.04	251.16	249.69	249.67	249.64	249.63	249.53	249.20	
26	249.38	249.71	249.64	249.65	249.86	249.86	249.69	249.67	249.64	249.63	249.52	249.20	
27	249.37	249.91	249.64	249.65	249.78	249.79	249.68	249.67	249.64	249.63	249.50	249.19	
28	249.36	249.76	249.65	249.65	249.74	249.76	249.68	249.67	249.64	249.63	249.49	249.18	
29	249.35	249.71	250.73	249.66	249.73	249.74	249.68	249.67	249.64	249.63		249.18	
30	249.33	249.68	250.04	249.67	249.72	249.72	249.68	249.67	249.64	249.63		249.29	
31		249.69		249.66	249.72		249.68		249.64	249.62		249.40	
Mean	249.45	249.67	249.69	249.96	250.10	250.35	249.77	249.67	249.64	249.63	249.59	249.31	
Max	249.52	251.55	250.73	252.29	251.66	254.38	250.45	249.69	249.67	249.64	249.63	249.48	254.38
Min	249.33	249.28	249.62	249.65	249.66	249.72	249.68	249.67	249.63	249.62	249.49	249.18	249.18

Annual Max Momentary Gage Height 255.81 M (MSL), at 15.00 Hours, on Sep 1, 1998
Zero Gage at Bottom Elevation 247.24 M (MSL), River Bed 247.64 M (MSL)
Left Bank Elevation 259.58 M (MSL)
Right Bank Elevation 255.65 M (MSL), Drainage Area 267 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.05	0.01	0.70	56.83	0.70	120.10	15.05	1.15	0.93	0.35	0.10	0.03	
2	0.05	0.00	0.35	12.58	7.64	27.98	4.68	1.15	0.70	0.35	0.23	0.03	
3	0.05	0.00	0.35	5.14	1.70	14.10	3.55	1.15	0.70	0.35	0.23	0.02	
4	0.06	0.00	0.35	21.60	0.93	13.72	2.72	0.93	0.70	0.23	0.23	0.02	
5	0.06	0.00	0.35	19.00	0.70	6.69	2.30	0.93	0.70	0.23	0.23	0.02	
6	0.05	0.00	0.23	6.88	3.13	5.02	2.30	0.93	0.70	0.23	0.23	0.02	
7	0.06	0.00	4.21	12.96	1.70	4.21	2.00	0.93	0.52	0.23	0.23	0.02	
8	0.06	0.01	0.93	32.60	1.15	3.77	2.00	0.93	0.52	0.23	0.23	0.02	
9	0.07	0.02	0.52	8.40	21.20	2.72	4.33	0.93	0.35	0.23	0.23	0.01	
10	0.07	0.02	0.35	4.79	17.20	16.80	4.33	0.93	0.35	0.23	0.23	0.01	
11	0.07	0.02	0.23	5.02	10.30	31.28	3.88	0.93	0.23	0.23	0.10	0.01	
12	0.06	0.01	0.23	2.72	4.45	6.38	5.88	0.93	0.23	0.23	0.08	0.00	
13	0.06	0.01	0.23	1.43	3.66	5.25	5.62	0.93	0.23	0.23	0.08	0.00	
14	0.06	4.45	0.23	0.93	2.72	4.90	4.45	0.93	0.23	0.23	0.05	0.00	
15	0.05	0.52	0.10	0.70	6.00	3.99	4.10	0.93	0.23	0.23	0.05	0.00	
16	0.05	0.23	0.10	0.70	4.68	3.55	3.66	0.93	0.23	0.23	0.05	0.00	
17	0.04	0.70	0.10	0.70	2.72	13.15	3.13	0.93	0.23	0.23	0.05	0.00	
18	0.04	17.00	0.10	0.93	12.96	13.15	3.13	0.93	0.23	0.23	0.05	0.00	
19	0.04	38.20	0.23	0.93	22.20	23.80	3.77	0.93	0.23	0.23	0.05	0.00	
20	0.04	24.80	0.23	0.70	34.58	48.76	3.13	0.93	0.23	0.23	0.05	0.00	
21	0.04	3.66	0.35	0.70	40.84	13.15	2.30	0.93	0.23	0.23	0.05	0.00	
22	0.04	1.15	0.23	0.70	24.40	6.88	2.00	1.15	0.23	0.23	0.04	0.00	
23	0.04	0.52	0.35	0.70	23.60	5.50	1.70	1.43	0.23	0.23	0.04	0.00	
24	0.03	0.35	0.35	0.52	13.72	7.45	1.70	1.15	0.23	0.23	0.04	0.00	
25	0.03	0.23	0.35	0.52	7.26	29.52	1.43	0.93	0.35	0.23	0.04	0.00	
26	0.02	2.00	0.35	0.52	4.79	4.79	1.43	0.93	0.35	0.23	0.04	0.00	
27	0.02	5.38	0.35	0.52	3.88	3.99	1.15	0.93	0.35	0.23	0.03	0.00	
28	0.02	3.66	0.52	0.52	3.13	3.66	1.15	0.93	0.35	0.23	0.03	0.00	
29	0.02	2.00	20.60	0.70	2.72	3.13	1.15	0.93	0.35	0.23		0.00	
30	0.01	1.15	7.26	0.93	2.30	2.30	1.15	0.93	0.35	0.23		0.00	
31		1.43		0.70	2.30		1.15		0.35	0.10		0.02	
Total	1.36	107.53	40.83	202.57	289.26	449.69	100.32	29.50	11.84	7.36	3.09	0.23	1243.58 CMSDAY
Mean	0.05	3.47	1.36	6.53	9.33	14.99	3.24	0.98	0.38	0.24	0.11	0.01	3.41 CMS
Max	0.07	38.20	20.60	56.83	40.84	120.10	15.05	1.43	0.93	0.35	0.23	0.03	120.10 CMS
Min	0.01	0.00	0.10	0.52	0.70	2.30	1.15	0.93	0.23	0.10	0.03	0.00	0.00 CMS
Runoff	0.118	9.291	3.528	17.502	24.992	38.853	8.668	2.549	1.023	0.636	0.267	0.020	107.445 MCM

Momentary Peak 246.25 CMS, at 255.81 M (MSL), at 15.00 Hours, on Sep 1, 1998

Runoff Yield 12.76 Liters/Second/Square KM, Momentary Peak Yield 922.285 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

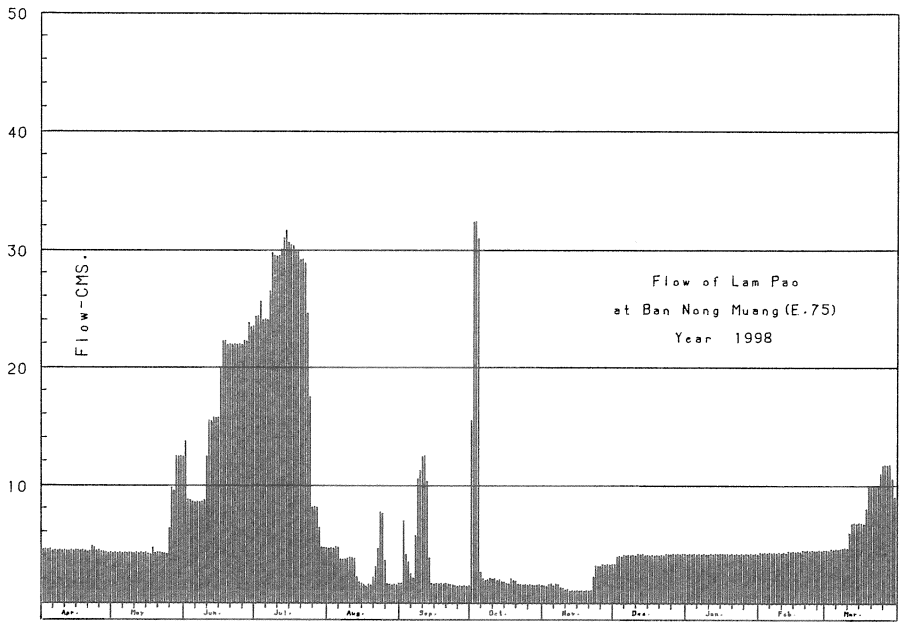
Lam Pao at Ban Nong Muang, Kalasin (E.75)

Location	Lat. 16°-34'-36" N., Long. 103°-26'-32" E., on left bank about 3 kilometers downstream from Lam Pao Damsite, Tambon Lam Pao, Amphoe Muang, Kalasin.
Drainage Area	6,054 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+138.02 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank infront of gage observer's house.
Elevation	+149.759 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow regulated by Lam Pao Dam. Stage-discharge relation defined by 9 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	138.46	138.43	138.91	139.28	138.47	138.17	138.98	138.15	138.33	138.42	138.43	138.45	
2	138.46	138.43	138.69	139.28	138.47	138.60	139.54	138.15	138.40	138.42	138.43	138.45	
3	138.46	138.43	138.69	139.32	138.47	138.42	139.54	138.16	138.40	138.42	138.43	138.46	
4	138.46	138.43	138.68	139.27	138.48	138.35	139.50	138.17	138.40	138.42	138.43	138.46	
5	138.45	138.43	138.68	139.27	138.48	138.25	138.27	138.15	138.41	138.42	138.43	138.46	
6	138.45	138.43	138.68	139.27	138.38	138.22	138.21	138.17	138.41	138.42	138.43	138.46	
7	138.45	138.43	138.68	139.35	138.37	138.54	138.20	138.16	138.41	138.42	138.43	138.46	
8	138.45	138.43	138.68	139.46	138.38	138.78	138.20	138.14	138.41	138.42	138.43	138.47	
9	138.45	138.43	138.69	139.45	138.38	138.81	138.22	138.13	138.41	138.42	138.43	138.47	
10	138.45	138.43	138.86	139.45	138.39	138.86	138.21	138.12	138.41	138.42	138.43	138.47	
11	138.45	138.43	138.98	139.45	138.39	138.86	138.21	138.12	138.42	138.42	138.43	138.55	
12	138.45	138.43	138.98	139.47	138.38	138.77	138.20	138.11	138.42	138.42	138.43	138.59	
13	138.45	138.43	138.99	139.50	138.23	138.39	138.20	138.11	138.42	138.42	138.44	138.59	
14	138.45	138.43	138.99	139.52	138.18	138.17	138.19	138.11	138.41	138.42	138.44	138.59	
15	138.45	138.43	138.99	139.49	138.17	138.17	138.18	138.11	138.41	138.42	138.44	138.59	
16	138.45	138.42	139.13	139.48	138.16	138.17	138.17	138.11	138.41	138.42	138.44	138.59	
17	138.45	138.42	139.21	139.48	138.15	138.17	138.17	138.11	138.41	138.42	138.44	138.59	
18	138.45	138.47	139.21	139.46	138.16	138.17	138.21	138.11	138.41	138.42	138.44	138.65	
19	138.45	138.43	139.20	139.46	138.16	138.17	138.20	138.11	138.41	138.42	138.45	138.75	
20	138.44	138.43	139.20	139.44	138.22	138.17	138.19	138.11	138.41	138.42	138.45	138.75	
21	138.44	138.43	139.20	139.44	138.31	138.17	138.17	138.11	138.41	138.42	138.45	138.75	
22	138.49	138.43	139.20	139.43	138.47	138.16	138.16	138.23	138.41	138.42	138.45	138.75	
23	138.47	138.42	139.20	139.29	138.64	138.16	138.16	138.32	138.42	138.42	138.45	138.75	
24	138.45	138.42	139.20	139.05	138.63	138.15	138.16	138.32	138.42	138.42	138.45	138.80	
25	138.45	138.57	139.20	138.66	138.37	138.15	138.16	138.32	138.42	138.42	138.45	138.83	
26	138.44	138.74	139.21	138.66	138.17	138.15	138.16	138.33	138.42	138.42	138.45	138.83	
27	138.44	138.73	139.21	138.66	138.16	138.15	138.16	138.33	138.42	138.42	138.45	138.83	
28	138.43	138.86	139.26	138.57	138.16	138.15	138.15	138.33	138.42	138.42	138.45	138.83	
29	138.43	138.86	139.25	138.48	138.16	138.15	138.16	138.33	138.42	138.42		138.78	
30	138.43	138.86	139.25	138.47	138.16	138.15	138.16	138.33	138.42	138.42		138.70	
31		138.86		138.47	138.17		138.16		138.42	138.42		138.70	
Mean	138.45	138.51	139.01	139.20	138.32	138.32	138.34	138.19	138.41	138.42	138.44	138.63	
Max	138.49	138.86	139.26	139.52	138.64	138.86	139.54	138.33	138.42	138.42	138.45	138.83	139.54
Min	138.43	138.42	138.68	138.47	138.15	138.15	138.15	138.11	138.33	138.42	138.43	138.45	138.11

Annual Max Momentary Gage Height 139.54 M (MSL), at 6.00 Hours, on Oct 2, 1998
Zero Gage at Bottom Elevation 138.02 M (MSL), River Bed 137.36 M (MSL)
Left Bank Elevation 149.56 M (MSL)
Right Bank Elevation 150.53 M (MSL), Drainage Area 6054 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.60	4.30	13.75	24.40	4.70	1.70	15.50	1.50	3.30	4.20	4.30	4.50	
2	4.60	4.30	8.80	24.40	4.70	7.00	32.40	1.50	4.00	4.20	4.30	4.50	
3	4.60	4.30	8.80	25.60	4.70	4.20	32.40	1.60	4.00	4.20	4.30	4.60	
4	4.60	4.30	8.60	24.10	4.80	3.50	31.00	1.70	4.00	4.20	4.30	4.60	
5	4.50	4.30	8.60	24.10	4.80	2.50	2.70	1.50	4.10	4.20	4.30	4.60	
6	4.50	4.30	8.60	24.10	3.80	2.20	2.10	1.70	4.10	4.20	4.30	4.60	
7	4.50	4.30	8.60	26.50	3.70	5.80	2.00	1.60	4.10	4.20	4.30	4.60	
8	4.50	4.30	8.60	29.80	3.80	10.60	2.00	1.40	4.10	4.20	4.30	4.70	
9	4.50	4.30	8.80	29.50	3.80	11.25	2.20	1.30	4.10	4.20	4.30	4.70	
10	4.50	4.30	12.50	29.50	3.90	12.50	2.10	1.20	4.10	4.20	4.30	4.70	
11	4.50	4.30	15.50	29.50	3.90	12.50	2.10	1.20	4.20	4.20	4.30	6.00	
12	4.50	4.30	15.50	30.10	3.80	10.40	2.00	1.10	4.20	4.20	4.30	6.80	
13	4.50	4.30	15.75	31.00	2.30	3.90	2.00	1.10	4.20	4.20	4.40	6.80	
14	4.50	4.30	15.75	31.70	1.80	1.70	1.90	1.10	4.10	4.20	4.40	6.80	
15	4.50	4.30	15.75	30.70	1.70	1.70	1.80	1.10	4.10	4.20	4.40	6.80	
16	4.50	4.20	19.90	30.40	1.60	1.70	1.70	1.10	4.10	4.20	4.40	6.80	
17	4.50	4.20	22.30	30.40	1.50	1.70	1.70	1.10	4.10	4.20	4.40	6.80	
18	4.50	4.70	22.30	29.80	1.60	1.70	2.10	1.10	4.10	4.20	4.40	8.00	
19	4.50	4.30	22.00	29.80	1.60	1.70	2.00	1.10	4.10	4.20	4.50	10.00	
20	4.40	4.30	22.00	29.20	2.20	1.70	1.90	1.10	4.10	4.20	4.50	10.00	
21	4.40	4.30	22.00	29.20	3.10	1.70	1.70	1.10	4.10	4.20	4.50	10.00	
22	4.90	4.30	22.00	28.90	4.70	1.60	1.60	2.30	4.10	4.20	4.50	10.00	
23	4.70	4.20	22.00	24.70	7.80	1.60	1.60	3.20	4.20	4.20	4.50	10.00	
24	4.50	4.20	22.00	17.50	7.60	1.50	1.60	3.20	4.20	4.20	4.50	11.00	
25	4.50	6.40	22.00	8.20	3.70	1.50	1.60	3.20	4.20	4.20	4.50	11.75	
26	4.40	9.80	22.30	8.20	1.70	1.50	1.60	3.30	4.20	4.20	4.50	11.75	
27	4.40	9.60	22.30	8.20	1.60	1.50	1.60	3.30	4.20	4.20	4.50	11.75	
28	4.30	12.50	23.80	6.40	1.60	1.50	1.50	3.30	4.20	4.20	4.50	11.75	
29	4.30	12.50	23.50	4.80	1.60	1.50	1.60	3.30	4.20	4.20		10.60	
30	4.30	12.50	23.50	4.70	1.60	1.50	1.60	3.30	4.20	4.20		9.00	
31		12.50		4.70	1.70		1.60		4.20	4.20		9.00	
Total	135.00	179.00	507.80	710.10	101.40	115.35	161.20	55.60	127.20	130.20	123.00	237.50	2583.35 CMSDAY
Mean	4.50	5.77	16.93	22.91	3.27	3.84	5.20	1.85	4.10	4.20	4.39	7.66	7.08 CMS
Max	4.90	12.50	23.80	31.70	7.80	12.50	32.40	3.30	4.20	4.20	4.50	11.75	32.40 CMS
Min	4.30	4.20	8.60	4.70	1.50	1.50	1.50	1.10	3.30	4.20	4.30	4.50	1.10 CMS
Runoff	11.664	15.466	43.874	61.353	8.761	9.966	13.928	4.804	10.990	11.249	10.627	20.520	223.201 MCM

Momentary Peak 32.40 CMS, at 139.54 M (MSL), at 6.00 Hours, on Oct 2, 1998

Runoff Yield 1.17 Liters/Second/Square KM, Momentary Peak Yield 5.352 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

Huai Sang Ka at Ban Kham Phimun, Kalasin (E.76)

Location — Lat. 16°-55'-16" N., Long. 103°-35'-30" E., on left bank at the bridge on road near Ban Kham Phimun, Amphoe Kham Muang, Kalasin.

Drainage Area — 163 sq.km.

Type of Gage — Staff gage.

Zero Gage at Bottom — +175.27 m.(M.S.L.)

Bench Mark — B.M.-H.D.

Location — On left bank downstream side at the abutment of the bridge.

Elevation — +183.679 m.(M.S.L.)

Gage Reading Frequency — 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height — Arithmetic mean of 5 readings.

Period of Available Gage Records — 1987 to date.

Rating Operation

Period of Rating — 1987 to date.

Rated by Float — -

Rated by Current Meter — 1987 to date.

Stability of Channel Regimes — Stable.

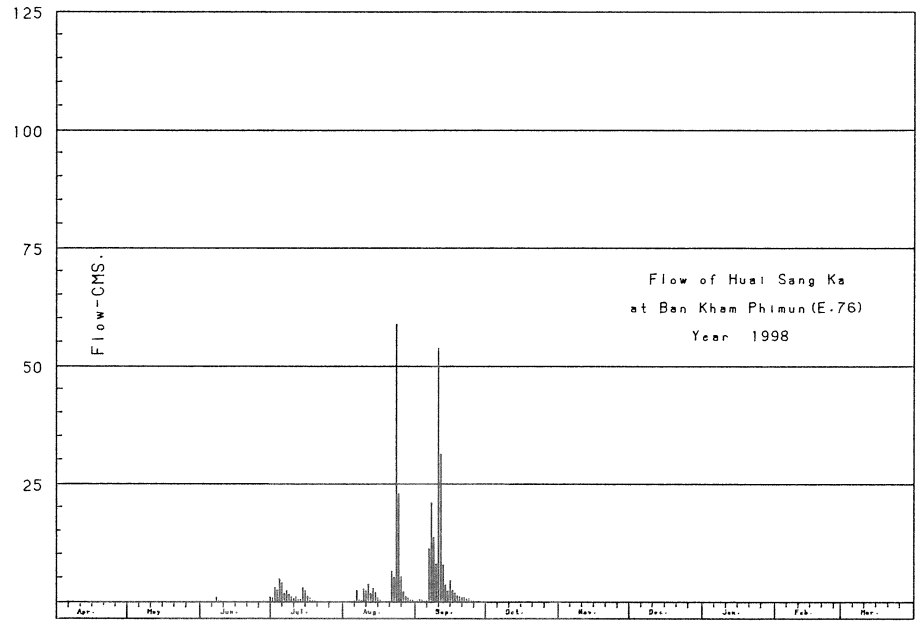
Overbank Flow Conditions — No overbank flow.

General Description — Records good. Flow effected by the local weir during Dec.27,98-Mar.31,99 discharge estimated by recession equation. Stage-discharge relation defined by 63 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	175.22	175.22	175.24	175.66	175.23	175.49	175.40	175.31	175.28	175.27	175.52	175.49	
2	175.22	175.22	175.24	176.13	175.23	175.58	175.38	175.30	175.28	175.27	175.52	175.49	
3	175.22	175.22	175.24	176.01	175.24	175.59	175.35	175.34	175.28	175.27	175.53	175.47	
4	175.22	175.22	175.25	176.44	175.24	175.53	175.33	175.39	175.28	175.26	175.53	175.47	
5	175.22	175.22	175.25	176.27	175.45	175.52	175.33	175.39	175.27	175.26	175.53	175.47	
6	175.22	175.22	175.31	175.89	176.02	177.28	175.32	175.38	175.27	175.28	175.53	175.48	
7	175.22	175.22	175.72	175.98	175.59	178.29	175.32	175.38	175.27	175.32	175.54	175.49	
8	175.22	175.22	175.56	175.85	175.50	177.53	175.32	175.42	175.27	175.32	175.54	175.50	
9	175.22	175.22	175.49	175.72	176.05	176.88	175.31	175.36	175.27	175.32	175.54	175.50	
10	175.22	175.22	175.43	175.67	175.98	180.15	175.44	175.33	175.27	175.32	175.53	175.49	
11	175.22	175.22	175.38	175.72	176.25	179.10	175.42	175.32	175.27	175.32	175.54	175.49	
12	175.22	175.22	175.33	175.61	175.88	176.87	175.39	175.31	175.27	175.33	175.55	175.48	
13	175.22	175.23	175.31	175.57	176.08	176.20	175.35	175.30	175.27	175.35	175.55	175.48	
14	175.22	175.23	175.27	176.12	175.92	175.96	175.35	175.32	175.27	175.37	175.54	175.47	
15	175.22	175.23	175.25	175.99	175.68	176.38	175.35	175.31	175.27	175.38	175.53	175.47	
16	175.22	175.23	175.27	175.77	175.59	176.03	175.34	175.30	175.27	175.38	175.53	175.47	
17	175.22	175.23	175.28	175.67	175.51	175.89	175.34	175.30	175.28	175.38	175.53	175.47	
18	175.22	175.23	175.28	175.56	175.46	175.80	175.52	175.30	175.28	175.38	175.53	175.46	
19	175.22	175.23	175.27	175.50	175.42	175.73	175.47	175.30	175.28	175.39	175.53	175.44	
20	175.22	175.23	175.25	175.47	175.51	175.71	175.44	175.30	175.27	175.42	175.53	175.43	
21	175.22	175.23	175.24	175.40	176.66	175.70	175.46	175.30	175.27	175.42	175.53	175.42	
22	175.22	175.23	175.24	175.35	176.50	175.64	175.42	175.29	175.27	175.43	175.53	175.42	
23	175.22	175.23	175.24	175.30	180.36	175.65	175.39	175.29	175.27	175.44	175.53	175.44	
24	175.22	175.23	175.24	175.28	178.45	175.56	175.39	175.29	175.27	175.44	175.53	175.44	
25	175.22	175.23	175.24	175.28	176.48	175.53	175.38	175.28	175.26	175.45	175.53	175.44	
26	175.22	175.23	175.24	175.28	175.96	175.50	175.37	175.28	175.25	175.46	175.53	175.44	
27	175.22	175.24	175.46	175.27	175.76	175.48	175.35	175.28	175.26	175.47	175.52	175.43	
28	175.22	175.24	175.41	175.26	175.66	175.48	175.34	175.28	175.27	175.48	175.50	175.43	
29	175.22	175.24	175.54	175.24	175.59	175.46	175.34	175.28	175.27	175.50		175.45	
30	175.22	175.24	175.70	175.23	175.52	175.41	175.33	175.28	175.24	175.50		175.44	
31		175.24		175.23	175.49		175.33		175.24	175.51		175.44	
Mean	175.22	175.23	175.34	175.64	175.98	176.23	175.37	175.32	175.27	175.38	175.53	175.46	
Max	175.22	175.24	175.72	176.44	180.36	180.15	175.52	175.42	175.28	175.51	175.55	175.50	180.36
Min	175.22	175.22	175.24	175.23	175.23	175.41	175.31	175.28	175.24	175.26	175.50	175.42	175.22

Annual Max Momentary Gage Height 181.78 M (MSL), at 19.00 Hours, on Aug 23, 1998
Zero Gage at Bottom Elevation 175.27 M (MSL), River Bed 175.10 M (MSL)
Left Bank Elevation 183.64 M (MSL)
Right Bank Elevation 183.67 M (MSL), Drainage Area 163 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.84	0.00	0.28	0.10	0.02	0.01	0.00	0.00	0.00	
2	0.00	0.00	0.00	3.18	0.00	0.54	0.08	0.01	0.01	0.00	0.00	0.00	
3	0.00	0.00	0.00	2.55	0.00	0.57	0.06	0.05	0.01	0.00	0.00	0.00	
4	0.00	0.00	0.01	5.04	0.00	0.39	0.04	0.09	0.01	0.00	0.00	0.00	
5	0.00	0.00	0.01	4.02	0.20	0.36	0.04	0.09	0.01	0.00	0.00	0.00	
6	0.00	0.00	0.02	1.95	2.60	11.42	0.03	0.08	0.01	0.00	0.00	0.00	
7	0.00	0.00	1.10	2.40	0.57	21.19	0.03	0.08	0.01	0.00	0.00	0.00	
8	0.00	0.00	0.48	1.75	0.30	13.67	0.03	0.14	0.01	0.00	0.00	0.00	
9	0.00	0.00	0.28	1.10	2.75	8.06	0.02	0.06	0.01	0.00	0.00	0.00	
10	0.00	0.00	0.16	0.88	2.40	53.75	0.18	0.04	0.01	0.00	0.00	0.00	
11	0.00	0.00	0.08	1.10	3.90	31.50	0.14	0.03	0.01	0.00	0.00	0.00	
12	0.00	0.00	0.04	0.64	1.90	7.99	0.09	0.02	0.01	0.00	0.00	0.00	
13	0.00	0.00	0.02	0.51	2.90	3.60	0.06	0.01	0.01	0.00	0.00	0.00	
14	0.00	0.00	0.01	3.12	2.10	2.30	0.06	0.03	0.01	0.00	0.00	0.00	
15	0.00	0.00	0.01	2.45	0.92	4.68	0.06	0.02	0.01	0.00	0.00	0.00	
16	0.00	0.00	0.01	1.35	0.57	2.65	0.05	0.01	0.01	0.00	0.00	0.00	
17	0.00	0.00	0.01	0.88	0.33	1.95	0.05	0.01	0.01	0.00	0.00	0.00	
18	0.00	0.00	0.01	0.48	0.22	1.50	0.36	0.01	0.01	0.00	0.00	0.00	
19	0.00	0.00	0.01	0.30	0.14	1.15	0.24	0.01	0.01	0.00	0.00	0.00	
20	0.00	0.00	0.01	0.24	0.33	1.05	0.18	0.01	0.01	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.10	6.52	1.00	0.22	0.01	0.01	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.06	5.40	0.76	0.14	0.01	0.01	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.01	59.00	0.80	0.09	0.01	0.01	0.00	0.00	0.00	
24	0.00	0.00	0.00	0.01	22.95	0.48	0.09	0.01	0.01	0.00	0.00	0.00	
25	0.00	0.00	0.00	0.01	5.28	0.39	0.08	0.01	0.01	0.00	0.00	0.00	
26	0.00	0.00	0.00	0.01	2.30	0.30	0.07	0.01	0.00	0.00	0.00	0.00	
27	0.00	0.00	0.22	0.01	1.30	0.26	0.06	0.01	0.00	0.00	0.00	0.00	
28	0.00	0.00	0.12	0.01	0.84	0.26	0.05	0.01	0.00	0.00	0.00	0.00	
29	0.00	0.00	0.42	0.00	0.57	0.22	0.05	0.01	0.00	0.00		0.00	
30	0.00	0.00	1.00	0.00	0.36	0.12	0.04	0.01	0.00	0.00		0.00	
31		0.00		0.00	0.28		0.04		0.00	0.00		0.00	
Total	0.00	0.00	4.03	35.00	126.93	173.19	2.83	0.92	0.25	0.00	0.00	0.00	343.15 CMSDAY
Mean	0.00	0.00	0.13	1.13	4.09	5.77	0.09	0.03	0.01	0.00	0.00	0.00	0.94 CMS
Max	0.00	0.00	1.10	5.04	59.00	53.75	0.36	0.14	0.01	0.00	0.00	0.00	59.00 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.12	0.02	0.01	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.348	3.024	10.967	14.964	0.245	0.079	0.022	0.000	0.000	0.000	29.648 MCM

Momentary Peak 105.30 CMS, at 181.78 M (MSL), at 19.00 Hours, on Aug 23, 1998
Runoff Yield 5.77 Liters/Second/Square KM, Momentary Peak Yield 646.012 Liters/Second/Square KM

WATER YEAR 1998

CHI RIVER BASIN

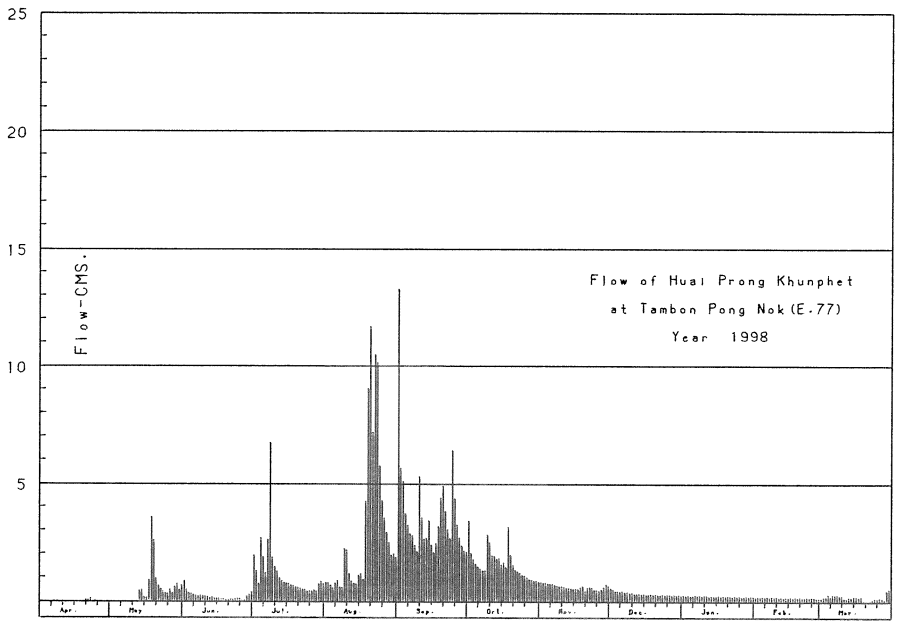
Huai Pong Khun Phet at Ban Thep Sila, Chaiyaphum (E.77)

Location	Lat.15°-49'-35" N., Long. 101°-30'-10" E., on right bank at the bridge of Chaiyaphum-Nakhon Sawan highway between guidepost 119-120, Amphoe Thep Sathit, Chaiyaphum.
Drainage Area	83 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+304.44 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of gage observer s house.
Elevation	+310.804 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1995 to date.
Rating Operation	
Period of Rating	1995 to date.
Rated by Float	-
Rated by Current Meter	1995 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow during Dec.13,98-Feb.28,99, discharge estimated by recession equation. Stage-discharge relation defined by 48 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	304.69	304.69	305.59	305.97	305.52	307.60	306.29	305.52	305.28	305.33	305.03	304.86	
2	304.69	304.69	305.20	305.76	305.50	306.71	305.99	305.51	305.21	305.34	304.97	304.89	
3	304.69	304.69	305.08	305.48	305.41	306.62	305.92	305.50	305.16	305.36	304.94	304.92	
4	304.71	304.68	305.03	306.14	305.27	306.35	305.87	305.48	305.14	305.36	304.94	305.01	
5	304.71	304.67	305.00	305.95	305.50	306.25	305.83	305.46	305.13	305.33	305.05	304.92	
6	304.72	304.68	304.94	305.72	305.59	306.18	305.79	305.44	305.13	305.31	305.05	304.99	
7	304.73	304.68	304.94	306.13	305.33	306.16	305.77	305.41	305.10	305.30	305.07	305.00	
8	304.73	304.67	304.95	306.87	305.29	306.07	305.76	305.36	305.09	305.29	305.06	304.97	
9	304.73	304.67	304.95	305.94	306.04	306.01	306.17	305.35	305.07	305.28	305.08	304.96	
10	304.73	304.67	304.91	305.83	306.02	306.65	306.10	305.34	305.06	305.29	305.03	304.94	
11	304.73	304.67	304.90	305.75	305.72	306.31	305.96	305.32	305.05	305.29	305.01	304.86	
12	304.73	304.67	304.88	305.65	305.57	306.13	305.96	305.30	305.03	305.28	305.03	304.84	
13	304.72	305.16	304.87	305.58	305.49	306.14	305.93	305.28	305.02	305.28	305.04	304.88	
14	304.71	305.19	304.85	305.53	305.44	306.29	305.93	305.27	305.05	305.28	305.03	304.89	
15	304.71	304.90	304.84	305.49	305.69	306.08	305.85	305.25	305.11	305.29	305.01	304.90	
16	304.71	304.85	304.83	305.46	305.71	306.00	305.88	305.23	305.10	305.29	305.00	304.90	
17	304.71	305.61	304.81	305.41	305.62	306.09	305.82	305.24	305.11	305.28	304.92	304.90	
18	304.73	306.32	304.80	305.37	306.45	306.24	306.23	305.30	305.14	305.26	304.90	304.90	
19	304.73	306.12	304.78	305.33	307.13	306.48	305.97	305.36	305.14	305.27	304.95	304.78	
20	304.77	305.63	304.79	305.29	307.42	306.58	305.85	305.14	305.16	305.27	304.97	304.71	
21	304.79	305.39	304.79	305.26	306.92	306.37	305.78	305.28	305.17	305.27	304.98	304.74	
22	304.83	305.23	304.80	305.23	307.29	306.21	305.75	305.32	305.14	305.27	304.99	304.78	
23	304.78	305.13	304.81	305.20	307.25	306.14	305.72	305.28	305.10	305.26	304.99	304.81	
24	304.75	305.06	304.84	305.15	306.73	306.83	305.69	305.21	305.10	305.26	304.98	304.83	
25	304.73	305.02	304.81	305.15	306.46	306.48	305.67	305.18	305.19	305.27	304.97	304.85	
26	304.73	305.21	304.79	305.15	306.31	306.25	305.65	305.16	305.21	305.27	304.97	304.86	
27	304.72	305.07	304.79	305.20	306.19	306.14	305.62	305.22	305.23	305.27	304.85	304.86	
28	304.71	305.34	304.94	305.14	306.10	306.07	305.60	305.29	305.18	305.27	304.82	304.77	
29	304.70	305.45	304.99	305.45	305.97	306.01	305.58	305.44	305.29	305.03		305.18	
30	304.69	305.21	305.10	305.55	305.98	306.00	305.57	305.34	305.35	304.85		305.22	
31		305.38		305.45	305.94		305.55		305.34	304.89		305.17	
Mean	304.73	305.08	304.92	305.57	306.03	306.31	305.84	305.33	305.15	305.25	304.99	304.91	
Max	304.83	306.32	305.59	306.87	307.42	307.60	306.29	305.52	305.35	305.36	305.08	305.22	307.60
Min	304.69	304.67	304.78	305.14	305.27	306.00	305.55	305.14	305.02	304.85	304.82	304.71	304.67

Annual Max Momentary Gage Height 308.78 M (MSL), at 6.00 Hours, on Sep 1, 1998
Zero Gage at Bottom Elevation 304.44 M (MSL), River Bed 304.30 M (MSL)
Left Bank Elevation 312.84 M (MSL)
Right Bank Elevation 312.93 M (MSL), Drainage Area 83 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.89	1.98	0.82	13.30	3.45	0.82	0.58	0.27	0.20	0.16	
2	0.00	0.00	0.50	1.30	0.80	5.66	2.06	0.81	0.51	0.27	0.20	0.19	
3	0.00	0.00	0.38	0.78	0.71	5.12	1.78	0.80	0.46	0.26	0.20	0.22	
4	0.01	0.00	0.33	2.70	0.57	3.75	1.61	0.78	0.44	0.26	0.20	0.31	
5	0.01	0.00	0.30	1.90	0.80	3.25	1.49	0.76	0.43	0.26	0.20	0.22	
6	0.02	0.00	0.24	1.20	0.89	2.90	1.38	0.74	0.43	0.26	0.19	0.29	
7	0.03	0.00	0.24	2.65	0.63	2.80	1.32	0.71	0.40	0.26	0.19	0.30	
8	0.03	0.00	0.25	6.76	0.59	2.38	1.30	0.66	0.39	0.25	0.19	0.27	
9	0.03	0.00	0.25	1.86	2.26	2.14	2.85	0.65	0.37	0.25	0.19	0.26	
10	0.03	0.00	0.21	1.49	2.18	5.30	2.50	0.64	0.36	0.25	0.19	0.24	
11	0.03	0.00	0.20	1.28	1.20	3.55	1.94	0.62	0.35	0.25	0.19	0.16	
12	0.03	0.00	0.18	1.02	0.87	2.65	1.94	0.60	0.33	0.24	0.18	0.14	
13	0.02	0.46	0.17	0.88	0.79	2.70	1.82	0.58	0.32	0.24	0.18	0.18	
14	0.01	0.49	0.15	0.83	0.74	3.45	1.82	0.57	0.32	0.24	0.18	0.19	
15	0.01	0.20	0.14	0.79	1.13	2.42	1.55	0.55	0.31	0.24	0.18	0.20	
16	0.01	0.15	0.13	0.76	1.17	2.10	1.64	0.53	0.31	0.24	0.18	0.20	
17	0.01	0.92	0.11	0.71	0.95	2.46	1.46	0.54	0.31	0.23	0.18	0.20	
18	0.03	3.60	0.10	0.67	4.25	3.20	3.15	0.60	0.31	0.23	0.17	0.20	
19	0.03	2.60	0.08	0.63	9.07	4.40	1.98	0.66	0.30	0.23	0.17	0.08	
20	0.07	0.98	0.09	0.59	11.68	4.90	1.55	0.44	0.30	0.23	0.17	0.01	
21	0.09	0.69	0.09	0.56	7.18	3.85	1.35	0.58	0.30	0.22	0.17	0.04	
22	0.13	0.53	0.10	0.53	10.51	3.05	1.28	0.62	0.29	0.22	0.17	0.08	
23	0.08	0.43	0.11	0.50	10.15	2.70	1.20	0.58	0.29	0.22	0.17	0.11	
24	0.05	0.36	0.14	0.45	5.78	6.44	1.13	0.51	0.29	0.22	0.17	0.13	
25	0.03	0.32	0.11	0.45	4.30	4.40	1.08	0.48	0.29	0.22	0.16	0.15	
26	0.03	0.51	0.09	0.45	3.55	3.25	1.02	0.46	0.28	0.21	0.16	0.16	
27	0.02	0.37	0.09	0.50	2.95	2.70	0.95	0.52	0.28	0.21	0.15	0.16	
28	0.01	0.64	0.24	0.44	2.50	2.38	0.90	0.59	0.28	0.21	0.12	0.07	
29	0.00	0.75	0.29	0.75	1.98	2.14	0.88	0.74	0.28	0.21		0.48	
30	0.00	0.51	0.40	0.85	2.02	2.10	0.87	0.64	0.27	0.21		0.52	
31		0.68		0.75	1.86		0.85		0.27	0.21		0.47	
Total	0.85	15.19	6.60	37.01	94.88	111.44	50.10	18.78	10.65	7.32	5.00	6.39	364.21 CMSDAY
Mean	0.03	0.49	0.22	1.19	3.06	3.71	1.62	0.63	0.34	0.24	0.18	0.21	1.00 CMS
Max	0.13	3.60	0.89	6.76	11.68	13.30	3.45	0.82	0.58	0.27	0.20	0.52	13.30 CMS
Min	0.00	0.00	0.08	0.44	0.57	2.10	0.85	0.44	0.27	0.21	0.12	0.01	0.00 CMS
Runoff	0.073	1.312	0.570	3.198	8.198	9.628	4.329	1.623	0.920	0.632	0.432	0.552	31.468 MCM

Momentary Peak 30.44 CMS, at 308.78 M (MSL), at 6.00 Hours, on Sep 1, 1998

Runoff Yield 12.02 Liters/Second/Square KM, Momentary Peak Yield 366.747 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

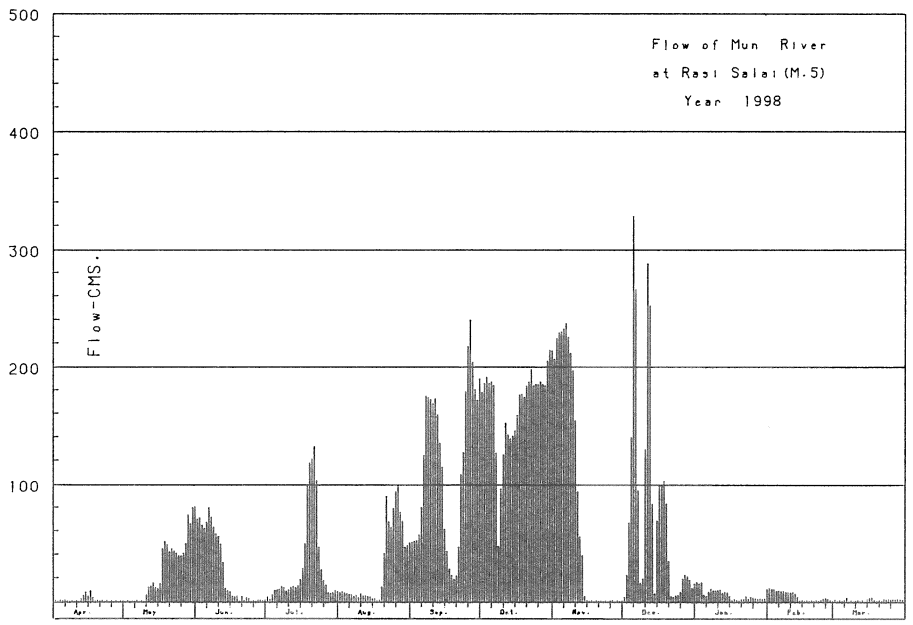
Mun River at Rasi Salai, Si Sa Ket (M.5)

Location	Lat. 15°-20'-16" N., Long. 104°-09'-29" E., on left bank infront of Amphoe Rasi Salai Office, Si Sa Ket.
Drainage Area	44,275 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+110.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream at the footpath of the bridge.
Elevation	+124.814 m. (M.S.L.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00, and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1955 to date.
Rating Operation	
Period of Rating	1972 to date.
Rated by Float	-
Rated by Current Meter	1972 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Rasi Salai barrage about 10 kilometers above gage site. Stage-discharge relation defined by 67 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	109.94	109.90	111.16	110.07	110.17	110.90	112.31	112.58	110.06	110.36	110.25	110.01	
2	109.93	109.91	111.18	110.03	110.18	110.92	112.38	112.74	110.46	110.33	110.24	109.98	
3	109.94	109.91	111.10	110.11	110.16	110.92	112.44	112.79	111.12	110.36	110.23	109.97	
4	109.98	109.93	111.06	110.22	110.14	110.99	112.38	112.79	111.93	110.12	110.20	109.98	
5	109.98	109.94	111.13	110.23	110.12	111.29	112.40	112.82	113.62	110.08	110.20	109.99	
6	109.94	109.95	111.28	110.23	110.11	111.77	112.37	112.86	113.10	110.18	110.20	110.06	
7	109.90	109.95	111.18	110.30	110.09	112.28	111.79	112.75	111.47	110.24	110.19	109.97	
8	109.91	109.90	111.08	110.26	110.10	112.26	110.86	112.63	110.35	110.21	110.18	110.00	
9	109.95	109.94	111.00	110.20	110.06	112.25	111.48	112.49	110.40	110.20	110.17	109.96	
10	109.92	110.12	110.98	110.22	110.13	112.21	111.78	112.07	111.82	110.22	110.17	109.97	
11	109.93	110.27	110.88	110.28	110.10	112.25	112.05	111.46	113.29	110.22	110.16	109.99	
12	110.03	110.30	110.64	110.29	110.09	112.12	111.95	110.97	112.99	110.16	110.14	109.99	
13	110.11	110.35	110.26	110.28	110.09	111.88	111.91	110.74	111.32	110.17	110.06	109.98	
14	110.17	110.26	110.20	110.30	110.07	111.67	111.94	110.09	110.15	110.17	110.00	109.97	
15	110.09	110.25	110.19	110.40	110.03	111.06	111.98	109.97	111.15	110.08	110.00	110.02	
16	110.21	110.33	110.08	110.55	110.03	110.79	112.11	110.00	111.51	109.95	109.98	110.04	
17	110.05	110.83	110.08	110.89	110.00	110.55	112.29	109.97	111.52	110.03	109.97	110.06	
18	109.97	110.92	110.08	111.51	109.99	110.45	112.29	109.96	111.55	110.00	109.97	109.98	
19	109.96	110.87	109.96	111.71	110.29	110.40	112.27	109.94	111.33	109.99	109.96	109.98	
20	110.00	110.79	110.09	111.74	110.76	110.44	112.36	109.95	110.66	110.01	109.95	109.98	
21	109.93	110.82	109.94	111.85	111.40	110.84	112.40	109.91	110.09	110.03	109.99	109.99	
22	109.93	110.80	110.06	111.56	111.14	111.61	112.50	109.95	110.06	110.08	109.98	110.02	
23	109.93	110.76	110.03	110.84	111.07	111.80	112.36	109.93	110.10	110.03	109.98	110.02	
24	109.92	110.73	109.95	110.54	111.28	112.31	112.38	109.94	110.10	110.06	110.04	110.02	
25	109.93	110.72	109.91	110.37	111.46	112.68	112.37	110.00	110.18	110.05	110.05	110.02	
26	109.92	110.76	109.97	110.32	111.52	112.89	112.40	109.93	110.40	110.03	110.02	110.01	
27	109.91	110.89	110.01	110.17	111.23	112.56	112.38	109.91	110.45	110.03	109.97	110.02	
28	109.90	111.21	109.99	110.14	111.14	112.33	112.36	109.96	110.44	110.03	109.97	110.02	
29	109.89	111.11	110.00	110.17	110.85	112.24	112.57	109.97	110.38	110.03		110.02	
30	109.90	111.29	110.00	110.20	110.86	112.42	112.65	109.92	110.26	110.03		109.99	
31		111.29		110.18	110.90		112.65		110.33	110.24		109.95	
Mean	109.97	110.48	110.45	110.52	110.50	111.64	112.21	110.97	111.05	110.12	110.08	110.00	
Max	110.21	111.29	111.28	111.85	111.52	112.89	112.65	112.86	113.62	110.36	110.25	110.06	113.62
Min	109.89	109.90	109.91	110.03	109.99	110.40	110.86	109.91	110.06	109.95	109.95	109.95	109.89

Annual Max Momentary Gage Height 113.65 M (MSL), at 18.00 Hours, on Dec 5, 1998
Zero Gage at Bottom Elevation 110.00 M (MSL), River Bed 109.19 M (MSL)
Left Bank Elevation 123.30 M (MSL)
Right Bank Elevation 122.64 M (MSL), Drainage Area 44275 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.70	1.50	70.80	4.80	8.80	51.00	179.00	206.80	4.40	17.60	12.00	2.40	
2	1.65	1.55	72.40	3.20	9.20	52.40	186.00	224.40	23.60	15.80	11.60	1.90	
3	1.70	1.55	66.00	6.40	8.40	52.40	192.00	229.90	67.60	17.60	11.20	1.85	
4	1.90	1.65	62.80	10.80	7.60	57.30	186.00	229.90	141.00	6.80	10.00	1.90	
5	1.90	1.70	68.40	11.20	6.80	81.20	188.00	233.20	328.40	5.20	10.00	1.95	
6	1.70	1.75	80.40	11.20	6.40	125.00	185.00	237.60	266.00	9.20	10.00	4.40	
7	1.50	1.75	72.40	14.00	5.60	176.00	127.00	225.50	95.60	11.60	9.60	1.85	
8	1.55	1.50	64.40	12.40	6.00	174.00	48.20	212.30	17.00	10.40	9.20	2.00	
9	1.75	1.70	58.00	10.00	4.40	173.00	96.40	197.00	20.00	10.00	8.80	1.80	
10	1.60	6.80	56.60	10.80	7.20	169.00	126.00	155.00	130.00	10.80	8.80	1.85	
11	1.65	12.80	49.60	13.20	6.00	173.00	153.00	94.80	288.80	10.80	8.40	1.95	
12	3.20	14.00	34.40	13.60	5.60	160.00	143.00	55.90	252.80	8.40	7.60	1.95	
13	6.40	17.00	12.40	13.20	5.60	136.00	139.00	40.40	83.60	8.80	4.40	1.90	
14	8.80	12.40	10.00	14.00	4.80	115.00	142.00	5.60	8.00	8.80	2.00	1.85	
15	5.60	12.00	9.60	20.00	3.20	62.80	146.00	1.85	70.00	5.20	2.00	2.80	
16	10.40	15.80	5.20	29.00	3.20	43.40	159.00	2.00	99.00	1.75	1.90	3.60	
17	4.00	46.10	5.20	50.30	2.00	29.00	177.00	1.85	100.00	3.20	1.85	4.40	
18	1.85	52.40	5.20	99.00	1.95	23.00	177.00	1.80	103.00	2.00	1.85	1.90	
19	1.80	48.90	1.80	119.00	13.60	20.00	175.00	1.70	84.40	1.95	1.80	1.90	
20	2.00	43.40	5.60	122.00	41.60	22.40	184.00	1.75	35.60	2.40	1.75	1.90	
21	1.65	45.40	1.70	133.00	90.00	46.80	188.00	1.55	5.60	3.20	1.95	1.95	
22	1.65	44.00	4.40	104.00	69.20	109.00	198.00	1.75	4.40	5.20	1.90	2.80	
23	1.65	41.60	3.20	46.80	63.60	128.00	184.00	1.65	6.00	3.20	1.90	2.80	
24	1.60	39.80	1.75	28.40	80.40	179.00	186.00	1.70	6.00	4.40	3.60	2.80	
25	1.65	39.20	1.55	18.20	94.80	217.80	185.00	2.00	9.20	4.00	4.00	2.80	
26	1.60	41.60	1.85	15.20	100.00	240.90	188.00	1.65	20.00	3.20	2.80	2.40	
27	1.55	50.30	2.40	8.80	76.40	204.60	186.00	1.55	23.00	3.20	1.85	2.80	
28	1.50	74.80	1.95	7.60	69.20	181.00	184.00	1.80	22.40	3.20	1.85	2.80	
29	1.45	66.80	2.00	8.80	47.50	172.00	205.70	1.85	18.80	3.20		2.80	
30	1.50	81.20	2.00	10.00	48.20	190.00	214.50	1.60	12.40	3.20		1.95	
31		81.20		9.20	51.00		214.50		15.80	11.60		1.75	
Total	78.45	902.15	834.00	978.10	948.25	3565.00	5242.30	2376.35	2362.40	215.90	154.60	73.70	17731.20 CMSDAY
Mean	2.62	29.10	27.80	31.55	30.59	118.83	169.11	79.21	76.21	6.96	5.52	2.38	48.58 CMS
Max	10.40	81.20	80.40	133.00	100.00	240.90	214.50	237.60	328.40	17.60	12.00	4.40	328.40 CMS
Min	1.45	1.50	1.55	3.20	1.95	20.00	48.20	1.55	4.40	1.75	1.75	1.75	1.45 CMS
Runoff	6.778	77.946	72.058	84.508	81.929	308.016	452.935	205.317	204.111	18.654	13.357	6.368	1531.976 MCM

Momentary Peak 332.00 CMS, at 113.65 M (MSL), at 18.00 Hours, on Dec 5, 1998

Runoff Yield 1.10 Liters/Second/Square KM, Momentary Peak Yield 7.499 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

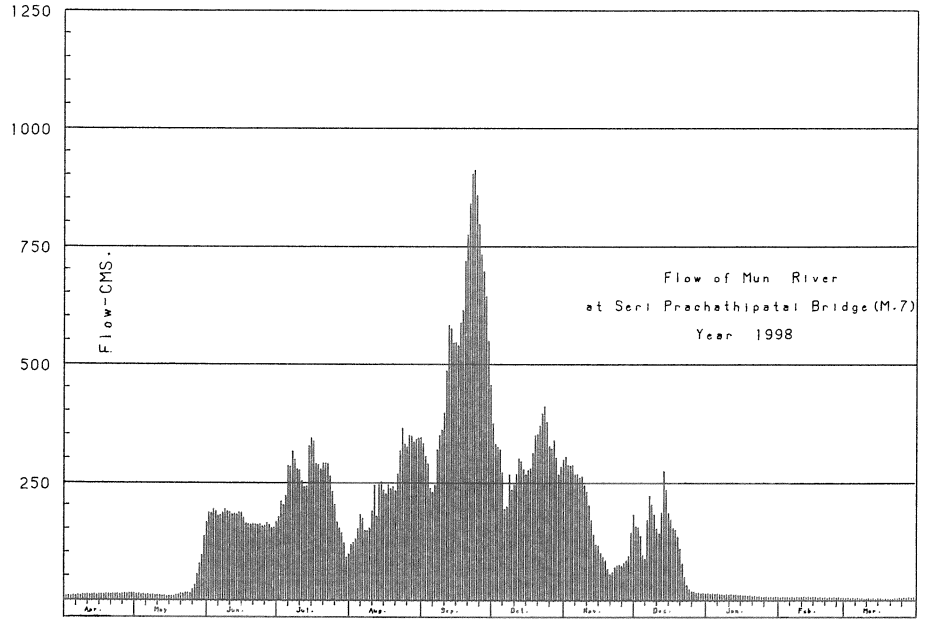
Mun River at Seri Prachathipatai Bridge, Ubon Ratchathani (M.7)

Location	Lat. 15°-13'-17" N., Long. 104°-51'-39" E., on left bank at Seri Prachathipatai Bridge, Amphoe Muang, Ubon Ratchathani.
Drainage Area	106,673 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+105.00 m.(M.S.L.)
Bench Mark	B.M.-Department of Lands.
Location	On left bank at the abutment of 200 years Krung Ratanakosin Bridge.
Elevation	+117.645 m.(M.S.L.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00, and 17.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1944 to date.
Rating Operation	
Period of Rating	1956 - 1958, 1964 - 1981, 1983 to date.
Rated by Float	-
Rated by Current Meter	1956 - 1958, 1964 - 1981, 1983 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Pak Mun barrage situated about 20 kilometers downstream from the gage site. Stage-discharge relation defined by 54 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	106.45	106.61	107.90	107.87	107.64	108.30	108.40	108.23	107.81	106.66	106.39	106.33	
2	106.45	106.60	107.90	107.97	107.66	108.23	108.30	108.18	107.80	106.65	106.39	106.33	
3	106.46	106.59	107.92	107.95	107.70	108.19	108.28	108.18	107.73	106.63	106.40	106.32	
4	106.48	106.57	107.91	108.01	107.79	108.05	108.27	108.18	107.53	106.63	106.39	106.31	
5	106.50	106.55	107.88	108.18	107.89	108.03	108.14	108.13	107.50	106.63	106.39	106.30	
6	106.51	106.53	107.88	108.17	107.86	108.07	107.92	108.13	107.85	106.61	106.39	106.30	
7	106.52	106.53	107.90	108.26	107.78	108.27	107.94	108.11	108.01	106.58	106.39	106.29	
8	106.54	106.52	107.92	108.21	107.77	108.34	108.13	108.12	107.95	106.58	106.40	106.28	
9	106.55	106.51	107.91	108.16	107.80	108.37	108.04	108.07	107.89	106.58	106.41	106.28	
10	106.55	106.50	107.90	108.15	107.91	108.45	108.07	108.03	107.79	106.58	106.42	106.27	
11	106.56	106.50	107.89	108.09	108.07	108.65	108.13	107.95	107.75	106.58	106.42	106.27	
12	106.56	106.49	107.89	108.06	107.88	108.85	108.22	107.85	107.90	106.58	106.42	106.28	
13	106.56	106.47	107.89	108.06	108.07	108.84	108.20	107.74	108.15	106.54	106.41	106.27	
14	106.55	106.45	107.90	108.29	108.09	108.78	108.16	107.64	108.04	106.54	106.41	106.26	
15	106.55	106.45	107.90	108.33	108.04	108.78	108.13	107.63	107.90	106.54	106.40	106.25	
16	106.56	106.45	107.86	108.31	108.02	108.77	108.15	107.56	107.85	106.53	106.40	106.25	
17	106.58	106.48	107.83	108.19	108.07	108.86	108.16	107.51	107.80	106.51	106.40	106.25	
18	106.60	106.52	107.82	108.18	108.05	108.91	108.25	107.47	107.78	106.50	106.39	106.25	
19	106.60	106.57	107.82	108.16	108.06	109.10	108.34	107.33	107.72	106.49	106.38	106.25	
20	106.59	106.61	107.82	108.19	108.04	109.19	108.35	107.24	107.60	106.48	106.37	106.25	
21	106.58	106.65	107.82	108.19	108.13	109.30	108.39	107.27	107.43	106.47	106.35	106.25	
22	106.60	106.66	107.82	108.19	108.26	109.40	108.45	107.37	107.18	106.46	106.34	106.27	
23	106.60	106.66	107.82	108.12	108.38	109.41	108.48	107.39	107.02	106.45	106.37	106.30	
24	106.59	106.68	107.81	108.03	108.30	109.33	108.41	107.41	106.86	106.43	106.38	106.32	
25	106.60	106.86	107.81	107.95	108.28	109.23	108.29	107.40	106.81	106.42	106.37	106.32	
26	106.62	107.01	107.83	107.84	108.34	109.12	108.27	107.43	106.75	106.40	106.35	106.33	
27	106.63	107.24	107.82	107.80	108.34	109.06	108.32	107.47	106.70	106.40	106.35	106.34	
28	106.64	107.42	107.80	107.75	108.31	108.96	108.22	107.52	106.68	106.40	106.34	106.35	
29	106.65	107.54	107.80	107.66	108.32	108.79	108.13	107.75	106.67	106.40		106.35	
30	106.63	107.72	107.84	107.51	108.33	108.58	108.17	107.89	106.67	106.40		106.37	
31		107.84		107.55	108.33		108.21		106.65	106.40		106.37	
Mean	106.56	106.73	107.86	108.04	108.05	108.74	108.22	107.74	107.48	106.52	106.39	106.30	
Max	106.65	107.84	107.92	108.33	108.38	109.41	108.48	108.23	108.15	106.66	106.42	106.37	109.41
Min	106.45	106.45	107.80	107.51	107.64	108.03	107.92	107.24	106.65	106.40	106.34	106.25	106.25

Annual Max Momentary Gage Height 109.42 M (MSL), at 6.00 Hours, on Sep 23, 1998
Zero Gage at Bottom Elevation 105.00 M (MSL), River Bed 100.81 M (MSL)
Left Bank Elevation 120.43 M (MSL)
Right Bank Elevation 113.75 M (MSL), Drainage Area 106673 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	9.5	14.3	187.0	177.4	118.8	333.0	375.0	306.4	158.2	15.8	7.8	6.6	
2	9.5	14.0	187.0	210.1	123.2	306.4	333.0	287.4	155.0	15.5	7.8	6.6	
3	9.8	13.7	193.6	203.5	132.0	291.2	325.4	287.4	138.9	14.9	8.0	6.4	
4	10.4	13.1	190.3	223.7	152.7	238.5	321.6	287.4	96.0	14.9	7.8	6.2	
5	11.0	12.5	180.6	287.4	183.8	231.1	272.2	268.4	90.0	14.9	7.8	6.0	
6	11.3	11.9	180.6	283.6	174.2	245.9	193.6	268.4	171.0	14.3	7.8	6.0	
7	11.6	11.9	187.0	317.8	150.4	321.6	200.2	260.8	223.7	13.4	7.8	5.8	
8	12.2	11.6	193.6	298.8	148.1	349.8	268.4	264.6	203.5	13.4	8.0	5.6	
9	12.5	11.3	190.3	279.8	155.0	362.4	234.8	245.9	183.8	13.4	8.3	5.6	
10	12.5	11.0	187.0	276.0	190.3	397.5	245.9	231.1	152.7	13.4	8.6	5.4	
11	12.8	11.0	183.8	253.3	245.9	487.5	268.4	203.5	143.5	13.4	8.6	5.4	
12	12.8	10.7	183.8	242.2	180.6	582.5	302.6	171.0	187.0	13.4	8.6	5.6	
13	12.8	10.1	183.8	242.2	245.9	577.0	295.0	141.2	276.0	12.2	8.3	5.4	
14	12.5	9.5	187.0	329.2	253.3	546.0	279.8	118.8	234.8	12.2	8.3	5.2	
15	12.5	9.5	187.0	345.6	234.8	546.0	268.4	116.6	187.0	12.2	8.0	5.0	
16	12.8	9.5	174.2	337.2	227.4	541.5	276.0	102.0	171.0	11.9	8.0	5.0	
17	13.4	10.4	164.6	291.2	245.9	588.0	279.8	92.0	155.0	11.3	8.0	5.0	
18	14.0	11.6	161.4	287.4	238.5	615.5	314.0	85.5	150.4	11.0	7.8	5.0	
19	14.0	13.1	161.4	279.8	242.2	720.0	349.8	66.6	136.6	10.7	7.6	5.0	
20	13.7	14.3	161.4	291.2	234.8	774.0	354.0	56.4	110.0	10.4	7.4	5.0	
21	13.4	15.5	161.4	291.2	268.4	840.0	370.8	59.7	79.5	10.1	7.0	5.0	
22	14.0	15.8	161.4	291.2	317.8	905.0	397.5	71.4	50.0	9.8	6.8	5.4	
23	14.0	15.8	161.4	264.6	366.6	911.5	411.0	73.8	34.0	9.5	7.4	6.0	
24	13.7	16.4	158.2	231.1	333.0	859.5	379.5	76.5	23.6	8.9	7.6	6.4	
25	14.0	23.6	158.2	203.5	325.4	798.0	329.2	75.0	20.6	8.6	7.4	6.4	
26	14.6	33.0	164.6	167.8	349.8	732.0	321.6	79.5	18.5	8.0	7.0	6.6	
27	14.9	56.4	161.4	155.0	349.8	698.0	341.4	85.5	17.0	8.0	7.0	6.8	
28	15.2	78.0	155.0	143.5	337.2	643.0	302.6	94.0	16.4	8.0	6.8	7.0	
29	15.5	98.0	155.0	123.2	341.4	550.5	268.4	143.5	16.1	8.0		7.0	
30	14.9	136.6	167.8	92.0	345.6	456.0	283.6	183.8	16.1	8.0		7.4	
31		167.8		100.0	345.6		298.8		15.5	8.0		7.4	
Total	385.8	891.9	5229.8	7520.5	7558.4	16448.9	9462.3	4804.1	3631.4	357.5	217.3	183.2	56691.1 CMSDAY
Mean	12.9	28.8	174.3	242.6	243.8	548.3	305.2	160.1	117.1	11.5	7.8	5.9	155.3 CMS
Max	15.5	167.8	193.6	345.6	366.6	911.5	411.0	306.4	276.0	15.8	8.6	7.4	911.5 CMS
Min	9.5	9.5	155.0	92.0	118.8	231.1	193.6	56.4	15.5	8.0	6.8	5.0	5.0 CMS
Runoff	33.33	77.06	451.85	649.77	653.05	1421.19	817.54	415.07	313.75	30.89	18.77	15.83	4898.11 MCM

Momentary Peak 918.00 CMS, at 109.42 M (MSL), at 6.00 Hours, on Sep 23, 1998

Runoff Yield 1.46 Liters/Second/Square KM, Momentary Peak Yield 8.606 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

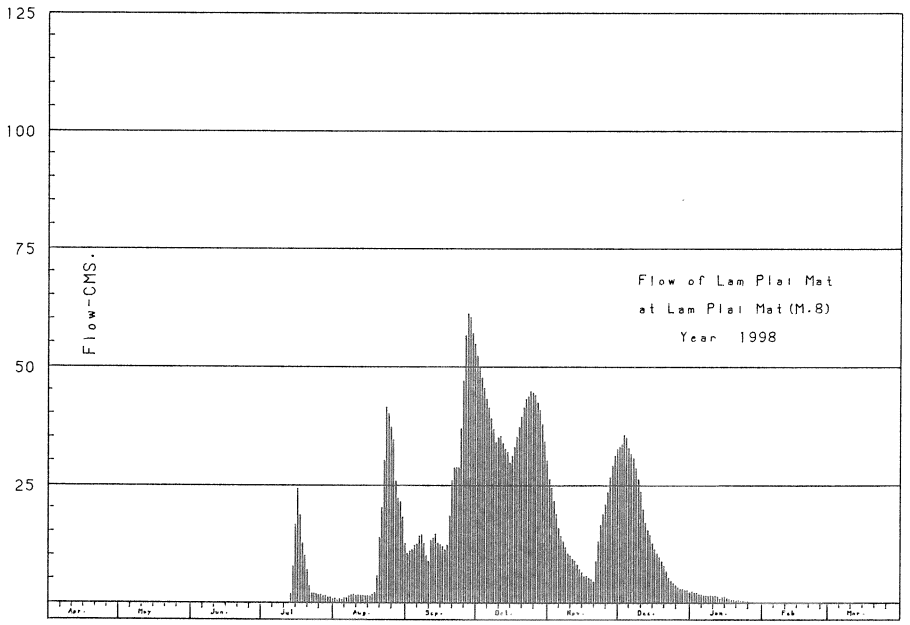
Lam Plai Mat at Lam Plai Mat, Burirum (M.8)

Location	Lat. 15°-01'-05" N., Long. 102°-48'-55" E., on left bank about 60 meters upstream from the railway bridge, Amphoe Lam Plai Mat, Burirum.
Drainage Area	5,025 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+149.50 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank near the automatic gage building.
Elevation	+155.859 m.(M.S.L)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1951 to date.
Rating Operation	
Period of Rating	1967, 1998 to date.
Rated by Float	-
Rated by Current Meter	1967, 1998 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	Overbank flow starts at elevation +152.09 m.(M.S.L) and is included.
General Description	Records fair. Ban Don Thamung weir situated about 500 meters downstream from the gage site. Stage-discharge relation defined by 20 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	150.57	150.44	150.39	150.86	151.63	152.11	154.17	152.90	153.24	151.75	151.42	151.14	
2	150.57	150.43	150.39	150.86	151.61	152.13	154.05	152.80	153.26	151.74	151.41	151.13	
3	150.57	150.41	150.39	150.86	151.62	152.15	153.95	152.67	153.36	151.73	151.40	151.12	
4	150.57	150.40	150.39	150.86	151.62	152.19	153.84	152.52	153.34	151.71	151.39	151.11	
5	150.56	150.40	150.39	150.86	151.64	152.21	153.74	152.38	153.23	151.70	151.37	151.10	
6	150.56	150.40	150.40	150.86	151.65	152.29	153.64	152.29	153.16	151.69	151.36	151.09	
7	150.56	150.40	150.40	150.86	151.67	152.31	153.54	152.24	153.12	151.68	151.34	151.08	
8	150.56	150.40	150.40	150.86	151.70	152.21	153.42	152.17	153.01	151.68	151.32	151.08	
9	150.56	150.40	150.40	150.88	151.70	152.08	153.29	152.11	152.90	151.68	151.31	151.07	
10	150.56	150.39	150.40	150.98	151.69	152.02	153.34	152.08	152.76	151.68	151.30	151.05	
11	150.55	150.39	150.40	151.04	151.69	152.25	153.35	152.05	152.58	151.67	151.29	151.03	
12	150.54	150.38	150.40	151.24	151.69	152.27	153.28	152.02	152.43	151.67	151.28	151.00	
13	150.53	150.38	150.40	151.72	151.68	152.31	153.21	151.99	152.36	151.62	151.27	150.98	
14	150.52	150.38	150.40	151.98	151.68	152.22	153.18	151.96	152.30	151.66	151.26	150.97	
15	150.51	150.39	150.39	152.41	151.68	152.20	153.07	151.94	152.22	151.66	151.24	150.96	
16	150.50	150.40	150.39	152.79	151.68	152.18	153.14	151.92	152.15	151.64	151.24	150.95	
17	150.50	150.39	150.39	152.52	151.70	152.15	153.24	151.92	152.11	151.62	151.23	150.94	
18	150.49	150.39	150.39	152.22	151.74	152.20	153.34	151.91	152.06	151.61	151.22	150.93	
19	150.48	150.38	150.39	152.08	151.92	152.51	153.45	151.90	152.02	151.60	151.22	150.91	
20	150.47	150.38	150.42	151.96	152.28	152.88	153.55	151.88	151.98	151.60	151.21	150.90	
21	150.45	150.38	150.42	151.83	152.59	153.02	153.65	152.02	151.95	151.59	151.21	150.89	
22	150.44	150.38	150.42	151.73	153.10	153.02	153.73	152.23	151.91	151.58	151.20	150.88	
23	150.44	150.38	150.42	151.72	153.65	153.02	153.76	152.41	151.89	151.58	151.19	150.88	
24	150.44	150.38	150.42	151.72	153.59	153.43	153.81	152.52	151.86	151.57	151.18	150.88	
25	150.43	150.38	150.42	151.70	153.45	153.92	153.80	152.63	151.84	151.56	151.17	150.88	
26	150.43	150.38	150.42	151.70	153.31	154.36	153.77	152.76	151.81	151.53	151.16	150.90	
27	150.42	150.38	150.68	151.68	152.88	154.57	153.70	152.91	151.80	151.51	151.15	150.90	
28	150.42	150.38	150.83	151.68	152.69	154.53	153.62	153.04	151.79	151.50	151.14	150.90	
29	150.42	150.38	150.87	151.66	152.66	154.39	153.48	153.14	151.78	151.48		150.92	
30	150.42	150.39	150.87	151.65	152.49	154.28	153.29	153.21	151.77	151.45		150.92	
31		150.39		151.63	152.21		153.09		151.74	151.42		150.92	
Mean	150.50	150.39	150.46	151.53	152.16	152.78	153.53	152.35	152.38	151.62	151.27	150.98	
Max	150.57	150.44	150.87	152.79	153.65	154.57	154.17	153.21	153.36	151.75	151.42	151.14	154.57
Min	150.42	150.38	150.39	150.86	151.61	152.02	153.07	151.88	151.74	151.42	151.14	150.88	150.38

Annual Max Momentary Gage Height 154.59 M (MSL), at 8.00 Hours, on Sep 27, 1998
Zero Gage at Bottom Elevation 149.50 M (MSL), River Bed 149.69 M (MSL)
Left Bank Elevation 155.70 M (MSL)
Right Bank Elevation 152.08 M (MSL), Drainage Area 5025 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.96	10.60	52.47	26.40	33.20	2.40	0.04	0.00	
2	0.00	0.00	0.00	0.00	0.72	11.00	49.95	24.40	33.60	2.28	0.02	0.00	
3	0.00	0.00	0.00	0.00	0.84	11.40	47.85	21.80	35.60	2.16	0.00	0.00	
4	0.00	0.00	0.00	0.00	0.84	12.20	45.54	18.80	35.20	1.92	0.00	0.00	
5	0.00	0.00	0.00	0.00	1.08	12.60	43.44	16.00	33.00	1.80	0.00	0.00	
6	0.00	0.00	0.00	0.00	1.20	14.20	41.34	14.20	31.60	1.68	0.00	0.00	
7	0.00	0.00	0.00	0.00	1.44	14.60	39.24	13.20	30.80	1.56	0.00	0.00	
8	0.00	0.00	0.00	0.00	1.80	12.60	36.80	11.80	28.60	1.56	0.00	0.00	
9	0.00	0.00	0.00	0.00	1.80	10.04	34.20	10.60	26.40	1.56	0.00	0.00	
10	0.00	0.00	0.00	0.00	1.68	8.96	35.20	10.04	23.60	1.56	0.00	0.00	
11	0.00	0.00	0.00	0.00	1.68	13.40	35.40	9.50	20.00	1.44	0.00	0.00	
12	0.00	0.00	0.00	0.00	1.68	13.80	34.00	8.96	17.00	1.44	0.00	0.00	
13	0.00	0.00	0.00	2.04	1.56	14.60	32.60	8.24	15.60	0.84	0.00	0.00	
14	0.00	0.00	0.00	7.88	1.56	12.80	32.00	7.16	14.40	1.32	0.00	0.00	
15	0.00	0.00	0.00	16.60	1.56	12.40	29.80	6.44	12.80	1.32	0.00	0.00	
16	0.00	0.00	0.00	24.20	1.56	12.00	31.20	5.72	11.40	1.08	0.00	0.00	
17	0.00	0.00	0.00	18.80	1.80	11.40	33.20	5.72	10.60	0.84	0.00	0.00	
18	0.00	0.00	0.00	12.80	2.28	12.40	35.20	5.36	9.68	0.72	0.00	0.00	
19	0.00	0.00	0.00	10.04	5.72	18.60	37.40	5.00	8.96	0.60	0.00	0.00	
20	0.00	0.00	0.00	7.16	14.00	26.00	39.45	4.60	7.88	0.60	0.00	0.00	
21	0.00	0.00	0.00	3.60	20.20	28.80	41.55	8.96	6.80	0.56	0.00	0.00	
22	0.00	0.00	0.00	2.16	30.40	28.80	43.23	13.00	5.36	0.52	0.00	0.00	
23	0.00	0.00	0.00	2.04	41.55	28.80	43.86	16.60	4.80	0.52	0.00	0.00	
24	0.00	0.00	0.00	2.04	40.29	37.00	44.91	18.80	4.20	0.48	0.00	0.00	
25	0.00	0.00	0.00	1.80	37.40	47.22	44.70	21.00	3.80	0.44	0.00	0.00	
26	0.00	0.00	0.00	1.80	34.60	56.62	44.07	23.60	3.20	0.32	0.00	0.00	
27	0.00	0.00	0.00	1.56	26.00	61.41	42.60	26.60	3.00	0.24	0.00	0.00	
28	0.00	0.00	0.00	1.56	22.20	60.49	40.92	29.20	2.88	0.20	0.00	0.00	
29	0.00	0.00	0.00	1.32	21.60	57.28	38.00	31.20	2.76	0.16		0.00	
30	0.00	0.00	0.00	1.20	18.20	54.86	34.20	32.60	2.64	0.10		0.00	
31		0.00		0.96	12.60		30.20		2.28	0.04		0.00	
Total	0.00	0.00	0.00	119.56	350.80	726.88	1214.52	455.50	481.64	32.26	0.06	0.00	3381.22 CMSDAY
Mean	0.00	0.00	0.00	3.86	11.32	24.23	39.18	15.18	15.54	1.04	0.00	0.00	9.26 CMS
Max	0.00	0.00	0.00	24.20	41.55	61.41	52.47	32.60	35.60	2.40	0.04	0.00	61.41 CMS
Min	0.00	0.00	0.00	0.00	0.72	8.96	29.80	4.60	2.28	0.04	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	10.330	30.309	62.802	104.935	39.355	41.614	2.787	0.005	0.000	292.137 MCM

Momentary Peak 61.87 CMS, at 154.59 M (MSL), at 8.00 Hours, on Sep 27, 1998

Runoff Yield 1.84 Liters/Second/Square KM, Momentary Peak Yield 12.312 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

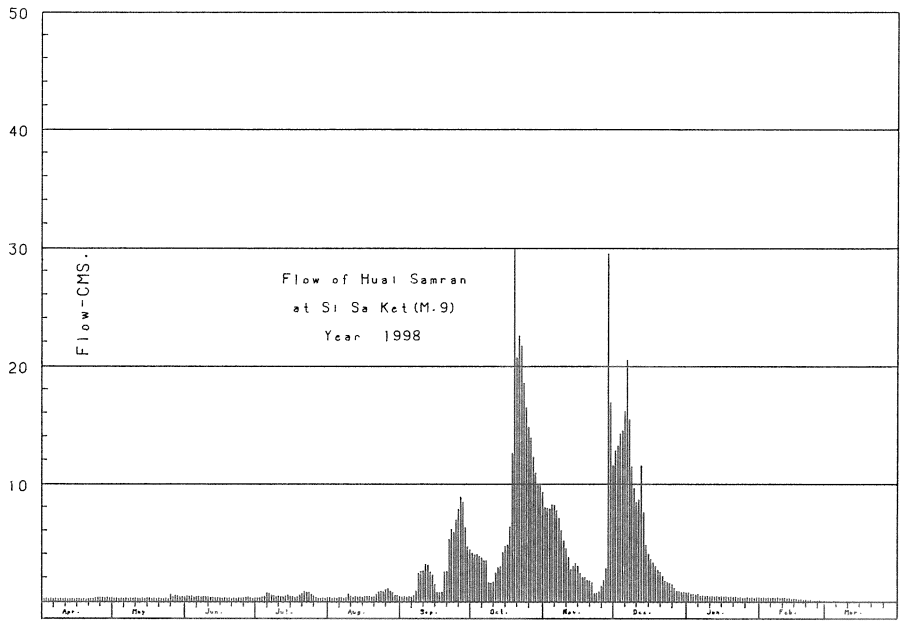
Huai Samran at Muang, Si Sa Ket (M.9)

Location	Lat. 15°-07'-00" N., Long. 104°-19'-20" E., on right bank at the bridge on highway, Amphoe Muang, Si Sa Ket.
Drainage Area	3,026 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+109.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the top staff gage.
Elevation	+122.055 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1954, 1972 - 1981, 1987 to date.
Rated by Float	-
Rated by Current Meter	1954, 1972 - 1981, 1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the Water Supply weir during Feb.11-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 68 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	109.11	109.16	109.33	109.14	109.17	109.27	110.44	110.91	111.29	109.60	109.18	109.67	
2	109.11	109.14	109.33	109.22	109.15	109.28	110.40	110.90	111.32	109.54	109.18	109.67	
3	109.11	109.13	109.34	109.24	109.13	109.27	110.42	110.90	111.38	109.49	109.18	109.39	
4	109.12	109.13	109.25	109.35	109.15	109.27	110.38	110.93	111.40	109.46	109.18	109.20	
5	109.11	109.13	109.27	109.62	109.23	109.28	110.36	110.93	111.50	109.49	109.18	109.14	
6	109.11	109.12	109.27	109.51	109.16	109.35	110.31	110.88	111.73	109.37	109.18	109.16	
7	109.11	109.13	109.27	109.42	109.15	109.79	110.30	110.82	111.46	109.36	109.18	109.26	
8	109.10	109.13	109.27	109.33	109.17	110.10	109.94	110.71	111.20	109.35	109.18	109.31	
9	109.10	109.14	109.24	109.28	109.54	110.12	109.92	110.63	111.06	109.33	109.18	109.37	
10	109.10	109.14	109.24	109.29	109.29	110.14	109.94	110.51	110.95	109.32	109.18	109.45	
11	109.10	109.14	109.22	109.27	109.26	110.24	110.10	110.37	110.97	109.30	109.25	109.50	
12	109.09	109.14	109.20	109.28	109.29	110.24	110.19	110.15	111.21	109.30	109.26	109.55	
13	109.09	109.13	109.19	109.30	109.28	110.11	110.20	110.22	110.87	109.29	109.30	109.61	
14	109.09	109.14	109.18	109.45	109.26	110.07	110.45	110.26	110.57	109.29	109.34	109.68	
15	109.09	109.13	109.18	109.32	109.24	109.90	110.55	110.22	110.43	109.30	109.40	109.69	
16	109.09	109.13	109.15	109.25	109.26	109.66	110.58	110.09	110.33	109.30	109.43	109.69	
17	109.09	109.13	109.16	109.22	109.33	109.59	110.74	110.03	110.28	109.29	109.43	109.68	
18	109.08	109.13	109.15	109.24	109.27	109.69	111.28	110.02	110.21	109.27	109.45	109.67	
19	109.09	109.11	109.15	109.44	109.28	110.11	112.16	109.98	110.16	109.28	109.48	109.69	
20	109.08	109.13	109.14	109.52	109.25	110.13	111.74	109.96	110.11	109.26	109.50	109.69	
21	109.09	109.14	109.14	109.73	109.45	110.64	111.83	109.93	110.05	109.24	109.53	109.67	
22	109.13	109.11	109.14	109.67	109.70	110.72	111.79	109.58	109.96	109.21	109.55	109.68	
23	109.16	109.13	109.14	109.61	109.72	110.70	111.63	109.54	109.95	109.21	109.58	109.74	
24	109.21	109.12	109.17	109.51	109.71	110.80	111.52	109.73	109.92	109.20	109.57	109.76	
25	109.21	109.49	109.15	109.31	109.81	110.89	111.42	109.88	109.91	109.20	109.57	109.74	
26	109.19	109.24	109.25	109.20	109.84	111.00	111.36	109.97	109.84	109.19	109.56	109.73	
27	109.18	109.37	109.27	109.16	109.78	110.95	111.26	110.18	109.77	109.19	109.59	109.73	
28	109.18	109.35	109.15	109.15	109.59	110.74	111.16	112.14	109.72	109.18	109.63	109.75	
29	109.18	109.25	109.14	109.14	109.43	110.54	111.08	111.54	109.68	109.18		109.74	
30	109.18	109.27	109.14	109.15	109.36	110.49	111.09	111.21	109.66	109.18		109.71	
31		109.28		109.15	109.27		111.03		109.65	109.18		109.74	
Mean	109.12	109.17	109.21	109.34	109.37	110.10	110.82	110.44	110.53	109.30	109.37	109.58	
Max	109.21	109.49	109.34	109.73	109.84	111.00	112.16	112.14	111.73	109.60	109.63	109.76	112.16
Min	109.08	109.11	109.14	109.14	109.13	109.27	109.92	109.54	109.65	109.18	109.18	109.14	109.08

Annual Max Momentary Gage Height 112.36 M (MSL), at 7.00 Hours, on Oct 19, 1998
Zero Gage at Bottom Elevation 109.00 M (MSL), River Bed 108.76 M (MSL)
Left Bank Elevation 121.55 M (MSL)
Right Bank Elevation 123.34 M (MSL), Drainage Area 3026 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.31	0.36	0.53	0.34	0.37	0.47	4.20	8.10	12.85	0.80	0.38	0.13	
2	0.31	0.34	0.53	0.42	0.35	0.48	4.00	8.00	13.32	0.74	0.38	0.12	
3	0.31	0.33	0.54	0.44	0.33	0.47	4.10	8.00	14.28	0.69	0.38	0.12	
4	0.32	0.33	0.45	0.55	0.35	0.47	3.90	8.30	14.60	0.66	0.38	0.11	
5	0.31	0.33	0.47	0.82	0.43	0.48	3.80	8.30	16.20	0.69	0.38	0.10	
6	0.31	0.32	0.47	0.71	0.36	0.55	3.55	7.80	20.60	0.57	0.38	0.10	
7	0.31	0.33	0.47	0.62	0.35	0.99	3.50	7.20	15.56	0.56	0.38	0.09	
8	0.30	0.33	0.47	0.53	0.37	2.50	1.70	6.10	11.50	0.55	0.38	0.08	
9	0.30	0.34	0.44	0.48	0.74	2.60	1.60	5.30	9.72	0.53	0.38	0.08	
10	0.30	0.34	0.44	0.49	0.49	2.70	1.70	4.55	8.50	0.52	0.38	0.08	
11	0.30	0.34	0.42	0.47	0.46	3.20	2.50	3.85	8.70	0.50	0.36	0.07	
12	0.29	0.34	0.40	0.48	0.49	3.20	2.95	2.75	11.65	0.50	0.34	0.07	
13	0.29	0.33	0.39	0.50	0.48	2.55	3.00	3.10	7.70	0.49	0.32	0.07	
14	0.29	0.34	0.38	0.65	0.46	2.35	4.25	3.30	4.85	0.49	0.30	0.06	
15	0.29	0.33	0.38	0.52	0.44	1.50	4.75	3.10	4.15	0.50	0.29	0.06	
16	0.29	0.33	0.35	0.45	0.46	0.86	4.90	2.45	3.65	0.50	0.27	0.06	
17	0.29	0.33	0.36	0.42	0.53	0.79	6.40	2.15	3.40	0.49	0.26	0.05	
18	0.28	0.33	0.35	0.44	0.47	0.89	12.70	2.10	3.05	0.47	0.24	0.05	
19	0.29	0.31	0.35	0.64	0.48	2.55	30.00	1.90	2.80	0.48	0.23	0.05	
20	0.28	0.33	0.34	0.72	0.45	2.65	20.80	1.80	2.55	0.46	0.22	0.05	
21	0.29	0.34	0.34	0.93	0.65	5.40	22.60	1.65	2.25	0.44	0.21	0.04	
22	0.33	0.31	0.34	0.87	0.90	6.20	21.80	0.78	1.80	0.41	0.19	0.04	
23	0.36	0.33	0.34	0.81	0.92	6.00	18.60	0.74	1.75	0.41	0.18	0.04	
24	0.41	0.32	0.37	0.71	0.91	7.00	16.56	0.93	1.60	0.40	0.17	0.04	
25	0.41	0.69	0.35	0.51	1.05	7.90	14.92	1.40	1.55	0.40	0.16	0.03	
26	0.39	0.44	0.45	0.40	1.20	9.00	13.96	1.85	1.20	0.39	0.15	0.03	
27	0.38	0.57	0.47	0.36	0.98	8.50	12.40	2.90	0.97	0.39	0.15	0.03	
28	0.38	0.55	0.35	0.35	0.79	6.40	10.98	29.50	0.92	0.38	0.14	0.03	
29	0.38	0.45	0.34	0.34	0.63	4.70	9.96	16.92	0.88	0.38		0.03	
30	0.38	0.47	0.34	0.35	0.56	4.45	10.08	11.65	0.86	0.38		0.03	
31		0.48		0.35	0.47		9.36		0.85	0.38		0.03	
Total	9.68	11.61	12.22	16.67	17.92	97.80	285.52	166.47	204.26	15.55	7.98	1.97	847.65 CMSDAY
Mean	0.32	0.37	0.41	0.54	0.58	3.26	9.21	5.55	6.59	0.50	0.29	0.06	2.32 CMS
Max	0.41	0.69	0.54	0.93	1.20	9.00	30.00	29.50	20.60	0.80	0.38	0.13	30.00 CMS
Min	0.28	0.31	0.34	0.34	0.33	0.47	1.60	0.74	0.85	0.38	0.14	0.03	0.03 CMS
Runoff	0.836	1.003	1.056	1.440	1.548	8.450	24.669	14.383	17.648	1.344	0.689	0.170	73.237 MCM

Momentary Peak 35.00 CMS, at 112.36 M (MSL), at 7.00 Hours, on Oct 19, 1998

Runoff Yield 0.77 Liters/Second/Square KM, Momentary Peak Yield 11.566 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

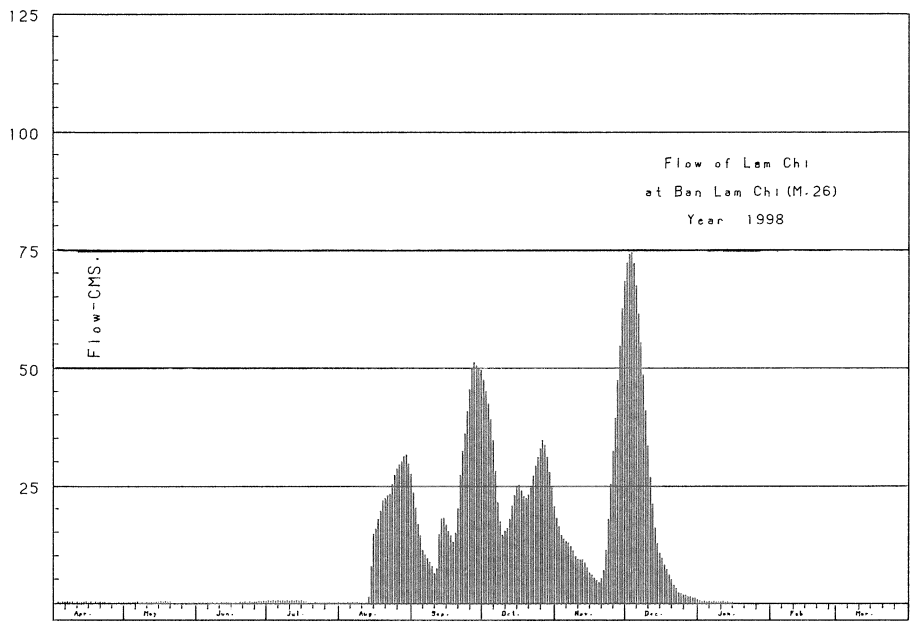
Lam Chi at Ban Lam Chi, Surin (M.26)

Location	Lat. 14°-54'-03" N., Long. 103°-24'-21" E., on left bank at railway bridge, Ban Lam Chi, Amphoe Muang, Surin.
Drainage Area	2,927 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+127.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the automatic gage building.
Elevation	+135.010 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1954 to date.
Rating Operation	
Period of Rating	1967-1968, 1978 to date.
Rated by Float	-
Rated by Current Meter	1967-1968, 1978 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by Muang Ling weir about 500 meters downstream from the gage site. Stage-discharge relation defined by 21 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	127.58	127.54	127.51	127.71	127.56	130.42	131.88	130.04	133.17	127.75	127.46	127.45	
2	127.59	127.54	127.53	127.73	127.56	130.19	131.74	129.89	133.26	127.71	127.46	127.45	
3	127.60	127.54	127.52	127.74	127.57	129.94	131.60	129.75	133.27	127.69	127.46	127.46	
4	127.61	127.55	127.53	127.74	127.57	129.73	131.41	129.67	133.16	127.66	127.45	127.46	
5	127.61	127.58	127.54	127.75	127.57	129.48	131.14	129.64	132.93	127.67	127.45	127.47	
6	127.61	127.58	127.54	127.75	127.57	129.38	130.72	129.60	132.63	127.67	127.44	127.47	
7	127.61	127.58	127.54	127.75	127.57	129.31	130.28	129.55	132.30	127.66	127.44	127.48	
8	127.60	127.56	127.54	127.75	127.56	129.21	129.97	129.46	131.94	127.66	127.44	127.46	
9	127.60	127.56	127.55	127.74	127.57	129.11	129.75	129.36	131.52	127.67	127.45	127.44	
10	127.61	127.57	127.56	127.74	127.57	128.95	129.82	129.28	131.06	127.68	127.46	127.44	
11	127.61	127.58	127.56	127.74	127.50	129.07	129.86	129.28	130.64	127.67	127.46	127.44	
12	127.62	127.58	127.56	127.75	127.50	129.75	130.02	129.27	130.25	127.64	127.46	127.43	
13	127.62	127.58	127.55	127.75	128.04	130.02	130.22	129.21	129.88	127.61	127.47	127.41	
14	127.62	127.58	127.54	127.76	129.12	130.04	130.38	129.08	129.59	127.61	127.47	127.40	
15	127.62	127.65	127.54	127.76	129.76	129.93	130.50	128.97	129.43	127.55	127.47	127.41	
16	127.61	127.65	127.54	127.71	129.86	129.81	130.52	128.91	129.31	127.55	127.46	127.41	
17	127.60	127.65	127.55	127.64	130.01	129.73	130.45	128.85	129.16	127.55	127.46	127.42	
18	127.61	127.65	127.55	127.54	130.15	129.63	130.36	128.78	129.04	127.49	127.46	127.42	
19	127.61	127.65	127.56	127.51	130.30	129.79	130.34	128.74	128.92	127.48	127.47	127.42	
20	127.61	127.65	127.63	127.52	130.34	130.18	130.38	128.82	128.80	127.51	127.47	127.42	
21	127.61	127.50	127.62	127.56	130.37	130.67	130.49	129.03	128.67	127.50	127.48	127.42	
22	127.55	127.43	127.62	127.62	130.40	130.99	130.65	129.47	128.51	127.49	127.47	127.50	
23	127.51	127.42	127.62	127.60	130.53	131.23	130.80	130.02	128.34	127.47	127.47	127.49	
24	127.51	127.42	127.62	127.56	130.67	131.50	130.91	130.53	128.29	127.46	127.48	127.53	
25	127.52	127.42	127.65	127.56	130.76	131.77	131.03	131.00	128.23	127.45	127.48	127.51	
26	127.52	127.42	127.65	127.56	130.81	132.01	131.13	131.42	128.17	127.44	127.48	127.48	
27	127.53	127.44	127.68	127.56	130.86	132.08	131.07	131.87	128.10	127.44	127.48	127.48	
28	127.54	127.46	127.68	127.56	130.92	132.05	130.92	132.27	128.05	127.43	127.48	127.48	
29	127.54	127.50	127.67	127.56	130.95	132.00	130.71	132.68	128.02	127.45		127.50	
30	127.55	127.53	127.70	127.56	130.82	131.99	130.48	132.97	127.96	127.46		127.50	
31		127.51		127.56	130.68		130.21		127.88	127.46		127.48	
Mean	127.58	127.54	127.58	127.66	129.23	130.33	130.64	129.91	130.02	127.57	127.46	127.46	
Max	127.62	127.65	127.70	127.76	130.95	132.08	131.88	132.97	133.27	127.75	127.48	127.53	133.27
Min	127.51	127.42	127.51	127.51	127.50	128.95	129.75	128.74	127.88	127.43	127.44	127.40	127.40

Annual Max Momentary Gage Height 133.28 M (MSL), at 24.00 Hours, on Dec 2, 1998
Zero Gage at Bottom Elevation 127.00 M (MSL), River Bed 127.03 M (MSL)
Left Bank Elevation 135.57 M (MSL)
Right Bank Elevation 135.35 M (MSL), Drainage Area 2927 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.36	0.28	0.22	0.62	0.32	23.70	47.64	18.32	72.40	0.70	0.12	0.10	
2	0.38	0.28	0.26	0.66	0.32	20.36	45.12	16.38	74.26	0.62	0.12	0.10	
3	0.40	0.28	0.24	0.68	0.34	17.02	42.60	14.70	74.47	0.58	0.12	0.12	
4	0.42	0.30	0.26	0.68	0.34	14.46	39.18	13.74	72.20	0.52	0.10	0.12	
5	0.42	0.36	0.28	0.70	0.34	11.46	34.84	13.38	67.60	0.54	0.10	0.14	
6	0.42	0.36	0.28	0.70	0.34	10.32	28.20	12.90	61.67	0.54	0.08	0.14	
7	0.42	0.36	0.28	0.70	0.34	9.69	21.62	12.30	55.40	0.52	0.08	0.16	
8	0.40	0.32	0.28	0.70	0.32	8.79	17.41	11.22	48.72	0.52	0.08	0.12	
9	0.40	0.32	0.30	0.68	0.34	7.89	14.70	10.14	41.16	0.54	0.10	0.08	
10	0.42	0.34	0.32	0.68	0.34	6.45	15.54	9.42	33.56	0.56	0.12	0.08	
11	0.42	0.36	0.32	0.68	0.20	7.53	16.02	9.42	27.00	0.54	0.12	0.08	
12	0.44	0.36	0.32	0.70	0.20	14.70	18.06	9.33	21.20	0.48	0.12	0.06	
13	0.44	0.36	0.30	0.70	1.42	18.06	20.78	8.79	16.26	0.42	0.14	0.02	
14	0.44	0.36	0.28	0.72	7.98	18.32	23.10	7.62	12.78	0.42	0.14	0.00	
15	0.44	0.50	0.28	0.72	14.82	16.89	24.90	6.63	10.86	0.30	0.14	0.02	
16	0.42	0.50	0.28	0.62	16.02	15.42	25.20	6.09	9.69	0.30	0.12	0.02	
17	0.40	0.50	0.30	0.48	17.93	14.46	24.15	5.55	8.34	0.30	0.12	0.04	
18	0.42	0.50	0.30	0.28	19.80	13.26	22.80	4.92	7.26	0.18	0.12	0.04	
19	0.42	0.50	0.32	0.22	21.90	15.18	22.50	4.56	6.18	0.16	0.14	0.04	
20	0.42	0.50	0.46	0.24	22.50	20.22	23.10	5.28	5.10	0.22	0.14	0.04	
21	0.42	0.20	0.44	0.32	22.95	27.45	24.75	7.17	4.05	0.20	0.16	0.04	
22	0.30	0.06	0.44	0.44	23.40	32.44	27.15	11.34	3.25	0.18	0.14	0.20	
23	0.22	0.04	0.44	0.40	25.35	36.28	29.40	18.06	2.40	0.14	0.14	0.18	
24	0.22	0.04	0.44	0.32	27.45	40.80	31.16	25.35	2.17	0.12	0.16	0.26	
25	0.24	0.04	0.50	0.32	28.80	45.66	33.08	32.60	1.99	0.10	0.16	0.22	
26	0.24	0.04	0.50	0.32	29.56	49.98	34.68	39.36	1.81	0.08	0.16	0.16	
27	0.26	0.08	0.56	0.32	30.36	51.24	33.72	47.46	1.60	0.08	0.16	0.16	
28	0.28	0.12	0.56	0.32	31.32	50.70	31.32	54.83	1.45	0.06	0.16	0.16	
29	0.28	0.20	0.54	0.32	31.80	49.80	28.05	62.62	1.36	0.10		0.20	
30	0.30	0.26	0.60	0.32	29.72	49.62	24.60	68.40	1.18	0.12		0.20	
31		0.22		0.32	27.60		20.64		0.96	0.12		0.16	
Total	11.06	8.94	10.90	15.88	434.42	718.15	846.01	567.88	748.33	10.26	3.56	3.46	3378.85 CMSDAY
Mean	0.37	0.29	0.36	0.51	14.01	23.94	27.29	18.93	24.14	0.33	0.13	0.11	9.26 CMS
Max	0.44	0.50	0.60	0.72	31.80	51.24	47.64	68.40	74.47	0.70	0.16	0.26	74.47 CMS
Min	0.22	0.04	0.22	0.22	0.20	6.45	14.70	4.56	0.96	0.06	0.08	0.00	0.00 CMS
Runoff	0.956	0.772	0.942	1.372	37.534	62.048	73.095	49.065	64.656	0.886	0.308	0.299	291.933 MCM

Momentary Peak 74.68 CMS, at 133.28 M (MSL), at 24.00 Hours, on Dec 2, 1998

Runoff Yield 3.16 Liters/Second/Square KM, Momentary Peak Yield 25.514 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

Lam Se Bai at Ban Kaeng, Yasothorn (M.32A)

Location — Lat. 15°-54'-05" N., Long. 104°-28'-20" E., on right bank about 9 kilometers upstream from Phawaphutanon Bridge. Amphoe Pa Tiu, Yasothorn.

Drainage Area — 1,535 sq.km.

Type of Gage — Water-stage recorder.

Zero Gage at Bottom — +120.29 m.(M.S.L.)

Bench Mark — B.M.-H.D.

Location — On right bank about 5.00 meters from the top staff gage.

Elevation — +127.626 m.(M.S.L.)

Gage Reading Frequency — Recording.

Basis of Mean Daily Gage Height — Arithmetic mean of 24 readingss.

Period of Available Gage Records — 1968-1974, 1997 to date.

Rating Operation

Period of Rating — 1968-1969, 1997 to date.

Rated by Float — -

Rated by Current Meter — 1968-1969, 1997 to date.

Stability of Channel Regimes — Stable because of backwater effect.

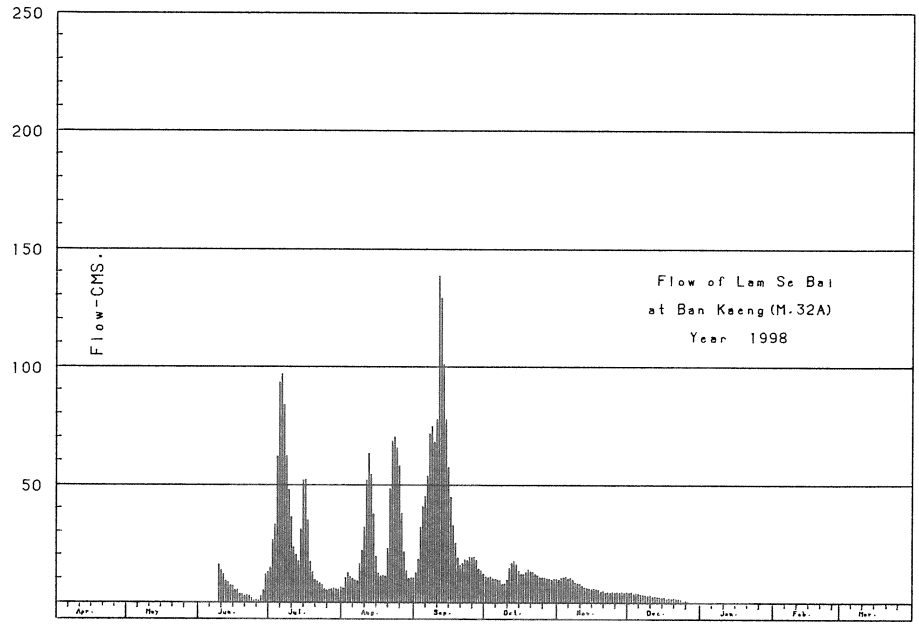
Overbank Flow Conditions — No overbank flow.

General Description — Records fair. The concrete weir situated about 3 kilometers downstream from the gage site. Stage-discharge relation defined by 22 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	122.79	122.60	122.39	123.92	123.75	123.88	123.84	123.82	123.71	123.52	123.11	122.67	
2	122.76	122.58	122.41	124.11	123.83	123.98	123.84	123.83	123.71	123.52	123.10	122.63	
3	122.76	122.56	122.41	124.22	123.88	124.20	123.84	123.84	123.70	123.51	123.08	122.58	
4	122.76	122.55	122.40	124.69	123.84	124.35	123.83	123.84	123.70	123.50	123.06	122.54	
5	122.76	122.53	122.44	125.11	123.83	124.42	123.82	123.83	123.70	123.49	123.04	122.51	
6	122.76	122.50	122.55	125.15	123.81	124.56	123.82	123.83	123.69	123.48	123.03	122.49	
7	122.76	122.46	122.69	124.99	123.81	124.83	123.81	123.82	123.69	123.47	123.02	122.47	
8	122.76	122.40	123.29	124.69	123.94	124.87	123.78	123.79	123.68	123.46	123.01	122.45	
9	122.76	122.39	123.94	124.47	124.04	124.78	123.78	123.79	123.68	123.45	122.98	122.43	
10	122.76	122.39	123.90	124.28	124.20	124.91	123.82	123.78	123.68	123.44	122.97	122.41	
11	122.76	122.39	123.86	124.06	124.53	125.65	123.91	123.77	123.67	123.41	122.95	122.39	
12	122.76	122.39	123.81	124.01	124.71	125.55	123.95	123.75	123.67	123.40	122.92	122.38	
13	122.77	122.39	123.79	123.96	124.57	125.20	123.96	123.75	123.67	123.39	122.91	122.36	
14	122.77	122.39	123.77	124.19	124.30	124.91	123.94	123.74	123.66	123.38	122.89	122.35	
15	122.77	122.39	123.76	124.53	124.00	124.62	123.89	123.74	123.66	123.36	122.87	122.32	
16	122.77	122.37	123.73	124.54	123.87	124.42	123.87	123.74	123.66	123.35	122.85	122.30	
17	122.76	122.37	123.73	124.25	123.85	124.22	123.86	123.74	123.65	123.33	122.84	122.27	
18	122.76	122.37	123.70	123.96	123.85	124.09	123.88	123.73	123.65	123.30	122.82	122.24	
19	122.75	122.37	123.69	123.88	123.85	123.99	123.90	123.72	123.65	123.29	122.81	122.23	
20	122.75	122.36	123.68	123.82	124.05	123.93	123.89	123.72	123.65	123.27	122.81	122.21	
21	122.75	122.33	123.68	123.80	124.48	123.95	123.88	123.71	123.65	123.26	122.81	122.19	
22	122.75	122.30	123.68	123.79	124.78	123.97	123.87	123.71	123.64	123.25	122.80	122.28	
23	122.73	122.32	123.65	123.77	124.81	123.97	123.85	123.71	123.64	123.23	122.79	122.32	
24	122.72	122.34	123.63	123.74	124.74	123.99	123.84	123.71	123.63	123.21	122.78	122.32	
25	122.72	122.34	123.63	123.73	124.63	123.99	123.84	123.71	123.63	123.21	122.77	122.32	
26	122.72	122.34	123.63	123.73	124.30	123.99	123.83	123.71	123.61	123.19	122.74	122.33	
27	122.70	122.34	123.67	123.74	124.03	123.97	123.83	123.71	123.59	123.18	122.72	122.33	
28	122.69	122.35	123.73	123.74	123.89	123.91	123.82	123.71	123.58	123.17	122.70	122.36	
29	122.67	122.39	123.86	123.74	123.83	123.89	123.82	123.71	123.58	123.15		122.39	
30	122.65	122.39	123.88	123.73	123.83	123.87	123.82	123.71	123.57	123.13		122.42	
31		122.39		123.75	123.83		123.82		123.54	123.12		122.41	
Mean	122.74	122.41	123.43	124.13	124.12	124.36	123.85	123.76	123.65	123.34	122.90	122.38	
Max	122.79	122.60	123.94	125.15	124.81	125.65	123.96	123.84	123.71	123.52	123.11	122.67	125.65
Min	122.65	122.30	122.39	123.73	123.75	123.87	123.78	123.71	123.54	123.12	122.70	122.19	122.19

Annual Max Momentary Gage Height 125.76 M (MSL), at 15.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 120.29 M (MSL), River Bed 117.45 M (MSL)
Left Bank Elevation 126.29 M (MSL)
Right Bank Elevation 126.10 M (MSL), Drainage Area 1535 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	15.20	6.50	13.00	11.00	10.00	4.50	0.00	0.00	0.00	
2	0.00	0.00	0.00	26.60	10.50	18.80	11.00	10.50	4.50	0.00	0.00	0.00	
3	0.00	0.00	0.00	33.20	13.00	32.00	11.00	11.00	4.00	0.00	0.00	0.00	
4	0.00	0.00	0.00	62.35	11.00	41.00	10.50	11.00	4.00	0.00	0.00	0.00	
5	0.00	0.00	0.00	93.80	10.50	45.20	10.00	10.50	4.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	97.00	9.50	53.90	10.00	10.50	3.60	0.00	0.00	0.00	
7	0.00	0.00	0.00	84.20	9.50	72.10	9.50	10.00	3.60	0.00	0.00	0.00	
8	0.00	0.00	0.00	62.35	16.40	74.90	8.00	8.50	3.20	0.00	0.00	0.00	
9	0.00	0.00	16.40	48.20	22.40	68.60	8.00	8.50	3.20	0.00	0.00	0.00	
10	0.00	0.00	14.00	36.80	32.00	77.80	10.00	8.00	3.20	0.00	0.00	0.00	
11	0.00	0.00	12.00	23.60	51.95	138.50	14.60	7.50	2.80	0.00	0.00	0.00	
12	0.00	0.00	9.50	20.60	63.70	129.50	17.00	6.50	2.80	0.00	0.00	0.00	
13	0.00	0.00	8.50	17.60	54.55	101.00	17.60	6.50	2.80	0.00	0.00	0.00	
14	0.00	0.00	7.50	31.40	38.00	77.80	16.40	6.00	2.40	0.00	0.00	0.00	
15	0.00	0.00	7.00	51.95	20.00	57.80	13.50	6.00	2.40	0.00	0.00	0.00	
16	0.00	0.00	5.50	52.60	12.50	45.20	12.50	6.00	2.40	0.00	0.00	0.00	
17	0.00	0.00	5.50	35.00	11.50	33.20	12.00	6.00	2.00	0.00	0.00	0.00	
18	0.00	0.00	4.00	17.60	11.50	25.40	13.00	5.50	2.00	0.00	0.00	0.00	
19	0.00	0.00	3.60	13.00	11.50	19.40	14.00	5.00	2.00	0.00	0.00	0.00	
20	0.00	0.00	3.20	10.00	23.00	15.80	13.50	5.00	2.00	0.00	0.00	0.00	
21	0.00	0.00	3.20	9.00	48.80	17.00	13.00	4.50	2.00	0.00	0.00	0.00	
22	0.00	0.00	3.20	8.50	68.60	18.20	12.50	4.50	1.60	0.00	0.00	0.00	
23	0.00	0.00	2.00	7.50	70.70	18.20	11.50	4.50	1.60	0.00	0.00	0.00	
24	0.00	0.00	1.20	6.00	65.80	19.40	11.00	4.50	1.20	0.00	0.00	0.00	
25	0.00	0.00	1.20	5.50	58.45	19.40	11.00	4.50	1.20	0.00	0.00	0.00	
26	0.00	0.00	1.20	5.50	38.00	19.40	10.50	4.50	0.40	0.00	0.00	0.00	
27	0.00	0.00	2.80	6.00	21.80	18.20	10.50	4.50	0.00	0.00	0.00	0.00	
28	0.00	0.00	5.50	6.00	13.50	14.60	10.00	4.50	0.00	0.00	0.00	0.00	
29	0.00	0.00	12.00	6.00	10.50	13.50	10.00	4.50	0.00	0.00		0.00	
30	0.00	0.00	13.00	5.50	10.50	12.50	10.00	4.50	0.00	0.00		0.00	
31		0.00		6.50	10.50		10.00		0.00	0.00		0.00	
Total	0.00	0.00	142.00	905.05	856.65	1311.30	363.10	203.50	69.40	0.00	0.00	0.00	3851.00 CMSDAY
Mean	0.00	0.00	4.73	29.20	27.63	43.71	11.71	6.78	2.24	0.00	0.00	0.00	10.55 CMS
Max	0.00	0.00	16.40	97.00	70.70	138.50	17.60	11.00	4.50	0.00	0.00	0.00	138.50 CMS
Min	0.00	0.00	0.00	5.50	6.50	12.50	8.00	4.50	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	12.269	78.196	74.015	113.296	31.372	17.582	5.996	0.000	0.000	0.000	332.726 MCM

Momentary Peak 148.40 CMS, at 125.76 M (MSL), at 15.00 Hours, on Sep 11, 1998

Runoff Yield 6.87 Liters/Second/Square KM, Momentary Peak Yield 96.678 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

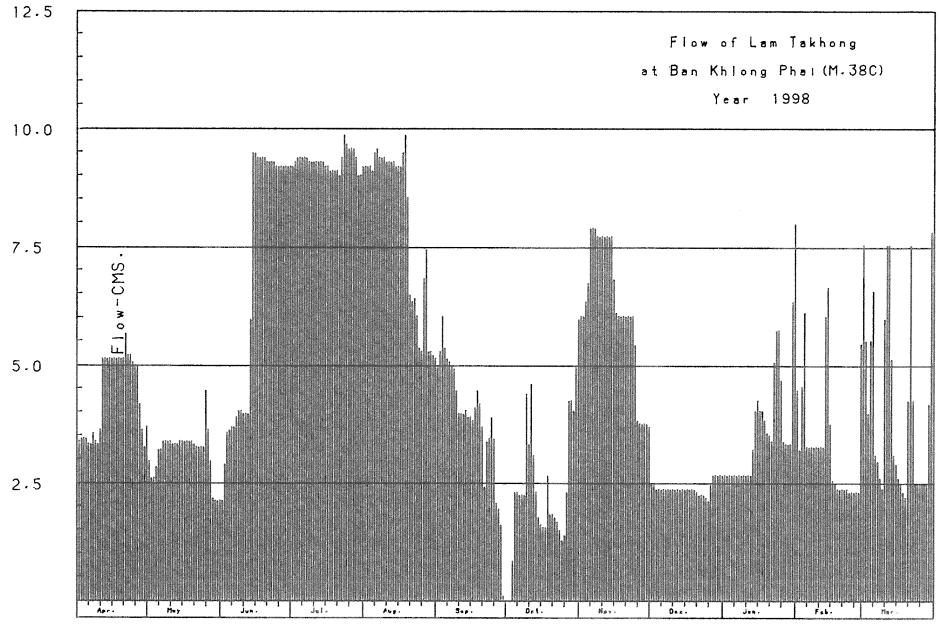
Lam Takhong at Ban Khlong Phai, Nakhon Ratchasima (M.38C)

Location	Lat. 14°-52'-06" N., Long. 101°-33'-53" E., on left bank about 500 meters downstream from Lam Takhong Dam, Amphoe Sikhiu, Nakhon Ratchasima.
Drainage Area	1,292 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+242.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 20 meters from the measuring line.
Elevation	+251.841 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1962 to date.
Rating Operation	
Period of Rating	1962-1965, 1967 - 1974, 1979 - 1981, 1983 to date.
Rated by Float	-
Rated by Current Meter	1962-1965, 1967 - 1974, 1979 - 1981, 1983 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Lam Takhong Dam Reservoir. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	244.75	244.68	244.54	245.48	245.48	244.98	244.10	245.12	244.60	244.63	244.91	245.30	
2	244.76	244.62	244.67	245.49	245.48	245.02	244.10	245.12	244.60	244.63	244.72	245.05	
3	244.76	244.62	244.78	245.50	245.48	245.12	244.30	245.16	244.58	244.63	244.92	244.84	
4	244.76	244.66	244.79	245.50	245.47	245.03	244.57	245.21	244.58	244.63	245.13	245.05	
5	244.74	244.72	244.80	245.50	245.51	245.00	244.57	245.34	244.58	244.63	244.73	245.19	
6	244.74	244.72	244.80	245.50	245.52	244.99	244.56	245.34	244.58	244.63	244.73	244.70	
7	244.78	244.75	244.83	245.50	245.50	244.98	244.56	245.34	244.58	244.63	244.73	244.68	
8	244.75	244.75	244.85	245.49	245.50	244.97	244.56	245.32	244.58	244.63	244.73	244.62	
9	244.74	244.75	244.85	245.49	245.50	244.91	244.90	245.32	244.58	244.63	244.73	244.58	
10	244.79	244.75	244.84	245.49	245.49	244.84	244.74	245.32	244.58	244.63	244.73	245.11	
11	245.00	244.74	244.84	245.49	245.49	244.84	244.93	245.32	244.58	244.63	244.73	245.30	
12	245.00	244.74	244.84	245.49	245.49	244.84	244.70	245.32	244.58	244.63	244.73	245.30	
13	245.00	244.74	245.11	245.49	245.49	244.85	244.57	245.32	244.58	244.72	245.12	245.00	
14	245.00	244.75	245.51	245.49	245.48	244.83	244.48	245.32	244.58	244.85	245.20	244.70	
15	245.00	244.75	245.51	245.48	245.48	244.83	244.45	245.22	244.58	244.88	244.81	244.67	
16	245.00	244.75	245.50	245.48	245.48	244.82	244.44	245.13	244.58	244.85	244.61	244.62	
17	245.00	244.75	245.50	245.47	245.51	244.86	244.44	245.12	244.58	244.85	244.60	244.60	
18	245.00	244.75	245.50	245.47	245.55	244.91	244.63	245.12	244.58	244.82	244.58	244.57	
19	245.00	244.75	245.50	245.47	245.41	244.87	244.49	245.12	244.58	244.78	244.58	244.55	
20	245.00	244.74	245.49	245.47	245.18	244.80	244.49	245.12	244.57	244.77	244.58	244.88	
21	245.07	244.73	245.49	245.46	245.16	244.59	244.48	245.12	244.56	244.75	244.58	245.30	
22	245.01	244.73	245.49	245.50	245.17	244.75	244.46	245.12	244.56	244.99	244.58	244.88	
23	245.01	244.73	245.49	245.55	245.12	244.76	244.43	245.12	244.56	245.08	244.57	244.60	
24	244.99	244.73	245.48	245.53	245.03	244.83	244.39	245.04	244.55	245.08	244.57	244.60	
25	244.98	244.91	245.48	245.52	245.02	244.76	244.41	244.82	244.54	244.94	244.57	244.60	
26	244.98	244.79	245.48	245.52	245.22	244.53	244.57	244.81	244.60	244.75	244.57	244.60	
27	244.87	244.68	245.48	245.52	245.29	244.51	244.88	244.81	244.63	244.74	244.57	244.60	
28	244.79	244.55	245.48	245.50	245.02	244.45	244.88	244.81	244.63	244.74	245.04	244.60	
29	244.73	244.54	245.48	245.46	245.02	244.13	244.85	244.81	244.63	244.74		244.87	
30	244.80	244.54	245.48	245.46	245.01	244.10	244.98	244.80	244.63	245.16		245.33	
31		244.54		245.48	245.00		245.11		244.63	245.35		245.27	
Mean	244.89	244.71	245.20	245.49	245.34	244.79	244.58	245.13	244.59	244.79	244.74	244.86	
Max	245.07	244.91	245.51	245.55	245.55	245.12	245.11	245.34	244.63	245.35	245.20	245.33	245.55
Min	244.73	244.54	244.54	245.46	245.00	244.10	244.10	244.80	244.54	244.63	244.57	244.55	244.10

Annual Max Momentary Gage Height 246.80 M (MSL), at 3.00 Hours, on oct 9, 1998
Zero Gage at Bottom Elevation 242.00 M (MSL), River Bed 243.48 M (MSL)
Left Bank Elevation 251.58 M (MSL)
Right Bank Elevation 252.24 M (MSL), Drainage Area 1292 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.40	2.98	2.14	9.21	9.21	5.00	0.00	6.05	2.50	2.68	4.48	7.55	
2	3.46	2.62	2.92	9.31	9.21	5.30	0.00	6.05	2.50	2.68	3.22	5.53	
3	3.46	2.62	3.58	9.40	9.21	6.05	0.85	6.35	2.38	2.68	4.55	3.98	
4	3.46	2.86	3.64	9.40	9.12	5.38	2.32	6.74	2.38	2.68	6.13	5.53	
5	3.34	3.22	3.70	9.40	9.49	5.15	2.32	7.91	2.38	2.68	3.28	6.58	
6	3.34	3.22	3.70	9.40	9.59	5.08	2.26	7.91	2.38	2.68	3.28	3.10	
7	3.58	3.40	3.91	9.40	9.40	5.00	2.26	7.91	2.38	2.68	3.28	2.98	
8	3.40	3.40	4.05	9.31	9.40	4.93	2.26	7.73	2.38	2.68	3.28	2.62	
9	3.34	3.40	4.05	9.31	9.40	4.48	4.40	7.73	2.38	2.68	3.28	2.38	
10	3.64	3.40	3.98	9.31	9.31	3.98	3.34	7.73	2.38	2.68	3.28	5.98	
11	5.15	3.34	3.98	9.31	9.31	3.98	4.62	7.73	2.38	2.68	3.28	7.55	
12	5.15	3.34	3.98	9.31	9.31	3.98	3.10	7.73	2.38	2.68	3.28	7.55	
13	5.15	3.34	5.98	9.31	9.31	4.05	2.32	7.73	2.38	3.22	6.05	5.15	
14	5.15	3.40	9.49	9.31	9.21	3.91	1.79	7.73	2.38	4.05	6.65	3.10	
15	5.15	3.40	9.49	9.21	9.21	3.91	1.63	6.83	2.38	4.26	3.77	2.92	
16	5.15	3.40	9.40	9.21	9.21	3.84	1.57	6.13	2.38	4.05	2.56	2.62	
17	5.15	3.40	9.40	9.12	9.49	4.12	1.57	6.05	2.38	4.05	2.50	2.50	
18	5.15	3.40	9.40	9.12	9.88	4.48	2.68	6.05	2.38	3.84	2.38	2.32	
19	5.15	3.40	9.40	9.12	8.55	4.19	1.85	6.05	2.38	3.58	2.38	2.20	
20	5.15	3.34	9.31	9.12	6.50	3.70	1.85	6.05	2.32	3.52	2.38	4.26	
21	5.68	3.28	9.31	9.02	6.35	2.44	1.79	6.05	2.26	3.40	2.38	7.55	
22	5.22	3.28	9.31	9.40	6.43	3.40	1.68	6.05	2.26	5.08	2.38	4.26	
23	5.22	3.28	9.31	9.88	6.05	3.46	1.51	6.05	2.26	5.75	2.32	2.50	
24	5.08	3.28	9.21	9.68	5.38	3.91	1.30	5.45	2.20	5.75	2.32	2.50	
25	5.00	4.48	9.21	9.59	5.30	3.46	1.41	3.84	2.14	4.70	2.32	2.50	
26	5.00	3.64	9.21	9.59	6.83	2.08	2.32	3.77	2.50	3.40	2.32	2.50	
27	4.19	2.98	9.21	9.59	7.46	1.96	4.26	3.77	2.68	3.34	2.32	2.50	
28	3.64	2.20	9.21	9.40	5.30	1.63	4.26	3.77	2.68	3.34	5.45	2.50	
29	3.28	2.14	9.21	9.02	5.30	0.12	4.05	3.77	2.68	3.34		4.19	
30	3.70	2.14	9.21	9.02	5.22	0.00	5.00	3.70	2.68	6.35		7.82	
31		2.14		9.21	5.15		5.98		2.68	8.00		7.28	
Total	131.93	97.72	207.90	288.99	248.09	112.97	76.55	186.41	74.80	115.18	95.10	132.50	1768.14 CMSDAY
Mean	4.40	3.15	6.93	9.32	8.00	3.77	2.47	6.21	2.41	3.72	3.40	4.27	4.84 CMS
Max	5.68	4.48	9.49	9.88	9.88	6.05	5.98	7.91	2.68	8.00	6.65	7.82	9.88 CMS
Min	3.28	2.14	2.14	9.02	5.15	0.00	0.00	3.70	2.14	2.68	2.32	2.20	0.00 CMS
Runoff	11.399	8.443	17.963	24.969	21.435	9.761	6.614	16.106	6.463	9.952	8.217	11.448	152.767 MCM

Momentary Peak 24.50 CMS, at 246.80 M (MSL), at 3.00 Hours, on oct 9, 1998

Runoff Yield 3.75 Liters/Second/Square KM, Momentary Peak Yield 18.963 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

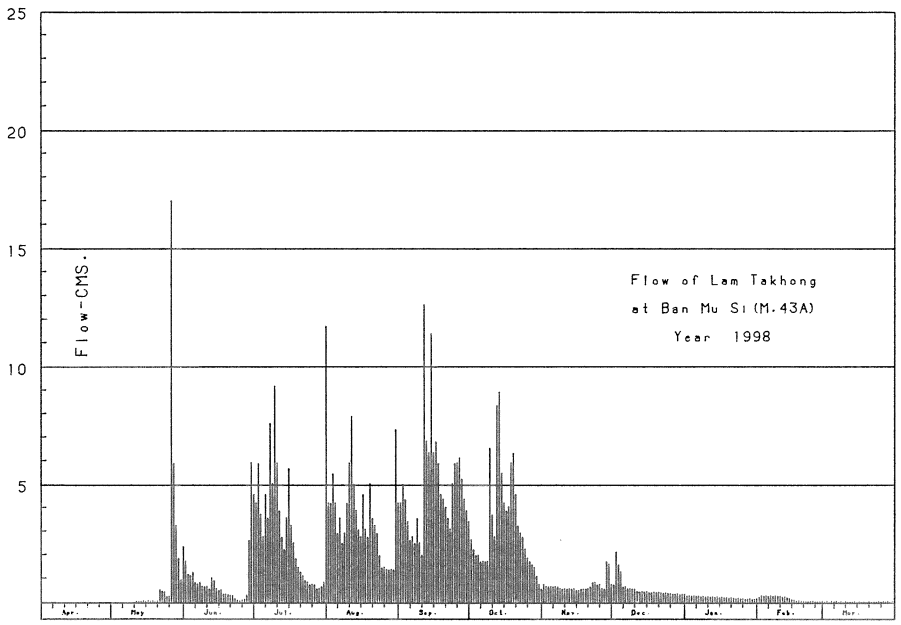
Lam Takhong at Ban Tha Maprang, Nakhon Ratchasima (M.43A)

Location	Lat. 14°-30'-43" N., Long. 101°-22'-49" E., on left bank about 2 kilometers downstream from M.43, Amphoe Pak Chong, Nakhon Ratchasima.
Drainage Area	237 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream at the footpath of the bridge.
Elevation	+6.135 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1989 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The weir situated above gage site. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.68	-0.70	-0.18	-0.01	-0.01	-0.01	-0.11	-0.28	-0.28	-0.40	-0.42	-0.55	
2	-0.68	-0.70	-0.23	0.07	-0.01	0.03	-0.14	-0.29	-0.15	-0.40	-0.40	-0.55	
3	-0.68	-0.70	-0.24	-0.04	0.05	0.00	-0.16	-0.29	-0.19	-0.40	-0.40	-0.55	
4	-0.68	-0.70	-0.22	-0.10	-0.01	-0.06	-0.16	-0.29	-0.22	-0.40	-0.40	-0.56	
5	-0.68	-0.70	-0.27	0.01	-0.09	-0.11	-0.18	-0.29	-0.29	-0.40	-0.40	-0.56	
6	-0.66	-0.70	-0.28	-0.05	-0.05	-0.10	-0.18	-0.29	-0.29	-0.41	-0.40	-0.56	
7	-0.67	-0.70	-0.27	0.14	-0.12	-0.12	-0.18	-0.29	-0.30	-0.41	-0.40	-0.56	
8	-0.69	-0.70	-0.29	0.03	-0.09	-0.05	-0.18	-0.30	-0.30	-0.41	-0.40	-0.56	
9	-0.65	-0.70	-0.29	0.20	-0.01	-0.12	0.10	-0.30	-0.30	-0.42	-0.40	-0.56	
10	-0.70	-0.70	-0.29	0.07	0.07	-0.16	-0.04	-0.30	-0.31	-0.42	-0.41	-0.56	
11	-0.70	-0.52	-0.30	-0.03	0.15	0.31	-0.10	-0.30	-0.33	-0.42	-0.42	-0.56	
12	-0.70	-0.52	-0.25	-0.10	0.03	0.11	0.17	-0.30	-0.34	-0.42	-0.42	-0.56	
13	-0.70	-0.53	-0.26	-0.14	-0.03	0.09	0.19	-0.30	-0.34	-0.42	-0.43	-0.56	
14	-0.70	-0.53	-0.30	-0.05	-0.08	0.27	0.05	-0.30	-0.34	-0.42	-0.46	-0.56	
15	-0.70	-0.53	-0.32	0.06	-0.10	0.09	-0.01	-0.32	-0.34	-0.43	-0.47	-0.56	
16	-0.70	-0.53	-0.32	-0.07	0.01	0.11	-0.03	-0.33	-0.35	-0.43	-0.49	-0.56	
17	-0.70	-0.53	-0.37	-0.12	-0.08	0.07	-0.02	-0.30	-0.35	-0.43	-0.50	-0.56	
18	-0.70	-0.55	-0.38	-0.17	-0.10	0.01	0.07	-0.31	-0.35	-0.44	-0.50	-0.56	
19	-0.70	-0.55	-0.38	-0.20	0.03	0.00	0.09	-0.30	-0.35	-0.44	-0.50	-0.56	
20	-0.70	-0.52	-0.40	-0.22	-0.05	-0.02	0.01	-0.30	-0.35	-0.44	-0.51	-0.56	
21	-0.70	-0.31	-0.40	-0.24	-0.07	-0.05	-0.07	-0.29	-0.36	-0.45	-0.52	-0.56	
22	-0.70	-0.33	-0.45	-0.26	-0.09	-0.08	-0.09	-0.27	-0.36	-0.45	-0.53	-0.56	
23	-0.70	-0.35	-0.50	-0.27	-0.16	0.03	-0.10	-0.27	-0.36	-0.45	-0.53	-0.56	
24	-0.70	-0.41	-0.50	-0.28	-0.20	0.07	-0.14	-0.28	-0.36	-0.45	-0.54	-0.56	
25	-0.70	-0.42	-0.48	-0.28	-0.20	0.07	-0.17	-0.28	-0.37	-0.46	-0.54	-0.57	
26	-0.70	0.42	-0.48	-0.28	-0.21	0.08	-0.18	-0.30	-0.37	-0.46	-0.54	-0.57	
27	-0.70	0.07	-0.39	-0.30	-0.21	0.04	-0.19	-0.30	-0.37	-0.46	-0.55	-0.57	
28	-0.70	-0.07	-0.11	-0.30	-0.21	0.00	-0.20	-0.18	-0.37	-0.46	-0.55	-0.57	
29	-0.70	-0.17	0.07	-0.29	-0.21	-0.03	-0.24	-0.19	-0.38	-0.47		-0.57	
30	-0.70	-0.26	0.01	-0.27	0.13	-0.06	-0.28	-0.28	-0.38	-0.47		-0.57	
31		-0.13		0.28	-0.01		-0.30		-0.38	-0.46		-0.57	
Mean	-0.69	-0.46	-0.30	-0.10	-0.06	0.01	-0.09	-0.29	-0.33	-0.43	-0.47	-0.56	
Max	-0.65	0.42	0.07	0.28	0.15	0.31	0.19	-0.18	-0.15	-0.40	-0.40	-0.55	0.42
Min	-0.70	-0.70	-0.50	-0.30	-0.21	-0.16	-0.30	-0.33	-0.38	-0.47	-0.55	-0.57	-0.70

Annual Max Momentary Gage Height 0.60 M (A.D), at 18.00 Hours, on May 26, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -1.05 M (A.D)
Left Bank Elevation 3.31 M (A.D)
Right Bank Elevation 3.35 M (A.D), Drainage Area 237 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.01	0.00	1.76	4.24	4.24	4.24	2.67	0.78	0.78	0.30	0.26	0.08	
2	0.01	0.00	1.23	5.94	4.24	5.06	2.28	0.69	2.15	0.30	0.30	0.08	
3	0.01	0.00	1.14	3.76	5.50	4.40	2.02	0.69	1.63	0.30	0.30	0.08	
4	0.01	0.00	1.32	2.80	4.24	3.44	2.02	0.69	1.32	0.30	0.30	0.07	
5	0.01	0.00	0.87	4.62	2.96	2.67	1.76	0.69	0.69	0.30	0.30	0.07	
6	0.02	0.00	0.78	3.60	3.60	2.80	1.76	0.69	0.69	0.28	0.30	0.07	
7	0.01	0.00	0.87	7.64	2.54	2.54	1.76	0.69	0.60	0.28	0.30	0.07	
8	0.00	0.00	0.69	5.06	2.96	3.60	1.76	0.60	0.60	0.28	0.30	0.07	
9	0.03	0.00	0.69	9.20	4.24	2.54	6.60	0.60	0.60	0.26	0.30	0.07	
10	0.00	0.00	0.69	5.94	5.94	2.02	3.76	0.60	0.57	0.26	0.28	0.07	
11	0.00	0.09	0.60	3.92	7.90	12.78	2.80	0.60	0.51	0.26	0.26	0.07	
12	0.00	0.09	1.05	2.80	5.06	6.86	8.42	0.60	0.48	0.26	0.26	0.07	
13	0.00	0.09	0.96	2.28	3.92	6.38	8.94	0.60	0.48	0.26	0.24	0.07	
14	0.00	0.09	0.60	3.60	3.12	11.44	5.50	0.60	0.48	0.26	0.18	0.07	
15	0.00	0.09	0.54	5.72	2.80	6.38	4.24	0.54	0.48	0.24	0.16	0.07	
16	0.00	0.09	0.54	3.28	4.62	6.86	3.92	0.51	0.45	0.24	0.12	0.07	
17	0.00	0.09	0.39	2.54	3.12	5.94	4.08	0.60	0.45	0.24	0.10	0.07	
18	0.00	0.08	0.36	1.89	2.80	4.62	5.94	0.57	0.45	0.22	0.10	0.07	
19	0.00	0.08	0.36	1.50	5.06	4.40	6.38	0.60	0.45	0.22	0.10	0.07	
20	0.00	0.09	0.30	1.32	3.60	4.08	4.62	0.60	0.45	0.22	0.10	0.07	
21	0.00	0.57	0.30	1.14	3.28	3.60	3.28	0.69	0.42	0.20	0.09	0.07	
22	0.00	0.51	0.20	0.96	2.96	3.12	2.96	0.87	0.42	0.20	0.09	0.07	
23	0.00	0.45	0.10	0.87	2.02	5.06	2.80	0.87	0.42	0.20	0.09	0.07	
24	0.00	0.28	0.10	0.78	1.50	5.94	2.28	0.78	0.42	0.20	0.08	0.07	
25	0.00	0.26	0.14	0.78	1.50	5.94	1.89	0.78	0.39	0.18	0.08	0.07	
26	0.00	17.06	0.14	0.78	1.41	6.16	1.76	0.60	0.39	0.18	0.08	0.07	
27	0.00	5.94	0.33	0.60	1.41	5.28	1.63	0.60	0.39	0.18	0.08	0.07	
28	0.00	3.28	2.67	0.60	1.41	4.40	1.50	1.76	0.39	0.18	0.08	0.07	
29	0.00	1.89	5.94	0.69	1.41	3.92	1.14	1.63	0.36	0.16		0.07	
30	0.00	0.96	4.62	0.87	7.38	3.44	0.78	0.78	0.36	0.16		0.07	
31		2.41		11.76	4.24		0.60		0.36	0.18		0.07	
Total	0.11	34.49	30.28	101.48	110.98	149.91	101.85	21.90	18.63	7.30	5.23	2.20	584.36 CMSDAY
Mean	0.00	1.11	1.01	3.27	3.58	5.00	3.29	0.73	0.60	0.24	0.19	0.07	1.60 CMS
Max	0.03	17.06	5.94	11.76	7.90	12.78	8.94	1.76	2.15	0.30	0.30	0.08	17.06 CMS
Min	0.00	0.00	0.10	0.60	1.41	2.02	0.60	0.51	0.36	0.16	0.08	0.07	0.00 CMS
Runoff	0.010	2.980	2.616	8.768	9.589	12.952	8.800	1.892	1.610	0.631	0.452	0.190	50.489 MCM

Momentary Peak 25.80 CMS, at 0.60 M (A.D), at 18.00 Hours, on May 26, 1998
Runoff Yield 6.76 Liters/Second/Square KM, Momentary Peak Yield 108.861 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

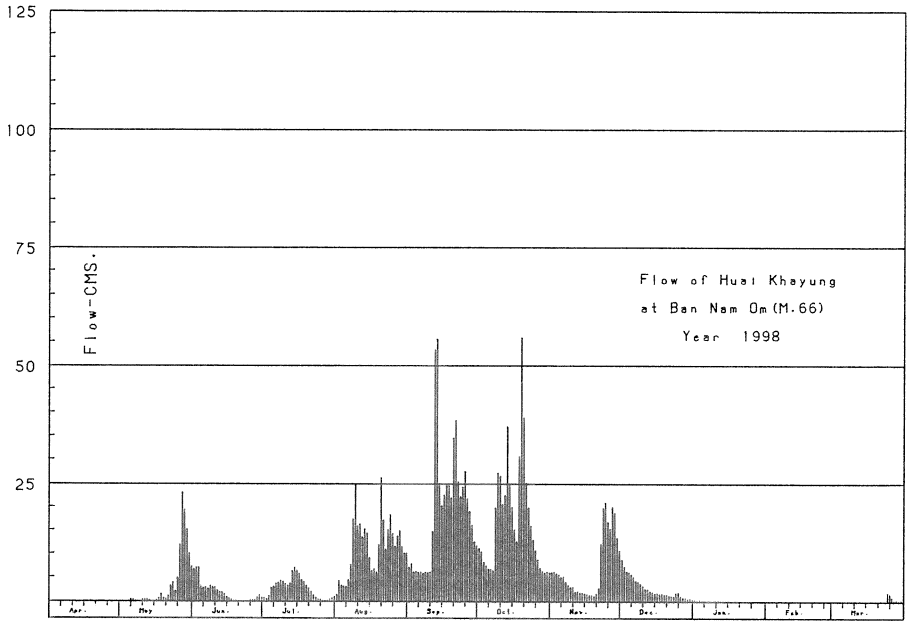
Huai Khayung at Ban Nam Om, Si Sa Ket (M.66)

Location	Lat. 14°-38'-23" N., Long. 104°-29'-45" E., on right bank about 50 meters upstream from the bridge of Kantharalak-Det Udom Road, Ban Nam Om, Amphoe Kantharalak, Si Sa Ket.
Drainage Area	586 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	At the automatic gage building.
Elevation	+6.581 m. (A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1965 to date.
Rating Operation	
Period of Rating	1965-1968, 1972 - 1981, 1987 to date.
Rated by Float	-
Rated by Current Meter	1965-1968, 1972 - 1981, 1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 71 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.84	-0.81	0.10	-0.53	-0.44	0.12	0.32	0.03	0.20	-0.60	-0.83	-0.87	
2	-0.84	-0.82	0.11	-0.56	-0.16	0.15	0.28	0.03	0.12	-0.62	-0.83	-0.86	
3	-0.84	-0.83	0.12	-0.48	-0.25	0.04	0.17	0.01	0.05	-0.63	-0.83	-0.86	
4	-0.84	-0.73	-0.24	-0.30	-0.28	0.04	0.13	-0.03	0.02	-0.64	-0.83	-0.85	
5	-0.84	-0.61	-0.30	-0.27	-0.27	0.03	0.10	-0.07	-0.01	-0.65	-0.83	-0.85	
6	-0.84	-0.62	-0.30	-0.22	-0.13	0.02	0.08	-0.07	-0.08	-0.66	-0.83	-0.84	
7	-0.85	-0.68	-0.32	-0.19	0.14	0.01	0.06	-0.17	-0.15	-0.67	-0.83	-0.84	
8	-0.85	-0.70	-0.27	-0.16	0.63	0.02	0.75	-0.25	-0.18	-0.68	-0.83	-0.85	
9	-0.85	-0.70	-0.28	-0.17	0.98	0.02	1.07	-0.28	-0.21	-0.68	-0.83	-0.85	
10	-0.84	-0.62	-0.30	-0.23	0.55	0.02	1.05	-0.29	-0.27	-0.69	-0.83	-0.85	
11	-0.83	-0.58	-0.35	-0.26	0.57	0.50	0.78	-0.38	-0.32	-0.69	-0.83	-0.86	
12	-0.82	-0.58	-0.40	-0.20	0.44	1.98	0.88	-0.38	-0.34	-0.70	-0.84	-0.86	
13	-0.81	-0.67	-0.39	0.06	0.52	2.06	1.44	-0.40	-0.37	-0.70	-0.84	-0.87	
14	-0.80	-0.72	-0.44	0.11	0.48	0.98	0.98	-0.41	-0.40	-0.70	-0.84	-0.88	
15	-0.76	-0.72	-0.49	0.06	0.22	0.77	0.75	-0.42	-0.42	-0.70	-0.84	-0.90	
16	-0.78	-0.64	-0.54	-0.01	0.05	0.88	0.51	-0.44	-0.42	-0.71	-0.84	-0.92	
17	-0.74	-0.53	-0.63	-0.13	0.09	0.97	0.39	-0.45	-0.43	-0.73	-0.84	-0.94	
18	-0.65	-0.44	-0.66	-0.19	0.03	0.96	1.21	-0.46	-0.43	-0.73	-0.85	-0.94	
19	-0.70	-0.53	-0.68	-0.25	0.35	0.85	2.07	-0.47	-0.44	-0.74	-0.86	-0.94	
20	-0.72	-0.60	-0.70	-0.32	1.03	1.36	1.50	-0.43	-0.45	-0.74	-0.87	-0.95	
21	-0.72	-0.48	-0.70	-0.39	0.62	1.48	0.99	-0.30	-0.46	-0.75	-0.87	-0.95	
22	-0.72	-0.25	-0.72	-0.45	0.31	1.00	0.75	0.36	-0.48	-0.76	-0.87	-0.83	
23	-0.72	-0.20	-0.77	-0.53	0.51	0.87	0.55	0.75	-0.48	-0.77	-0.86	-0.70	
24	-0.72	-0.37	-0.73	-0.58	0.67	0.95	0.41	0.80	-0.42	-0.79	-0.85	-0.41	
25	-0.72	-0.09	-0.64	-0.62	0.47	1.09	0.30	0.60	-0.40	-0.81	-0.83	-0.43	
26	-0.72	0.35	-0.60	-0.63	0.34	0.84	0.19	0.52	-0.45	-0.81	-0.77	-0.52	
27	-0.73	0.91	-0.60	-0.64	0.45	0.71	0.11	0.76	-0.51	-0.81	-0.73	-0.61	
28	-0.74	0.72	-0.50	-0.63	0.51	0.56	0.04	0.69	-0.55	-0.82	-0.87	-0.66	
29	-0.77	0.52	-0.46	-0.59	0.33	0.39	0.02	0.43	-0.57	-0.82		-0.62	
30	-0.76	0.26	-0.50	-0.53	0.27	0.34	0.03	0.29	-0.57	-0.82		-0.64	
31		0.12		-0.50	0.26		0.01		-0.59	-0.83		-0.73	
Mean	-0.78	-0.38	-0.44	-0.33	0.30	0.67	0.58	-0.01	-0.32	-0.72	-0.84	-0.80	
Max	-0.65	0.91	0.12	0.11	1.03	2.06	2.07	0.80	0.20	-0.60	-0.73	-0.41	2.07
Min	-0.85	-0.83	-0.77	-0.64	-0.44	0.01	0.01	-0.47	-0.59	-0.83	-0.87	-0.95	-0.95

Annual Max Momentary Gage Height 2.70 M (A.D), at 24.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -1.08 M (A.D)
Left Bank Elevation 7.44 M (A.D)
Right Bank Elevation 7.22 M (A.D), Drainage Area 586 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.06	0.09	7.00	0.85	1.60	7.40	11.40	6.30	9.00	0.50	0.07	0.03	
2	0.06	0.08	7.20	0.70	4.40	8.00	10.60	6.30	7.40	0.44	0.07	0.04	
3	0.06	0.07	7.40	1.20	3.50	6.40	8.40	6.10	6.50	0.41	0.07	0.04	
4	0.06	0.17	3.60	3.00	3.20	6.40	7.60	5.70	6.20	0.38	0.07	0.05	
5	0.06	0.47	3.00	3.30	3.30	6.30	7.00	5.30	5.90	0.35	0.07	0.05	
6	0.06	0.44	3.00	3.80	4.70	6.20	6.80	5.30	5.20	0.32	0.07	0.06	
7	0.05	0.26	2.80	4.10	7.80	6.10	6.60	4.30	4.50	0.29	0.07	0.06	
8	0.05	0.20	3.30	4.40	17.60	6.20	20.00	3.50	4.20	0.26	0.07	0.05	
9	0.05	0.20	3.20	4.30	25.00	6.20	27.25	3.20	3.90	0.26	0.07	0.05	
10	0.06	0.44	3.00	3.70	16.00	6.20	26.75	3.10	3.30	0.23	0.07	0.05	
11	0.07	0.60	2.50	3.40	16.40	15.00	20.60	2.20	2.80	0.23	0.07	0.04	
12	0.08	0.60	2.00	4.00	13.80	53.40	22.60	2.20	2.60	0.20	0.06	0.04	
13	0.09	0.29	2.10	6.60	15.40	55.80	37.20	2.00	2.30	0.20	0.06	0.03	
14	0.10	0.18	1.60	7.20	14.60	25.00	25.00	1.90	2.00	0.20	0.06	0.02	
15	0.14	0.18	1.10	6.60	9.40	20.40	20.00	1.80	1.80	0.20	0.06	0.00	
16	0.12	0.38	0.80	5.90	6.50	22.60	15.20	1.60	1.80	0.19	0.06	0.00	
17	0.16	0.85	0.41	4.70	6.90	24.75	12.80	1.50	1.70	0.17	0.06	0.00	
18	0.35	1.60	0.32	4.10	6.30	24.50	30.75	1.40	1.70	0.17	0.05	0.00	
19	0.20	0.85	0.26	3.50	12.00	22.00	56.10	1.30	1.60	0.16	0.04	0.00	
20	0.18	0.50	0.20	2.80	26.25	34.80	39.00	1.70	1.50	0.16	0.03	0.00	
21	0.18	1.20	0.20	2.10	17.40	38.40	25.25	3.00	1.40	0.15	0.03	0.00	
22	0.18	3.50	0.18	1.50	11.20	25.50	20.00	12.20	1.20	0.14	0.03	0.07	
23	0.18	4.00	0.13	0.85	15.20	22.40	16.00	20.00	1.20	0.13	0.04	0.20	
24	0.18	2.30	0.17	0.60	18.40	24.25	13.20	21.00	1.80	0.11	0.05	1.90	
25	0.18	5.10	0.38	0.44	14.40	27.75	11.00	17.00	2.00	0.09	0.07	1.70	
26	0.18	12.00	0.50	0.41	11.80	21.80	8.80	15.40	1.50	0.09	0.13	0.90	
27	0.17	23.25	0.50	0.38	14.00	19.20	7.20	20.20	0.95	0.09	0.17	0.47	
28	0.16	19.40	1.00	0.41	15.20	16.20	6.40	18.80	0.75	0.08	0.03	0.32	
29	0.13	15.40	1.40	0.55	11.60	12.80	6.20	13.60	0.65	0.08		0.44	
30	0.14	10.20	1.00	0.85	10.40	11.80	6.30	10.80	0.65	0.08		0.38	
31		7.40		1.00	10.20		6.10		0.55	0.07		0.17	
Total	3.74	112.20	60.25	87.24	364.45	583.75	538.10	218.70	88.55	6.43	1.80	7.16	2072.37 CMSDAY
Mean	0.12	3.62	2.01	2.81	11.76	19.46	17.36	7.29	2.86	0.21	0.06	0.23	5.68 CMS
Max	0.35	23.25	7.40	7.20	26.25	55.80	56.10	21.00	9.00	0.50	0.17	1.90	56.10 CMS
Min	0.05	0.07	0.13	0.38	1.60	6.10	6.10	1.30	0.55	0.07	0.03	0.00	0.00 CMS
Runoff	0.323	9.694	5.206	7.538	31.488	50.436	46.492	18.896	7.651	0.556	0.156	0.619	179.053 MCM

Momentary Peak 75.00 CMS, at 2.70 M (A.D), at 24.00 Hours, on Sep 12, 1998

Runoff Yield 9.69 Liters/Second/Square KM, Momentary Peak Yield 127.986 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

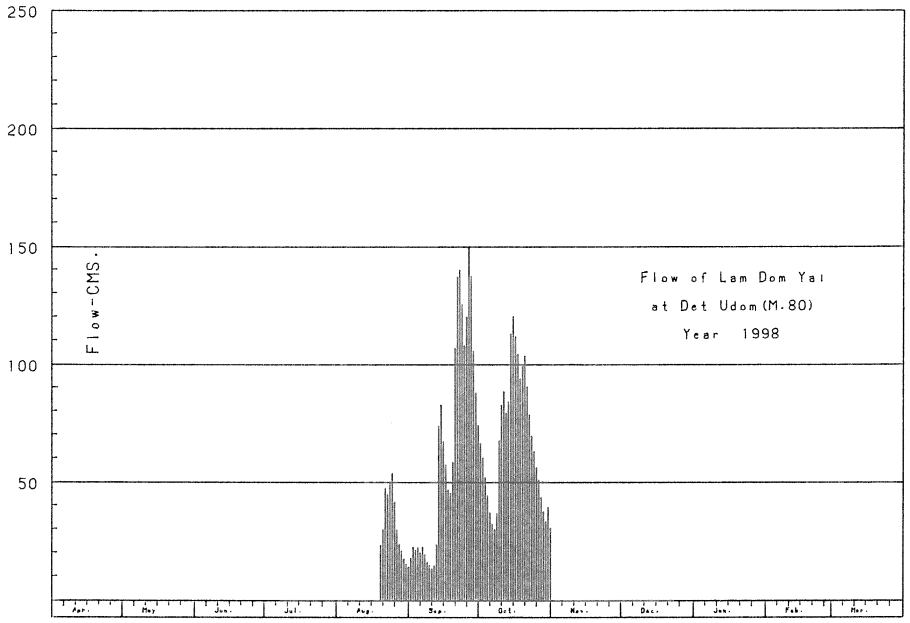
Lam Dom Yai at Det Udom, Ubon Ratchathani (M.80)

Location	Lat. 14°-53'-53" N., Long. 105°-05'-08" E., on left bank about 20 meters downstream from the bridge on road, Amphoe Det Udom, Ubon Ratchathani.
Drainage Area	3,363 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+117.26 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the automatic gage building.
Elevation	+130.912 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1965 to date.
Rating Operation	
Period of Rating	1965 to date.
Rated by Float	-
Rated by Current Meter	1965 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The rubber weir situated about 1.7 kilometers downstream from the gage site. Stage-discharge relation defined by 18 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	121.24	121.37	121.51	121.41	121.42	118.86	119.83	119.11	119.54	121.47	121.40	119.92	
2	121.24	121.38	121.50	121.41	121.41	118.96	119.71	119.10	119.44	121.46	121.38	120.02	
3	121.28	121.35	121.50	121.42	121.42	118.93	119.55	119.09	119.29	121.45	121.37	120.10	
4	121.28	121.35	121.50	121.43	121.42	118.95	119.39	119.73	119.19	121.43	121.36	120.17	
5	121.24	121.35	121.47	121.49	121.42	118.91	119.25	121.57	119.14	121.43	121.40	120.24	
6	121.24	121.34	121.45	121.50	121.46	118.96	119.15	121.50	119.12	121.44	121.40	120.30	
7	121.25	121.34	121.42	121.50	121.45	118.89	119.11	121.53	119.02	121.43	121.39	120.36	
8	121.26	121.33	121.42	121.56	121.48	118.83	119.24	121.62	118.99	121.42	121.39	120.42	
9	121.26	121.33	121.43	121.62	121.59	118.80	119.86	121.58	118.95	121.43	121.40	120.48	
10	121.26	121.33	121.43	121.62	121.67	118.77	120.15	121.57	118.95	121.45	121.40	120.54	
11	121.27	121.31	121.42	121.60	121.21	118.80	120.27	121.54	118.98	121.43	121.39	120.61	
12	121.27	121.29	121.42	121.56	119.49	118.98	120.09	121.52	118.94	121.42	121.38	120.68	
13	121.26	121.30	121.42	121.52	119.46	119.98	120.18	121.52	118.86	121.43	121.37	120.73	
14	121.26	121.31	121.42	121.58	119.33	120.16	120.75	121.49	118.79	121.45	121.36	120.78	
15	121.26	121.33	121.40	121.58	119.16	119.85	120.89	121.50	119.15	121.44	121.35	120.84	
16	121.26	121.32	121.41	121.53	119.06	119.65	120.72	121.49	120.80	121.43	121.33	120.89	
17	121.30	121.31	121.41	121.49	119.07	119.44	120.58	121.49	121.57	121.42	121.36	120.92	
18	121.33	121.30	121.39	121.46	119.01	119.41	120.37	121.50	121.61	121.41	121.38	120.97	
19	121.33	121.30	121.38	121.44	118.97	119.68	120.48	121.49	121.60	121.40	121.38	121.00	
20	121.32	121.31	121.37	121.44	119.11	120.63	120.56	121.47	121.59	121.40	121.29	121.05	
21	121.33	121.36	121.41	121.46	119.45	121.22	120.31	121.49	121.57	121.42	120.16	121.08	
22	121.34	121.38	121.42	121.45	119.40	121.27	120.07	121.54	121.55	121.44	119.32	121.17	
23	121.33	121.39	121.41	121.44	119.51	120.99	119.90	121.65	121.54	121.44	119.22	121.27	
24	121.35	121.39	121.40	121.44	119.58	120.65	119.76	121.68	121.52	121.42	119.35	121.26	
25	121.34	121.46	121.40	121.44	119.34	120.89	119.63	121.68	121.51	121.41	119.48	121.27	
26	121.32	121.41	121.38	121.43	119.10	121.46	119.52	121.64	121.50	121.40	119.61	121.37	
27	121.34	121.49	121.39	121.41	118.98	121.22	119.38	121.67	121.49	121.40	119.73	121.39	
28	121.37	121.54	121.42	121.40	118.92	120.60	119.26	121.28	121.47	121.39	119.84	121.37	
29	121.36	121.51	121.42	121.44	118.86	120.26	119.17	119.82	121.45	121.39		121.37	
30	121.37	121.48	121.42	121.45	118.81	119.99	119.29	119.60	121.44	121.42		121.36	
31		121.49		121.43	118.79		119.12		121.46	121.41		121.38	
Mean	121.30	121.37	121.42	121.48	119.98	119.80	119.86	121.12	120.32	121.43	120.86	120.82	
Max	121.37	121.54	121.51	121.62	121.67	121.46	120.89	121.68	121.61	121.47	121.40	121.39	121.68
Min	121.24	121.29	121.37	121.40	118.79	118.77	119.11	119.09	118.79	121.39	119.22	119.92	118.77

Annual Max Momentary Gage Height 121.86 M (MSL), at 15.00 Hours, on Nov 28, 1998
Zero Gage at Bottom Elevation 117.26 M (MSL), River Bed 117.09 M (MSL)
Left Bank Elevation 129.33 M (MSL)
Right Bank Elevation 127.60 M (MSL), Drainage Area 3363 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.00	18.00	66.50	0.00	0.00	0.00	0.00	0.00	
2	0.00	0.00	0.00	0.00	0.00	23.00	60.50	0.00	0.00	0.00	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	21.50	52.50	0.00	0.00	0.00	0.00	0.00	
4	0.00	0.00	0.00	0.00	0.00	22.50	44.50	0.00	0.00	0.00	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	20.50	37.50	0.00	0.00	0.00	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	23.00	32.50	0.00	0.00	0.00	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	19.50	30.50	0.00	0.00	0.00	0.00	0.00	
8	0.00	0.00	0.00	0.00	0.00	16.50	37.00	0.00	0.00	0.00	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	15.00	68.00	0.00	0.00	0.00	0.00	0.00	
10	0.00	0.00	0.00	0.00	0.00	13.50	82.65	0.00	0.00	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	15.00	88.77	0.00	0.00	0.00	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	24.00	79.59	0.00	0.00	0.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.00	74.00	84.18	0.00	0.00	0.00	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	83.16	113.25	0.00	0.00	0.00	0.00	0.00	
15	0.00	0.00	0.00	0.00	0.00	67.50	120.39	0.00	0.00	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	57.50	111.72	0.00	0.00	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	47.00	104.58	0.00	0.00	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	45.50	93.87	0.00	0.00	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	23.50	59.00	99.48	0.00	0.00	0.00	0.00	0.00	
20	0.00	0.00	0.00	0.00	30.50	107.13	103.56	0.00	0.00	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	47.50	137.44	90.81	0.00	0.00	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.00	45.00	140.04	78.57	0.00	0.00	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.00	50.50	125.49	70.00	0.00	0.00	0.00	0.00	0.00	
24	0.00	0.00	0.00	0.00	54.00	108.15	63.00	0.00	0.00	0.00	0.00	0.00	
25	0.00	0.00	0.00	0.00	42.00	120.39	56.50	0.00	0.00	0.00	0.00	0.00	
26	0.00	0.00	0.00	0.00	30.00	149.92	51.00	0.00	0.00	0.00	0.00	0.00	
27	0.00	0.00	0.00	0.00	24.00	137.44	44.00	0.00	0.00	0.00	0.00	0.00	
28	0.00	0.00	0.00	0.00	21.00	105.60	38.00	0.00	0.00	0.00	0.00	0.00	
29	0.00	0.00	0.00	0.00	18.00	88.26	33.50	0.00	0.00	0.00		0.00	
30	0.00	0.00	0.00	0.00	15.50	74.50	39.50	0.00	0.00	0.00		0.00	
31		0.00		0.00	14.50		31.00		0.00	0.00		0.00	
Total	0.00	0.00	0.00	0.00	416.00	1960.02	2107.42	0.00	0.00	0.00	0.00	0.00	4483.44 CMSDAY
Mean	0.00	0.00	0.00	0.00	13.42	65.33	67.98	0.00	0.00	0.00	0.00	0.00	12.28 CMS
Max	0.00	0.00	0.00	0.00	54.00	149.92	120.39	0.00	0.00	0.00	0.00	0.00	149.92 CMS
Min	0.00	0.00	0.00	0.00	0.00	13.50	30.50	0.00	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	0.000	35.942	169.346	182.081	0.000	0.000	0.000	0.000	0.000	387.369 MCM

Momentary Peak 170.72 CMS, at 121.86 M (MSL), at 15.00 Hours, on Nov 28, 1998
Runoff Yield 3.65 Liters/Second/Square KM, Momentary Peak Yield 50.764 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

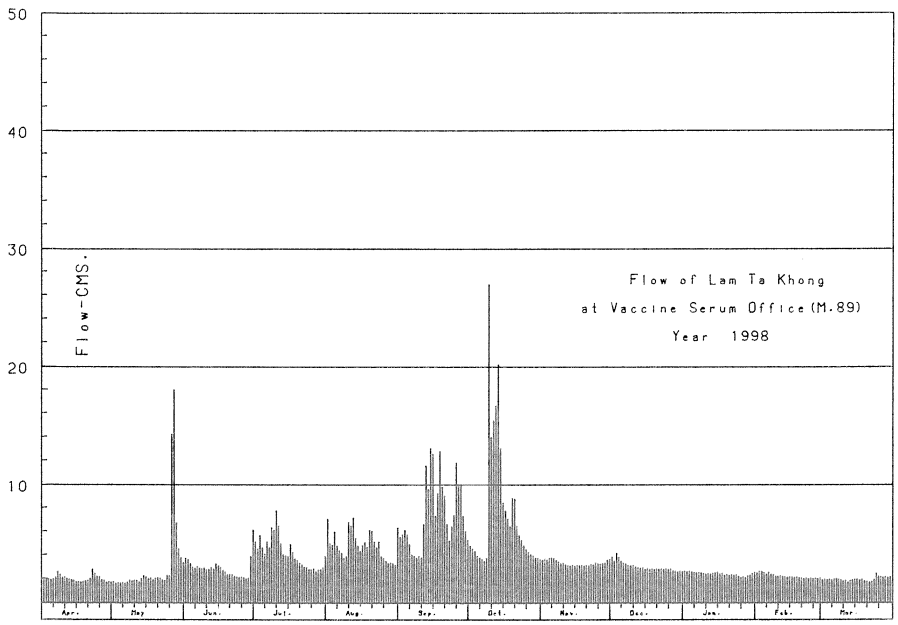
Lam Takhong at Vaccine Serum Office, Nakhon Ratchasima (M.89)

Location	Lat. 14°-41'-46" N., Long. 101°-25'-07" E., on left bank at the bridge infront of Vaccine Serum Office, Amphoe Pak Chong, Nakhon Ratchasima.
Drainage Area	665 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+8.909 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1970 to date.
Rating Operation	
Period of Rating	1971 to date.
Rated by Float	-
Rated by Current Meter	1971 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 55 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.11	1.08	1.28	1.38	1.51	1.41	1.36	1.27	1.29	1.17	1.16	1.10	
2	1.10	1.07	1.27	1.34	1.37	1.42	1.34	1.27	1.26	1.17	1.17	1.10	
3	1.10	1.07	1.24	1.42	1.36	1.45	1.33	1.27	1.32	1.17	1.17	1.10	
4	1.10	1.07	1.21	1.35	1.44	1.42	1.30	1.28	1.29	1.17	1.16	1.10	
5	1.10	1.07	1.20	1.31	1.36	1.37	1.29	1.29	1.26	1.16	1.15	1.10	
6	1.12	1.07	1.21	1.38	1.33	1.31	1.27	1.28	1.24	1.16	1.16	1.10	
7	1.17	1.08	1.20	1.35	1.32	1.30	1.26	1.27	1.24	1.16	1.15	1.11	
8	1.14	1.09	1.19	1.46	1.28	1.29	1.28	1.25	1.22	1.16	1.14	1.10	
9	1.12	1.09	1.20	1.45	1.30	1.30	2.44	1.24	1.22	1.15	1.13	1.10	
10	1.12	1.09	1.18	1.56	1.49	1.29	1.88	1.24	1.22	1.15	1.13	1.09	
11	1.11	1.09	1.19	1.47	1.47	1.48	1.95	1.23	1.21	1.15	1.13	1.09	
12	1.10	1.08	1.20	1.37	1.52	1.76	2.01	1.22	1.20	1.15	1.13	1.08	
13	1.10	1.11	1.19	1.31	1.40	1.66	2.17	1.22	1.20	1.15	1.12	1.09	
14	1.09	1.13	1.23	1.30	1.36	1.83	1.83	1.22	1.20	1.16	1.12	1.10	
15	1.08	1.12	1.22	1.30	1.33	1.81	1.60	1.22	1.19	1.16	1.12	1.10	
16	1.08	1.11	1.20	1.37	1.36	1.53	1.56	1.22	1.19	1.15	1.12	1.10	
17	1.08	1.11	1.18	1.32	1.38	1.64	1.51	1.22	1.19	1.15	1.12	1.10	
18	1.08	1.10	1.16	1.28	1.35	1.82	1.47	1.22	1.19	1.14	1.12	1.10	
19	1.09	1.11	1.14	1.26	1.45	1.67	1.62	1.22	1.19	1.14	1.12	1.09	
20	1.09	1.12	1.14	1.24	1.44	1.63	1.62	1.22	1.19	1.14	1.11	1.08	
21	1.11	1.11	1.14	1.23	1.38	1.48	1.47	1.22	1.19	1.14	1.11	1.08	
22	1.19	1.10	1.13	1.21	1.35	1.39	1.42	1.23	1.19	1.14	1.11	1.08	
23	1.15	1.09	1.12	1.20	1.38	1.47	1.39	1.23	1.19	1.14	1.11	1.10	
24	1.13	1.14	1.12	1.19	1.30	1.53	1.36	1.24	1.19	1.13	1.11	1.15	
25	1.12	1.13	1.12	1.18	1.28	1.77	1.34	1.24	1.19	1.12	1.11	1.13	
26	1.10	1.89	1.12	1.19	1.26	1.67	1.32	1.23	1.19	1.12	1.11	1.12	
27	1.09	2.08	1.11	1.17	1.24	1.68	1.31	1.24	1.18	1.12	1.11	1.12	
28	1.08	1.49	1.11	1.18	1.24	1.53	1.30	1.24	1.17	1.13	1.11	1.12	
29	1.08	1.34	1.30	1.19	1.24	1.44	1.29	1.27	1.17	1.14		1.12	
30	1.08	1.29	1.45	1.20	1.22	1.39	1.28	1.27	1.17	1.15		1.12	
31		1.25		1.30	1.46		1.27		1.17	1.16		1.12	
Mean	1.11	1.19	1.19	1.31	1.36	1.52	1.51	1.24	1.21	1.15	1.13	1.10	
Max	1.19	2.08	1.45	1.56	1.52	1.83	2.44	1.29	1.32	1.17	1.17	1.15	2.44
Min	1.08	1.07	1.11	1.17	1.22	1.29	1.26	1.22	1.17	1.12	1.11	1.08	1.07

Annual Max Momentary Gage Height 2.92 M (A.D), at 15.00 Hours, on Oct 9, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.02 M (A.D)
Left Bank Elevation 8.52 M (A.D)
Right Bank Elevation 7.36 M (A.D), Drainage Area 665 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.10	1.80	3.80	5.20	7.15	5.65	4.90	3.70	3.90	2.70	2.60	2.00	
2	2.00	1.70	3.70	4.60	5.05	5.80	4.60	3.70	3.60	2.70	2.70	2.00	
3	2.00	1.70	3.40	5.80	4.90	6.25	4.45	3.70	4.30	2.70	2.70	2.00	
4	2.00	1.70	3.10	4.75	6.10	5.80	4.00	3.80	3.90	2.70	2.60	2.00	
5	2.00	1.70	3.00	4.15	4.90	5.05	3.90	3.90	3.60	2.60	2.50	2.00	
6	2.20	1.70	3.10	5.20	4.45	4.15	3.70	3.80	3.40	2.60	2.60	2.00	
7	2.70	1.80	3.00	4.75	4.30	4.00	3.60	3.70	3.40	2.60	2.50	2.10	
8	2.40	1.90	2.90	6.40	3.80	3.90	3.80	3.50	3.20	2.60	2.40	2.00	
9	2.20	1.90	3.00	6.25	4.00	4.00	27.00	3.40	3.20	2.50	2.30	2.00	
10	2.20	1.90	2.80	7.90	6.85	3.90	14.10	3.40	3.20	2.50	2.30	1.90	
11	2.10	1.90	2.90	6.55	6.55	6.70	15.50	3.30	3.10	2.50	2.30	1.90	
12	2.00	1.80	3.00	5.05	7.30	11.70	16.70	3.20	3.00	2.50	2.30	1.80	
13	2.00	2.10	2.90	4.15	5.50	9.70	20.25	3.20	3.00	2.50	2.20	1.90	
14	1.90	2.30	3.30	4.00	4.90	13.10	13.10	3.20	3.00	2.60	2.20	2.00	
15	1.80	2.20	3.20	4.00	4.45	12.70	8.50	3.20	2.90	2.60	2.20	2.00	
16	1.80	2.10	3.00	5.05	4.90	7.45	7.90	3.20	2.90	2.50	2.20	2.00	
17	1.80	2.10	2.80	4.30	5.20	9.30	7.15	3.20	2.90	2.50	2.20	2.00	
18	1.80	2.00	2.60	3.80	4.75	12.90	6.55	3.20	2.90	2.40	2.20	2.00	
19	1.90	2.10	2.40	3.60	6.25	9.90	8.90	3.20	2.90	2.40	2.20	1.90	
20	1.90	2.20	2.40	3.40	6.10	9.10	8.90	3.20	2.90	2.40	2.10	1.80	
21	2.10	2.10	2.40	3.30	5.20	6.70	6.55	3.20	2.90	2.40	2.10	1.80	
22	2.90	2.00	2.30	3.10	4.75	5.35	5.80	3.30	2.90	2.40	2.10	1.80	
23	2.50	1.90	2.20	3.00	5.20	6.55	5.35	3.30	2.90	2.40	2.10	2.00	
24	2.30	2.40	2.20	2.90	4.00	7.45	4.90	3.40	2.90	2.30	2.10	2.50	
25	2.20	2.30	2.20	2.80	3.80	11.90	4.60	3.40	2.90	2.20	2.10	2.30	
26	2.00	14.30	2.20	2.90	3.60	9.90	4.30	3.30	2.90	2.20	2.10	2.20	
27	1.90	18.10	2.10	2.70	3.40	10.10	4.15	3.40	2.80	2.20	2.10	2.20	
28	1.80	6.85	2.10	2.80	3.40	7.45	4.00	3.40	2.70	2.30	2.10	2.20	
29	1.80	4.60	4.00	2.90	3.40	6.10	3.90	3.70	2.70	2.40		2.20	
30	1.80	3.90	6.25	3.00	3.20	5.35	3.80	3.70	2.70	2.50		2.20	
31		3.50		4.00	6.40		3.70		2.70	2.60		2.20	
Total	62.10	100.55	88.25	132.30	153.75	227.90	238.55	102.80	96.20	77.00	64.10	62.90	1406.40 CMSDAY
Mean	2.07	3.24	2.94	4.27	4.96	7.60	7.70	3.43	3.10	2.48	2.29	2.03	3.85 CMS
Max	2.90	18.10	6.25	7.90	7.30	13.10	27.00	3.90	4.30	2.70	2.70	2.50	27.00 CMS
Min	1.80	1.70	2.10	2.70	3.20	3.90	3.60	3.20	2.70	2.20	2.10	1.80	1.70 CMS
Runoff	5.365	8.688	7.625	11.431	13.284	19.691	20.611	8.882	8.312	6.653	5.538	5.435	121.513 MCM

Momentary Peak 39.00 CMS, at 2.92 M (A.D), at 15.00 Hours, on Oct 9, 1998

Runoff Yield 5.79 Liters/Second/Square KM, Momentary Peak Yield 58.647 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

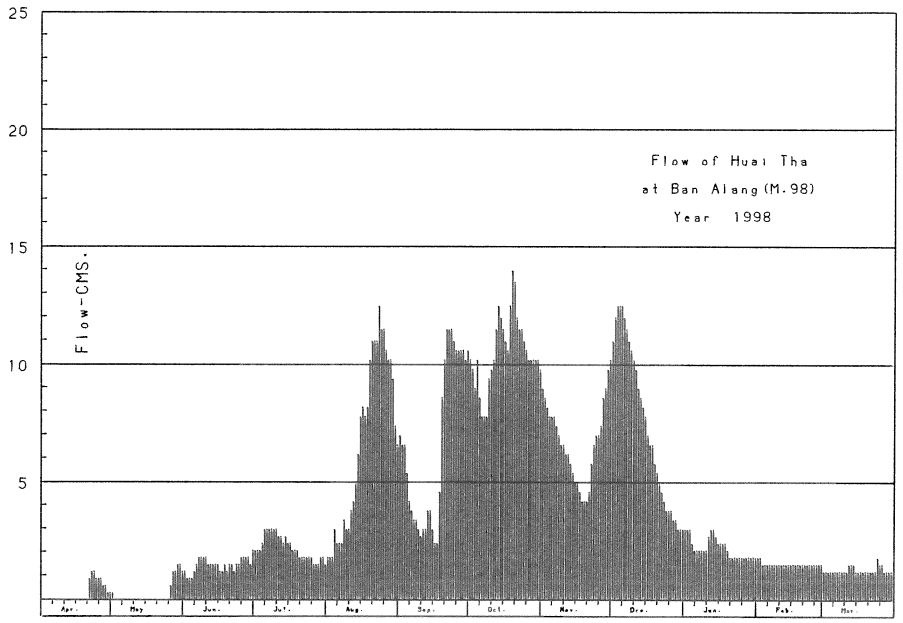
Huai Tha at Ban Alang, Si Sa Ket (M.98)

Location	Lat. 14°-52'-39" N., Long. 104°-26'-16" E., on left bank at the bridge of Si Sa Ket-Kantharalak Highway near guidepost 27+734, Amphoe Muang, Si Sa Ket.
Drainage Area	1,092 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Highways Dept.
Location	On right bank at the footpath of the bridge.
Elevation	+8.568 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1979 - 1981, 1987 to date.
Rated by Float	-
Rated by Current Meter	1979 - 1981, 1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. The concrete weir situated downstream from the gage site. Stage-discharge relation defined by 28 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.90	2.91	2.94	2.97	2.96	3.10	3.18	3.15	3.20	3.00	2.96	2.94	
2	2.89	2.90	2.93	2.97	2.96	3.09	3.17	3.14	3.22	3.00	2.96	2.94	
3	2.89	2.90	2.93	2.97	2.96	3.09	3.15	3.13	3.23	3.00	2.95	2.94	
4	2.88	2.90	2.93	2.98	3.00	3.06	3.18	3.12	3.23	2.98	2.95	2.94	
5	2.88	2.89	2.94	3.00	2.98	3.03	3.14	3.12	3.23	2.97	2.95	2.94	
6	2.88	2.89	2.95	3.00	2.98	3.02	3.12	3.12	3.22	2.97	2.95	2.94	
7	2.87	2.88	2.96	3.00	2.98	3.01	3.12	3.11	3.21	2.97	2.95	2.94	
8	2.87	2.87	2.96	3.00	3.01	3.01	3.12	3.10	3.20	2.97	2.95	2.94	
9	2.86	2.85	2.96	3.00	3.00	3.00	3.16	3.09	3.19	2.97	2.95	2.94	
10	2.86	2.85	2.96	3.00	3.00	2.99	3.17	3.09	3.18	2.97	2.95	2.94	
11	2.85	2.85	2.95	2.99	3.02	3.00	3.18	3.08	3.17	2.99	2.95	2.94	
12	2.85	2.85	2.95	2.99	3.03	3.00	3.21	3.08	3.15	3.00	2.95	2.95	
13	2.84	2.85	2.95	2.98	3.05	3.02	3.23	3.07	3.14	3.00	2.95	2.95	
14	2.84	2.84	2.95	2.99	3.08	3.02	3.22	3.06	3.13	2.99	2.95	2.95	
15	2.83	2.84	2.95	2.98	3.12	3.00	3.21	3.05	3.12	2.98	2.95	2.94	
16	2.82	2.84	2.94	2.98	3.13	2.98	3.20	3.05	3.10	2.98	2.95	2.94	
17	2.85	2.85	2.94	2.97	3.12	2.98	3.19	3.04	3.09	2.98	2.95	2.94	
18	2.88	2.84	2.95	2.97	3.13	3.04	3.23	3.03	3.09	2.98	2.95	2.94	
19	2.87	2.84	2.94	2.97	3.18	3.14	3.26	3.03	3.07	2.97	2.95	2.94	
20	2.90	2.84	2.95	2.96	3.20	3.18	3.25	3.03	3.06	2.96	2.95	2.94	
21	2.93	2.83	2.95	2.96	3.20	3.21	3.22	3.04	3.05	2.96	2.95	2.94	
22	2.94	2.83	2.94	2.96	3.20	3.21	3.21	3.07	3.04	2.96	2.95	2.94	
23	2.94	2.82	2.95	2.96	3.23	3.21	3.21	3.09	3.03	2.96	2.95	2.94	
24	2.93	2.82	2.95	2.96	3.21	3.20	3.20	3.10	3.02	2.96	2.95	2.96	
25	2.93	2.90	2.96	2.96	3.21	3.19	3.19	3.10	3.02	2.96	2.95	2.95	
26	2.93	2.92	2.96	2.95	3.19	3.19	3.18	3.11	3.02	2.96	2.95	2.95	
27	2.92	2.94	2.96	2.95	3.18	3.19	3.18	3.14	3.01	2.96	2.95	2.94	
28	2.92	2.94	2.96	2.95	3.18	3.19	3.18	3.15	3.01	2.96	2.95	2.94	
29	2.91	2.95	2.95	2.96	3.16	3.18	3.18	3.17	3.00	2.96		2.94	
30	2.91	2.95	2.97	2.96	3.11	3.19	3.18	3.18	3.00	2.96		2.94	
31		2.94		2.95	3.09		3.17		3.00	2.96		2.94	
Mean	2.89	2.87	2.95	2.97	3.09	3.09	3.19	3.09	3.11	2.97	2.95	2.94	
Max	2.94	2.95	2.97	3.00	3.23	3.21	3.26	3.18	3.23	3.00	2.96	2.96	3.26
Min	2.82	2.82	2.93	2.95	2.96	2.98	3.12	3.03	3.00	2.96	2.95	2.94	2.82

Annual Max Momentary Gage Height 3.26 M (A.D), at 24.00 Hours, on Oct 18, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.19 M (A.D)
Left Bank Elevation 5.46 M (A.D)
Right Bank Elevation 5.11 M (A.D), Drainage Area 1092 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.000	0.300	1.200	2.100	1.800	7.000	10.200	9.000	11.000	3.000	1.800	1.200	
2	0.000	0.000	0.900	2.100	1.800	6.600	9.800	8.600	12.000	3.000	1.800	1.200	
3	0.000	0.000	0.900	2.100	1.800	6.600	9.000	8.200	12.500	3.000	1.500	1.200	
4	0.000	0.000	0.900	2.400	3.000	5.400	10.200	7.800	12.500	2.400	1.500	1.200	
5	0.000	0.000	1.200	3.000	2.400	4.200	8.600	7.800	12.500	2.100	1.500	1.200	
6	0.000	0.000	1.500	3.000	2.400	3.800	7.800	7.800	12.000	2.100	1.500	1.200	
7	0.000	0.000	1.800	3.000	2.400	3.400	7.800	7.400	11.500	2.100	1.500	1.200	
8	0.000	0.000	1.800	3.000	3.400	3.400	7.800	7.000	11.000	2.100	1.500	1.200	
9	0.000	0.000	1.800	3.000	3.000	3.000	9.400	6.600	10.600	2.100	1.500	1.200	
10	0.000	0.000	1.800	3.000	3.000	2.700	9.800	6.600	10.200	2.100	1.500	1.200	
11	0.000	0.000	1.500	2.700	3.800	3.000	10.200	6.200	9.800	2.700	1.500	1.200	
12	0.000	0.000	1.500	2.700	4.200	3.000	11.500	6.200	9.000	3.000	1.500	1.500	
13	0.000	0.000	1.500	2.400	5.000	3.800	12.500	5.800	8.600	3.000	1.500	1.500	
14	0.000	0.000	1.500	2.700	6.200	3.800	12.000	5.400	8.200	2.700	1.500	1.500	
15	0.000	0.000	1.500	2.400	7.800	3.000	11.500	5.000	7.800	2.400	1.500	1.200	
16	0.000	0.000	1.200	2.400	8.200	2.400	11.000	5.000	7.000	2.400	1.500	1.200	
17	0.000	0.000	1.200	2.100	7.800	2.400	10.600	4.600	6.600	2.400	1.500	1.200	
18	0.000	0.000	1.500	2.100	8.200	4.600	12.500	4.200	6.600	2.400	1.500	1.200	
19	0.000	0.000	1.200	2.100	10.200	8.600	14.000	4.200	5.800	2.100	1.500	1.200	
20	0.000	0.000	1.500	1.800	11.000	10.200	13.500	4.200	5.400	1.800	1.500	1.200	
21	0.900	0.000	1.500	1.800	11.000	11.500	12.000	4.600	5.000	1.800	1.500	1.200	
22	1.200	0.000	1.200	1.800	11.000	11.500	11.500	5.800	4.600	1.800	1.500	1.200	
23	1.200	0.000	1.500	1.800	12.500	11.500	11.500	6.600	4.200	1.800	1.500	1.200	
24	0.900	0.000	1.500	1.800	11.500	11.000	11.000	7.000	3.800	1.800	1.500	1.800	
25	0.900	0.000	1.800	1.800	11.500	10.600	10.600	7.000	3.800	1.800	1.500	1.500	
26	0.900	0.600	1.800	1.500	10.600	10.600	10.200	7.400	3.800	1.800	1.500	1.500	
27	0.600	1.200	1.800	1.500	10.200	10.600	10.200	8.600	3.400	1.800	1.500	1.200	
28	0.600	1.200	1.800	1.500	10.200	10.600	10.200	9.000	3.400	1.800	1.500	1.200	
29	0.300	1.500	1.500	1.800	9.400	10.200	10.200	9.800	3.000	1.800		1.200	
30	0.300	1.500	2.100	1.800	7.400	10.600	10.200	10.200	3.000	1.800		1.200	
31		1.200		1.500	6.600		9.800		3.000	1.800		1.200	
Total	7.800	7.500	44.400	68.700	209.300	199.600	327.100	203.600	231.600	68.700	42.600	39.300	1450.200 CMSDAY
Mean	0.260	0.242	1.480	2.216	6.752	6.653	10.552	6.787	7.471	2.216	1.521	1.268	3.973 CMS
Max	1.200	1.500	2.100	3.000	12.500	11.500	14.000	10.200	12.500	3.000	1.800	1.800	14.000 CMS
Min	0.000	0.000	0.900	1.500	1.800	2.400	7.800	4.200	3.000	1.800	1.500	1.200	0.000 CMS
Runoff	0.674	0.648	3.836	5.936	18.084	17.245	28.261	17.591	20.010	5.936	3.681	3.396	125.297 MCM

Momentary Peak 14.00 CMS, at 3.26 M (A.D), at 24.00 Hours, on Oct 18, 1998
Runoff Yield 3.64 Liters/Second/Square KM, Momentary Peak Yield 12.821 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

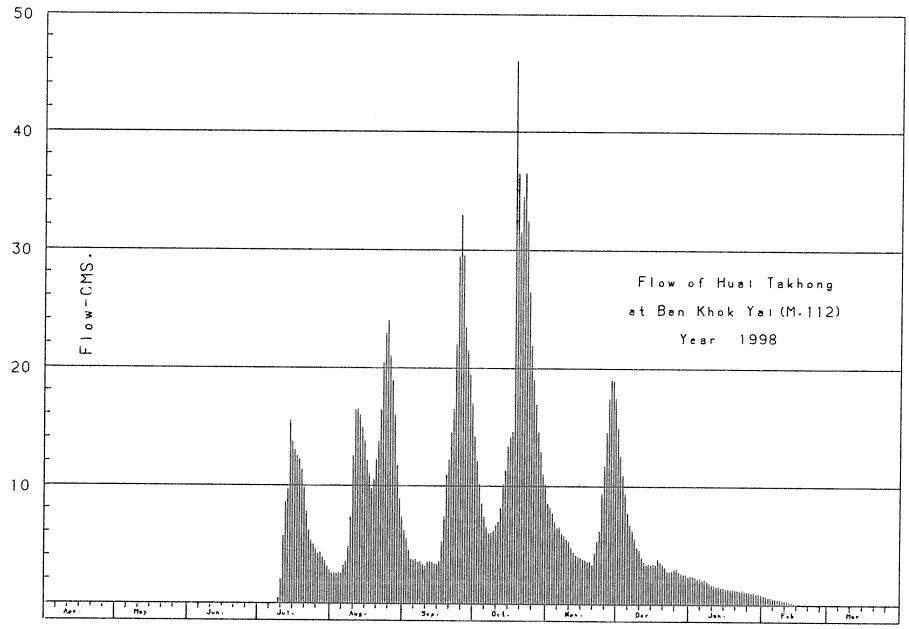
Huai Takhong at Ban Khok Yai, Buri Ram (M.112)

Location	Lat. 15°-11'-44" N., Long. 103°-12'-22" E., on left bank at the bridge on highway, Ban Khok Yai, Amphoe Satuk, Buri Ram.
Drainage Area	1,156 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 5 meters from the gage site.
Elevation	+9.129 m.(A.D.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1983 - 1987, 1998 to date.
Rated by Float	-
Rated by Current Meter	1983 - 1987, 1998 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	Overbank flow starts at elevation +5.14 m.(A.D.) and is included.
General Description	Records good. Ban Don Mun weir situated downstream from the gage site. Stage-discharge relation defined by 16 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.57	3.36	3.43	3.73	4.60	4.77	4.98	4.84	5.00	4.58	4.30	3.81	
2	3.57	3.36	3.43	3.77	4.60	4.74	4.93	4.83	4.94	4.58	4.27	3.81	
3	3.57	3.34	3.41	3.82	4.60	4.70	4.88	4.82	4.90	4.57	4.25	3.80	
4	3.56	3.33	3.40	3.86	4.60	4.66	4.84	4.80	4.86	4.56	4.23	3.80	
5	3.56	3.34	3.39	3.90	4.60	4.66	4.81	4.78	4.82	4.56	4.21	3.79	
6	3.56	3.34	3.38	3.95	4.63	4.66	4.78	4.78	4.79	4.55	4.20	3.78	
7	3.56	3.33	3.39	4.00	4.65	4.65	4.76	4.76	4.77	4.55	4.19	3.75	
8	3.55	3.32	3.39	4.06	4.71	4.65	4.76	4.75	4.74	4.54	4.18	3.71	
9	3.54	3.34	3.39	4.20	4.81	4.64	4.77	4.74	4.71	4.52	4.17	3.69	
10	3.53	3.37	3.40	4.55	4.94	4.63	4.79	4.73	4.70	4.51	4.15	3.67	
11	3.52	3.37	3.39	4.75	5.03	4.65	4.80	4.71	4.67	4.50	4.13	3.65	
12	3.51	3.37	3.38	4.84	5.03	4.65	4.83	4.69	4.65	4.49	4.12	3.62	
13	3.50	3.48	3.37	4.87	5.02	4.65	4.88	4.68	4.64	4.48	4.09	3.60	
14	3.49	3.49	3.43	5.01	5.00	4.64	4.91	4.67	4.64	4.46	4.08	3.60	
15	3.48	3.49	3.42	4.97	4.97	4.64	4.96	4.67	4.64	4.45	4.06	3.60	
16	3.47	3.49	3.41	4.95	4.93	4.65	4.98	4.66	4.64	4.44	4.04	3.59	
17	3.46	3.49	3.40	4.94	4.90	4.73	4.99	4.66	4.64	4.43	4.02	3.57	
18	3.45	3.49	3.40	4.93	4.87	4.81	5.61	4.65	4.66	4.43	4.00	3.55	
19	3.45	3.49	3.40	4.91	4.89	4.90	5.43	4.65	4.65	4.42	3.98	3.52	
20	3.44	3.49	3.38	4.87	4.93	4.93	5.33	4.64	4.64	4.42	3.97	3.50	
21	3.44	3.48	3.35	4.82	4.97	4.99	5.39	4.69	4.63	4.40	3.95	3.48	
22	3.43	3.46	3.34	4.77	5.03	5.03	5.43	4.73	4.61	4.40	3.93	3.52	
23	3.43	3.45	3.33	4.73	5.11	5.14	5.35	4.77	4.61	4.40	3.91	3.52	
24	3.43	3.44	3.33	4.72	5.16	5.29	5.23	4.86	4.61	4.39	3.89	3.52	
25	3.42	3.44	3.33	4.70	5.18	5.36	5.14	4.92	4.62	4.38	3.87	3.53	
26	3.41	3.44	3.33	4.68	5.12	5.29	5.08	4.99	4.62	4.36	3.85	3.54	
27	3.40	3.43	3.47	4.69	5.08	5.17	5.04	5.05	4.61	4.36	3.83	3.54	
28	3.39	3.43	3.56	4.67	5.02	5.13	4.99	5.08	4.60	4.35	3.83	3.54	
29	3.38	3.43	3.62	4.65	4.92	5.09	4.95	5.08	4.60	4.33		3.55	
30	3.37	3.44	3.68	4.63	4.85	5.04	4.90	5.05	4.59	4.32		3.55	
31		3.44		4.61	4.81		4.88		4.58	4.31		3.54	
Mean	3.48	3.42	3.41	4.53	4.89	4.85	5.01	4.79	4.69	4.45	4.06	3.62	
Max	3.57	3.49	3.68	5.01	5.18	5.36	5.61	5.08	5.00	4.58	4.30	3.81	5.61
Min	3.37	3.32	3.33	3.73	4.60	4.63	4.76	4.64	4.58	4.31	3.83	3.48	3.32

Annual Max Momentary Gage Height 5.75 M (A.D), at 15.00 Hours, on Oct 18, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.23 M (A.D)
Left Bank Elevation 6.04 M (A.D)
Right Bank Elevation 5.13 M (A.D), Drainage Area 1156 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	2.60	6.28	14.20	8.60	15.00	2.40	0.80	0.00	
2	0.00	0.00	0.00	0.00	2.60	5.56	12.20	8.20	12.60	2.40	0.71	0.00	
3	0.00	0.00	0.00	0.00	2.60	4.60	10.20	7.80	11.00	2.30	0.65	0.00	
4	0.00	0.00	0.00	0.00	2.60	3.80	8.60	7.00	9.40	2.20	0.59	0.00	
5	0.00	0.00	0.00	0.00	2.60	3.80	7.40	6.52	7.80	2.20	0.53	0.00	
6	0.00	0.00	0.00	0.00	3.20	3.80	6.52	6.52	6.76	2.10	0.50	0.00	
7	0.00	0.00	0.00	0.00	3.60	3.60	6.04	6.04	6.28	2.10	0.47	0.00	
8	0.00	0.00	0.00	0.12	4.84	3.60	6.04	5.80	5.56	2.00	0.44	0.00	
9	0.00	0.00	0.00	0.50	7.40	3.40	6.28	5.56	4.84	1.80	0.41	0.00	
10	0.00	0.00	0.00	2.10	12.60	3.20	6.76	5.32	4.60	1.70	0.35	0.00	
11	0.00	0.00	0.00	5.80	16.50	3.60	7.00	4.84	4.00	1.60	0.29	0.00	
12	0.00	0.00	0.00	8.60	16.50	3.60	8.20	4.40	3.60	1.56	0.26	0.00	
13	0.00	0.00	0.00	9.80	16.00	3.60	10.20	4.20	3.40	1.52	0.18	0.00	
14	0.00	0.00	0.00	15.50	15.00	3.40	11.40	4.00	3.40	1.44	0.16	0.00	
15	0.00	0.00	0.00	13.80	13.80	3.40	13.40	4.00	3.40	1.40	0.12	0.00	
16	0.00	0.00	0.00	13.00	12.20	3.60	14.20	3.80	3.40	1.36	0.08	0.00	
17	0.00	0.00	0.00	12.60	11.00	5.32	14.60	3.80	3.40	1.32	0.04	0.00	
18	0.00	0.00	0.00	12.20	9.80	7.40	46.05	3.60	3.80	1.32	0.00	0.00	
19	0.00	0.00	0.00	11.40	10.60	11.00	36.50	3.60	3.60	1.28	0.00	0.00	
20	0.00	0.00	0.00	9.80	12.20	12.20	31.50	3.40	3.40	1.28	0.00	0.00	
21	0.00	0.00	0.00	7.80	13.80	14.60	34.50	4.40	3.20	1.20	0.00	0.00	
22	0.00	0.00	0.00	6.28	16.50	16.50	36.50	5.32	2.80	1.20	0.00	0.00	
23	0.00	0.00	0.00	5.32	20.50	22.00	32.50	6.28	2.80	1.20	0.00	0.00	
24	0.00	0.00	0.00	5.08	23.00	29.50	26.50	9.40	2.80	1.16	0.00	0.00	
25	0.00	0.00	0.00	4.60	24.00	33.00	22.00	11.80	3.00	1.12	0.00	0.00	
26	0.00	0.00	0.00	4.20	21.00	29.50	19.00	14.60	3.00	1.04	0.00	0.00	
27	0.00	0.00	0.00	4.40	19.00	23.50	17.00	17.50	2.80	1.04	0.00	0.00	
28	0.00	0.00	0.00	4.00	16.00	21.50	14.60	19.00	2.60	1.00	0.00	0.00	
29	0.00	0.00	0.00	3.60	11.80	19.50	13.00	19.00	2.60	0.92		0.00	
30	0.00	0.00	0.00	3.20	9.00	17.00	11.00	17.50	2.50	0.88		0.00	
31		0.00		2.80	7.40		10.20		2.40	0.84		0.00	
Total	0.00	0.00	0.00	166.50	360.24	325.36	514.09	231.80	149.74	46.88	6.58	0.00	1801.19 CMSDAY
Mean	0.00	0.00	0.00	5.37	11.62	10.85	16.58	7.73	4.83	1.51	0.23	0.00	4.93 CMS
Max	0.00	0.00	0.00	15.50	24.00	33.00	46.05	19.00	15.00	2.40	0.80	0.00	46.05 CMS
Min	0.00	0.00	0.00	0.00	2.60	3.20	6.04	3.40	2.40	0.84	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	14.386	31.125	28.111	44.417	20.028	12.938	4.050	0.569	0.000	155.623 MCM

Momentary Peak 53.75 CMS, at 5.75 M (A.D), at 15.00 Hours, on Oct 18, 1998

Runoff Yield 4.27 Liters/Second/Square KM, Momentary Peak Yield 46.497 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

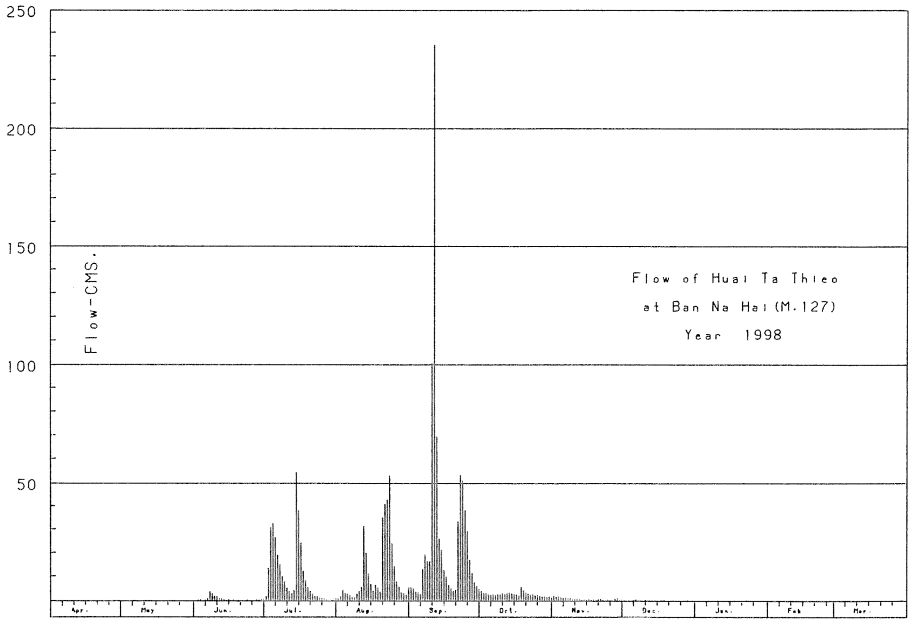
Huai Ta Thieo at Ban Na Hai, Ubon Ratchathani (M.127)

Location	Lat. 15°-38'-37" N., Long. 104°-55'-57" E., on left bank at the bridge on road, Ban Na Hai, Amphoe Trakan Phutphon, Ubon Ratchathani.
Drainage Area	414 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream side at the abutment of the bridge.
Elevation	+11.514 m.(A.D.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	Overbank flow starts at elevation +5.06 m.(A.D.),records are channel flow only.
General Description	Records good. The weir situated about 300 meters downstream from the gage site. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.83	0.74	1.35	1.49	1.33	1.79	1.69	1.49	1.29	1.23	1.09	0.95	
2	0.83	0.73	1.30	2.05	1.50	1.75	1.64	1.47	1.27	1.22	1.09	0.94	
3	0.82	0.73	1.28	2.40	1.72	1.69	1.61	1.46	1.26	1.21	1.08	0.94	
4	0.82	0.75	1.27	2.44	1.64	1.64	1.57	1.45	1.32	1.21	1.07	0.93	
5	0.81	0.81	1.28	2.32	1.61	1.59	1.56	1.43	1.30	1.20	1.07	0.93	
6	0.81	0.82	1.41	2.17	1.51	2.04	1.55	1.41	1.27	1.20	1.06	0.93	
7	0.81	0.80	1.69	2.08	1.47	2.17	1.54	1.42	1.24	1.20	1.06	0.93	
8	0.79	0.79	1.59	1.96	1.42	2.12	1.56	1.40	1.25	1.20	1.06	0.93	
9	0.79	0.77	1.51	1.90	1.60	2.11	1.57	1.38	1.25	1.20	1.05	0.93	
10	0.78	0.77	1.46	1.78	1.69	3.61	1.60	1.36	1.24	1.18	1.05	0.93	
11	0.78	0.76	1.40	1.68	1.78	5.66	1.60	1.34	1.24	1.18	1.04	0.92	
12	0.78	0.75	1.34	1.62	2.41	3.10	1.62	1.32	1.24	1.18	1.04	0.92	
13	0.76	0.75	1.30	1.71	2.19	2.31	1.63	1.33	1.24	1.18	1.03	0.92	
14	0.76	0.75	1.30	2.84	1.98	2.21	1.62	1.28	1.25	1.17	1.01	0.91	
15	0.76	0.74	1.29	2.54	1.86	2.03	1.56	1.31	1.25	1.16	1.01	0.91	
16	0.75	0.73	1.27	2.27	1.70	1.95	1.54	1.30	1.25	1.15	1.01	0.90	
17	0.76	0.73	1.26	2.02	1.84	1.84	1.53	1.31	1.25	1.15	1.01	0.90	
18	0.78	0.75	1.25	1.91	1.76	1.75	1.80	1.31	1.25	1.15	1.00	0.89	
19	0.79	0.75	1.26	1.79	1.67	1.71	1.73	1.31	1.25	1.14	1.00	0.91	
20	0.78	0.75	1.26	1.69	2.49	1.72	1.63	1.32	1.24	1.14	1.00	0.88	
21	0.78	0.74	1.25	1.59	2.59	2.45	1.58	1.34	1.24	1.14	1.00	0.88	
22	0.79	0.73	1.25	1.50	2.63	2.82	1.56	1.33	1.24	1.13	0.99	0.92	
23	0.78	0.73	1.26	1.46	2.81	2.77	1.56	1.30	1.24	1.13	0.98	0.94	
24	0.78	0.72	1.26	1.43	2.27	2.55	1.53	1.30	1.24	1.12	0.98	0.94	
25	0.77	0.82	1.26	1.39	2.06	2.37	1.52	1.31	1.24	1.11	0.97	0.94	
26	0.76	0.83	1.29	1.36	1.90	2.13	1.49	1.31	1.23	1.11	0.97	0.94	
27	0.75	0.91	1.32	1.33	1.80	2.00	1.48	1.40	1.23	1.11	0.96	0.94	
28	0.75	0.91	1.30	1.32	1.66	1.88	1.46	1.38	1.24	1.10	0.96	0.93	
29	0.74	0.93	1.34	1.31	1.59	1.82	1.46	1.33	1.24	1.11		0.93	
30	0.74	1.00	1.33	1.40	1.56	1.74	1.46	1.33	1.23	1.10		0.95	
31		1.04		1.36	1.77		1.44		1.23	1.10		0.95	
Mean	0.78	0.79	1.33	1.81	1.86	2.24	1.57	1.36	1.25	1.16	1.02	0.92	
Max	0.83	1.04	1.69	2.84	2.81	5.66	1.80	1.49	1.32	1.23	1.09	0.95	5.66
Min	0.74	0.72	1.25	1.31	1.33	1.59	1.44	1.28	1.23	1.10	0.96	0.88	0.72

Annual Max Momentary Gage Height 6.12 M (A.D), at 6.00 Hours, on Sep 11, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.32 M (A.D)
Left Bank Elevation 5.05 M (A.D)
Right Bank Elevation 9.99 M (A.D), Drainage Area 414 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.75	1.90	0.65	5.80	3.90	1.90	0.45	0.15	0.00	0.00	
2	0.00	0.00	0.50	14.00	2.00	5.00	3.40	1.70	0.35	0.10	0.00	0.00	
3	0.00	0.00	0.40	31.00	4.40	3.90	3.10	1.60	0.30	0.05	0.00	0.00	
4	0.00	0.00	0.35	33.00	3.40	3.40	2.70	1.50	0.60	0.05	0.00	0.00	
5	0.00	0.00	0.40	27.00	3.10	2.90	2.60	1.30	0.50	0.00	0.00	0.00	
6	0.00	0.00	1.10	19.50	2.10	13.60	2.50	1.10	0.35	0.00	0.00	0.00	
7	0.00	0.00	3.90	15.20	1.70	19.50	2.40	1.20	0.20	0.00	0.00	0.00	
8	0.00	0.00	2.90	10.40	1.20	17.00	2.60	1.00	0.25	0.00	0.00	0.00	
9	0.00	0.00	2.10	8.00	3.00	16.50	2.70	0.90	0.25	0.00	0.00	0.00	
10	0.00	0.00	1.60	5.60	3.90	100.60	3.00	0.80	0.20	0.00	0.00	0.00	
11	0.00	0.00	1.00	3.80	5.60	235.20	3.00	0.70	0.20	0.00	0.00	0.00	
12	0.00	0.00	0.70	3.20	31.50	70.00	3.20	0.60	0.20	0.00	0.00	0.00	
13	0.00	0.00	0.50	4.20	20.50	26.50	3.30	0.65	0.20	0.00	0.00	0.00	
14	0.00	0.00	0.50	54.70	11.20	21.50	3.20	0.40	0.25	0.00	0.00	0.00	
15	0.00	0.00	0.45	38.20	7.20	13.20	2.60	0.55	0.25	0.00	0.00	0.00	
16	0.00	0.00	0.35	24.50	4.00	10.00	2.40	0.50	0.25	0.00	0.00	0.00	
17	0.00	0.00	0.30	12.80	6.80	6.80	2.30	0.55	0.25	0.00	0.00	0.00	
18	0.00	0.00	0.25	8.40	5.20	5.00	6.00	0.55	0.25	0.00	0.00	0.00	
19	0.00	0.00	0.30	5.80	3.70	4.20	4.60	0.55	0.25	0.00	0.00	0.00	
20	0.00	0.00	0.30	3.90	35.50	4.40	3.30	0.60	0.20	0.00	0.00	0.00	
21	0.00	0.00	0.25	2.90	40.95	33.50	2.80	0.70	0.20	0.00	0.00	0.00	
22	0.00	0.00	0.25	2.00	43.15	53.60	2.60	0.65	0.20	0.00	0.00	0.00	
23	0.00	0.00	0.30	1.60	53.05	50.85	2.60	0.50	0.20	0.00	0.00	0.00	
24	0.00	0.00	0.30	1.30	24.50	38.75	2.30	0.50	0.20	0.00	0.00	0.00	
25	0.00	0.00	0.30	0.95	14.40	29.50	2.20	0.55	0.20	0.00	0.00	0.00	
26	0.00	0.00	0.45	0.80	8.00	17.50	1.90	0.55	0.15	0.00	0.00	0.00	
27	0.00	0.00	0.60	0.65	6.00	12.00	1.80	1.00	0.15	0.00	0.00	0.00	
28	0.00	0.00	0.50	0.60	3.60	7.60	1.60	0.90	0.20	0.00	0.00	0.00	
29	0.00	0.00	0.70	0.55	2.90	6.40	1.60	0.65	0.20	0.00		0.00	
30	0.00	0.00	0.65	1.00	2.60	4.80	1.60	0.65	0.15	0.00		0.00	
31		0.00		0.80	5.40		1.40		0.15	0.00		0.00	
Total	0.00	0.00	22.95	338.25	361.20	839.50	85.20	25.30	7.75	0.35	0.00	0.00	1680.50 CMSDAY
Mean	0.00	0.00	0.77	10.91	11.65	27.98	2.75	0.84	0.25	0.01	0.00	0.00	4.60 CMS
Max	0.00	0.00	3.90	54.70	53.05	235.20	6.00	1.90	0.60	0.15	0.00	0.00	235.20 CMS
Min	0.00	0.00	0.25	0.55	0.65	2.90	1.40	0.40	0.15	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	1.983	29.225	31.208	72.533	7.361	2.186	0.670	0.030	0.000	0.000	145.195 MCM

Momentary Peak 267.40 CMS, at 6.12 M (A.D), at 6.00 Hours, on Sep 11, 1998

Runoff Yield 11.12 Liters/Second/Square KM, Momentary Peak Yield 645.894 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

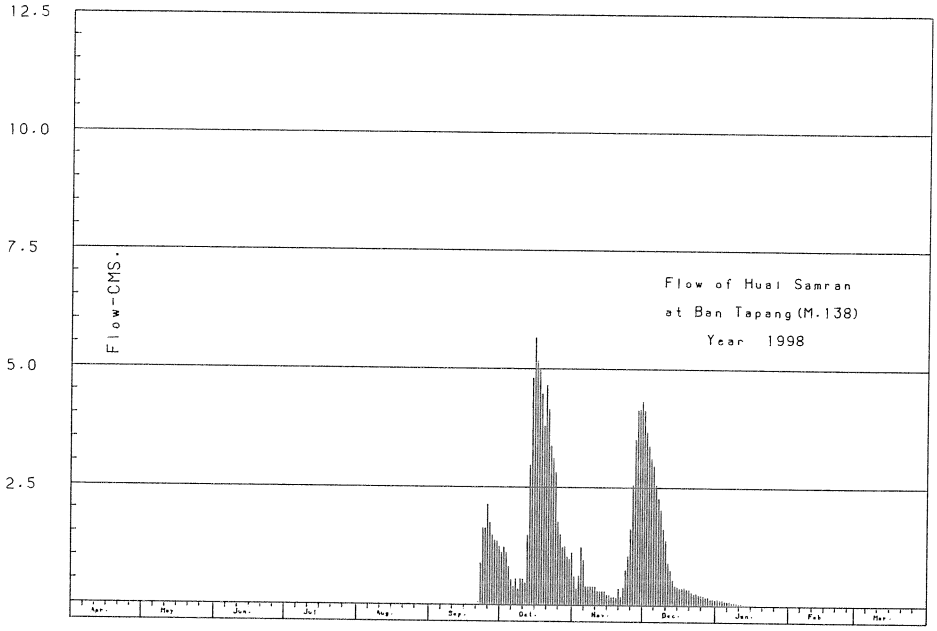
Huai Samran at Ban Tapang, Si Sa Ket (M.138)

Location	Lat. 14°-46'-54" N., Long. 104°-07'-32" E., on right bank at the bridge on road, Ban Tapang, Amphoe Khu Khan, Si Sa Ket.
Drainage Area	1,038 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Highways Department.
Location	On right bank downstream side at the abutment of the bridge.
Elevation	+5.108 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow effected by the weir about 1 kilometer above gage site. Stage-discharge relation defined by 23 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.63	1.44	1.33	1.18	1.07	1.48	2.50	2.43	2.72	2.22	2.06	1.81	
2	1.62	1.43	1.31	1.21	1.13	1.47	2.51	2.37	2.69	2.21	2.06	1.80	
3	1.60	1.43	1.30	1.20	1.12	1.46	2.50	2.43	2.67	2.20	2.05	1.80	
4	1.60	1.42	1.29	1.20	1.14	1.46	2.46	2.51	2.65	2.19	2.04	1.79	
5	1.59	1.41	1.28	1.21	1.14	1.45	2.42	2.48	2.64	2.18	2.03	1.78	
6	1.58	1.41	1.28	1.20	1.14	1.44	2.39	2.40	2.61	2.17	2.02	1.77	
7	1.57	1.40	1.28	1.20	1.14	1.44	2.42	2.39	2.59	2.16	2.01	1.76	
8	1.56	1.39	1.27	1.20	1.28	1.46	2.37	2.40	2.57	2.15	2.00	1.76	
9	1.55	1.38	1.27	1.22	1.29	1.45	2.42	2.39	2.54	2.14	2.00	1.75	
10	1.54	1.37	1.26	1.22	1.30	1.45	2.42	2.39	2.52	2.14	1.99	1.74	
11	1.53	1.37	1.25	1.21	1.33	1.47	2.41	2.35	2.47	2.13	1.98	1.73	
12	1.52	1.36	1.25	1.20	1.34	1.48	2.53	2.34	2.45	2.13	1.97	1.72	
13	1.51	1.35	1.24	1.20	1.34	1.49	2.64	2.35	2.42	2.12	1.96	1.71	
14	1.50	1.35	1.24	1.20	1.34	1.48	2.76	2.34	2.40	2.12	1.96	1.70	
15	1.49	1.34	1.23	1.20	1.35	1.48	2.81	2.31	2.39	2.11	1.95	1.69	
16	1.48	1.33	1.22	1.19	1.35	1.47	2.78	2.30	2.38	2.11	1.94	1.68	
17	1.47	1.32	1.21	1.18	1.36	1.48	2.77	2.27	2.38	2.10	1.93	1.67	
18	1.47	1.32	1.20	1.18	1.36	1.63	2.74	2.26	2.38	2.09	1.92	1.66	
19	1.46	1.31	1.19	1.16	1.39	1.79	2.70	2.26	2.37	2.09	1.91	1.65	
20	1.46	1.31	1.18	1.09	1.40	1.82	2.75	2.37	2.36	2.08	1.90	1.64	
21	1.48	1.30	1.17	1.08	1.42	2.16	2.72	2.27	2.34	2.08	1.89	1.63	
22	1.49	1.29	1.16	1.06	1.48	2.47	2.67	2.39	2.32	2.08	1.88	1.63	
23	1.51	1.28	1.15	1.05	1.50	2.54	2.65	2.45	2.32	2.09	1.87	1.63	
24	1.50	1.28	1.16	1.05	1.51	2.54	2.63	2.49	2.31	2.10	1.86	1.62	
25	1.49	1.30	1.16	1.04	1.51	2.58	2.55	2.54	2.30	2.10	1.85	1.63	
26	1.48	1.32	1.16	1.06	1.50	2.55	2.53	2.61	2.29	2.10	1.84	1.67	
27	1.48	1.31	1.16	1.06	1.50	2.53	2.51	2.68	2.27	2.09	1.83	1.68	
28	1.47	1.32	1.15	1.05	1.49	2.52	2.51	2.72	2.26	2.09	1.82	1.68	
29	1.45	1.32	1.15	1.05	1.49	2.52	2.49	2.72	2.23	2.08		1.68	
30	1.45	1.33	1.14	1.07	1.48	2.51	2.48	2.73	2.22	2.08		1.68	
31		1.33		1.07	1.48		2.50		2.22	2.07		1.67	
Mean	1.52	1.35	1.22	1.14	1.34	1.84	2.57	2.43	2.43	2.12	1.95	1.70	
Max	1.63	1.44	1.33	1.22	1.51	2.58	2.81	2.73	2.72	2.22	2.06	1.81	2.81
Min	1.45	1.28	1.14	1.04	1.07	1.44	2.37	2.26	2.22	2.07	1.82	1.62	1.04

Annual Max Momentary Gage Height 2.82 M (A.D), at 15.00 Hours, on Oct 15, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -1.07 M (A.D)
Left Bank Elevation 3.89 M (A.D)
Right Bank Elevation 3.91 M (A.D), Drainage Area 1038 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.61	4.14	0.12	0.00	0.00	
2	0.00	0.00	0.00	0.00	0.00	0.00	1.23	0.34	3.66	0.11	0.00	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.61	3.38	0.10	0.00	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.82	1.23	3.10	0.09	0.00	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.96	2.96	0.08	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.38	0.40	2.54	0.07	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.38	2.27	0.06	0.00	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.40	2.01	0.05	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.38	1.62	0.04	0.00	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.54	0.38	1.36	0.04	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.30	0.89	0.03	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	1.49	0.28	0.75	0.03	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	2.96	0.30	0.54	0.02	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	4.82	0.28	0.40	0.02	0.00	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	5.67	0.22	0.38	0.01	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	5.16	0.20	0.36	0.01	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.17	0.36	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	4.48	0.16	0.36	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	3.80	0.16	0.34	0.00	0.00	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	4.65	0.34	0.32	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.06	4.14	0.17	0.28	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.89	3.38	0.38	0.24	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.00	0.00	1.62	3.10	0.75	0.24	0.00	0.00	0.00	
24	0.00	0.00	0.00	0.00	0.00	1.62	2.82	1.03	0.22	0.00	0.00	0.00	
25	0.00	0.00	0.00	0.00	0.00	2.14	1.75	1.62	0.20	0.00	0.00	0.00	
26	0.00	0.00	0.00	0.00	0.00	1.75	1.49	2.54	0.19	0.00	0.00	0.00	
27	0.00	0.00	0.00	0.00	0.00	1.49	1.23	3.52	0.17	0.00	0.00	0.00	
28	0.00	0.00	0.00	0.00	0.00	1.36	1.23	4.14	0.16	0.00	0.00	0.00	
29	0.00	0.00	0.00	0.00	0.00	1.36	1.03	4.14	0.13	0.00		0.00	
30	0.00	0.00	0.00	0.00	0.00	1.23	0.96	4.31	0.12	0.00		0.00	
31		0.00		0.00	0.00		1.10		0.12	0.00		0.00	
Total	0.00	0.00	0.00	0.00	0.00	13.52	67.85	30.70	33.81	0.88	0.00	0.00	146.76 CMSDAY
Mean	0.00	0.00	0.00	0.00	0.00	0.45	2.19	1.02	1.09	0.03	0.00	0.00	0.40 CMS
Max	0.00	0.00	0.00	0.00	0.00	2.14	5.67	4.31	4.14	0.12	0.00	0.00	5.67 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.34	0.16	0.12	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	0.000	0.000	1.168	5.862	2.652	2.921	0.076	0.000	0.000	12.680 MCM

Momentary Peak 5.84 CMS, at 2.82 M (A.D), at 15.00 Hours, on Oct 15, 1998

Runoff Yield 0.39 Liters/Second/Square KM, Momentary Peak Yield 5.626 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

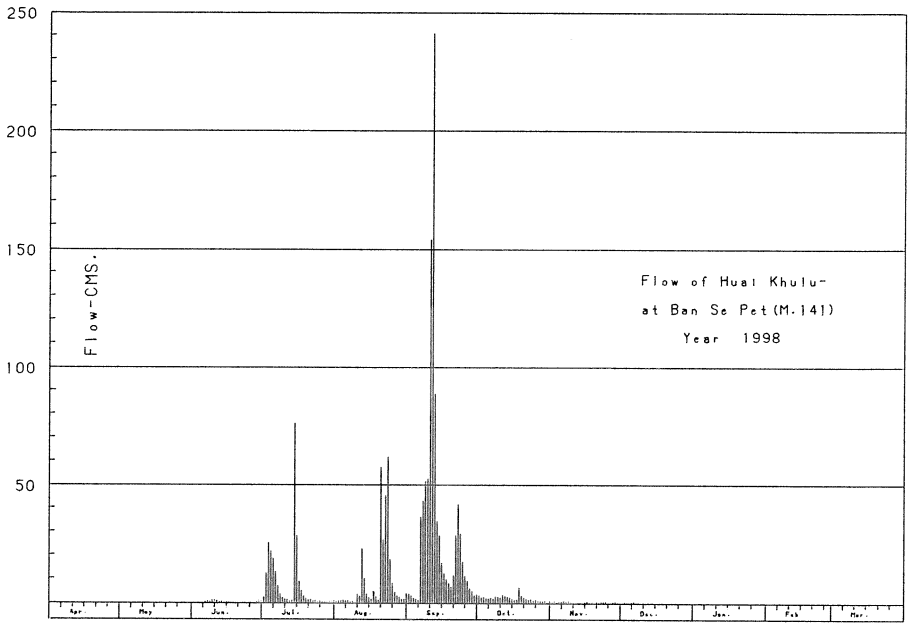
Huai Khulu at Ban Se Pet, Ubon Ratchathani (M.141)

Location	Lat. 15°-32'-24" N., Long. 104°-58'-46" E., on left bank at the bridge on highway, Ban Se Pet, Amphoe Trakan Phutpon, Ubon Ratchathani.
Drainage Area	382 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Highway Department.
Location	On left bank downstream side at the abutment of the bridge.
Elevation	+7.494 m.(A.D.)
Gage Reading Frequency	3-time daily readings at 07.00, 12.00 and 17.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1986-1993, 1997 to date.
Rated by Float	-
Rated by Current Meter	1986-1993, 1997 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	Overbank flow starts at elevation +6.01 m.(A.D.) and is included.
General Description	Records good. Stage-discharge relation defined by 43 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.32	1.68	1.92	2.19	1.98	2.30	2.23	1.97	1.87	1.73	1.68	1.56	
2	1.32	1.68	1.82	2.66	1.94	2.23	2.19	1.96	1.87	1.71	1.68	1.56	
3	1.32	1.68	1.80	3.05	2.03	2.17	2.18	1.95	1.87	1.71	1.68	1.56	
4	1.32	1.68	1.80	2.94	2.02	2.10	2.16	1.94	1.86	1.70	1.68	1.56	
5	1.32	1.68	1.78	2.86	2.01	2.07	2.15	1.93	1.85	1.69	1.67	1.56	
6	1.32	1.68	1.85	2.67	1.97	3.32	2.14	1.93	1.84	1.69	1.67	1.56	
7	1.32	1.68	1.94	2.46	1.93	3.48	2.14	1.94	1.83	1.69	1.67	1.56	
8	1.32	1.68	1.96	2.27	1.91	3.65	2.20	1.93	1.81	1.69	1.67	1.56	
9	1.32	1.68	2.03	2.18	1.95	3.68	2.21	1.92	1.81	1.69	1.67	1.56	
10	1.32	1.68	2.04	2.12	2.27	5.21	2.15	1.91	1.81	1.69	1.67	1.56	
11	1.32	1.69	1.94	2.05	2.23	5.98	2.26	1.89	1.81	1.69	1.67	1.56	
12	1.32	1.69	1.92	1.98	2.98	4.36	2.24	1.88	1.81	1.69	1.67	1.56	
13	1.32	1.69	1.88	2.00	2.59	3.28	2.21	1.87	1.80	1.69	1.67	1.56	
14	1.32	1.69	1.85	4.15	2.28	3.14	2.16	1.88	1.80	1.69	1.66	1.56	
15	1.32	1.70	1.81	3.13	2.16	2.80	2.11	1.88	1.79	1.69	1.65	1.56	
16	1.32	1.70	1.79	2.54	2.12	2.66	2.08	1.88	1.78	1.69	1.65	1.56	
17	1.32	1.70	1.78	2.36	2.36	2.56	2.08	1.88	1.78	1.69	1.60	1.56	
18	1.32	1.71	1.84	2.23	2.20	2.51	2.42	1.88	1.79	1.69	1.57	1.56	
19	1.32	1.71	1.81	2.14	2.08	2.43	2.25	1.87	1.79	1.69	1.56	1.56	
20	1.32	1.72	1.78	2.08	3.77	2.63	2.15	1.87	1.78	1.69	1.56	1.56	
21	1.32	1.73	1.76	2.04	3.08	3.13	2.11	1.87	1.78	1.69	1.56	1.56	
22	1.71	1.74	1.74	2.02	3.53	3.44	2.09	1.94	1.78	1.69	1.56	1.69	
23	1.71	1.75	1.73	1.99	3.86	3.16	2.07	1.91	1.77	1.69	1.56	1.68	
24	1.71	1.75	1.73	1.96	2.85	2.81	2.03	1.89	1.77	1.69	1.56	1.67	
25	1.71	1.76	1.73	1.94	2.50	2.61	2.03	1.88	1.77	1.69	1.56	1.65	
26	1.70	1.76	1.73	1.93	2.34	2.55	2.02	1.88	1.76	1.69	1.56	1.63	
27	1.69	1.77	1.73	1.92	2.24	2.41	2.00	1.90	1.76	1.69	1.56	1.63	
28	1.69	1.76	1.89	1.91	2.18	2.34	1.99	1.89	1.75	1.69	1.56	1.63	
29	1.71	1.75	2.02	1.91	2.12	2.25	1.98	1.87	1.75	1.69		1.62	
30	1.71	1.74	1.98	1.98	2.09	2.26	1.96	1.87	1.74	1.68		1.56	
31		1.73		2.00	2.29		1.97		1.74	1.68		1.56	
Mean	1.44	1.71	1.85	2.31	2.38	2.98	2.13	1.90	1.80	1.69	1.62	1.58	
Max	1.71	1.77	2.04	4.15	3.86	5.98	2.42	1.97	1.87	1.73	1.68	1.69	5.98
Min	1.32	1.68	1.73	1.91	1.91	2.07	1.96	1.87	1.74	1.68	1.56	1.56	1.32

Annual Max Momentary Gage Height 6.30 M (A.D), at 17.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 1.62 M (A.D)
Left Bank Elevation 6.00 M (A.D)
Right Bank Elevation 6.09 M (A.D), Drainage Area 382 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.68	2.50	0.92	4.00	3.02	0.88	0.51	0.09	0.00	0.00	
2	0.00	0.00	0.36	12.80	0.76	3.02	2.50	0.84	0.51	0.03	0.00	0.00	
3	0.00	0.00	0.30	25.75	1.18	2.30	2.40	0.80	0.51	0.03	0.00	0.00	
4	0.00	0.00	0.30	21.90	1.12	1.60	2.20	0.76	0.48	0.00	0.00	0.00	
5	0.00	0.00	0.24	19.10	1.06	1.42	2.10	0.72	0.45	0.00	0.00	0.00	
6	0.00	0.00	0.45	13.10	0.88	36.40	2.00	0.72	0.42	0.00	0.00	0.00	
7	0.00	0.00	0.76	7.38	0.72	43.60	2.00	0.76	0.39	0.00	0.00	0.00	
8	0.00	0.00	0.84	3.58	0.64	51.50	2.60	0.72	0.33	0.00	0.00	0.00	
9	0.00	0.00	1.18	2.40	0.80	53.00	2.74	0.68	0.33	0.00	0.00	0.00	
10	0.00	0.00	1.24	1.80	3.58	154.40	2.10	0.64	0.33	0.00	0.00	0.00	
11	0.00	0.00	0.76	1.30	3.02	241.40	3.44	0.57	0.33	0.00	0.00	0.00	
12	0.00	0.00	0.68	0.92	23.30	89.20	3.16	0.54	0.33	0.00	0.00	0.00	
13	0.00	0.00	0.54	1.00	10.73	34.60	2.74	0.51	0.30	0.00	0.00	0.00	
14	0.00	0.00	0.45	76.50	3.72	28.90	2.20	0.54	0.30	0.00	0.00	0.00	
15	0.00	0.00	0.33	28.55	2.20	17.00	1.70	0.54	0.27	0.00	0.00	0.00	
16	0.00	0.00	0.27	9.38	1.80	12.80	1.48	0.54	0.24	0.00	0.00	0.00	
17	0.00	0.00	0.24	5.20	5.20	9.92	1.48	0.54	0.24	0.00	0.00	0.00	
18	0.00	0.03	0.42	3.02	2.60	8.57	6.46	0.54	0.27	0.00	0.00	0.00	
19	0.00	0.03	0.33	2.00	1.48	6.69	3.30	0.51	0.27	0.00	0.00	0.00	
20	0.00	0.06	0.24	1.48	57.50	11.90	2.10	0.51	0.24	0.00	0.00	0.00	
21	0.00	0.09	0.18	1.24	26.80	28.55	1.70	0.51	0.24	0.00	0.00	0.00	
22	0.03	0.12	0.12	1.12	45.85	41.80	1.54	0.76	0.24	0.00	0.00	0.00	
23	0.03	0.15	0.09	0.96	62.00	29.60	1.42	0.64	0.21	0.00	0.00	0.00	
24	0.03	0.15	0.09	0.84	18.75	17.35	1.18	0.57	0.21	0.00	0.00	0.00	
25	0.03	0.18	0.09	0.76	8.30	11.30	1.18	0.54	0.21	0.00	0.00	0.00	
26	0.00	0.18	0.09	0.72	4.80	9.65	1.12	0.54	0.18	0.00	0.00	0.00	
27	0.00	0.21	0.09	0.68	3.16	6.23	1.00	0.60	0.18	0.00	0.00	0.00	
28	0.00	0.18	0.57	0.64	2.40	4.80	0.96	0.57	0.15	0.00	0.00	0.00	
29	0.03	0.15	1.12	0.64	1.80	3.30	0.92	0.51	0.15	0.00		0.00	
30	0.03	0.12	0.92	0.92	1.54	3.44	0.84	0.51	0.12	0.00		0.00	
31		0.09		1.00	3.86		0.88		0.12	0.00		0.00	
Total	0.18	1.74	13.97	249.18	302.47	968.24	64.46	18.61	9.06	0.15	0.00	0.00	1628.06 CMSDAY
Mean	0.01	0.06	0.47	8.04	9.76	32.27	2.08	0.62	0.29	0.00	0.00	0.00	4.46 CMS
Max	0.03	0.21	1.24	76.50	62.00	241.40	6.46	0.88	0.51	0.09	0.00	0.00	241.40 CMS
Min	0.00	0.00	0.09	0.64	0.64	1.42	0.84	0.51	0.12	0.00	0.00	0.00	0.00 CMS
Runoff	0.016	0.150	1.207	21.529	26.133	83.656	5.569	1.608	0.783	0.013	0.000	0.000	140.664 MCM

Momentary Peak 289.00 CMS, at 6.30 M (A.D), at 17.00 Hours, on Sep 10, 1998
Runoff Yield 11.68 Liters/Second/Square KM, Momentary Peak Yield 756.544 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

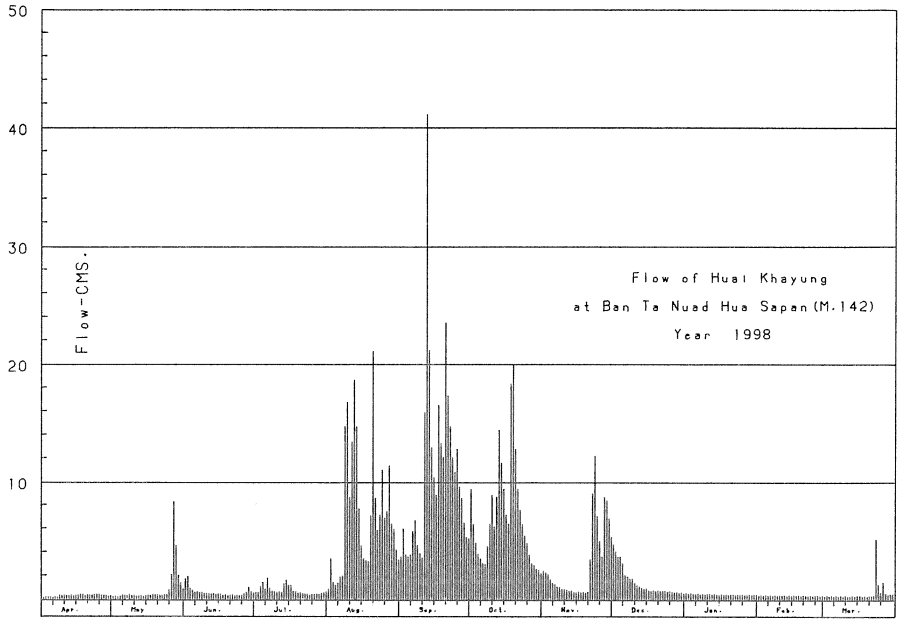
Huai Khayung at Ban Ta Nuad Hua Saphan, Si Sa Ket (M.142)

Location	Lat. 14°-30'-32" N., Long. 104°-37'-28" E.,on left bank at the bridge on road, Ban Ta Nuad Hua Saphan, Amphoe Kantharalak, Si Sa Ket.
Drainage Area	241 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Highways Dept.
Location	On left bank downstream side at the abutment of the bridge.
Elevation	+10.184 m.(A.D.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1990 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 54 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.26	0.30	0.83	0.54	0.67	1.08	1.66	0.93	1.19	0.51	0.40	0.35	
2	0.26	0.30	0.87	0.57	1.07	1.33	1.36	0.92	1.13	0.51	0.40	0.35	
3	0.28	0.29	0.69	0.72	0.79	1.11	1.21	0.89	1.08	0.50	0.40	0.35	
4	0.25	0.29	0.65	0.79	0.74	1.08	1.11	0.83	1.09	0.50	0.40	0.35	
5	0.25	0.43	0.60	0.69	0.78	1.11	1.07	0.78	1.02	0.49	0.40	0.35	
6	0.25	0.36	0.59	0.84	0.86	1.30	1.02	0.75	0.89	0.48	0.40	0.35	
7	0.28	0.39	0.59	0.70	0.88	1.40	1.00	0.73	0.86	0.47	0.39	0.34	
8	0.40	0.43	0.55	0.63	2.20	1.18	1.18	0.71	0.84	0.47	0.39	0.34	
9	0.39	0.39	0.54	0.59	2.40	1.12	1.37	0.69	0.83	0.47	0.39	0.34	
10	0.39	0.37	0.50	0.58	1.59	1.07	1.61	0.66	0.78	0.47	0.39	0.34	
11	0.40	0.36	0.47	0.58	2.07	2.32	1.34	0.65	0.74	0.47	0.39	0.34	
12	0.40	0.36	0.49	0.58	2.57	4.31	1.60	0.63	0.73	0.47	0.39	0.34	
13	0.40	0.35	0.47	0.76	2.19	2.80	2.17	0.62	0.70	0.46	0.39	0.34	
14	0.39	0.34	0.47	0.82	1.50	2.02	1.89	0.60	0.69	0.46	0.39	0.34	
15	0.39	0.34	0.47	0.75	1.18	1.76	1.66	0.59	0.68	0.45	0.39	0.34	
16	0.39	0.39	0.46	0.74	1.07	1.61	1.44	0.59	0.65	0.45	0.39	0.34	
17	0.47	0.42	0.42	0.63	1.05	2.38	1.37	0.58	0.63	0.45	0.39	0.34	
18	0.43	0.43	0.41	0.58	1.03	2.05	2.54	0.56	0.63	0.44	0.38	0.33	
19	0.40	0.43	0.40	0.56	1.44	1.94	2.69	0.56	0.63	0.44	0.38	0.33	
20	0.43	0.43	0.40	0.54	2.80	3.00	2.00	0.58	0.63	0.43	0.38	0.33	
21	0.40	0.42	0.40	0.52	1.59	2.45	1.66	1.06	0.63	0.43	0.38	0.33	
22	0.43	0.42	0.39	0.50	1.31	2.20	1.49	1.63	0.63	0.44	0.37	0.41	
23	0.42	0.42	0.39	0.46	1.44	1.93	1.36	1.95	0.62	0.44	0.37	1.24	
24	0.48	0.43	0.39	0.44	1.83	1.81	1.27	1.43	0.61	0.44	0.36	0.76	
25	0.44	0.65	0.39	0.44	1.42	2.00	1.20	1.22	0.61	0.44	0.36	0.54	
26	0.39	0.90	0.47	0.44	1.47	1.68	1.10	1.09	0.58	0.44	0.36	0.78	
27	0.38	1.56	0.60	0.49	1.86	1.59	1.02	1.59	0.57	0.44	0.36	0.54	
28	0.36	1.18	0.72	0.48	1.37	1.38	0.99	1.57	0.56	0.43	0.35	0.42	
29	0.36	0.89	0.59	0.50	1.32	1.26	0.96	1.41	0.55	0.43		0.50	
30	0.34	0.77	0.55	0.56	1.15	1.24	0.94	1.26	0.54	0.42		0.46	
31		0.69		0.59	1.05		0.91		0.52	0.41		0.53	
Mean	0.37	0.51	0.53	0.60	1.44	1.78	1.43	0.94	0.74	0.46	0.38	0.43	
Max	0.48	1.56	0.87	0.84	2.80	4.31	2.69	1.95	1.19	0.51	0.40	1.24	4.31
Min	0.25	0.29	0.39	0.44	0.67	1.07	0.91	0.56	0.52	0.41	0.35	0.33	0.25

Annual Max Momentary Gage Height 4.60 M (A.D), at 15.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.19 M (A.D)
Left Bank Elevation 6.65 M (A.D)
Right Bank Elevation 8.03 M (A.D), Drainage Area 241 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.26	0.30	1.78	0.61	0.91	3.64	9.40	2.44	4.70	0.56	0.40	0.35	
2	0.26	0.30	2.02	0.66	3.56	6.10	6.40	2.36	4.10	0.56	0.40	0.35	
3	0.28	0.29	0.97	1.12	1.54	3.90	4.90	2.14	3.64	0.55	0.40	0.35	
4	0.25	0.29	0.85	1.54	1.24	3.64	3.90	1.78	3.72	0.55	0.40	0.35	
5	0.25	0.45	0.70	0.97	1.48	3.90	3.56	1.48	3.16	0.54	0.40	0.35	
6	0.25	0.36	0.68	1.84	1.96	5.80	3.16	1.30	2.14	0.52	0.40	0.35	
7	0.28	0.39	0.68	1.00	2.08	6.80	3.00	1.18	1.96	0.51	0.39	0.34	
8	0.40	0.45	0.63	0.79	14.80	4.60	4.60	1.06	1.84	0.51	0.39	0.34	
9	0.39	0.39	0.61	0.68	16.80	4.00	6.50	0.97	1.78	0.51	0.39	0.34	
10	0.39	0.37	0.55	0.67	8.70	3.56	8.90	0.88	1.48	0.51	0.39	0.34	
11	0.40	0.36	0.51	0.67	13.50	16.00	6.20	0.85	1.24	0.51	0.39	0.34	
12	0.40	0.36	0.54	0.67	18.67	41.15	8.80	0.79	1.18	0.51	0.39	0.34	
13	0.40	0.35	0.51	1.36	14.70	21.20	14.50	0.76	1.00	0.49	0.39	0.34	
14	0.39	0.34	0.51	1.72	7.80	13.00	11.70	0.70	0.97	0.49	0.39	0.34	
15	0.39	0.34	0.51	1.30	4.60	10.40	9.40	0.68	0.94	0.47	0.39	0.34	
16	0.39	0.39	0.49	1.24	3.56	8.90	7.20	0.68	0.85	0.47	0.39	0.34	
17	0.51	0.43	0.43	0.79	3.40	16.60	6.50	0.67	0.79	0.47	0.39	0.34	
18	0.45	0.45	0.42	0.67	3.24	13.30	18.34	0.64	0.79	0.46	0.38	0.33	
19	0.40	0.45	0.40	0.64	7.20	12.20	19.99	0.64	0.79	0.46	0.38	0.33	
20	0.45	0.45	0.40	0.61	21.20	23.60	12.80	0.67	0.79	0.45	0.38	0.33	
21	0.40	0.43	0.40	0.58	8.70	17.35	9.40	3.48	0.79	0.45	0.38	0.33	
22	0.45	0.43	0.39	0.55	5.90	14.80	7.70	9.10	0.79	0.46	0.37	0.42	
23	0.43	0.43	0.39	0.49	7.20	12.10	6.40	12.30	0.76	0.46	0.37	5.20	
24	0.52	0.45	0.39	0.46	11.10	10.90	5.50	7.10	0.73	0.46	0.36	1.36	
25	0.46	0.85	0.39	0.46	7.00	12.80	4.80	5.00	0.73	0.46	0.36	0.61	
26	0.39	2.20	0.51	0.46	7.50	9.60	3.80	3.72	0.67	0.46	0.36	1.48	
27	0.38	8.40	0.70	0.54	11.40	8.70	3.16	8.70	0.66	0.46	0.36	0.61	
28	0.36	4.60	1.12	0.52	6.50	6.60	2.92	8.50	0.64	0.45	0.35	0.43	
29	0.36	2.14	0.68	0.55	6.00	5.40	2.68	6.90	0.63	0.45		0.55	
30	0.34	1.42	0.63	0.64	4.30	5.20	2.52	5.40	0.61	0.43		0.49	
31		0.97		0.68	3.40		2.28		0.58	0.42		0.59	
Total	11.28	29.83	19.79	25.48	229.94	325.74	220.91	92.87	45.45	15.06	10.74	18.90	1045.99 CMSDAY
Mean	0.38	0.96	0.66	0.82	7.42	10.86	7.13	3.10	1.47	0.49	0.38	0.61	2.87 CMS
Max	0.52	8.40	2.02	1.84	21.20	41.15	19.99	12.30	4.70	0.56	0.40	5.20	41.15 CMS
Min	0.25	0.29	0.39	0.46	0.91	3.56	2.28	0.64	0.58	0.42	0.35	0.33	0.25 CMS
Runoff	0.975	2.577	1.710	2.201	19.867	28.144	19.087	8.024	3.927	1.301	0.928	1.633	90.374 MCM

Momentary Peak 45.50 CMS, at 4.60 M (A.D), at 15.00 Hours, on Sep 12, 1998

Runoff Yield 11.89 Liters/Second/Square KM, Momentary Peak Yield 188.797 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

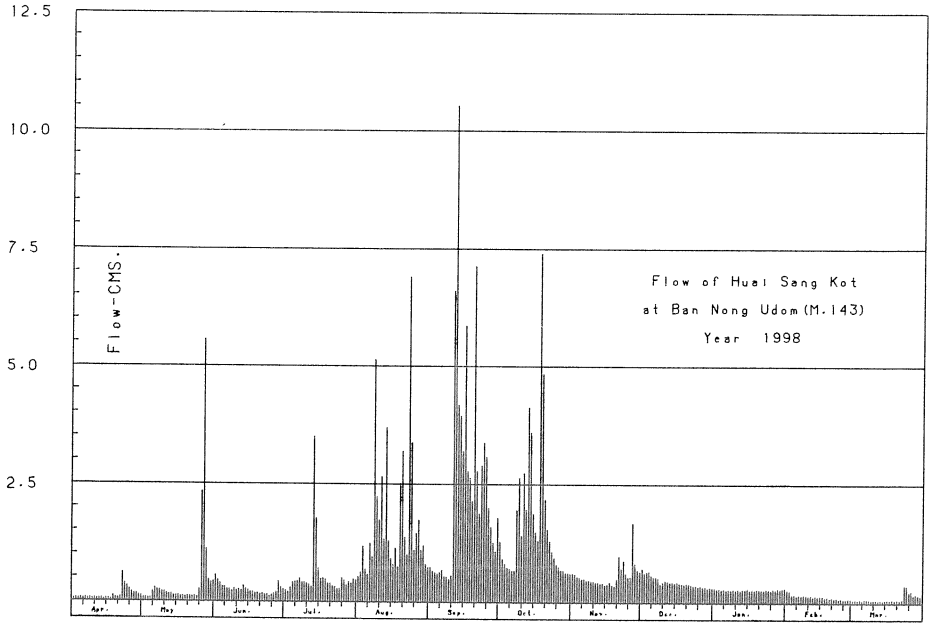
Huai Sang Kot at Ban Nong Udom, Si Sa Ket (M.143)

Location	Lat. 14°-29'-03" N., Long. 104°-39'-50" E., on left bank at the bridge on road, Ban Nong Udom, Amphoe Kantharalak, Si Sa Ket.
Drainage Area	46 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank upstream at the abutment of the bridge.
Elevation	+6.460 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1990 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 50 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.67	0.69	1.17	0.85	1.15	1.34	1.65	1.23	1.33	0.91	0.88	0.67	
2	0.67	0.69	1.08	0.83	1.23	1.28	1.47	1.20	1.22	0.90	0.85	0.67	
3	0.67	0.69	1.00	0.90	1.59	1.23	1.41	1.16	1.26	0.90	0.78	0.67	
4	0.67	0.68	0.94	1.03	1.31	1.22	1.35	1.13	1.26	0.89	0.77	0.67	
5	0.67	0.82	0.92	1.03	1.20	1.25	1.31	1.11	1.19	0.89	0.76	0.67	
6	0.67	0.88	0.89	1.06	1.63	1.28	1.27	1.10	1.14	0.88	0.76	0.68	
7	0.67	0.86	0.87	1.10	1.48	1.16	1.29	1.08	1.15	0.88	0.76	0.68	
8	0.67	0.84	0.85	1.03	2.56	1.13	1.89	1.07	1.12	0.88	0.76	0.67	
9	0.67	0.82	0.88	1.02	1.96	1.10	2.06	1.06	1.01	0.88	0.76	0.67	
10	0.67	0.80	0.86	1.01	1.82	1.16	1.71	1.05	1.03	0.88	0.75	0.67	
11	0.67	0.79	0.86	0.97	2.07	2.80	2.09	1.04	1.08	0.88	0.75	0.66	
12	0.67	0.77	0.85	0.94	1.67	3.43	1.89	1.03	1.05	0.87	0.74	0.66	
13	0.67	0.76	0.95	2.24	2.28	2.38	2.37	1.02	1.04	0.88	0.74	0.66	
14	0.66	0.74	0.88	1.83	1.66	2.33	2.26	1.01	1.03	0.89	0.74	0.66	
15	0.66	0.73	0.85	1.31	1.47	2.18	1.86	0.99	1.03	0.89	0.73	0.66	
16	0.66	0.73	0.83	1.09	1.40	2.68	1.73	0.98	1.03	0.87	0.73	0.67	
17	0.66	0.72	0.81	1.12	1.58	2.10	1.66	1.04	1.02	0.87	0.72	0.67	
18	0.72	0.72	0.80	1.08	1.36	2.06	2.93	0.97	1.00	0.87	0.72	0.67	
19	0.70	0.72	0.79	1.01	2.03	1.94	2.51	0.96	1.00	0.88	0.71	0.67	
20	0.69	0.72	0.78	0.99	2.18	2.89	1.95	1.09	1.00	0.88	0.71	0.67	
21	0.69	0.73	0.78	0.95	1.69	2.10	1.75	1.49	1.01	0.87	0.70	0.67	
22	1.23	0.72	0.77	0.92	1.51	1.86	1.66	1.33	0.98	0.87	0.70	0.67	
23	0.98	0.72	0.76	0.89	2.85	2.12	1.54	1.45	0.97	0.88	0.69	0.98	
24	0.94	0.71	0.74	0.88	2.22	2.22	1.48	1.21	0.96	0.88	0.69	0.96	
25	0.85	0.86	0.75	1.12	1.55	2.16	1.41	1.15	0.95	0.87	0.68	0.84	
26	0.80	1.99	0.78	1.06	1.72	1.90	1.35	1.14	0.95	0.88	0.68	0.85	
27	0.78	2.63	0.82	0.97	1.82	1.77	1.30	1.80	0.94	0.88	0.68	0.77	
28	0.76	1.56	1.04	1.03	1.56	1.63	1.27	1.41	0.93	0.89	0.68	0.78	
29	0.74	1.09	0.91	1.01	1.60	1.54	1.24	1.30	0.92	0.89		0.77	
30	0.72	1.01	0.88	1.08	1.41	1.83	1.22	1.25	0.92	0.89		0.74	
31		1.05		1.06	1.34		1.21		0.92	0.90		0.80	
Mean	0.73	0.91	0.87	1.08	1.71	1.87	1.68	1.16	1.05	0.88	0.74	0.72	
Max	1.23	2.63	1.17	2.24	2.85	3.43	2.93	1.80	1.33	0.91	0.88	0.98	3.43
Min	0.66	0.68	0.74	0.83	1.15	1.10	1.21	0.96	0.92	0.87	0.68	0.66	0.66

Annual Max Momentary Gage Height 3.75 M (A.D), at 6.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.50 M (A.D)
Left Bank Elevation 4.54 M (A.D)
Right Bank Elevation 4.26 M (A.D), Drainage Area 46 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.07	0.09	0.57	0.25	0.55	0.74	1.30	0.63	0.73	0.31	0.28	0.07	
2	0.07	0.09	0.48	0.23	0.63	0.68	0.94	0.60	0.62	0.30	0.25	0.07	
3	0.07	0.09	0.40	0.30	1.18	0.63	0.82	0.56	0.66	0.30	0.18	0.07	
4	0.07	0.08	0.34	0.43	0.71	0.62	0.75	0.53	0.66	0.29	0.17	0.07	
5	0.07	0.22	0.32	0.43	0.60	0.65	0.71	0.51	0.59	0.29	0.16	0.07	
6	0.07	0.28	0.29	0.46	1.26	0.68	0.67	0.50	0.54	0.28	0.16	0.08	
7	0.07	0.26	0.27	0.50	0.96	0.56	0.69	0.48	0.55	0.28	0.16	0.08	
8	0.07	0.24	0.25	0.43	5.16	0.53	1.97	0.47	0.52	0.28	0.16	0.07	
9	0.07	0.22	0.28	0.42	2.24	0.50	2.64	0.46	0.41	0.28	0.16	0.07	
10	0.07	0.20	0.26	0.41	1.76	0.56	1.43	0.45	0.43	0.28	0.15	0.07	
11	0.07	0.19	0.26	0.37	2.68	6.60	2.76	0.44	0.48	0.28	0.15	0.06	
12	0.07	0.17	0.25	0.34	1.34	10.54	1.97	0.43	0.45	0.27	0.14	0.06	
13	0.07	0.16	0.35	3.50	3.70	4.20	4.15	0.42	0.44	0.28	0.14	0.06	
14	0.06	0.14	0.28	1.79	1.32	3.95	3.60	0.41	0.43	0.29	0.14	0.06	
15	0.06	0.13	0.25	0.71	0.94	3.20	1.88	0.39	0.43	0.29	0.13	0.06	
16	0.06	0.13	0.23	0.49	0.80	5.88	1.49	0.38	0.43	0.27	0.13	0.07	
17	0.06	0.12	0.21	0.52	1.16	2.80	1.32	0.44	0.42	0.27	0.12	0.07	
18	0.12	0.12	0.20	0.48	0.76	2.64	7.38	0.37	0.40	0.27	0.12	0.07	
19	0.10	0.12	0.19	0.41	2.52	2.16	4.86	0.36	0.40	0.28	0.11	0.07	
20	0.09	0.12	0.18	0.39	3.20	7.14	2.20	0.49	0.40	0.28	0.11	0.07	
21	0.09	0.13	0.18	0.35	1.38	2.80	1.55	0.98	0.41	0.27	0.10	0.07	
22	0.63	0.12	0.17	0.32	1.02	1.88	1.32	0.73	0.38	0.27	0.10	0.07	
23	0.38	0.12	0.16	0.29	6.90	2.90	1.08	0.90	0.37	0.28	0.09	0.38	
24	0.34	0.11	0.14	0.28	3.40	3.40	0.96	0.61	0.36	0.28	0.09	0.36	
25	0.25	0.26	0.15	0.52	1.10	3.10	0.82	0.55	0.35	0.27	0.08	0.24	
26	0.20	2.36	0.18	0.46	1.46	2.00	0.75	0.54	0.35	0.28	0.08	0.25	
27	0.18	5.58	0.22	0.37	1.76	1.61	0.70	1.70	0.34	0.28	0.08	0.17	
28	0.16	1.12	0.44	0.43	1.12	1.26	0.67	0.82	0.33	0.29	0.08	0.18	
29	0.14	0.49	0.31	0.41	1.20	1.08	0.64	0.70	0.32	0.29		0.17	
30	0.12	0.41	0.28	0.48	0.82	1.79	0.62	0.65	0.32	0.29		0.14	
31		0.45		0.46	0.74		0.61		0.32	0.30		0.20	
Total	3.95	14.32	8.09	17.23	54.37	77.08	53.25	17.50	13.84	8.77	3.82	3.60	275.82 CMSDAY
Mean	0.13	0.46	0.27	0.56	1.75	2.57	1.72	0.58	0.45	0.28	0.14	0.12	0.76 CMS
Max	0.63	5.58	0.57	3.50	6.90	10.54	7.38	1.70	0.73	0.31	0.28	0.38	10.54 CMS
Min	0.06	0.08	0.14	0.23	0.55	0.50	0.61	0.36	0.32	0.27	0.08	0.06	0.06 CMS
Runoff	0.341	1.237	0.699	1.489	4.698	6.660	4.601	1.512	1.196	0.758	0.330	0.311	23.831 MCM

Momentary Peak 13.10 CMS, at 3.75 M (A.D), at 6.00 Hours, on Sep 12, 1998
Runoff Yield 16.43 Liters/Second/Square KM, Momentary Peak Yield 284.783 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

Huai Chok at Ban Khlong Phlu, Nakhon Ratchasima (M.148)

Location — Lat. 14°-28'-52" N., Long. 101°-39'-32" E., on left bank at the bridge on road, Ban Khlong Phlu, Amphoe Pak Chong, Nakhon Ratchasima.

Drainage Area — 48 sq.km.

Type of Gage — Staff gage.

Zero Gage at Bottom — +0.00 m.(A.D.)

Bench Mark — B.M.-H.D.

Location — On left bank about 8.00 meters from the top staff gage.

Elevation — +4.893 m.(A.D.)

Gage Reading Frequency — 5-times daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height — Arithmetic mean of 5 readings.

Period of Available Gage Records — 1993 to date.

Rating Operation

Period of Rating — 1993 to date.

Rated by Float — -

Rated by Current Meter — 1993 to date.

Stability of Channel Regimes — Fairly stable.

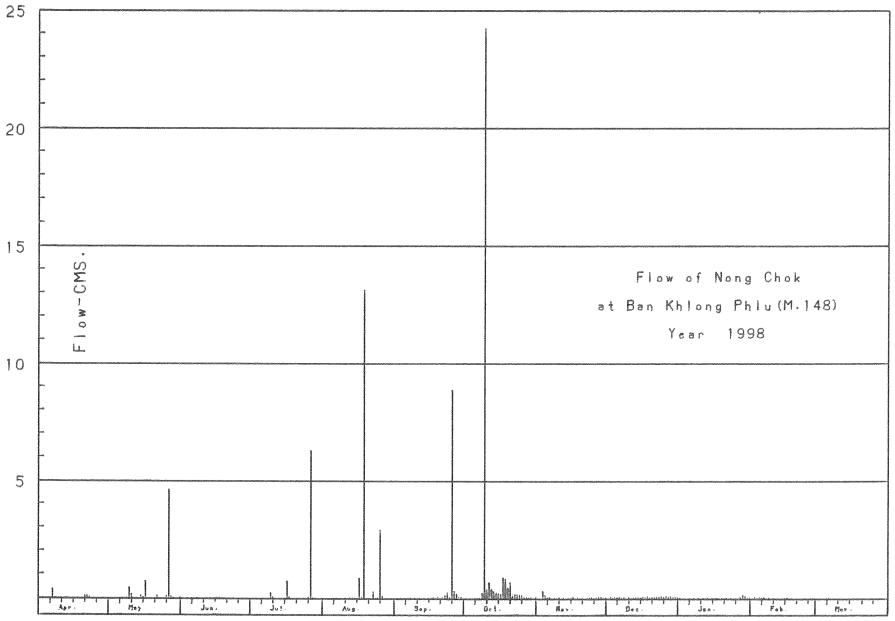
Overbank Flow Conditions — Overbank flow starts at elevation +4.47 m.(A.D.), records are channel flow only.

General Description — Records fair. Stage-discharge relation defined by 22 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.75	0.83	0.93	0.83	0.88	1.03	0.99	1.02	1.06	0.98	1.06	0.96	
2	0.97	0.93	0.93	0.93	0.88	0.99	0.98	1.02	1.06	0.98	1.06	0.96	
3	0.87	0.91	0.93	0.91	0.88	0.98	0.98	1.29	1.06	0.98	1.06	0.95	
4	0.83	0.85	0.94	0.85	0.87	0.98	0.97	1.15	1.05	0.98	1.05	0.95	
5	0.82	0.85	0.95	0.83	0.87	0.97	0.97	1.04	1.05	0.97	1.03	0.94	
6	1.33	0.83	0.95	0.83	0.87	0.97	0.95	1.03	1.05	0.97	1.03	0.93	
7	0.93	0.83	0.94	0.83	0.88	0.97	0.95	1.03	1.05	0.97	1.02	0.92	
8	0.87	0.86	0.94	0.86	0.88	0.96	1.24	1.03	1.05	0.97	1.02	0.92	
9	0.87	1.36	0.93	1.24	0.88	0.96	3.84	1.02	1.05	0.97	1.01	0.91	
10	0.86	1.16	0.93	1.03	0.96	0.96	1.31	1.02	1.04	0.97	1.01	0.90	
11	0.85	0.87	0.93	0.87	0.90	0.98	1.48	1.02	1.04	0.98	1.01	0.89	
12	0.84	0.86	0.92	0.85	0.97	0.98	1.33	1.02	1.04	0.99	1.00	0.89	
13	0.84	0.91	0.92	0.91	1.07	0.98	1.26	1.01	1.04	0.99	1.00	0.88	
14	0.83	1.15	0.91	0.92	0.93	0.97	1.23	1.01	1.04	0.99	1.00	0.87	
15	0.83	0.97	0.91	0.93	0.89	0.97	1.20	1.01	1.04	0.99	0.99	0.87	
16	0.82	1.50	0.91	1.50	1.57	1.04	1.18	1.04	1.07	0.98	0.99	0.86	
17	0.82	1.02	0.90	1.02	1.08	1.02	1.58	1.03	1.07	0.98	0.99	0.85	
18	0.82	0.94	0.90	0.94	3.18	0.99	1.54	1.02	1.07	0.97	0.98	0.85	
19	0.83	0.91	0.90	0.91	0.89	1.07	1.36	1.01	1.07	0.97	0.98	0.84	
20	1.12	0.90	0.90	0.90	0.88	1.01	1.47	1.01	1.08	0.96	0.98	0.83	
21	1.11	1.11	0.89	0.90	0.87	1.05	1.20	1.04	1.08	0.96	0.98	0.81	
22	1.04	0.90	0.89	0.89	1.26	1.15	1.19	1.05	1.10	0.96	0.97	0.80	
23	0.94	0.88	0.88	0.88	1.00	1.23	1.18	1.05	1.10	0.95	0.97	0.78	
24	0.90	0.87	0.88	0.87	0.99	1.07	1.16	1.04	1.10	0.95	0.97	0.76	
25	0.88	1.12	0.88	1.12	2.06	2.81	1.13	1.03	1.09	0.95	0.97	0.75	
26	0.87	2.32	0.87	2.53	1.09	1.28	1.10	1.02	1.09	0.95	0.97	0.74	
27	0.86	1.12	0.87	1.03	0.93	1.22	1.07	1.10	1.09	1.07	0.96	0.73	
28	0.85	0.94	0.87	0.95	0.89	1.09	1.05	1.06	1.09	1.18	0.96	0.72	
29	0.84	0.91	0.91	0.91	0.88	1.04	1.04	1.04	1.09	1.10		0.71	
30	0.84	0.89	0.91	0.90	0.97	1.01	1.03	1.03	1.08	1.07		0.70	
31		0.95		0.94	0.89		1.02		1.08	1.06		0.70	
Mean	0.89	1.01	0.91	0.99	1.07	1.09	1.26	1.04	1.07	0.99	1.00	0.84	
Max	1.33	2.32	0.95	2.53	3.18	2.81	3.84	1.29	1.10	1.18	1.06	0.96	3.84
Min	0.75	0.83	0.87	0.83	0.87	0.96	0.95	1.01	1.04	0.95	0.96	0.70	0.70

Annual Max Momentary Gage Height 5.00 M (A.D), at 6.00 Hours, on Oct 9, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.27 M (A.D)
Left Bank Elevation 4.46 M (A.D)
Right Bank Elevation 5.89 M (A.D), Drainage Area 48 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.01	0.01	0.03	0.01	0.02	0.06	0.05	0.06	0.08	0.04	0.08	0.04	
2	0.04	0.03	0.03	0.03	0.02	0.05	0.04	0.06	0.08	0.04	0.08	0.04	
3	0.02	0.02	0.03	0.02	0.02	0.04	0.04	0.34	0.08	0.04	0.08	0.04	
4	0.01	0.02	0.03	0.02	0.02	0.04	0.04	0.15	0.07	0.04	0.07	0.04	
5	0.01	0.02	0.04	0.01	0.02	0.04	0.04	0.07	0.07	0.04	0.06	0.03	
6	0.41	0.01	0.04	0.01	0.02	0.04	0.04	0.06	0.07	0.04	0.06	0.03	
7	0.03	0.01	0.03	0.01	0.02	0.04	0.04	0.06	0.07	0.04	0.06	0.03	
8	0.02	0.02	0.03	0.02	0.02	0.04	0.26	0.06	0.07	0.04	0.06	0.03	
9	0.02	0.47	0.03	0.26	0.02	0.04	24.24	0.06	0.07	0.04	0.05	0.02	
10	0.02	0.16	0.03	0.06	0.04	0.04	0.37	0.06	0.07	0.04	0.05	0.02	
11	0.02	0.02	0.03	0.02	0.02	0.04	0.71	0.06	0.07	0.04	0.05	0.02	
12	0.01	0.02	0.03	0.02	0.04	0.04	0.41	0.06	0.07	0.05	0.05	0.02	
13	0.01	0.02	0.03	0.02	0.09	0.04	0.29	0.05	0.07	0.05	0.05	0.02	
14	0.01	0.15	0.02	0.03	0.03	0.04	0.25	0.05	0.07	0.05	0.05	0.02	
15	0.01	0.04	0.02	0.03	0.02	0.04	0.20	0.05	0.07	0.05	0.05	0.02	
16	0.01	0.75	0.02	0.75	0.89	0.07	0.18	0.07	0.09	0.04	0.05	0.02	
17	0.01	0.06	0.02	0.06	0.09	0.06	0.91	0.06	0.09	0.04	0.05	0.02	
18	0.01	0.03	0.02	0.03	13.14	0.05	0.83	0.06	0.09	0.04	0.04	0.02	
19	0.01	0.02	0.02	0.02	0.02	0.09	0.47	0.05	0.09	0.04	0.04	0.01	
20	0.12	0.02	0.02	0.02	0.02	0.05	0.69	0.05	0.09	0.04	0.04	0.01	
21	0.11	0.11	0.02	0.02	0.02	0.07	0.20	0.07	0.09	0.04	0.04	0.01	
22	0.07	0.02	0.02	0.02	0.29	0.15	0.19	0.07	0.10	0.04	0.04	0.01	
23	0.03	0.02	0.02	0.02	0.05	0.25	0.18	0.07	0.10	0.04	0.04	0.01	
24	0.02	0.02	0.02	0.02	0.05	0.09	0.16	0.07	0.10	0.04	0.04	0.01	
25	0.02	0.12	0.02	0.12	2.90	8.90	0.13	0.06	0.10	0.04	0.04	0.01	
26	0.02	4.65	0.02	6.32	0.10	0.32	0.10	0.06	0.10	0.04	0.04	0.00	
27	0.02	0.12	0.02	0.06	0.03	0.23	0.09	0.10	0.10	0.09	0.04	0.00	
28	0.02	0.03	0.02	0.04	0.02	0.10	0.07	0.08	0.10	0.18	0.04	0.00	
29	0.01	0.02	0.02	0.02	0.02	0.07	0.07	0.07	0.10	0.10		0.00	
30	0.01	0.02	0.02	0.02	0.04	0.05	0.06	0.06	0.09	0.09		0.00	
31		0.04		0.03	0.02		0.06		0.09	0.08		0.00	
Total	1.14	7.07	0.75	8.14	18.12	11.18	31.41	2.25	2.60	1.62	1.44	0.55	86.27 CMSDAY
Mean	0.04	0.23	0.02	0.26	0.58	0.37	1.01	0.07	0.08	0.05	0.05	0.02	0.24 CMS
Max	0.41	4.65	0.04	6.32	13.14	8.90	24.24	0.34	0.10	0.18	0.08	0.04	24.24 CMS
Min	0.01	0.01	0.02	0.01	0.02	0.04	0.04	0.05	0.07	0.04	0.04	0.00	0.00 CMS
Runoff	0.098	0.611	0.065	0.703	1.566	0.966	2.714	0.194	0.225	0.140	0.124	0.048	7.454 MCM

Momentary Peak 58.00 CMS, at 5.00 M (A.D), at 6.00 Hours, on Oct 9, 1998

Runoff Yield 4.92 Liters/Second/Square KM, Momentary Peak Yield 1208.333 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

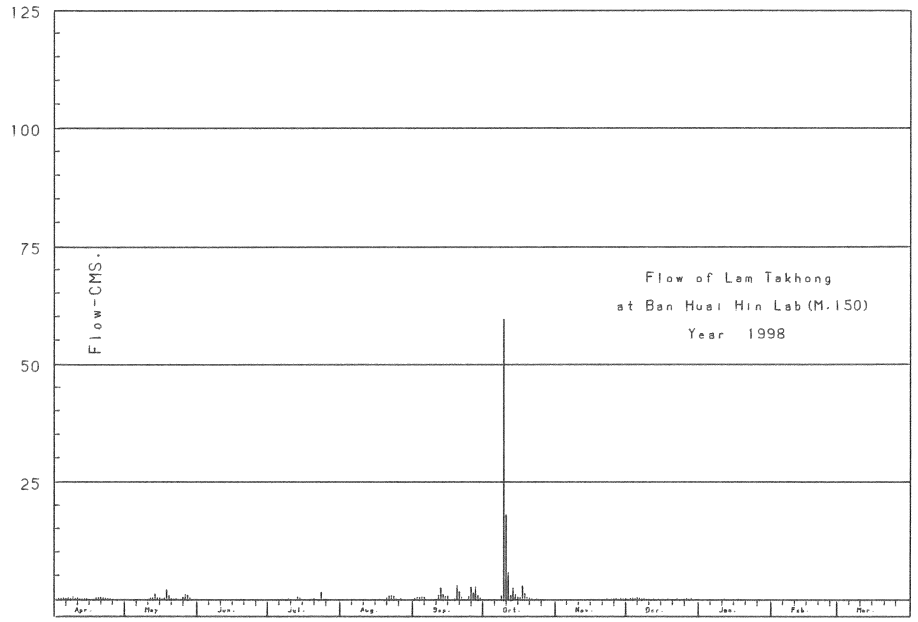
Huai Hin Lap at Ban Kaeng Hip, Nakhon Ratchasima (M.150)

Location	Lat. 14°-45'-30" N., Long. 101°-31'-18" E., on right bank at the bridge on Pak Chong - Nakhon Ratchasima highway between guidepost 184-185, Amphoe Pak Chong, Nakhon Ratchasima.
Drainage Area	175 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+7.064 m.(A.D.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1994 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	Overbank flow starts at elevation +2.88 m.(A.D.), records are channel flow only.
General Description	Records good. Flow effected by The Soldier Preserved Foodstaffs weir. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.25	0.10	0.15	0.05	0.05	0.30	0.15	0.11	0.25	0.10	0.05	0.08	
2	0.25	0.10	0.15	0.05	0.05	0.33	0.16	0.10	0.25	0.10	0.15	0.10	
3	0.30	0.10	0.10	0.06	0.06	0.35	0.15	0.10	0.33	0.15	0.15	0.07	
4	0.30	0.15	0.10	0.07	0.09	0.35	0.14	0.10	0.27	0.20	0.15	0.05	
5	0.30	0.15	0.09	0.07	0.09	0.37	0.14	0.10	0.35	0.07	0.17	0.03	
6	0.30	0.10	0.06	0.05	0.09	0.13	0.13	0.10	0.30	0.07	0.15	0.00	
7	0.30	0.10	0.05	0.05	0.09	0.10	0.15	0.09	0.30	0.07	0.15	0.01	
8	0.35	0.10	0.15	0.05	0.09	0.10	0.43	0.08	0.30	0.20	0.15	0.01	
9	0.30	0.18	0.15	0.32	0.10	0.09	2.90	0.07	0.25	0.10	0.12	0.01	
10	0.30	0.20	0.08	0.10	0.10	0.07	1.55	0.05	0.25	0.08	0.10	0.00	
11	0.29	0.27	0.09	0.06	0.07	0.43	1.03	0.09	0.23	0.20	0.10	0.01	
12	0.28	0.33	0.07	0.06	0.07	0.71	0.45	0.09	0.23	0.22	0.09	0.05	
13	0.28	0.50	0.07	0.37	0.07	0.48	0.69	0.09	0.22	0.10	0.08	0.05	
14	0.24	0.28	0.06	0.30	0.05	0.37	0.47	0.09	0.20	0.07	0.08	0.05	
15	0.20	0.28	0.05	0.10	0.20	0.42	0.37	0.09	0.20	0.07	0.07	0.05	
16	0.17	0.25	0.05	0.10	0.07	0.15	0.31	0.08	0.20	0.07	0.08	0.05	
17	0.17	0.28	0.04	0.07	0.25	0.10	0.77	0.08	0.20	0.20	0.10	0.10	
18	0.30	0.65	0.04	0.07	0.07	0.28	0.53	0.08	0.25	0.25	0.10	0.08	
19	0.35	0.43	0.07	0.07	0.12	0.77	0.35	0.10	0.24	0.10	0.10	0.05	
20	0.35	0.30	0.06	0.21	0.28	0.60	0.33	0.19	0.24	0.10	0.10	0.05	
21	0.30	0.27	0.05	0.07	0.42	0.35	0.25	0.25	0.24	0.07	0.15	0.05	
22	0.30	0.25	0.03	0.06	0.42	0.24	0.24	0.25	0.24	0.05	0.15	0.01	
23	0.26	0.25	0.03	0.57	0.42	0.10	0.21	0.25	0.24	0.05	0.15	0.00	
24	0.23	0.20	0.03	0.25	0.24	0.37	0.23	0.27	0.24	0.05	0.15	0.05	
25	0.15	0.36	0.03	0.09	0.10	0.73	0.15	0.28	0.24	0.05	0.13	0.15	
26	0.12	0.46	0.03	0.05	0.22	0.55	0.18	0.25	0.27	0.04	0.10	0.05	
27	0.10	0.45	0.02	0.05	0.11	0.72	0.10	0.25	0.27	0.05	0.09	0.05	
28	0.10	0.29	0.00	0.05	0.06	0.45	0.10	0.28	0.27	0.07	0.08	0.05	
29	0.10	0.20	0.05	0.05	0.05	0.30	0.10	0.29	0.20	0.07		0.05	
30	0.10	0.15	0.05	0.04	0.05	0.17	0.12	0.25	0.20	0.07		0.05	
31		0.17		0.04	0.05		0.13		0.20	0.07		0.05	
Mean	0.24	0.25	0.07	0.12	0.14	0.35	0.42	0.15	0.25	0.10	0.12	0.05	
Max	0.35	0.65	0.15	0.57	0.42	0.77	2.90	0.29	0.35	0.25	0.17	0.15	2.90
Min	0.10	0.10	0.00	0.04	0.05	0.07	0.10	0.05	0.20	0.04	0.05	0.00	0.00

Annual Max Momentary Gage Height 3.20 M (A.D), at 6.00 Hours, on Oct 9, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.01 M (A.D)
Left Bank Elevation 2.87 M (A.D)
Right Bank Elevation 6.13 M (A.D), Drainage Area 175 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.40	0.10	0.20	0.05	0.05	0.50	0.20	0.12	0.40	0.10	0.05	0.08	
2	0.40	0.10	0.20	0.05	0.05	0.62	0.22	0.10	0.40	0.10	0.20	0.10	
3	0.50	0.10	0.10	0.06	0.06	0.70	0.20	0.10	0.62	0.20	0.20	0.07	
4	0.50	0.20	0.10	0.07	0.09	0.70	0.18	0.10	0.44	0.30	0.20	0.05	
5	0.50	0.20	0.09	0.07	0.09	0.78	0.18	0.10	0.70	0.07	0.24	0.03	
6	0.50	0.10	0.06	0.05	0.09	0.16	0.16	0.10	0.50	0.07	0.20	0.00	
7	0.50	0.10	0.05	0.05	0.09	0.10	0.20	0.09	0.50	0.07	0.20	0.01	
8	0.70	0.10	0.20	0.05	0.09	0.10	1.05	0.08	0.50	0.30	0.20	0.01	
9	0.50	0.26	0.20	0.58	0.10	0.09	59.70	0.07	0.40	0.10	0.14	0.01	
10	0.50	0.30	0.08	0.10	0.10	0.07	18.20	0.05	0.40	0.08	0.10	0.00	
11	0.48	0.44	0.09	0.06	0.07	1.05	5.78	0.09	0.36	0.30	0.10	0.01	
12	0.46	0.62	0.07	0.06	0.07	2.67	1.15	0.09	0.36	0.34	0.09	0.05	
13	0.46	1.40	0.07	0.78	0.07	1.30	2.53	0.09	0.34	0.10	0.08	0.05	
14	0.38	0.46	0.06	0.50	0.05	0.78	1.25	0.09	0.30	0.07	0.08	0.05	
15	0.30	0.46	0.05	0.10	0.30	1.00	0.78	0.09	0.30	0.07	0.07	0.05	
16	0.24	0.40	0.05	0.10	0.07	0.20	0.54	0.08	0.30	0.07	0.08	0.05	
17	0.24	0.46	0.04	0.07	0.40	0.10	3.09	0.08	0.30	0.30	0.10	0.10	
18	0.50	2.25	0.04	0.07	0.07	0.46	1.55	0.08	0.40	0.40	0.10	0.08	
19	0.70	1.05	0.07	0.07	0.14	3.09	0.70	0.10	0.38	0.10	0.10	0.05	
20	0.70	0.50	0.06	0.32	0.46	1.90	0.62	0.28	0.38	0.10	0.10	0.05	
21	0.50	0.44	0.05	0.07	1.00	0.70	0.40	0.40	0.38	0.07	0.20	0.05	
22	0.50	0.40	0.03	0.06	1.00	0.38	0.38	0.40	0.38	0.05	0.20	0.01	
23	0.42	0.40	0.03	1.75	1.00	0.10	0.32	0.40	0.38	0.05	0.20	0.00	
24	0.36	0.30	0.03	0.40	0.38	0.78	0.36	0.44	0.38	0.05	0.20	0.05	
25	0.20	0.74	0.03	0.09	0.10	2.81	0.20	0.46	0.38	0.05	0.16	0.20	
26	0.14	1.20	0.03	0.05	0.34	1.65	0.26	0.40	0.44	0.04	0.10	0.05	
27	0.10	1.15	0.02	0.05	0.12	2.74	0.10	0.40	0.44	0.05	0.09	0.05	
28	0.10	0.48	0.00	0.05	0.06	1.15	0.10	0.46	0.44	0.07	0.08	0.05	
29	0.10	0.30	0.05	0.05	0.05	0.50	0.10	0.48	0.30	0.07		0.05	
30	0.10	0.20	0.05	0.04	0.05	0.24	0.14	0.40	0.30	0.07		0.05	
31		0.24		0.04	0.05		0.16		0.30	0.07		0.05	
Total	11.98	15.45	2.20	5.91	6.66	27.42	100.80	6.22	12.40	3.88	3.86	1.51	198.29 CMSDAY
Mean	0.40	0.50	0.07	0.19	0.21	0.91	3.25	0.21	0.40	0.13	0.14	0.05	0.54 CMS
Max	0.70	2.25	0.20	1.75	1.00	3.09	59.70	0.48	0.70	0.40	0.24	0.20	59.70 CMS
Min	0.10	0.10	0.00	0.04	0.05	0.07	0.10	0.05	0.30	0.04	0.05	0.00	0.00 CMS
Runoff	1.035	1.335	0.190	0.511	0.575	2.369	8.709	0.537	1.071	0.335	0.334	0.130	17.132 MCM

Momentary Peak 69.45 CMS, at 3.20 M (A.D), at 6.00 Hours, on Oct 9, 1998
Runoff Yield 3.10 Liters/Second/Square KM, Momentary Peak Yield 396.857 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

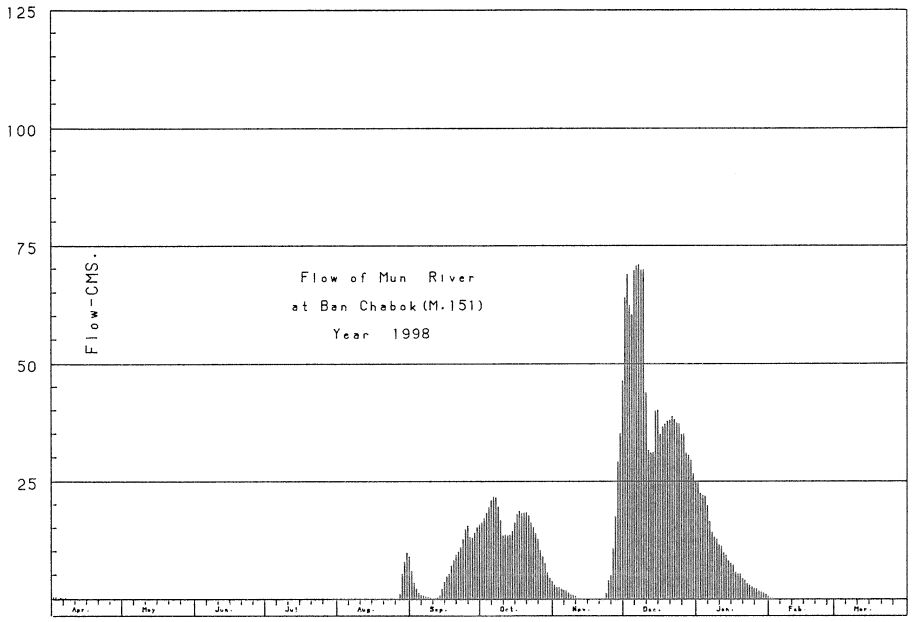
Mun River at Ban Chabok, Nakhon Ratchasima (M.151)

Location	Lat. 15°-13'-03" N., Long. 102°-28'-08" E., on right bank at the bridge on Nakhon Ratchasima - Phimai Highway, Amphoe Phimai, Nakhon Ratchasima.
Drainage Area	11,872 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+149.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 35 meters from the measuring line.
Elevation	+153.190 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1994 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The weir situated about 30 meters downstream from the gage site. Stage-discharge relation defined by 9 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	149.85	149.15	148.95	148.94	148.86	150.86	151.60	150.44	152.68	151.90	149.84	148.70	
2	149.82	149.16	148.95	148.94	148.80	150.53	151.63	150.37	152.73	151.82	149.79	148.77	
3	149.80	149.13	148.95	148.94	148.80	150.31	151.68	150.35	152.66	151.80	149.71	148.77	
4	149.77	149.12	148.96	148.95	148.80	150.06	151.72	150.30	152.64	151.80	149.67	148.72	
5	149.75	149.10	148.96	148.96	148.77	149.97	151.77	150.24	152.74	151.73	149.62	148.71	
6	149.73	149.10	148.95	148.96	148.79	149.90	151.79	150.17	152.75	151.61	149.57	148.76	
7	149.71	149.08	148.95	148.95	148.80	149.89	151.79	150.10	152.75	151.49	149.52	148.76	
8	149.71	149.06	148.95	148.95	148.74	149.81	151.72	149.95	152.74	151.43	149.48	148.76	
9	149.69	149.05	148.95	148.94	148.74	149.75	151.62	149.96	152.74	151.39	149.42	148.72	
10	149.65	149.04	148.95	148.87	148.74	149.70	151.45	149.87	152.40	151.32	149.38	148.72	
11	149.62	149.02	148.95	148.85	148.73	149.70	151.45	149.81	152.11	151.29	149.33	148.72	
12	149.60	149.01	148.95	148.85	148.72	149.74	151.45	149.74	152.10	151.20	149.26	148.71	
13	149.58	148.99	148.95	148.85	148.72	149.96	151.45	149.67	152.10	151.15	149.25	148.71	
14	149.55	148.99	148.95	148.85	148.70	150.26	151.50	149.58	152.32	151.07	149.20	148.70	
15	149.50	148.99	148.94	148.85	148.70	150.57	151.60	149.53	152.32	151.01	149.17	148.70	
16	149.49	148.98	148.94	148.85	148.70	150.71	151.67	149.46	152.20	150.99	149.15	148.75	
17	149.47	148.98	148.94	148.85	148.70	150.80	151.69	149.37	152.24	150.82	149.08	148.76	
18	149.45	148.98	148.94	148.85	148.70	150.96	151.67	149.34	152.25	150.80	149.03	148.74	
19	149.42	148.97	148.94	148.85	148.70	151.08	151.68	149.30	152.27	150.78	149.01	148.74	
20	149.40	148.97	148.94	148.83	148.70	151.16	151.68	149.25	152.27	150.67	148.95	148.75	
21	149.38	148.97	148.95	148.83	148.71	151.20	151.66	149.30	152.29	150.60	148.90	148.76	
22	149.36	148.98	148.95	148.83	148.77	151.28	151.60	149.57	152.28	150.52	148.88	148.88	
23	149.35	148.98	148.95	148.83	148.80	151.40	151.54	150.06	152.26	150.44	148.86	148.86	
24	149.32	148.98	148.95	148.83	148.71	151.53	151.48	150.59	152.25	150.39	148.79	148.79	
25	149.30	148.99	148.95	148.82	148.71	151.56	151.39	150.76	152.20	150.32	148.76	148.76	
26	149.26	148.99	148.95	148.82	149.44	151.42	151.23	151.25	152.20	150.27	148.73	148.73	
27	149.25	148.99	148.95	148.81	150.03	151.42	151.14	151.65	152.10	150.19	148.70	148.70	
28	149.20	148.98	148.95	148.81	150.78	151.48	151.02	152.04	152.08	150.10	148.70	148.70	
29	149.18	148.98	148.95	148.81	151.05	151.55	150.81	152.20	152.05	150.09		148.97	
30	149.15	148.97	148.94	148.81	151.20	151.57	150.69	152.44	151.95	149.98		148.97	
31		148.96		148.81	151.13		150.57		151.90	149.89		148.97	
Mean	149.51	149.02	148.95	148.87	149.10	150.67	151.48	150.22	152.34	150.93	149.21	148.77	
Max	149.85	149.16	148.96	148.96	151.20	151.57	151.79	152.44	152.75	151.90	149.84	148.97	152.75
Min	149.15	148.96	148.94	148.81	148.70	149.70	150.57	149.25	151.90	149.89	148.70	148.70	148.70

Annual Max Momentary Gage Height 152.81 M (MSL), at 6.00 Hours, on Nov 8, 1998
Zero Gage at Bottom Elevation 149.00 M (MSL), River Bed 148.64 M (MSL)
Left Bank Elevation 154.79 M (MSL)
Right Bank Elevation 153.21 M (MSL), Drainage Area 11872 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.55	0.00	0.00	0.00	0.00	6.10	16.40	3.00	64.20	25.13	0.52	0.00	
2	0.46	0.00	0.00	0.00	0.00	3.51	17.18	2.65	69.00	22.68	0.38	0.00	
3	0.40	0.00	0.00	0.00	0.00	2.35	18.48	2.55	62.40	22.07	0.22	0.00	
4	0.34	0.00	0.00	0.00	0.00	1.34	19.61	2.30	60.60	22.07	0.14	0.00	
5	0.30	0.00	0.00	0.00	0.00	0.98	21.15	2.06	70.00	19.92	0.04	0.00	
6	0.26	0.00	0.00	0.00	0.00	0.70	21.76	1.78	71.00	16.66	0.00	0.00	
7	0.22	0.00	0.00	0.00	0.00	0.67	21.76	1.50	71.00	14.25	0.00	0.00	
8	0.22	0.00	0.00	0.00	0.00	0.43	19.61	0.90	70.00	13.35	0.00	0.00	
9	0.18	0.00	0.00	0.00	0.00	0.30	16.92	0.94	70.00	12.75	0.00	0.00	
10	0.10	0.00	0.00	0.00	0.00	0.20	13.65	0.61	44.00	11.70	0.00	0.00	
11	0.04	0.00	0.00	0.00	0.00	0.20	13.65	0.43	31.60	11.26	0.00	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.28	13.65	0.28	31.20	10.00	0.00	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.94	13.65	0.14	31.20	9.30	0.00	0.00	
14	0.00	0.00	0.00	0.00	0.00	2.14	14.40	0.00	40.16	8.27	0.00	0.00	
15	0.00	0.00	0.00	0.00	0.00	3.79	16.40	0.00	40.16	7.61	0.00	0.00	
16	0.00	0.00	0.00	0.00	0.00	4.78	18.22	0.00	35.20	7.40	0.00	0.00	
17	0.00	0.00	0.00	0.00	0.00	5.50	18.74	0.00	36.80	5.70	0.00	0.00	
18	0.00	0.00	0.00	0.00	0.00	7.10	18.22	0.00	37.20	5.50	0.00	0.00	
19	0.00	0.00	0.00	0.00	0.00	8.38	18.48	0.00	38.00	5.34	0.00	0.00	
20	0.00	0.00	0.00	0.00	0.00	9.44	18.48	0.00	38.00	4.49	0.00	0.00	
21	0.00	0.00	0.00	0.00	0.00	10.00	17.96	0.00	38.80	4.00	0.00	0.00	
22	0.00	0.00	0.00	0.00	0.00	11.12	16.40	0.00	38.40	3.44	0.00	0.00	
23	0.00	0.00	0.00	0.00	0.00	12.90	15.20	1.34	37.60	3.00	0.00	0.00	
24	0.00	0.00	0.00	0.00	0.00	15.00	14.10	3.93	37.20	2.75	0.00	0.00	
25	0.00	0.00	0.00	0.00	0.00	15.60	12.75	5.18	35.20	2.40	0.00	0.00	
26	0.00	0.00	0.00	0.00	0.00	13.20	10.42	10.70	35.20	2.18	0.00	0.00	
27	0.00	0.00	0.00	0.00	1.22	13.20	9.16	17.70	31.20	1.86	0.00	0.00	
28	0.00	0.00	0.00	0.00	5.34	14.10	7.72	29.40	30.60	1.50	0.00	0.00	
29	0.00	0.00	0.00	0.00	8.05	15.40	5.60	35.20	29.70	1.46		0.00	
30	0.00	0.00	0.00	0.00	10.00	15.80	4.63	46.40	26.67	1.02		0.00	
31		0.00		0.00	9.02		3.79		25.13	0.67		0.00	
Total	3.07	0.00	0.00	0.00	33.63	195.45	468.14	168.99	1377.42	279.73	1.30	0.00	2527.73 CMSDAY
Mean	0.10	0.00	0.00	0.00	1.08	6.52	15.10	5.63	44.43	9.02	0.05	0.00	6.93 CMS
Max	0.55	0.00	0.00	0.00	10.00	15.80	21.76	46.40	71.00	25.13	0.52	0.00	71.00 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.20	3.79	0.00	25.13	0.67	0.00	0.00	0.00 CMS
Runoff	0.265	0.000	0.000	0.000	2.906	16.887	40.447	14.601	119.009	24.169	0.112	0.000	218.396 MCM

Momentary Peak 77.60 CMS, at 152.81 M (MSL), at 6.00 Hours, on Nov 8, 1998

Runoff Yield 0.58 Liters/Second/Square KM, Momentary Peak Yield 6.536 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

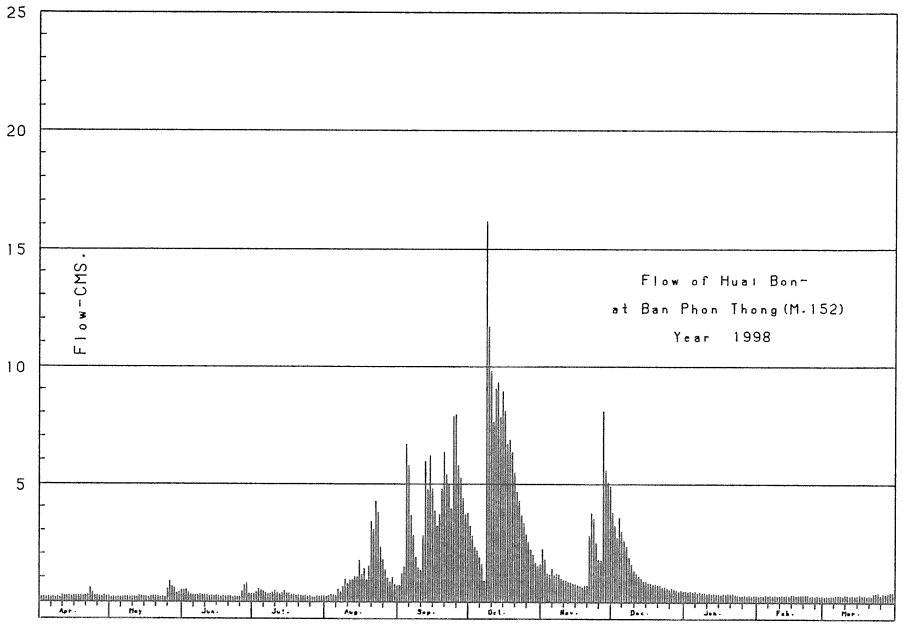
Huai Bon at Ban Phon Thong, Ubon Ratchathani (M.152)

Location	Lat. 14°-27'-53" N., Long. 105°-06'-19" E., on left bank at the bridge on road, Ban Phon Thong, Amphoe Nam Yuen, Ubon Ratchathani.
Drainage Area	212 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream at the footpath of the bridge.
Elevation	+9.719 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 43 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.03	1.02	1.20	1.12	1.06	1.28	1.64	1.53	1.70	1.18	1.07	1.06	
2	1.02	1.02	1.22	1.17	1.07	1.40	1.59	1.48	1.64	1.18	1.07	1.06	
3	1.02	1.01	1.15	1.22	1.12	1.44	1.54	1.40	1.58	1.18	1.09	1.06	
4	1.02	1.02	1.12	1.21	1.09	1.99	1.52	1.39	1.68	1.18	1.10	1.07	
5	1.02	1.02	1.10	1.19	1.09	1.90	1.49	1.43	1.61	1.18	1.10	1.08	
6	1.02	1.01	1.09	1.14	1.21	1.69	1.45	1.39	1.57	1.16	1.09	1.09	
7	1.01	1.04	1.11	1.13	1.17	1.59	1.33	1.40	1.54	1.16	1.09	1.11	
8	1.01	1.03	1.11	1.12	1.26	1.49	2.73	1.40	1.49	1.15	1.09	1.09	
9	1.01	1.02	1.11	1.16	1.34	1.43	2.41	1.35	1.45	1.15	1.09	1.09	
10	1.09	1.01	1.09	1.19	1.30	1.42	2.25	1.34	1.42	1.14	1.09	1.12	
11	1.09	1.04	1.09	1.15	1.33	1.59	2.07	1.33	1.40	1.14	1.09	1.09	
12	1.08	1.03	1.08	1.13	1.34	1.92	2.19	1.32	1.38	1.13	1.09	1.09	
13	1.07	1.07	1.08	1.14	1.37	1.80	2.21	1.31	1.35	1.13	1.09	1.09	
14	1.07	1.05	1.08	1.20	1.37	1.94	2.09	1.30	1.33	1.13	1.10	1.09	
15	1.07	1.03	1.07	1.15	1.47	1.80	2.18	1.29	1.32	1.12	1.11	1.08	
16	1.07	1.01	1.06	1.13	1.39	1.71	2.11	1.28	1.31	1.12	1.11	1.11	
17	1.08	1.01	1.05	1.11	1.43	1.64	1.99	1.26	1.30	1.13	1.10	1.09	
18	1.08	1.04	1.05	1.10	1.34	1.69	2.01	1.25	1.29	1.13	1.09	1.09	
19	1.07	1.08	1.05	1.10	1.44	1.80	1.96	1.26	1.29	1.13	1.11	1.08	
20	1.08	1.06	1.04	1.09	1.66	1.96	1.87	1.28	1.28	1.13	1.10	1.08	
21	1.09	1.04	1.04	1.08	1.62	1.86	1.79	1.59	1.27	1.13	1.12	1.08	
22	1.24	1.03	1.03	1.07	1.75	1.82	1.75	1.70	1.25	1.12	1.10	1.13	
23	1.15	1.02	1.03	1.07	1.70	1.72	1.69	1.67	1.25	1.09	1.08	1.15	
24	1.09	1.02	1.03	1.06	1.54	2.09	1.65	1.56	1.24	1.09	1.08	1.16	
25	1.07	1.23	1.02	1.06	1.48	2.10	1.60	1.48	1.22	1.10	1.08	1.11	
26	1.05	1.32	1.19	1.03	1.42	1.90	1.56	1.47	1.23	1.09	1.08	1.13	
27	1.05	1.26	1.28	1.03	1.36	1.85	1.53	2.11	1.22	1.09	1.08	1.13	
28	1.08	1.23	1.30	1.06	1.31	1.76	1.50	1.88	1.20	1.09	1.07	1.14	
29	1.06	1.15	1.14	1.06	1.36	1.69	1.46	1.83	1.19	1.08		1.17	
30	1.04	1.16	1.12	1.05	1.29	1.70	1.44	1.81	1.20	1.08		1.15	
31		1.21		1.06	1.26		1.45		1.19	1.08		1.12	
Mean	1.06	1.07	1.10	1.12	1.35	1.73	1.81	1.47	1.37	1.13	1.09	1.10	
Max	1.24	1.32	1.30	1.22	1.75	2.10	2.73	2.11	1.70	1.18	1.12	1.17	2.73
Min	1.01	1.01	1.02	1.03	1.06	1.28	1.33	1.25	1.19	1.08	1.07	1.06	1.01

Annual Max Momentary Gage Height 2.90 M (A.D), at 6.00 Hours, on Oct 8, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.80 M (A.D)
Left Bank Elevation 8.48 M (A.D)
Right Bank Elevation 8.40 M (A.D), Drainage Area 212 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.23	0.22	0.50	0.34	0.26	0.74	3.26	2.27	3.80	0.46	0.27	0.26	
2	0.22	0.22	0.56	0.44	0.27	1.20	2.81	1.84	3.26	0.46	0.27	0.26	
3	0.22	0.21	0.40	0.56	0.34	1.52	2.36	1.20	2.72	0.46	0.29	0.26	
4	0.22	0.22	0.34	0.53	0.29	6.70	2.18	1.16	3.62	0.46	0.30	0.27	
5	0.22	0.22	0.30	0.48	0.29	5.80	1.92	1.44	2.99	0.46	0.30	0.28	
6	0.22	0.21	0.29	0.38	0.53	3.71	1.60	1.16	2.63	0.42	0.29	0.29	
7	0.21	0.24	0.32	0.36	0.44	2.81	0.92	1.20	2.36	0.42	0.29	0.32	
8	0.21	0.23	0.32	0.34	0.68	1.92	16.15	1.20	1.92	0.40	0.29	0.29	
9	0.21	0.22	0.32	0.42	0.96	1.44	11.72	1.00	1.60	0.40	0.29	0.29	
10	0.29	0.21	0.29	0.48	0.80	1.36	9.80	0.96	1.36	0.38	0.29	0.34	
11	0.29	0.24	0.29	0.40	0.92	2.81	7.64	0.92	1.20	0.38	0.29	0.29	
12	0.28	0.23	0.28	0.36	0.96	6.00	9.08	0.88	1.12	0.36	0.29	0.29	
13	0.27	0.27	0.28	0.38	1.08	4.80	9.32	0.84	1.00	0.36	0.29	0.29	
14	0.27	0.25	0.28	0.50	1.08	6.20	7.88	0.80	0.92	0.36	0.30	0.29	
15	0.27	0.23	0.27	0.40	1.76	4.80	8.96	0.77	0.88	0.34	0.32	0.28	
16	0.27	0.21	0.26	0.36	1.16	3.90	8.12	0.74	0.84	0.34	0.32	0.32	
17	0.28	0.21	0.25	0.32	1.44	3.26	6.70	0.68	0.80	0.36	0.30	0.29	
18	0.28	0.24	0.25	0.30	0.96	3.71	6.92	0.65	0.77	0.36	0.29	0.29	
19	0.27	0.28	0.25	0.30	1.52	4.80	6.40	0.68	0.77	0.36	0.32	0.28	
20	0.28	0.26	0.24	0.29	3.44	6.40	5.50	0.74	0.74	0.36	0.30	0.28	
21	0.29	0.24	0.24	0.28	3.08	5.40	4.70	2.81	0.71	0.36	0.34	0.28	
22	0.62	0.23	0.23	0.27	4.30	5.00	4.30	3.80	0.65	0.34	0.30	0.36	
23	0.40	0.22	0.23	0.27	3.80	4.00	3.71	3.53	0.65	0.29	0.28	0.40	
24	0.29	0.22	0.23	0.26	2.36	7.88	3.35	2.54	0.62	0.29	0.28	0.42	
25	0.27	0.59	0.22	0.26	1.84	8.00	2.90	1.84	0.56	0.30	0.28	0.32	
26	0.25	0.88	0.48	0.23	1.36	5.80	2.54	1.76	0.59	0.29	0.28	0.36	
27	0.25	0.68	0.74	0.23	1.04	5.30	2.27	8.12	0.56	0.29	0.28	0.36	
28	0.28	0.59	0.80	0.26	0.84	4.40	2.00	5.60	0.50	0.29	0.27	0.38	
29	0.26	0.40	0.38	0.26	1.04	3.71	1.68	5.10	0.48	0.28		0.44	
30	0.24	0.42	0.34	0.25	0.77	3.80	1.52	4.90	0.50	0.28		0.40	
31		0.53		0.26	0.68		1.60		0.48	0.28		0.34	
Total	8.16	9.62	10.18	10.77	40.29	127.17	159.81	61.13	41.60	11.19	8.21	9.82	497.95 CMSDAY
Mean	0.27	0.31	0.34	0.35	1.30	4.24	5.16	2.04	1.34	0.36	0.29	0.32	1.36 CMS
Max	0.62	0.88	0.80	0.56	4.30	8.00	16.15	8.12	3.80	0.46	0.34	0.44	16.15 CMS
Min	0.21	0.21	0.22	0.23	0.26	0.74	0.92	0.65	0.48	0.28	0.27	0.26	0.21 CMS
Runoff	0.705	0.831	0.880	0.931	3.481	10.987	13.808	5.282	3.594	0.967	0.709	0.848	43.023 MCM

Momentary Peak 18.70 CMS, at 2.90 M (A.D), at 6.00 Hours, on Oct 8, 1998

Runoff Yield 6.44 Liters/Second/Square KM, Momentary Peak Yield 88.208 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

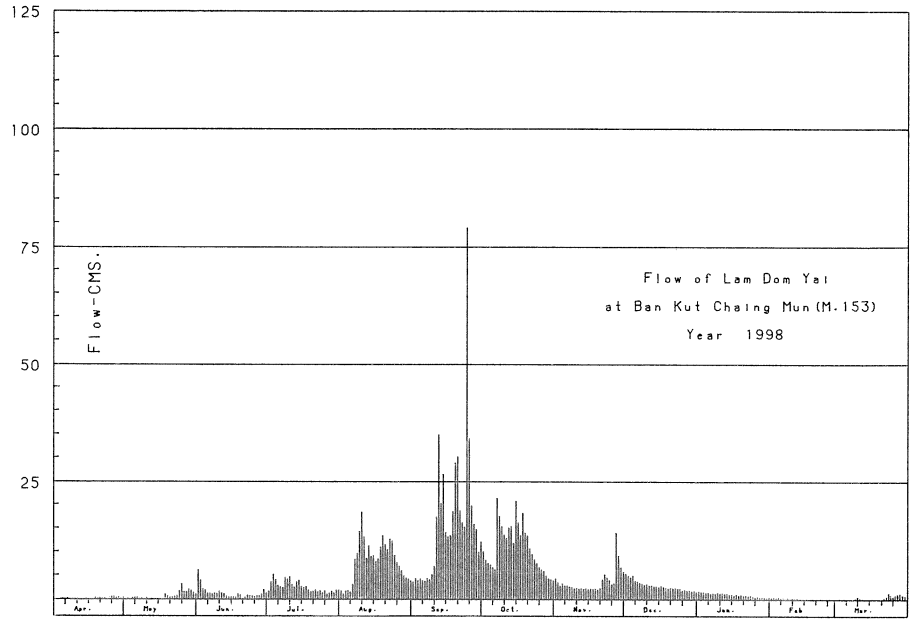
Lam Dom Yai at Ban Kut Chiang Mun, Ubon Ratchathani (M.153)

Location	Lat. 14°-26'-49" N., Long. 105°-07'-31" E., on right bank at the bridge on road, Ban Kut Chiang Mun, Amphoe Nam Yuen, Ubon Ratchathani.
Drainage Area	369 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank downstream at the footpath of the bridge.
Elevation	+11.183 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00, and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.62	0.68	1.50	0.98	0.96	1.26	1.81	1.36	1.45	0.95	0.70	0.62	
2	0.62	0.67	1.33	1.26	0.85	1.36	1.66	1.25	1.40	0.95	0.70	0.65	
3	0.65	0.67	1.05	1.44	0.95	1.30	1.62	1.17	1.37	0.92	0.70	0.64	
4	0.65	0.68	1.03	1.32	0.97	1.35	1.58	1.22	1.42	0.91	0.70	0.65	
5	0.65	0.70	0.88	1.18	0.94	1.30	1.55	1.18	1.31	0.90	0.69	0.64	
6	0.65	0.68	0.85	1.12	1.21	1.30	1.50	1.16	1.28	0.88	0.68	0.62	
7	0.64	0.67	0.85	1.12	1.67	1.35	2.53	1.15	1.26	0.87	0.68	0.62	
8	0.63	0.67	0.86	1.38	1.77	1.33	2.30	1.12	1.22	0.88	0.68	0.60	
9	0.63	0.67	0.87	1.33	2.11	1.42	2.18	1.10	1.20	0.89	0.67	0.69	
10	0.63	0.67	0.94	1.40	2.36	1.57	2.06	1.09	1.20	0.88	0.68	0.74	
11	0.62	0.66	0.87	1.18	2.02	2.30	2.00	1.09	1.18	0.87	0.67	0.65	
12	0.65	0.65	0.87	1.13	1.70	3.08	2.16	1.07	1.17	0.86	0.66	0.64	
13	0.65	0.65	0.75	1.26	1.89	2.46	2.17	1.08	1.16	0.85	0.65	0.64	
14	0.65	0.64	0.73	1.32	1.73	2.75	1.94	1.07	1.14	0.83	0.64	0.63	
15	0.64	0.64	0.71	1.13	1.73	2.08	2.50	1.06	1.14	0.82	0.65	0.64	
16	0.64	0.63	0.70	1.10	1.63	2.02	2.22	1.06	1.15	0.80	0.65	0.65	
17	0.65	0.63	0.72	1.15	1.69	2.05	2.04	1.06	1.14	0.82	0.64	0.65	
18	0.69	0.85	0.85	1.00	1.87	2.37	2.35	1.06	1.10	0.80	0.63	0.64	
19	0.67	0.74	0.78	0.95	2.05	2.84	2.08	1.05	1.10	0.80	0.63	0.63	
20	0.69	0.70	0.68	0.94	1.92	2.90	2.05	1.07	1.10	0.79	0.61	0.61	
21	0.67	0.70	0.69	1.03	1.83	2.37	1.85	1.34	1.10	0.78	0.60	0.70	
22	0.67	0.75	0.80	0.92	2.00	2.23	1.77	1.43	1.09	0.77	0.65	0.72	
23	0.66	0.75	0.75	1.00	1.96	2.16	1.67	1.38	1.09	0.77	0.65	0.90	
24	0.70	0.99	0.76	0.87	1.75	4.65	1.62	1.31	1.06	0.75	0.63	0.80	
25	0.75	1.23	0.72	1.00	1.63	3.05	1.55	1.22	1.01	0.72	0.60	0.75	
26	0.74	0.92	0.79	0.85	1.56	2.44	1.50	1.22	1.00	0.72	0.63	0.78	
27	0.70	0.95	0.78	0.86	1.50	2.20	1.49	2.09	1.00	0.71	0.62	0.85	
28	0.70	1.03	0.82	0.96	1.40	2.14	1.40	1.73	0.98	0.70	0.61	0.84	
29	0.69	0.97	1.04	0.87	1.37	1.79	1.36	1.55	0.98	0.70		0.81	
30	0.69	0.89	0.86	1.02	1.33	1.95	1.32	1.47	0.96	0.70		0.75	
31		0.85		0.99	1.31		1.30		0.95	0.70		0.70	
Mean	0.66	0.76	0.86	1.10	1.60	2.11	1.84	1.24	1.15	0.82	0.65	0.69	
Max	0.75	1.23	1.50	1.44	2.36	4.65	2.53	2.09	1.45	0.95	0.70	0.90	4.65
Min	0.62	0.63	0.68	0.85	0.85	1.26	1.30	1.05	0.95	0.70	0.60	0.60	0.60

Annual Max Momentary Gage Height 5.00 M (A.D), at 18.00 Hours, on Sep 24, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.57 M (A.D)
Left Bank Elevation 8.74 M (A.D)
Right Bank Elevation 6.96 M (A.D), Drainage Area 369 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.10	0.40	6.30	1.90	1.80	3.70	10.33	4.60	5.65	1.75	0.50	0.10	
2	0.10	0.35	4.30	3.70	1.25	4.60	8.38	3.63	5.00	1.75	0.50	0.25	
3	0.25	0.35	2.25	5.52	1.75	4.00	7.86	3.02	4.70	1.60	0.50	0.20	
4	0.25	0.40	2.15	4.20	1.85	4.50	7.34	3.40	5.26	1.55	0.50	0.25	
5	0.25	0.50	1.40	3.10	1.70	4.00	6.95	3.10	4.10	1.50	0.45	0.20	
6	0.25	0.40	1.25	2.65	3.33	4.00	6.30	2.95	3.85	1.40	0.40	0.10	
7	0.20	0.35	1.25	2.65	8.51	4.50	21.70	2.87	3.70	1.35	0.40	0.10	
8	0.15	0.35	1.30	4.80	9.81	4.30	17.70	2.65	3.40	1.40	0.40	0.00	
9	0.15	0.35	1.35	4.30	14.65	5.26	15.70	2.50	3.25	1.45	0.35	0.45	
10	0.15	0.35	1.70	5.00	18.72	7.21	13.90	2.45	3.25	1.40	0.40	0.70	
11	0.10	0.30	1.35	3.10	13.30	17.70	13.00	2.45	3.10	1.35	0.35	0.25	
12	0.25	0.25	1.35	2.73	8.90	35.00	15.40	2.35	3.02	1.30	0.30	0.20	
13	0.25	0.25	0.75	3.70	11.37	20.42	15.55	2.40	2.95	1.25	0.25	0.20	
14	0.25	0.20	0.65	4.20	9.29	26.75	12.10	2.35	2.80	1.15	0.20	0.15	
15	0.20	0.20	0.55	2.73	9.29	14.20	21.10	2.30	2.80	1.10	0.25	0.20	
16	0.20	0.15	0.50	2.50	7.99	13.30	16.34	2.30	2.87	1.00	0.25	0.25	
17	0.25	0.15	0.60	2.87	8.77	13.75	13.60	2.30	2.80	1.10	0.20	0.25	
18	0.45	1.25	1.25	2.00	11.11	18.89	18.55	2.30	2.50	1.00	0.15	0.20	
19	0.35	0.70	0.90	1.75	13.75	29.00	14.20	2.25	2.50	1.00	0.15	0.15	
20	0.45	0.50	0.40	1.70	11.80	30.50	13.75	2.35	2.50	0.95	0.05	0.05	
21	0.35	0.50	0.45	2.15	10.59	18.89	10.85	4.40	2.50	0.90	0.00	0.50	
22	0.35	0.75	1.00	1.60	13.00	16.51	9.81	5.39	2.45	0.85	0.25	0.60	
23	0.30	0.75	0.75	2.00	12.40	15.40	8.51	4.80	2.45	0.85	0.25	1.50	
24	0.50	1.95	0.80	1.35	9.55	79.25	7.86	4.10	2.30	0.75	0.15	1.00	
25	0.75	3.48	0.60	2.00	7.99	34.25	6.95	3.40	2.05	0.60	0.00	0.75	
26	0.70	1.60	0.95	1.25	7.08	20.08	6.30	3.40	2.00	0.60	0.15	0.90	
27	0.50	1.75	0.90	1.30	6.30	16.00	6.17	14.35	2.00	0.55	0.10	1.25	
28	0.50	2.15	1.10	1.80	5.00	15.10	5.00	9.29	1.90	0.50	0.05	1.20	
29	0.45	1.85	2.20	1.35	4.70	10.07	4.60	6.95	1.90	0.50		1.05	
30	0.45	1.45	1.30	2.10	4.30	12.25	4.20	5.91	1.80	0.50		0.75	
31		1.25		1.95	4.10		4.00		1.75	0.50		0.50	
Total	9.45	25.23	41.60	83.95	253.95	503.38	344.00	116.51	93.10	33.45	7.50	14.25	1526.37 CMSDAY
Mean	0.31	0.81	1.39	2.71	8.19	16.78	11.10	3.88	3.00	1.08	0.27	0.46	4.18 CMS
Max	0.75	3.48	6.30	5.52	18.72	79.25	21.70	14.35	5.65	1.75	0.50	1.50	79.25 CMS
Min	0.10	0.15	0.40	1.25	1.25	3.70	4.00	2.25	1.75	0.50	0.00	0.00	0.00 CMS
Runoff	0.816	2.180	3.594	7.253	21.941	43.492	29.722	10.066	8.044	2.890	0.648	1.231	131.878 MCM

Momentary Peak 91.50 CMS, at 5.00 M (A.D), at 18.00 Hours, on Sep 24, 1998

Runoff Yield 11.33 Liters/Second/Square KM, Momentary Peak Yield 247.967 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

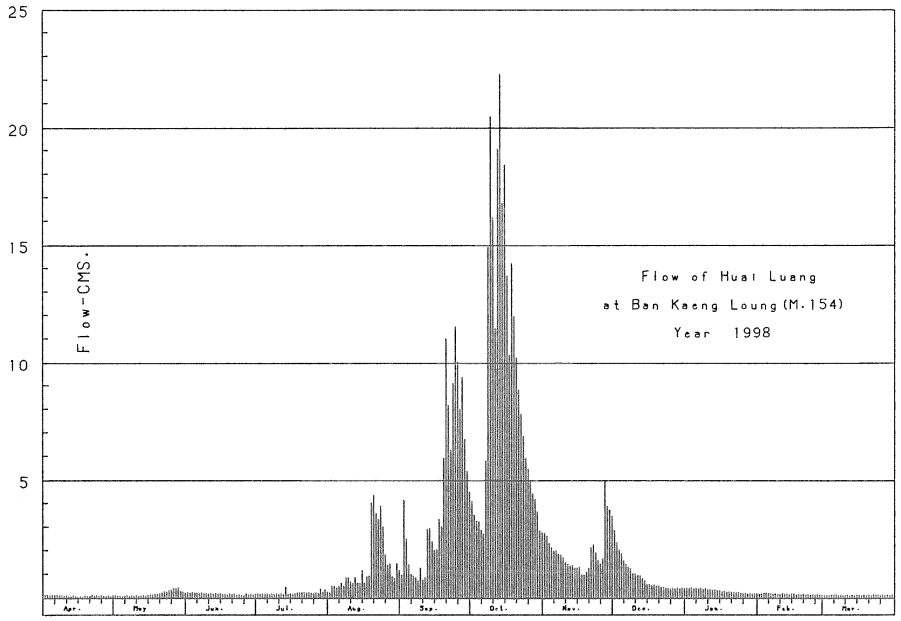
Huai Luang at Ban Kaeng Rueng, Ubon Ratchathani (M.154)

Location	Lat. 14°-27'-06" N., Long. 105°-11'-25" E., on left bank at the bridge on road, Ban Kaeng Rueng, Amphoe Na Chaluai, Ubon Ratchathani.
Drainage Area	209 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank downstream at the footpath of the bridge.
Elevation	+10.124 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 37 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.91	0.88	0.97	0.93	0.98	1.28	1.79	1.60	1.62	1.07	0.93	0.90	
2	0.90	0.88	0.97	0.93	1.11	1.80	1.71	1.58	1.54	1.08	0.93	0.90	
3	0.90	0.87	0.97	0.93	1.12	1.56	1.67	1.54	1.50	1.08	0.97	0.90	
4	0.90	0.87	0.97	0.93	1.07	1.39	1.67	1.51	1.47	1.07	0.96	0.90	
5	0.90	0.87	0.96	0.93	1.12	1.30	1.62	1.49	1.42	1.07	0.96	0.91	
6	0.89	0.88	0.96	0.93	1.17	1.27	1.59	1.49	1.39	1.07	0.95	0.91	
7	0.89	0.88	0.96	0.93	1.13	1.26	2.04	1.47	1.37	1.07	0.94	0.90	
8	0.89	0.88	0.96	0.93	1.25	1.21	3.25	1.46	1.35	1.06	0.93	0.90	
9	0.89	0.88	0.95	0.93	1.26	1.36	3.95	1.44	1.31	1.06	0.93	0.90	
10	0.88	0.88	0.95	0.93	1.20	1.23	3.41	1.41	1.30	1.05	0.93	0.90	
11	0.87	0.89	0.95	0.93	1.17	1.25	2.82	1.39	1.29	1.04	0.93	0.90	
12	0.87	0.89	0.94	0.93	1.26	1.62	3.78	1.38	1.28	1.04	0.93	0.90	
13	0.87	0.89	0.94	1.10	1.19	1.63	4.17	1.38	1.25	1.03	0.93	0.90	
14	0.86	0.89	0.94	0.93	1.17	1.55	3.49	1.36	1.22	1.03	0.93	0.90	
15	0.86	0.89	0.94	0.93	1.33	1.49	3.69	1.36	1.16	1.02	0.93	0.90	
16	0.86	0.90	0.93	0.93	1.19	1.50	3.10	1.36	1.15	1.01	0.93	0.90	
17	0.86	0.91	0.92	0.93	1.27	1.68	2.68	1.30	1.14	1.01	0.92	0.90	
18	0.87	0.92	0.92	0.98	1.27	1.64	3.17	1.28	1.14	1.00	0.92	0.90	
19	0.88	0.93	0.93	0.96	1.78	2.05	2.89	1.32	1.13	0.99	0.92	0.90	
20	0.88	0.94	0.93	0.98	1.83	2.77	2.66	1.35	1.12	0.99	0.92	0.90	
21	0.89	0.97	0.93	0.97	1.72	2.37	2.47	1.51	1.10	0.98	0.92	0.90	
22	0.89	0.99	0.92	0.97	1.68	2.10	2.32	1.53	1.09	0.98	0.91	0.91	
23	0.88	1.00	0.91	0.97	1.76	2.51	2.19	1.48	1.08	0.98	0.91	0.91	
24	0.88	1.02	0.90	0.97	1.64	2.83	2.05	1.42	1.07	0.97	0.91	0.91	
25	0.88	1.04	0.90	0.96	1.46	2.64	1.99	1.40	1.06	0.96	0.91	0.90	
26	0.87	1.06	0.93	0.96	1.38	2.35	1.91	1.43	1.07	0.95	0.91	0.90	
27	0.87	1.07	0.92	0.96	1.40	2.54	1.84	1.92	1.07	0.95	0.91	0.90	
28	0.87	1.08	0.91	1.05	1.27	2.17	1.80	1.76	1.07	0.95	0.90	0.90	
29	0.88	1.02	0.92	0.99	1.24	1.97	1.73	1.74	1.07	0.94		0.90	
30	0.88	0.98	0.92	1.03	1.40	1.85	1.61	1.70	1.07	0.93		0.90	
31		0.97		0.98	1.33		1.60		1.07	0.93		0.90	
Mean	0.88	0.94	0.94	0.96	1.33	1.81	2.47	1.48	1.22	1.01	0.93	0.90	
Max	0.91	1.08	0.97	1.10	1.83	2.83	4.17	1.92	1.62	1.08	0.97	0.91	4.17
Min	0.86	0.87	0.90	0.93	0.98	1.21	1.59	1.28	1.06	0.93	0.90	0.90	0.86

Annual Max Momentary Gage Height 4.20 M (A.D), at 18.00 Hours, on Oct 12, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.71 M (A.D)
Left Bank Elevation 6.86 M (A.D)
Right Bank Elevation 7.19 M (A.D), Drainage Area 209 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.17	0.12	0.26	0.20	0.27	0.98	4.13	2.80	2.94	0.44	0.20	0.15	
2	0.15	0.12	0.26	0.20	0.52	4.20	3.57	2.66	2.38	0.46	0.20	0.15	
3	0.15	0.11	0.26	0.20	0.54	2.52	3.29	2.38	2.10	0.46	0.26	0.15	
4	0.15	0.11	0.26	0.20	0.44	1.46	3.29	2.17	1.92	0.44	0.24	0.15	
5	0.15	0.11	0.24	0.20	0.54	1.05	2.94	2.04	1.62	0.44	0.24	0.17	
6	0.13	0.12	0.24	0.20	0.64	0.95	2.73	2.04	1.46	0.44	0.22	0.17	
7	0.13	0.12	0.24	0.20	0.56	0.91	5.88	1.92	1.37	0.44	0.21	0.15	
8	0.13	0.12	0.24	0.20	0.88	0.74	14.90	1.86	1.28	0.42	0.20	0.15	
9	0.13	0.12	0.22	0.20	0.91	1.32	20.50	1.74	1.09	0.42	0.20	0.15	
10	0.12	0.12	0.22	0.20	0.70	0.81	16.18	1.56	1.05	0.40	0.20	0.15	
11	0.11	0.13	0.22	0.20	0.64	0.88	11.46	1.46	1.01	0.38	0.20	0.15	
12	0.11	0.13	0.21	0.20	0.91	2.94	19.14	1.41	0.98	0.38	0.20	0.15	
13	0.11	0.13	0.21	0.50	0.68	3.01	22.29	1.41	0.88	0.36	0.20	0.15	
14	0.09	0.13	0.21	0.20	0.64	2.45	16.82	1.32	0.77	0.36	0.20	0.15	
15	0.09	0.13	0.21	0.20	1.19	2.04	18.42	1.32	0.62	0.34	0.20	0.15	
16	0.09	0.15	0.20	0.20	0.68	2.10	13.70	1.32	0.60	0.32	0.20	0.15	
17	0.09	0.17	0.18	0.20	0.95	3.36	10.36	1.05	0.58	0.32	0.18	0.15	
18	0.11	0.18	0.18	0.27	0.95	3.08	14.26	0.98	0.58	0.30	0.18	0.15	
19	0.12	0.20	0.20	0.24	4.06	5.95	12.02	1.14	0.56	0.29	0.18	0.15	
20	0.12	0.21	0.20	0.27	4.41	11.06	10.22	1.28	0.54	0.29	0.18	0.15	
21	0.13	0.26	0.20	0.26	3.64	8.19	8.89	2.17	0.50	0.27	0.18	0.15	
22	0.13	0.29	0.18	0.26	3.36	6.30	7.84	2.31	0.48	0.27	0.17	0.17	
23	0.12	0.30	0.17	0.26	3.92	9.17	6.93	1.98	0.46	0.27	0.17	0.17	
24	0.12	0.34	0.15	0.26	3.08	11.54	5.95	1.62	0.44	0.26	0.17	0.17	
25	0.12	0.38	0.15	0.24	1.86	10.08	5.53	1.50	0.42	0.24	0.17	0.15	
26	0.11	0.42	0.20	0.24	1.41	8.05	4.97	1.68	0.44	0.22	0.17	0.15	
27	0.11	0.44	0.18	0.24	1.50	9.38	4.48	5.04	0.44	0.22	0.17	0.15	
28	0.11	0.46	0.17	0.40	0.95	6.79	4.20	3.92	0.44	0.22	0.15	0.15	
29	0.12	0.34	0.18	0.29	0.84	5.39	3.71	3.78	0.44	0.21		0.15	
30	0.12	0.27	0.18	0.36	1.50	4.55	2.87	3.50	0.44	0.20		0.15	
31		0.26		0.27	1.19		2.80		0.44	0.20		0.15	
Total	3.64	6.49	6.22	7.56	44.36	131.25	284.27	61.36	29.27	10.28	5.44	4.75	594.89 CMSDAY
Mean	0.12	0.21	0.21	0.24	1.43	4.38	9.17	2.05	0.94	0.33	0.19	0.15	1.63 CMS
Max	0.17	0.46	0.26	0.50	4.41	11.54	22.29	5.04	2.94	0.46	0.26	0.17	22.29 CMS
Min	0.09	0.11	0.15	0.20	0.27	0.74	2.73	0.98	0.42	0.20	0.15	0.15	0.09 CMS
Runoff	0.314	0.561	0.537	0.653	3.833	11.340	24.561	5.302	2.529	0.888	0.470	0.410	51.399 MCM

Momentary Peak 22.55 CMS, at 4.20 M (A.D), at 18.00 Hours, on Oct 12, 1998
Runoff Yield 7.80 Liters/Second/Square KM, Momentary Peak Yield 107.895 Liters/Second/Square KM

WATER YEAR 1998

MUN RIVER BASIN

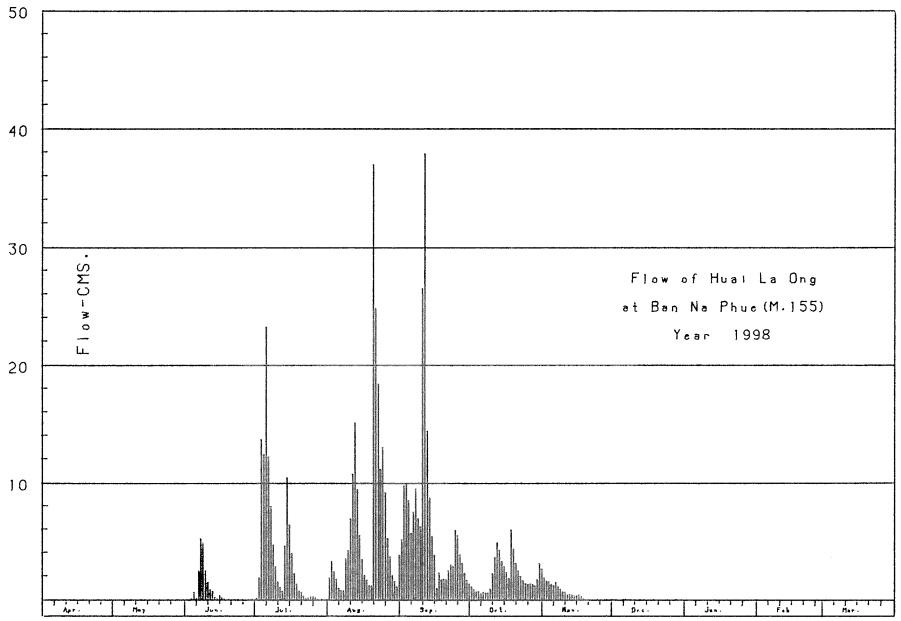
Huai La-ong at Ban Na Phu, Amnart Charoen (M.155)

Location	Lat. 16°-00'-16" N., Long. 104°-38'-37" E., on left bank at the bridge on road, Ban Na Phu, Amphoe Muang, Amnart Charoen.
Drainage Area	221 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank upstream side at the footpath of the bridge.
Elevation	+9.545 m.(A.D.)
Gage Reading Frequency	3-time daily readings at 06.00, 12.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 3 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. The weir situated about 1.5 kilometers downstream from the gage site. Stage-discharge relation defined by 40 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.32	0.28	0.42	0.56	0.79	0.98	0.72	0.79	0.49	0.49	0.37	0.37	
2	0.32	0.26	0.45	0.80	0.88	1.17	0.69	0.77	0.49	0.37	0.36	0.37	
3	0.30	0.27	0.53	1.32	0.83	1.18	0.67	0.76	0.48	0.36	0.36	0.37	
4	0.29	0.29	0.66	1.28	0.78	1.12	0.67	0.74	0.50	0.36	0.37	0.38	
5	0.29	0.29	0.54	1.57	0.71	1.01	0.65	0.73	0.49	0.36	0.37	0.38	
6	0.28	0.29	0.83	1.27	0.68	1.08	0.66	0.75	0.49	0.35	0.37	0.39	
7	0.27	0.28	0.99	1.10	0.68	1.16	0.66	0.72	0.49	0.35	0.36	0.38	
8	0.27	0.28	0.97	0.96	0.89	1.06	0.65	0.69	0.49	0.35	0.36	0.39	
9	0.27	0.27	0.83	0.85	0.93	1.03	0.70	0.67	0.48	0.34	0.36	0.38	
10	0.27	0.27	0.76	0.76	1.06	1.65	0.82	0.66	0.47	0.35	0.36	0.38	
11	0.27	0.25	0.69	0.71	1.21	1.93	0.90	0.64	0.47	0.36	0.36	0.38	
12	0.27	0.25	0.68	0.67	1.36	1.34	0.97	0.64	0.47	0.36	0.36	0.38	
13	0.27	0.25	0.61	0.95	1.16	1.13	0.93	0.64	0.47	0.35	0.35	0.38	
14	0.27	0.25	0.59	1.20	1.00	1.00	0.88	0.63	0.46	0.35	0.34	0.38	
15	0.27	0.23	0.63	1.04	0.89	0.91	0.85	0.63	0.42	0.36	0.35	0.38	
16	0.27	0.22	0.60	0.92	0.81	0.71	0.82	0.63	0.42	0.35	0.35	0.38	
17	0.25	0.26	0.51	0.82	0.77	0.82	0.79	0.62	0.42	0.35	0.35	0.38	
18	0.26	0.29	0.50	0.74	0.73	0.78	1.02	0.50	0.43	0.36	0.34	0.38	
19	0.25	0.34	0.49	0.68	0.72	0.78	0.94	0.48	0.43	0.35	0.34	0.34	
20	0.27	0.37	0.49	0.66	1.91	0.78	0.87	0.48	0.44	0.35	0.34	0.31	
21	0.28	0.37	0.48	0.62	1.61	0.83	0.83	0.48	0.44	0.35	0.34	0.31	
22	0.30	0.35	0.48	0.60	1.45	0.86	0.80	0.48	0.45	0.36	0.34	0.34	
23	0.32	0.34	0.48	0.60	1.23	0.85	0.77	0.47	0.44	0.34	0.36	0.35	
24	0.33	0.33	0.48	0.62	1.30	1.02	0.74	0.47	0.44	0.34	0.37	0.33	
25	0.33	0.45	0.48	0.62	1.15	1.00	0.74	0.47	0.44	0.37	0.37	0.32	
26	0.33	0.39	0.49	0.60	0.99	0.91	0.74	0.46	0.45	0.37	0.37	0.32	
27	0.33	0.39	0.50	0.48	0.90	0.87	0.74	0.47	0.46	0.37	0.38	0.31	
28	0.32	0.38	0.37	0.48	0.81	0.82	0.72	0.48	0.46	0.37	0.37	0.32	
29	0.30	0.45	0.54	0.48	0.76	0.77	0.78	0.51	0.44	0.41		0.36	
30	0.30	0.39	0.54	0.48	0.72	0.74	0.87	0.51	0.46	0.38		0.34	
31		0.42		0.48	0.91		0.84		0.49	0.38		0.32	
Mean	0.29	0.31	0.59	0.80	0.99	1.01	0.79	0.60	0.46	0.36	0.36	0.36	
Max	0.33	0.45	0.99	1.57	1.91	1.93	1.02	0.79	0.50	0.49	0.38	0.39	1.93
Min	0.25	0.22	0.37	0.48	0.68	0.71	0.65	0.46	0.42	0.34	0.34	0.31	0.22

Annual Max Momentary Gage Height 2.15 M (A.D), at 18.00 Hours, on Sep 10, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.14 M (A.D)
Left Bank Elevation 5.31 M (A.D)
Right Bank Elevation 3.05 M (A.D), Drainage Area 221 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.01	0.00	0.06	0.16	1.90	5.14	1.20	1.90	0.10	0.10	0.04	0.04	
2	0.01	0.00	0.08	2.00	3.36	9.75	0.92	1.70	0.10	0.04	0.03	0.04	
3	0.00	0.00	0.13	13.70	2.51	10.00	0.76	1.60	0.09	0.03	0.03	0.04	
4	0.00	0.00	0.68	12.50	1.80	8.50	0.76	1.40	0.10	0.03	0.04	0.04	
5	0.00	0.00	0.14	23.30	1.10	5.75	0.60	1.30	0.10	0.03	0.04	0.04	
6	0.00	0.00	2.51	12.25	0.84	7.50	0.68	1.50	0.10	0.02	0.04	0.04	
7	0.00	0.00	5.32	8.00	0.84	9.50	0.68	1.20	0.10	0.02	0.03	0.04	
8	0.00	0.00	4.96	4.78	3.53	7.00	0.60	0.92	0.10	0.02	0.03	0.04	
9	0.00	0.00	2.51	2.85	4.24	6.25	1.00	0.76	0.09	0.02	0.03	0.04	
10	0.00	0.00	1.60	1.60	7.00	26.50	2.34	0.68	0.09	0.02	0.03	0.04	
11	0.00	0.00	0.92	1.10	10.75	38.00	3.70	0.52	0.09	0.03	0.03	0.04	
12	0.00	0.00	0.84	0.76	15.10	14.40	4.96	0.52	0.09	0.03	0.03	0.04	
13	0.00	0.00	0.28	4.60	9.50	8.75	4.24	0.52	0.09	0.02	0.02	0.04	
14	0.00	0.00	0.19	10.50	5.50	5.50	3.36	0.44	0.08	0.02	0.02	0.04	
15	0.00	0.00	0.44	6.50	3.53	3.88	2.85	0.44	0.06	0.03	0.02	0.04	
16	0.00	0.00	0.20	4.06	2.17	1.10	2.34	0.44	0.06	0.02	0.02	0.04	
17	0.00	0.00	0.11	2.34	1.70	2.34	1.90	0.36	0.06	0.02	0.02	0.04	
18	0.00	0.00	0.10	1.40	1.30	1.80	6.00	0.10	0.07	0.03	0.02	0.04	
19	0.00	0.02	0.10	0.84	1.20	1.80	4.42	0.09	0.07	0.02	0.02	0.02	
20	0.00	0.04	0.10	0.68	37.00	1.80	3.19	0.09	0.07	0.02	0.02	0.00	
21	0.00	0.04	0.09	0.36	24.90	2.51	2.51	0.09	0.07	0.02	0.02	0.00	
22	0.00	0.02	0.09	0.20	18.50	3.02	2.00	0.09	0.08	0.03	0.02	0.02	
23	0.01	0.02	0.09	0.20	11.25	2.85	1.70	0.09	0.07	0.02	0.03	0.02	
24	0.02	0.02	0.09	0.36	13.00	6.00	1.40	0.09	0.07	0.02	0.04	0.02	
25	0.02	0.08	0.09	0.36	9.25	5.50	1.40	0.09	0.07	0.04	0.04	0.01	
26	0.02	0.04	0.10	0.20	5.32	3.88	1.40	0.08	0.08	0.04	0.04	0.01	
27	0.02	0.04	0.10	0.09	3.70	3.19	1.40	0.09	0.08	0.04	0.04	0.00	
28	0.01	0.04	0.04	0.09	2.17	2.34	1.20	0.09	0.08	0.04	0.04	0.01	
29	0.00	0.08	0.14	0.09	1.60	1.70	1.80	0.11	0.07	0.06		0.03	
30	0.00	0.04	0.14	0.09	1.20	1.40	3.19	0.11	0.08	0.04		0.02	
31		0.06		0.09	3.88		2.68		0.10	0.04		0.01	
Total	0.12	0.54	22.24	116.05	209.64	207.65	67.18	17.41	2.56	0.96	0.83	0.89	646.07 CMSDAY
Mean	0.00	0.02	0.74	3.74	6.76	6.92	2.17	0.58	0.08	0.03	0.03	0.03	1.77 CMS
Max	0.02	0.08	5.32	23.30	37.00	38.00	6.00	1.90	0.10	0.10	0.04	0.04	38.00 CMS
Min	0.00	0.00	0.04	0.09	0.84	1.10	0.60	0.08	0.06	0.02	0.02	0.00	0.00 CMS
Runoff	0.010	0.047	1.922	10.027	18.113	17.941	5.804	1.504	0.221	0.083	0.072	0.077	55.820 MCM

Momentary Peak 49.00 CMS, at 2.15 M (A.D), at 18.00 Hours, on Sep 10, 1998

Runoff Yield 8.01 Liters/Second/Square KM, Momentary Peak Yield 221.719 Liters/Second/Square KM

WATER YEAR 1998

TONLE SAP BASIN

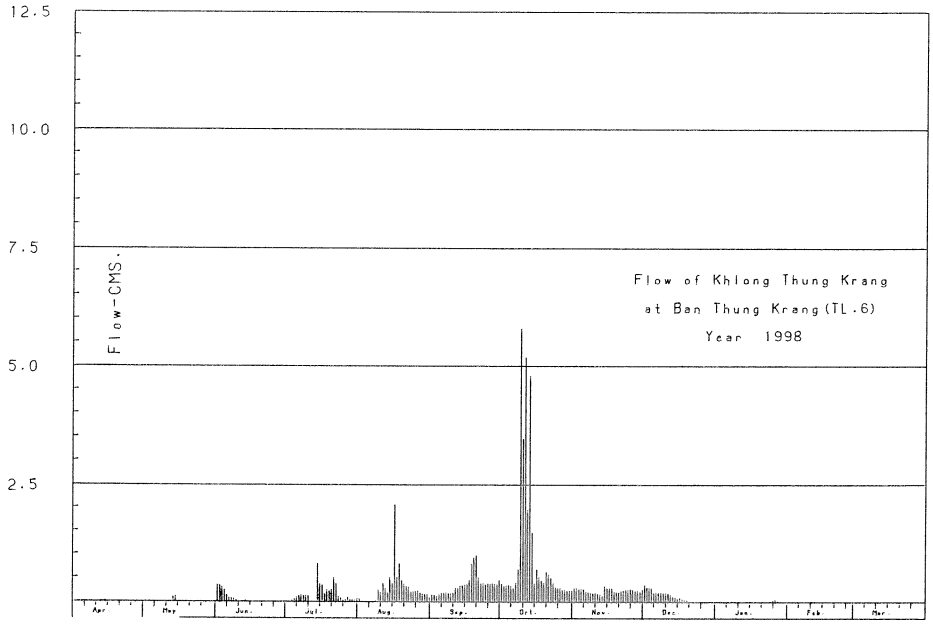
Khlong Thung Krang at Ban Thung Krang, Chanthaburi (TL.6)

Location	Lat. 13°-01'-36" N., Long. 102°-16'-21" E., on right bank at the bridge of Chanthaburi-Sa Kaeo Highway, Ban Thung Krang, Amphoe Pong Nam Ron, Chanthaburi.
Drainage Area	42 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+183.10 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 20 meters from the top staff gage.
Elevation	+187.655 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 21 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	183.37	183.23	183.98	183.73	183.77	183.85	183.99	183.95	183.98	183.64	183.57	183.49	
2	183.39	183.22	183.98	183.73	183.67	183.85	183.97	183.95	183.96	183.64	183.56	183.47	
3	183.40	183.23	183.96	183.73	183.62	183.82	183.97	183.94	183.95	183.63	183.55	183.45	
4	183.42	183.25	183.93	183.77	183.55	183.86	183.98	183.94	183.95	183.62	183.56	183.47	
5	183.41	183.25	183.85	183.81	183.66	183.88	183.97	183.94	183.90	183.61	183.58	183.50	
6	183.41	183.43	183.78	183.84	183.58	183.90	183.95	183.91	183.90	183.61	183.58	183.50	
7	183.46	183.25	183.78	183.85	183.58	183.90	184.00	183.91	183.90	183.60	183.59	183.50	
8	183.41	183.55	183.76	183.84	183.73	183.89	184.05	183.89	183.90	183.60	183.59	183.49	
9	183.40	183.48	183.74	183.84	183.93	183.88	184.40	183.89	183.90	183.60	183.58	183.49	
10	183.41	183.49	183.71	183.84	183.90	183.90	184.28	183.89	183.89	183.60	183.58	183.47	
11	183.40	183.46	183.70	183.70	184.00	183.95	184.37	183.88	183.89	183.60	183.57	183.47	
12	183.34	183.45	183.72	183.70	183.94	183.95	184.18	183.86	183.85	183.59	183.57	183.45	
13	183.31	183.81	183.73	183.74	183.90	183.97	184.35	183.84	183.82	183.59	183.57	183.47	
14	183.28	183.82	183.70	184.07	184.02	183.98	184.14	183.97	183.80	183.60	183.55	183.48	
15	183.24	183.62	183.68	183.99	184.00	183.98	183.99	183.95	183.78	183.60	183.55	183.50	
16	183.25	183.59	183.67	183.98	184.19	183.99	184.05	183.95	183.78	183.60	183.55	183.50	
17	183.25	183.54	183.66	183.88	184.02	184.01	184.02	183.95	183.77	183.60	183.55	183.49	
18	183.25	183.58	183.61	183.93	184.07	184.07	184.01	183.91	183.75	183.60	183.55	183.45	
19	183.31	183.52	183.55	183.92	184.01	184.09	184.00	183.91	183.75	183.60	183.54	183.42	
20	183.60	183.50	183.53	183.93	183.99	184.10	184.04	183.90	183.70	183.58	183.54	183.40	
21	183.47	183.56	183.55	184.02	183.97	184.02	184.03	183.92	183.67	183.60	183.54	183.37	
22	183.42	183.50	183.57	184.00	183.96	184.00	184.02	183.92	183.66	183.61	183.52	183.35	
23	183.41	183.35	183.56	183.81	183.91	184.00	184.00	183.93	183.66	183.66	183.52	183.34	
24	183.29	183.41	183.55	183.79	183.91	183.99	183.96	183.93	183.66	183.72	183.52	183.34	
25	183.40	183.39	183.55	183.73	183.92	184.00	183.95	183.94	183.65	183.75	183.52	183.35	
26	183.40	183.52	183.54	183.76	183.92	183.99	183.95	183.93	183.64	183.76	183.51	183.36	
27	183.37	183.53	183.53	183.80	183.90	184.00	183.93	183.92	183.64	183.72	183.50	183.38	
28	183.38	183.51	183.51	183.75	183.87	183.99	183.93	183.92	183.64	183.71	183.49	183.42	
29	183.27	183.50	183.50	183.75	183.87	183.99	183.92	183.91	183.64	183.66		183.49	
30	183.25	183.54	183.50	183.75	183.86	184.01	183.92	183.93	183.64	183.63		183.48	
31		183.62		183.77	183.80		183.92		183.63	183.59		183.48	
Mean	183.37	183.47	183.68	183.83	183.87	183.96	184.04	183.92	183.78	183.63	183.55	183.45	
Max	183.60	183.82	183.98	184.07	184.19	184.10	184.40	183.97	183.98	183.76	183.59	183.50	184.40
Min	183.24	183.22	183.50	183.70	183.55	183.82	183.92	183.84	183.63	183.58	183.49	183.34	183.22

Annual Max Momentary Gage Height 184.60 M (MSL), at 15.00 Hours, on Aug 4, 1998
Zero Gage at Bottom Elevation 183.10 M (MSL), River Bed 182.63 M (MSL)
Left Bank Elevation 186.44 M (MSL)
Right Bank Elevation 186.43 M (MSL), Drainage Area 42 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.36	0.03	0.07	0.15	0.38	0.30	0.36	0.00	0.00	0.00	
2	0.00	0.00	0.36	0.03	0.00	0.15	0.34	0.30	0.32	0.00	0.00	0.00	
3	0.00	0.00	0.32	0.03	0.00	0.12	0.34	0.28	0.30	0.00	0.00	0.00	
4	0.00	0.00	0.26	0.07	0.00	0.16	0.36	0.28	0.30	0.00	0.00	0.00	
5	0.00	0.00	0.15	0.11	0.00	0.18	0.34	0.28	0.20	0.00	0.00	0.00	
6	0.00	0.00	0.08	0.14	0.00	0.20	0.30	0.22	0.20	0.00	0.00	0.00	
7	0.00	0.00	0.08	0.15	0.00	0.20	0.40	0.22	0.20	0.00	0.00	0.00	
8	0.00	0.00	0.06	0.14	0.03	0.19	0.70	0.19	0.20	0.00	0.00	0.00	
9	0.00	0.00	0.04	0.14	0.26	0.18	5.80	0.19	0.20	0.00	0.00	0.00	
10	0.00	0.00	0.01	0.14	0.20	0.20	3.48	0.19	0.19	0.00	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.40	0.30	5.20	0.18	0.19	0.00	0.00	0.00	
12	0.00	0.00	0.02	0.00	0.28	0.30	1.96	0.16	0.15	0.00	0.00	0.00	
13	0.00	0.11	0.03	0.04	0.20	0.34	4.80	0.14	0.12	0.00	0.00	0.00	
14	0.00	0.12	0.00	0.82	0.52	0.36	1.48	0.34	0.10	0.00	0.00	0.00	
15	0.00	0.00	0.00	0.38	0.40	0.36	0.38	0.30	0.08	0.00	0.00	0.00	
16	0.00	0.00	0.00	0.36	2.08	0.38	0.70	0.30	0.08	0.00	0.00	0.00	
17	0.00	0.00	0.00	0.18	0.52	0.46	0.52	0.30	0.07	0.00	0.00	0.00	
18	0.00	0.00	0.00	0.26	0.82	0.82	0.46	0.22	0.05	0.00	0.00	0.00	
19	0.00	0.00	0.00	0.24	0.46	0.94	0.40	0.22	0.05	0.00	0.00	0.00	
20	0.00	0.00	0.00	0.26	0.38	1.00	0.64	0.20	0.00	0.00	0.00	0.00	
21	0.00	0.00	0.00	0.52	0.34	0.52	0.58	0.24	0.00	0.00	0.00	0.00	
22	0.00	0.00	0.00	0.40	0.32	0.40	0.52	0.24	0.00	0.00	0.00	0.00	
23	0.00	0.00	0.00	0.11	0.22	0.40	0.40	0.26	0.00	0.00	0.00	0.00	
24	0.00	0.00	0.00	0.09	0.22	0.38	0.32	0.26	0.00	0.02	0.00	0.00	
25	0.00	0.00	0.00	0.03	0.24	0.40	0.30	0.28	0.00	0.05	0.00	0.00	
26	0.00	0.00	0.00	0.06	0.24	0.38	0.30	0.26	0.00	0.06	0.00	0.00	
27	0.00	0.00	0.00	0.10	0.20	0.40	0.26	0.24	0.00	0.02	0.00	0.00	
28	0.00	0.00	0.00	0.05	0.17	0.38	0.26	0.24	0.00	0.01	0.00	0.00	
29	0.00	0.00	0.00	0.05	0.17	0.38	0.24	0.22	0.00	0.00		0.00	
30	0.00	0.00	0.00	0.05	0.16	0.46	0.24	0.26	0.00	0.00		0.00	
31		0.00		0.07	0.10		0.24		0.00	0.00		0.00	
Total	0.00	0.23	1.77	5.05	9.00	11.09	32.64	7.31	3.36	0.16	0.00	0.00	70.61 CMSDAY
Mean	0.00	0.01	0.06	0.16	0.29	0.37	1.05	0.24	0.11	0.01	0.00	0.00	0.19 CMS
Max	0.00	0.12	0.36	0.82	2.08	1.00	5.80	0.34	0.36	0.06	0.00	0.00	5.80 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.12	0.24	0.14	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.020	0.153	0.436	0.778	0.958	2.820	0.632	0.290	0.014	0.000	0.000	6.101 MCM

Momentary Peak 10.80 CMS, at 184.60 M (MSL), at 15.00 Hours, on Aug 4, 1998
Runoff Yield 4.61 Liters/Second/Square KM, Momentary Peak Yield 257.143 Liters/Second/Square KM

WATER YEAR 1998

THA CHIN RIVER BASIN

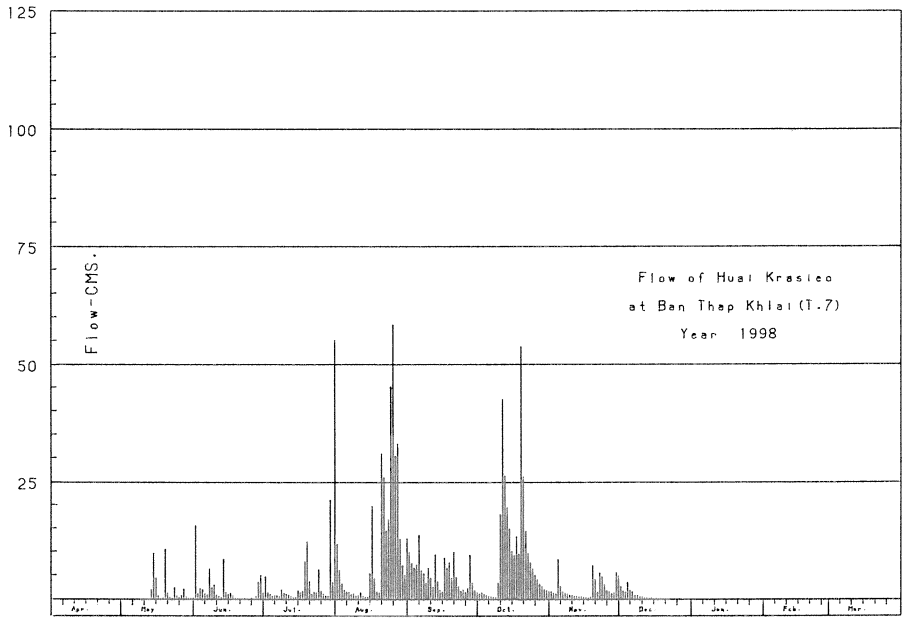
Huai Krasieo at Ban Thap Khlai, Uthai Thani (T.7)

Location	Lat. 15°-03'-06" N., Long. 99°-35'-18" E., on right bank in the vicinity of Wat Thap Khlai at Ban Thap Khlai, Amphoe Ban Rai, Uthai Thani.
Drainage Area	607 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank under the coconut tree and about 50 meters from the top staff gage.
Elevation	+3.689 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 100 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.35	-0.42	0.97	0.40	0.79	0.70	0.07	0.14	0.25	-0.28	-0.37	-0.50	
2	-0.35	-0.42	0.08	0.12	0.47	0.57	0.10	0.08	0.17	-0.27	-0.39	-0.50	
3	-0.35	-0.42	0.22	0.04	0.30	0.51	0.06	0.07	0.11	-0.27	-0.39	-0.50	
4	-0.35	-0.42	0.21	-0.02	0.19	0.54	-0.01	0.62	0.32	-0.28	-0.37	-0.51	
5	-0.35	-0.42	0.06	-0.02	0.14	0.88	-0.04	0.26	0.20	-0.31	-0.37	-0.51	
6	-0.35	-0.42	0.03	0.00	0.11	0.47	-0.05	0.13	0.13	-0.34	-0.38	-0.36	
7	-0.35	-0.42	0.49	-0.06	0.05	0.44	-0.07	0.10	0.01	-0.34	-0.38	-0.38	
8	-0.35	-0.42	0.24	0.20	0.06	0.30	-0.10	0.06	-0.01	-0.34	-0.39	-0.41	
9	-0.35	-0.42	0.27	0.10	-0.01	0.50	0.31	0.02	-0.05	-0.34	-0.39	-0.44	
10	-0.35	-0.42	0.02	0.04	-0.03	0.38	1.07	0.00	-0.07	-0.34	-0.41	-0.46	
11	-0.35	-0.42	-0.06	0.02	0.12	0.24	1.82	-0.02	-0.09	-0.35	-0.42	-0.51	
12	-0.35	-0.42	-0.09	-0.04	-0.03	0.68	1.35	-0.04	-0.10	-0.32	-0.44	-0.50	
13	-0.35	0.21	0.62	-0.09	-0.06	0.33	1.12	-0.05	-0.11	-0.32	-0.45	-0.50	
14	-0.35	0.69	0.10	-0.11	-0.09	0.19	0.94	-0.06	-0.13	-0.31	-0.46	-0.50	
15	-0.35	0.38	0.02	0.18	0.44	0.14	0.71	-0.07	-0.14	-0.35	-0.49	-0.50	
16	-0.35	-0.04	0.09	0.10	1.13	0.63	0.66	-0.10	-0.15	-0.33	-0.50	-0.49	
17	-0.35	-0.14	-0.02	0.17	0.36	0.51	0.86	-0.11	-0.15	-0.34	-0.50	-0.49	
18	-0.35	-0.17	-0.10	0.59	0.14	0.57	0.69	-0.09	-0.16	-0.34	-0.50	-0.49	
19	-0.35	0.74	-0.21	0.81	0.09	0.37	2.10	0.54	-0.16	-0.34	-0.49	-0.49	
20	-0.35	0.08	-0.20	0.32	1.49	0.71	1.34	0.35	-0.17	-0.37	-0.49	-0.49	
21	-0.35	-0.07	-0.20	0.06	1.34	0.39	0.92	0.13	-0.18	-0.37	-0.50	-0.48	
22	-0.35	-0.12	-0.22	0.13	0.92	0.25	0.69	0.44	-0.19	-0.37	-0.50	-0.48	
23	-0.35	0.24	-0.23	0.09	1.02	0.17	0.58	0.40	-0.20	-0.37	-0.50	-0.48	
24	-0.35	-0.04	-0.24	0.49	1.89	0.20	0.49	0.28	-0.21	-0.38	-0.50	-0.48	
25	-0.35	-0.09	-0.11	0.16	2.21	0.13	0.42	0.19	-0.22	-0.39	-0.50	-0.48	
26	-0.35	-0.02	-0.26	0.05	1.48	0.22	0.35	0.13	-0.23	-0.39	-0.50	-0.48	
27	-0.35	0.22	-0.03	-0.01	1.55	0.67	0.29	0.07	-0.24	-0.38	-0.50	-0.48	
28	-0.35	-0.05	0.32	-0.05	0.84	0.30	0.25	0.09	-0.25	-0.40	-0.50	-0.48	
29	-0.35	-0.13	0.41	1.18	0.54	0.19	0.21	0.45	-0.25	-0.40		-0.50	
30	-0.35	-0.18	0.08	0.31	0.41	0.11	0.17	0.40	-0.26	-0.37		-0.51	
31		-0.17		2.13	0.84		0.15		-0.26	-0.36		-0.51	
Mean	-0.35	-0.12	0.08	0.24	0.60	0.41	0.56	0.15	-0.09	-0.34	-0.45	-0.48	
Max	-0.35	0.74	0.97	2.13	2.21	0.88	2.10	0.62	0.32	-0.27	-0.37	-0.36	2.21
Min	-0.35	-0.42	-0.26	-0.11	-0.09	0.11	-0.10	-0.11	-0.26	-0.40	-0.50	-0.51	-0.51

Annual Max Momentary Gage Height 2.80 M (A.D), at 6.00 Hours, on Aug 25, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -0.32 M (A.D)
Left Bank Elevation 4.27 M (A.D)
Right Bank Elevation 3.98 M (A.D), Drainage Area 607 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.05	0.00	15.84	5.00	11.89	10.00	1.34	1.74	2.80	0.14	0.03	0.00	
2	0.05	0.00	1.39	1.62	6.17	7.83	1.50	1.39	1.92	0.16	0.01	0.00	
3	0.05	0.00	2.38	1.17	3.50	6.83	1.28	1.34	1.56	0.16	0.01	0.00	
4	0.05	0.00	2.24	0.86	2.04	7.33	0.91	8.67	3.80	0.14	0.03	0.00	
5	0.05	0.00	1.28	0.86	1.74	13.86	0.77	2.94	2.10	0.09	0.03	0.00	
6	0.05	0.00	1.12	0.95	1.56	6.17	0.73	1.68	1.68	0.06	0.02	0.04	
7	0.05	0.00	6.50	0.68	1.23	5.67	0.64	1.50	1.00	0.06	0.02	0.02	
8	0.05	0.00	2.66	2.10	1.28	3.50	0.50	1.28	0.91	0.06	0.01	0.00	
9	0.05	0.00	3.08	1.50	0.91	6.67	3.65	1.06	0.73	0.06	0.01	0.00	
10	0.05	0.00	1.06	1.17	0.82	4.70	18.25	0.95	0.64	0.06	0.00	0.00	
11	0.05	0.00	0.68	1.06	1.62	2.66	42.60	0.86	0.55	0.05	0.00	0.00	
12	0.05	0.00	0.55	0.77	0.82	9.67	26.45	0.77	0.50	0.08	0.00	0.00	
13	0.05	2.24	8.67	0.55	0.68	3.95	19.58	0.73	0.48	0.08	0.00	0.00	
14	0.05	9.83	1.50	0.48	0.55	2.04	15.18	0.68	0.44	0.09	0.00	0.00	
15	0.05	4.70	1.06	1.98	5.67	1.74	10.21	0.64	0.42	0.05	0.00	0.00	
16	0.05	0.77	1.45	1.50	19.87	8.83	9.33	0.50	0.40	0.07	0.00	0.00	
17	0.05	0.42	0.86	1.92	4.40	6.83	13.42	0.48	0.40	0.06	0.00	0.00	
18	0.05	0.36	0.50	8.17	1.74	7.83	9.83	0.55	0.38	0.06	0.00	0.00	
19	0.05	10.84	0.28	12.32	1.45	4.55	53.95	7.33	0.38	0.06	0.00	0.00	
20	0.05	1.39	0.30	3.80	31.06	10.21	26.14	4.25	0.36	0.03	0.00	0.00	
21	0.05	0.64	0.30	1.28	26.14	4.85	14.74	1.68	0.34	0.03	0.00	0.00	
22	0.05	0.46	0.26	1.68	14.74	2.80	9.83	5.67	0.32	0.03	0.00	0.00	
23	0.05	2.66	0.24	1.45	17.00	1.92	8.00	5.00	0.30	0.03	0.00	0.00	
24	0.05	0.77	0.22	6.50	45.40	2.10	6.50	3.22	0.28	0.02	0.00	0.00	
25	0.05	0.55	0.48	1.86	58.65	1.68	5.33	2.04	0.26	0.01	0.00	0.00	
26	0.05	0.86	0.18	1.23	30.72	2.38	4.25	1.68	0.24	0.01	0.00	0.00	
27	0.05	2.38	0.82	0.91	33.13	9.50	3.36	1.34	0.22	0.02	0.00	0.00	
28	0.05	0.73	3.80	0.73	12.98	3.50	2.80	1.45	0.20	0.00	0.00	0.00	
29	0.05	0.44	5.17	21.32	7.33	2.04	2.24	5.83	0.20	0.00		0.00	
30	0.05	0.34	1.39	3.65	5.17	1.56	1.92	5.00	0.18	0.03		0.00	
31		0.36		55.23	12.98		1.80		0.18	0.04		0.00	
Total	1.50	40.74	66.26	144.30	363.24	163.20	317.03	72.25	24.17	1.84	0.17	0.06	1194.76 CMSDAY
Mean	0.05	1.31	2.21	4.65	11.72	5.44	10.23	2.41	0.78	0.06	0.01	0.00	3.27 CMS
Max	0.05	10.84	15.84	55.23	58.65	13.86	53.95	8.67	3.80	0.16	0.03	0.04	58.65 CMS
Min	0.05	0.00	0.18	0.48	0.55	1.56	0.50	0.48	0.18	0.00	0.00	0.00	0.00 CMS
Runoff	0.130	3.520	5.725	12.468	31.384	14.100	27.391	6.242	2.088	0.159	0.015	0.005	103.227 MCM

Momentary Peak 86.62 CMS, at 2.80 M (A.D), at 6.00 Hours, on Aug 25, 1998

Runoff Yield 5.39 Liters/Second/Square KM, Momentary Peak Yield 142.702 Liters/Second/Square KM

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

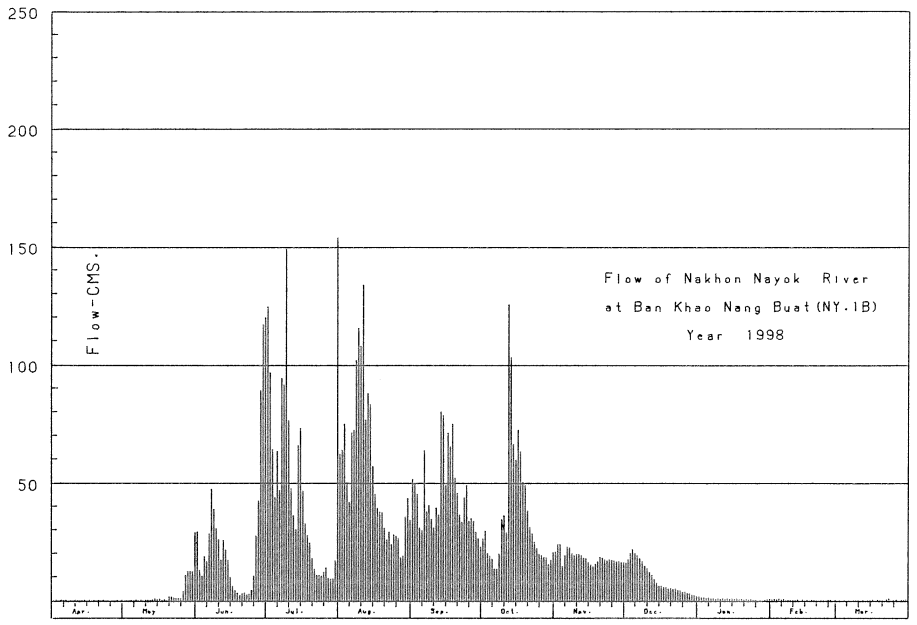
Nakhon Nayok River at Khao Nang Buat, Nakhon Nayok (Ny.1B)

Location	Lat. 14°-14'-45" N., Long. 101°-12'-38" E., on right bank about 700 meters upstream from NY.1, Amphoe Muang, Nakhon Nayok.
Drainage Area	519 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 200 meters from the staff gage.
Elevation	+8.758 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1973 to date.
Rating Operation	
Period of Rating	1973 - 1980, 1991 to date.
Rated by Float	-
Rated by Current Meter	1973 - 1980, 1991 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 48 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.34	3.33	4.88	6.75	5.67	5.44	4.79	4.63	4.46	3.61	3.41	3.34	
2	3.35	3.32	4.31	6.32	5.71	5.41	4.89	4.72	4.51	3.58	3.40	3.34	
3	3.34	3.32	4.20	5.71	5.93	5.29	4.62	4.73	4.62	3.54	3.42	3.30	
4	3.34	3.32	4.56	5.26	5.41	4.93	4.57	4.39	4.66	3.52	3.42	3.34	
5	3.33	3.32	4.48	5.70	5.21	4.89	4.53	4.59	4.62	3.52	3.41	3.33	
6	3.32	3.32	4.85	5.33	5.85	5.70	4.35	4.69	4.58	3.49	3.40	3.32	
7	3.33	3.35	5.35	6.28	5.88	5.11	4.33	4.69	4.54	3.46	3.38	3.32	
8	3.33	3.34	5.13	6.23	6.40	5.17	4.61	4.61	4.48	3.45	3.32	3.32	
9	3.34	3.34	4.92	7.10	6.61	5.03	5.02	4.59	4.41	3.45	3.36	3.32	
10	3.34	3.34	4.79	5.96	6.50	4.92	5.07	4.60	4.35	3.45	3.36	3.32	
11	3.34	3.34	4.50	5.35	6.89	5.15	4.86	4.61	4.28	3.45	3.36	3.32	
12	3.34	3.36	4.77	5.07	5.96	5.07	6.77	4.58	4.21	3.44	3.36	3.32	
13	3.34	3.40	4.66	4.90	6.17	6.03	6.42	4.55	4.13	3.44	3.36	3.32	
14	3.34	3.44	4.50	5.75	6.08	6.00	5.76	4.53	4.04	3.44	3.36	3.32	
15	3.34	3.41	4.17	5.89	5.57	5.38	5.62	4.47	3.99	3.44	3.35	3.34	
16	3.34	3.41	3.96	5.33	5.29	5.85	5.88	4.42	3.97	3.44	3.35	3.34	
17	3.34	3.35	3.86	4.98	5.15	5.74	5.69	4.40	3.95	3.43	3.35	3.33	
18	3.33	3.36	3.75	4.83	5.10	5.93	5.42	4.43	3.93	3.42	3.34	3.34	
19	3.32	3.37	3.69	4.74	5.10	5.46	5.38	4.49	3.91	3.42	3.34	3.35	
20	3.33	3.60	3.73	4.54	4.92	5.30	5.12	4.55	3.91	3.41	3.34	3.35	
21	3.34	3.63	3.76	4.33	4.78	5.07	4.93	4.55	3.90	3.41	3.34	3.35	
22	3.34	3.56	3.70	4.22	4.88	5.00	4.86	4.51	3.89	3.40	3.34	3.35	
23	3.32	3.47	3.71	4.20	4.73	5.26	4.75	4.50	3.87	3.40	3.34	3.49	
24	3.32	3.47	3.86	4.20	4.84	5.38	4.68	4.51	3.84	3.39	3.33	3.36	
25	3.32	3.46	4.20	4.27	4.83	5.01	4.61	4.51	3.82	3.38	3.33	3.34	
26	3.32	3.82	4.83	4.36	4.80	5.03	4.58	4.49	3.80	3.30	3.34	3.34	
27	3.32	4.22	5.22	4.15	4.55	5.01	4.56	4.48	3.77	3.30	3.34	3.34	
28	3.32	4.29	6.19	4.12	4.57	4.87	4.54	4.48	3.73	3.35	3.34	3.34	
29	3.32	4.30	6.64	4.14	5.05	4.80	4.44	4.47	3.70	3.33		3.34	
30	3.34	4.28	6.68	4.50	5.25	4.69	4.50	4.46	3.66	3.40		3.36	
31		4.86		7.16	5.01		4.63		3.64	3.42		3.34	
Mean	3.33	3.57	4.60	5.22	5.44	5.26	4.99	4.54	4.10	3.43	3.36	3.34	
Max	3.35	4.86	6.68	7.16	6.89	6.03	6.77	4.73	4.66	3.61	3.42	3.49	7.16
Min	3.32	3.32	3.69	4.12	4.55	4.69	4.33	4.39	3.64	3.30	3.32	3.30	3.30

Annual Max Momentary Gage Height 7.40 M (MSL), at 10.00 Hours, on Jun 29, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 2.73 M (MSL)
Left Bank Elevation 9.77 M (MSL)
Right Bank Elevation 8.80 M (MSL), Drainage Area 519 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.70	0.65	29.80	124.75	62.50	51.80	26.65	21.05	16.50	2.10	1.05	0.70	
2	0.75	0.60	13.20	97.20	64.50	50.45	30.15	24.20	17.75	1.90	1.00	0.70	
3	0.70	0.60	11.00	64.50	75.50	45.60	20.70	24.55	20.70	1.70	1.10	0.50	
4	0.70	0.60	19.00	44.40	50.45	31.55	19.25	14.80	22.10	1.60	1.10	0.70	
5	0.65	0.60	17.00	64.00	42.40	30.15	18.25	19.75	20.70	1.60	1.05	0.65	
6	0.60	0.60	28.75	47.20	71.50	64.00	14.00	23.15	19.50	1.45	1.00	0.60	
7	0.65	0.75	48.00	94.80	73.00	38.40	13.60	23.15	18.50	1.30	0.90	0.60	
8	0.65	0.70	39.20	91.80	102.00	40.80	20.35	20.35	17.00	1.25	0.60	0.60	
9	0.70	0.70	31.20	149.50	115.65	35.20	34.80	19.75	15.25	1.25	0.80	0.60	
10	0.70	0.70	26.65	77.00	108.50	31.20	36.80	20.00	14.00	1.25	0.80	0.60	
11	0.70	0.70	17.50	48.00	134.30	40.00	29.10	20.35	12.60	1.25	0.80	0.60	
12	0.70	0.80	25.95	36.80	77.00	36.80	126.05	19.50	11.20	1.20	0.80	0.60	
13	0.70	1.00	22.10	30.50	88.35	80.65	103.30	18.75	9.60	1.20	0.80	0.60	
14	0.70	1.20	17.50	66.50	83.40	79.00	67.00	18.25	7.80	1.20	0.80	0.60	
15	0.70	1.05	10.40	73.50	57.65	49.20	60.00	16.75	6.85	1.20	0.75	0.70	
16	0.70	1.05	6.40	47.20	45.60	71.50	73.00	15.50	6.55	1.20	0.75	0.70	
17	0.70	0.75	4.90	33.30	40.00	66.00	63.50	15.00	6.25	1.15	0.75	0.65	
18	0.65	0.80	3.50	28.05	38.00	75.50	50.90	15.75	5.95	1.10	0.70	0.70	
19	0.60	0.85	2.90	24.90	38.00	52.70	49.20	17.25	5.65	1.10	0.70	0.75	
20	0.65	2.00	3.30	18.50	31.20	46.00	38.80	18.75	5.65	1.05	0.70	0.75	
21	0.70	2.30	3.60	13.60	26.30	36.80	31.55	18.75	5.50	1.05	0.70	0.75	
22	0.70	1.80	3.00	11.40	29.80	34.00	29.10	17.75	5.35	1.00	0.70	0.75	
23	0.60	1.35	3.10	11.00	24.55	44.40	25.25	17.50	5.05	1.00	0.70	1.45	
24	0.60	1.35	4.90	11.00	28.40	49.20	22.80	17.75	4.60	0.95	0.65	0.80	
25	0.60	1.30	11.00	12.40	28.05	34.40	20.35	17.75	4.30	0.90	0.65	0.70	
26	0.60	4.30	28.05	14.20	27.00	35.20	19.50	17.25	4.00	0.50	0.70	0.70	
27	0.60	11.40	42.80	10.00	18.75	34.40	19.00	17.00	3.70	0.50	0.70	0.70	
28	0.60	12.80	89.45	9.40	19.25	29.45	18.50	17.00	3.30	0.75	0.70	0.70	
29	0.60	13.00	117.60	9.80	36.00	27.00	16.00	16.75	3.00	0.65		0.70	
30	0.70	12.60	120.20	17.50	44.00	23.15	17.50	16.50	2.60	1.00		0.80	
31		29.10		154.00	34.40		21.05		2.40	1.10		0.70	
Total	19.90	108.00	801.95	1536.70	1716.00	1364.50	1136.00	560.60	303.90	36.45	22.45	21.65	7628.10 CMSDAY
Mean	0.66	3.48	26.73	49.57	55.35	45.48	36.65	18.69	9.80	1.18	0.80	0.70	20.90 CMS
Max	0.75	29.10	120.20	154.00	134.30	80.65	126.05	24.55	22.10	2.10	1.10	1.45	154.00 CMS
Min	0.60	0.60	2.90	9.40	18.75	23.15	13.60	14.80	2.40	0.50	0.60	0.50	0.50 CMS
Runoff	1.719	9.331	69.288	132.771	148.262	117.893	98.150	48.436	26.257	3.149	1.940	1.871	659.068 MCM

Momentary Peak 172.00 CMS, at 7.40 M (MSL), at 10.00 Hours, on Jun 29, 1998
Runoff Yield 40.27 Liters/Second/Square KM, Momentary Peak Yield 331.407 Liters/Second/Square KM

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

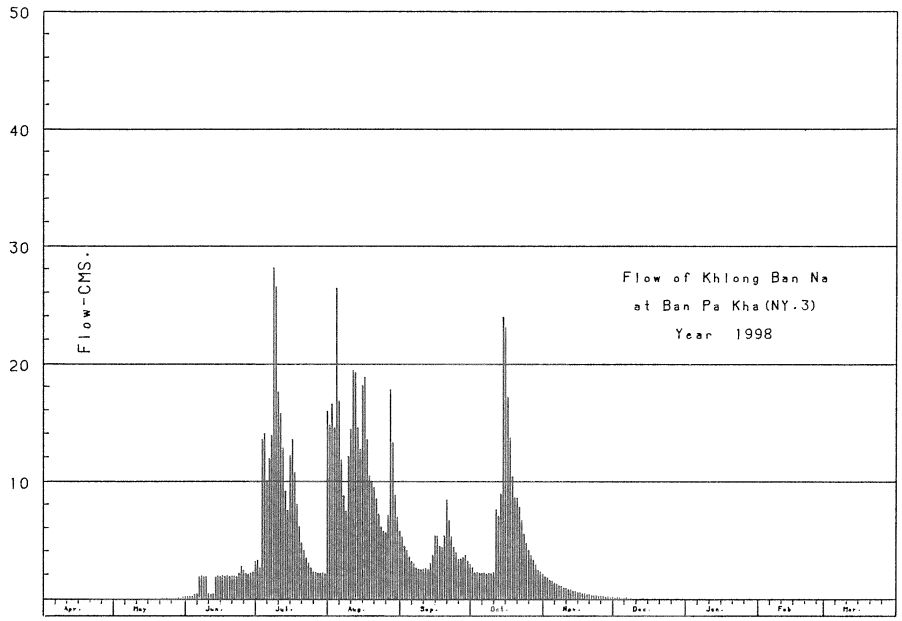
Khlong Ban Na at Ban Pa Kha, Nakhon Nayok (Ny.3)

Location	Lat. 14°-17'-07" N., Long. 101°-04'-26" E., on left bank near Wat Ban Pa Kha, Amphoe Ban Na, Nakhon Nayok.
Drainage Area	203 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	About 10 meters from the top staff gage.
Elevation	+6.367 m. (A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1977 to date.
Rating Operation	
Period of Rating	1977 - 1978, 1980, 1988 to date.
Rated by Float	-
Rated by Current Meter	1977 - 1978, 1980, 1988 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir during Oct.31,98-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 40 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.32	0.25	0.78	1.80	3.29	2.13	1.67	1.55	1.16	1.07	0.85	0.62	
2	0.47	0.20	0.73	1.67	3.47	2.01	1.59	1.53	1.20	1.09	0.85	0.61	
3	0.47	0.14	0.79	3.16	3.27	1.94	1.55	1.59	1.18	1.07	0.89	0.60	
4	0.48	0.10	0.90	3.21	4.33	1.85	1.52	1.55	1.15	1.05	0.83	0.60	
5	0.49	0.17	1.00	2.77	3.50	1.79	1.50	1.48	1.19	1.02	0.83	0.60	
6	0.49	0.26	1.08	2.98	2.96	1.74	1.46	1.42	1.13	1.00	0.80	0.60	
7	0.49	0.40	1.09	3.20	2.62	1.68	1.42	1.42	1.10	0.95	0.84	0.60	
8	0.49	0.39	1.08	4.46	2.44	1.65	1.42	1.37	1.15	0.90	0.83	0.60	
9	0.49	0.38	1.02	4.34	3.00	1.65	1.43	1.35	1.19	0.81	0.81	0.60	
10	0.49	0.38	0.99	3.57	3.25	1.65	1.54	1.31	1.14	0.85	0.81	0.59	
11	0.48	0.38	0.97	3.39	3.73	1.66	2.46	1.30	1.02	0.79	0.80	0.59	
12	0.48	0.38	0.98	3.07	3.72	1.65	2.39	1.29	1.04	0.78	0.77	0.58	
13	0.48	0.42	1.01	2.67	3.27	1.75	2.64	1.28	1.23	0.77	0.76	0.57	
14	0.48	0.48	1.06	2.45	3.06	1.88	4.13	1.21	1.22	0.76	0.75	0.56	
15	0.48	0.52	1.10	3.00	3.62	2.15	4.05	1.19	1.23	0.75	0.75	0.55	
16	0.48	0.59	1.13	3.16	3.68	2.14	3.53	1.17	1.23	0.75	0.75	0.56	
17	0.45	0.59	1.13	2.84	3.16	2.01	3.17	1.16	1.21	0.75	0.72	0.56	
18	0.40	0.59	1.12	2.52	2.81	1.98	2.81	1.17	1.25	0.75	0.70	0.55	
19	0.39	0.57	1.09	2.26	2.75	2.15	2.59	1.23	1.11	0.78	0.69	0.54	
20	0.39	0.57	1.06	2.06	2.70	2.57	2.59	1.17	1.13	0.75	0.70	0.52	
21	0.45	0.59	1.07	1.94	2.59	2.34	2.50	1.18	1.03	0.66	0.71	0.52	
22	0.46	0.59	1.08	1.84	2.41	2.13	2.33	1.16	0.92	0.62	0.71	0.51	
23	0.48	0.59	1.52	1.75	2.26	2.00	2.17	1.16	1.00	0.61	0.71	0.55	
24	0.48	0.59	1.70	1.68	2.20	1.91	2.04	1.15	1.08	0.61	0.66	0.57	
25	0.47	0.59	1.63	1.60	2.19	1.81	1.95	1.16	1.04	0.61	0.66	0.57	
26	0.41	0.60	1.49	1.55	2.39	1.83	1.87	1.17	1.01	0.61	0.60	0.57	
27	0.30	0.58	1.37	1.51	3.58	1.85	1.81	1.07	1.00	0.61	0.60	0.57	
28	0.30	0.63	1.47	1.50	3.13	1.87	1.72	1.07	0.96	0.61	0.65	0.57	
29	0.27	0.68	1.61	1.49	2.62	1.80	1.64	1.04	0.98	0.83		0.58	
30	0.29	0.69	1.78	1.46	2.37	1.73	1.60	1.06	1.00	0.83		0.58	
31		0.71		3.41	2.21		1.60		1.04	0.85		0.58	
Mean	0.44	0.47	1.16	2.53	2.99	1.91	2.15	1.27	1.11	0.80	0.75	0.57	
Max	0.49	0.71	1.78	4.46	4.33	2.57	4.13	1.59	1.25	1.09	0.89	0.62	4.46
Min	0.27	0.10	0.73	1.46	2.19	1.65	1.42	1.04	0.92	0.61	0.60	0.51	0.10

Annual Max Momentary Gage Height 4.74 M (A.D), at 18.00 Hours, on Jul 8, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.32 M (A.D)
Left Bank Elevation 6.75 M (A.D)
Right Bank Elevation 6.77 M (A.D), Drainage Area 203 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.28	3.30	14.81	5.31	2.65	1.95	0.16	0.01	0.00	0.00	
2	0.00	0.00	0.23	2.65	16.60	4.56	2.29	1.79	0.15	0.01	0.00	0.00	
3	0.00	0.00	0.29	13.64	14.63	4.14	2.27	1.65	0.14	0.01	0.00	0.00	
4	0.00	0.00	0.40	14.09	26.49	3.60	2.25	1.52	0.12	0.01	0.00	0.00	
5	0.00	0.00	0.50	10.13	16.90	3.25	2.23	1.39	0.11	0.01	0.00	0.00	
6	0.00	0.00	1.95	12.02	11.84	3.00	2.21	1.28	0.11	0.01	0.00	0.00	
7	0.00	0.00	1.96	14.00	8.86	2.70	2.18	1.18	0.10	0.01	0.00	0.00	
8	0.00	0.00	1.95	28.18	7.48	2.55	2.18	1.09	0.09	0.01	0.00	0.00	
9	0.00	0.00	1.91	26.62	12.20	2.55	2.19	1.00	0.08	0.01	0.00	0.00	
10	0.00	0.00	0.49	17.67	14.45	2.55	2.26	0.92	0.08	0.01	0.00	0.00	
11	0.00	0.00	0.47	15.80	19.43	2.60	7.62	0.85	0.07	0.01	0.00	0.00	
12	0.00	0.00	0.48	12.83	19.32	2.55	7.13	0.78	0.06	0.00	0.00	0.00	
13	0.00	0.00	1.91	9.26	14.63	3.05	9.02	0.72	0.06	0.00	0.00	0.00	
14	0.00	0.00	1.94	7.55	12.74	3.78	24.06	0.66	0.05	0.00	0.00	0.00	
15	0.00	0.02	1.97	12.20	18.22	5.45	23.10	0.61	0.05	0.00	0.00	0.00	
16	0.00	0.09	1.99	13.64	18.88	5.38	17.23	0.56	0.05	0.00	0.00	0.00	
17	0.00	0.09	1.99	10.76	13.64	4.56	13.73	0.51	0.04	0.00	0.00	0.00	
18	0.00	0.09	1.98	8.06	10.49	4.38	10.49	0.47	0.04	0.00	0.00	0.00	
19	0.00	0.07	1.96	6.22	9.95	5.45	8.62	0.43	0.04	0.00	0.00	0.00	
20	0.00	0.07	1.94	4.86	9.50	8.46	8.62	0.40	0.03	0.00	0.00	0.00	
21	0.00	0.09	1.95	4.14	8.62	6.78	7.90	0.37	0.03	0.00	0.00	0.00	
22	0.00	0.09	1.95	3.54	7.27	5.31	6.71	0.34	0.03	0.00	0.00	0.00	
23	0.00	0.09	2.25	3.05	6.22	4.50	5.59	0.31	0.03	0.00	0.00	0.00	
24	0.00	0.09	2.80	2.70	5.80	3.96	4.74	0.29	0.02	0.00	0.00	0.00	
25	0.00	0.09	2.45	2.30	5.73	3.36	4.20	0.26	0.02	0.00	0.00	0.00	
26	0.00	0.10	2.23	2.27	7.13	3.48	3.72	0.24	0.02	0.00	0.00	0.00	
27	0.00	0.08	2.15	2.24	17.78	3.60	3.36	0.22	0.02	0.00	0.00	0.00	
28	0.00	0.13	2.21	2.23	13.37	3.72	2.90	0.20	0.02	0.00	0.00	0.00	
29	0.00	0.18	2.35	2.23	8.86	3.30	2.50	0.19	0.02	0.00		0.00	
30	0.00	0.19	3.20	2.21	6.99	2.95	2.30	0.17	0.01	0.00		0.00	
31		0.21		16.00	5.87		2.12		0.01	0.00		0.00	
Total	0.00	1.77	50.13	286.39	384.70	120.83	198.37	22.35	1.86	0.11	0.00	0.00	1066.51 CMSDAY
Mean	0.00	0.06	1.67	9.24	12.41	4.03	6.40	0.75	0.06	0.00	0.00	0.00	2.92 CMS
Max	0.00	0.21	3.20	28.18	26.49	8.46	24.06	1.95	0.16	0.01	0.00	0.00	28.18 CMS
Min	0.00	0.00	0.23	2.21	5.73	2.55	2.12	0.17	0.01	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.153	4.331	24.744	33.238	10.440	17.139	1.931	0.161	0.010	0.000	0.000	92.146 MCM

Momentary Peak 31.96 CMS, at 4.74 M (A.D), at 18.00 Hours, on Jul 8, 1998

Runoff Yield 14.39 Liters/Second/Square KM, Momentary Peak Yield 157.438 Liters/Second/Square KM

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

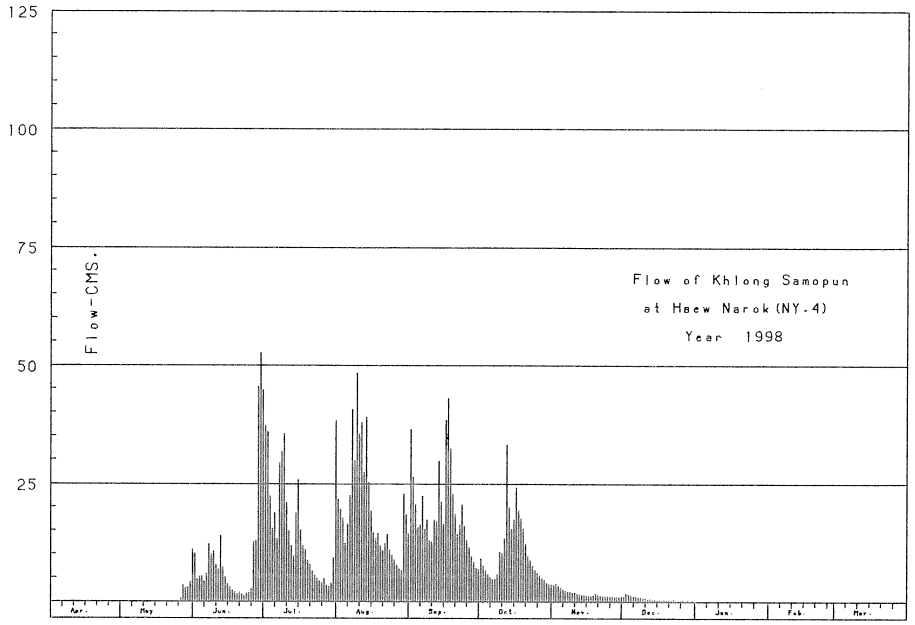
Khlong Samo Pun at Haew Narok, Prachin Buri (Ny.4)

Location	Lat. 14°-17'-23" N., Long. 101°-24'-16" E., on left bank at the bridge of Prachin Buri-Khao Yai Highway, Amphoe Muang, Prachin Buri.
Drainage Area	128 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+376.10 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+382.580 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1986 to date.
Rated by Float	-
Rated by Current Meter	1986 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	376.39	376.31	377.21	377.84	377.52	377.83	377.17	376.92	376.68	376.48	376.39	376.35	
2	376.39	376.31	376.99	377.82	377.47	377.63	377.12	376.93	376.75	376.46	376.39	376.35	
3	376.39	376.31	377.01	377.54	377.42	377.49	377.07	376.91	376.75	376.45	376.40	376.36	
4	376.40	376.31	377.02	377.36	377.27	377.37	377.04	376.87	376.71	376.45	376.41	376.37	
5	376.40	376.31	376.96	377.45	377.39	377.38	377.01	376.85	376.69	376.45	376.42	376.37	
6	376.40	376.30	377.04	377.30	377.54	377.54	376.98	376.82	376.68	376.44	376.42	376.37	
7	376.39	376.30	377.27	377.69	377.90	377.36	376.99	376.81	376.66	376.44	376.42	376.36	
8	376.39	376.30	377.20	377.74	377.70	377.41	377.03	376.80	376.63	376.44	376.41	376.36	
9	376.38	376.30	377.22	377.81	378.03	377.29	377.22	376.79	376.62	376.43	376.41	376.36	
10	376.37	376.30	377.12	377.50	377.81	377.28	377.21	376.78	376.60	376.43	376.40	376.36	
11	376.36	376.30	377.08	377.35	377.85	377.41	377.30	376.76	376.58	376.42	376.39	376.36	
12	376.35	376.31	377.32	377.26	377.65	377.40	377.77	376.74	376.57	376.42	376.39	376.36	
13	376.35	376.32	377.10	377.19	377.87	377.70	377.48	376.73	376.55	376.42	376.39	376.36	
14	376.34	376.33	377.01	377.45	377.61	377.51	377.36	376.72	376.54	376.42	376.39	376.36	
15	376.34	376.34	376.93	377.62	377.46	377.39	377.41	376.71	376.53	376.42	376.38	376.35	
16	376.34	376.35	376.88	377.35	377.34	377.86	377.58	376.70	376.53	376.42	376.38	376.35	
17	376.33	376.36	376.84	377.26	377.30	377.94	377.46	376.70	376.53	376.42	376.38	376.35	
18	376.33	376.37	376.79	377.23	377.33	377.75	377.42	376.71	376.54	376.42	376.38	376.35	
19	376.33	376.38	376.76	377.16	377.26	377.55	377.36	376.77	376.54	376.41	376.38	376.34	
20	376.32	376.38	376.78	377.12	377.23	377.44	377.27	376.72	376.54	376.41	376.37	376.34	
21	376.32	376.39	376.73	377.07	377.27	377.33	377.19	376.71	376.54	376.41	376.37	376.34	
22	376.32	376.40	376.70	377.03	377.33	377.38	377.16	376.69	376.54	376.41	376.37	376.34	
23	376.32	376.39	376.77	376.99	377.23	377.49	377.11	376.69	376.54	376.41	376.37	376.35	
24	376.32	376.39	376.77	376.97	377.20	377.38	377.08	376.68	376.53	376.41	376.36	376.35	
25	376.32	376.39	376.86	376.94	377.16	377.29	377.05	376.68	376.52	376.41	376.36	376.35	
26	376.32	376.58	377.28	376.99	377.12	377.25	377.02	376.67	376.52	376.41	376.36	376.35	
27	376.32	376.92	377.29	376.92	377.09	377.19	377.00	376.66	376.52	376.40	376.36	376.36	
28	376.31	376.86	377.98	376.89	377.07	377.14	376.97	376.65	376.51	376.40	376.35	376.37	
29	376.31	376.89	378.10	376.94	377.55	377.10	376.94	376.65	376.50	376.40		376.38	
30	376.31	376.95	377.97	377.18	377.44	377.08	376.92	376.65	376.49	376.40		376.40	
31		377.23		377.86	377.33		376.92		376.49	376.39		376.40	
Mean	376.35	376.45	377.10	377.32	377.44	377.44	377.18	376.75	376.58	376.42	376.39	376.36	
Max	376.40	377.23	378.10	377.86	378.03	377.94	377.77	376.93	376.75	376.48	376.42	376.40	378.10
Min	376.31	376.30	376.70	376.89	377.07	377.08	376.92	376.65	376.49	376.39	376.35	376.34	376.30

Annual Max Momentary Gage Height 378.55 M (MSL), at 11.00 Hours, on Jun 29, 1998
Zero Gage at Bottom Elevation 376.10 M (MSL), River Bed 375.59 M (MSL)
Left Bank Elevation 381.49 M (MSL)
Right Bank Elevation 382.80 M (MSL), Drainage Area 128 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.09	0.01	10.34	37.36	21.80	36.77	9.19	3.66	1.20	0.26	0.09	0.05	
2	0.09	0.01	4.92	36.18	19.80	26.50	7.84	3.84	1.70	0.22	0.09	0.05	
3	0.09	0.01	5.32	22.60	17.80	20.60	6.64	3.48	1.70	0.20	0.10	0.06	
4	0.10	0.01	5.54	15.56	12.38	15.92	5.98	2.94	1.38	0.20	0.12	0.07	
5	0.10	0.01	4.38	19.00	16.64	16.28	5.32	2.70	1.25	0.20	0.14	0.07	
6	0.10	0.00	5.98	13.40	22.60	22.60	4.74	2.34	1.20	0.18	0.14	0.07	
7	0.09	0.00	12.38	29.50	40.90	15.56	4.92	2.22	1.10	0.18	0.14	0.06	
8	0.09	0.00	10.00	32.00	30.00	17.40	5.76	2.10	0.95	0.18	0.12	0.06	
9	0.08	0.00	10.68	35.59	48.63	13.06	10.68	2.02	0.90	0.16	0.12	0.06	
10	0.07	0.00	7.84	21.00	35.59	12.72	10.34	1.94	0.80	0.16	0.10	0.06	
11	0.06	0.00	6.86	15.20	37.95	17.40	13.40	1.78	0.70	0.14	0.09	0.06	
12	0.05	0.01	14.12	12.04	27.50	17.00	33.50	1.62	0.65	0.14	0.09	0.06	
13	0.05	0.02	7.30	9.73	39.13	30.00	20.20	1.54	0.55	0.14	0.09	0.06	
14	0.04	0.03	5.32	19.00	25.50	21.40	15.56	1.46	0.50	0.14	0.09	0.06	
15	0.04	0.04	3.84	26.00	19.40	16.64	17.40	1.38	0.45	0.14	0.08	0.05	
16	0.04	0.05	3.06	15.20	14.84	38.54	24.20	1.30	0.45	0.14	0.08	0.05	
17	0.03	0.06	2.58	12.04	13.40	43.26	19.40	1.30	0.45	0.14	0.08	0.05	
18	0.03	0.07	2.02	11.02	14.48	32.50	17.80	1.38	0.50	0.14	0.08	0.05	
19	0.03	0.08	1.78	8.92	12.04	23.00	15.56	1.86	0.50	0.12	0.08	0.04	
20	0.02	0.08	1.94	7.84	11.02	18.60	12.38	1.46	0.50	0.12	0.07	0.04	
21	0.02	0.09	1.54	6.64	12.38	14.48	9.73	1.38	0.50	0.12	0.07	0.04	
22	0.02	0.10	1.30	5.76	14.48	16.28	8.92	1.25	0.50	0.12	0.07	0.04	
23	0.02	0.09	1.86	4.92	11.02	20.60	7.57	1.25	0.50	0.12	0.07	0.05	
24	0.02	0.09	1.86	4.56	10.00	16.28	6.86	1.20	0.45	0.12	0.06	0.05	
25	0.02	0.09	2.82	4.02	8.92	13.06	6.20	1.20	0.40	0.12	0.06	0.05	
26	0.02	0.70	12.72	4.92	7.84	11.70	5.54	1.15	0.40	0.12	0.06	0.05	
27	0.02	3.66	13.06	3.66	7.08	9.73	5.10	1.10	0.40	0.10	0.06	0.06	
28	0.01	2.82	45.62	3.18	6.64	8.38	4.56	1.05	0.35	0.10	0.05	0.07	
29	0.01	3.18	52.90	4.02	23.00	7.30	4.02	1.05	0.30	0.10		0.08	
30	0.01	4.20	45.03	9.46	18.60	6.86	3.66	1.05	0.28	0.10		0.10	
31		11.02		38.54	14.48		3.66		0.28	0.09		0.10	
Total	1.46	26.53	304.91	488.86	615.84	580.42	326.63	54.00	21.79	4.51	2.49	1.82	2429.26 CMSDAY
Mean	0.05	0.86	10.16	15.77	19.87	19.35	10.54	1.80	0.70	0.15	0.09	0.06	6.66 CMS
Max	0.10	11.02	52.90	38.54	48.63	43.26	33.50	3.84	1.70	0.26	0.14	0.10	52.90 CMS
Min	0.01	0.00	1.30	3.18	6.64	6.86	3.66	1.05	0.28	0.09	0.05	0.04	0.00 CMS
Runoff	0.126	2.292	26.344	42.238	53.209	50.148	28.221	4.666	1.883	0.390	0.215	0.157	209.888 MCM

Momentary Peak 87.75 CMS, at 378.55 M (MSL), at 11.00 Hours, on Jun 29, 1998

Runoff Yield 52.00 Liters/Second/Square KM, Momentary Peak Yield 685.547 Liters/Second/Square KM

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

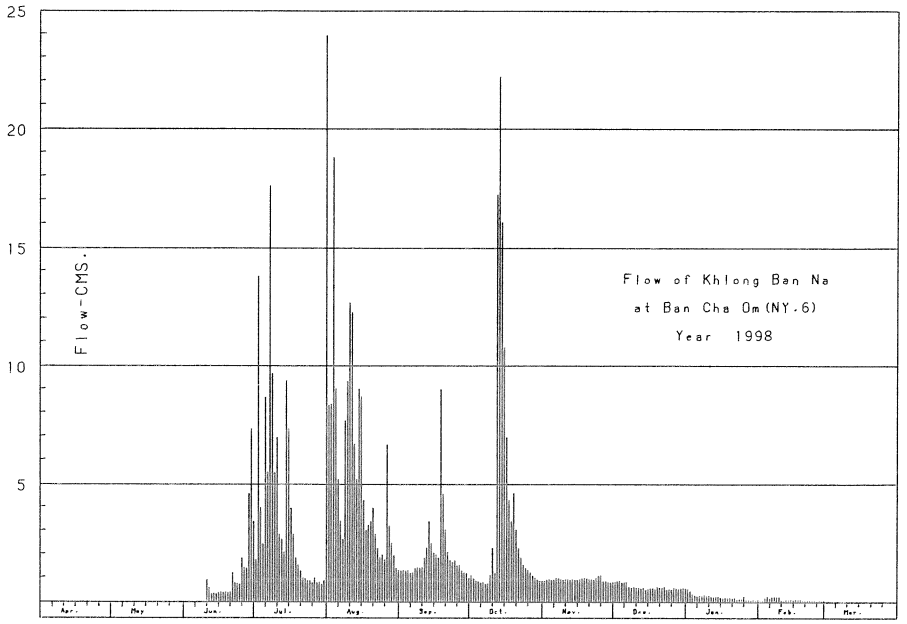
Khlong Ban Na at Ban Cha Om, Saraburi (Ny.6)

Location	Lat. 14°-24'-34" N., Long. 101°-07'-30" E., on right bank at the bridge of Ban Cha Om-Ban Kariang Kho Ma road, Tambon Cha Om, Amphoe Kaeng Khoi, Saraburi.
Drainage Area	116 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 50 meters from the top staff gage.
Elevation	+5.154 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00, and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1988 to date.
Rating Operation	
Period of Rating	1988 to date.
Rated by Float	-
Rated by Current Meter	1988 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.26	1.21	1.24	1.67	1.94	1.63	1.61	1.58	1.57	1.52	1.38	1.34	
2	1.26	1.21	1.24	2.09	1.94	1.63	1.60	1.59	1.58	1.51	1.33	1.34	
3	1.26	1.21	1.24	1.80	2.22	1.63	1.58	1.59	1.58	1.47	1.42	1.27	
4	1.26	1.21	1.24	1.72	1.96	1.63	1.58	1.59	1.57	1.46	1.44	1.26	
5	1.26	1.21	1.24	1.95	1.84	1.62	1.57	1.59	1.57	1.45	1.42	1.26	
6	1.26	1.21	1.24	1.85	1.77	1.62	1.57	1.60	1.57	1.45	1.43	1.32	
7	1.26	1.20	1.24	2.19	1.73	1.64	1.56	1.60	1.54	1.45	1.44	1.32	
8	1.26	1.20	1.25	1.98	1.92	1.64	1.56	1.59	1.53	1.46	1.43	1.32	
9	1.26	1.20	1.28	1.85	1.97	1.64	1.61	1.59	1.54	1.45	1.44	1.33	
10	1.26	1.20	1.59	1.90	2.06	1.64	1.71	1.59	1.53	1.45	1.35	1.33	
11	1.26	1.20	1.53	1.74	2.05	1.68	1.62	1.59	1.53	1.44	1.36	1.34	
12	1.26	1.20	1.48	1.73	1.89	1.71	2.18	1.59	1.53	1.43	1.39	1.34	
13	1.26	1.20	1.48	1.70	1.84	1.77	2.30	1.59	1.53	1.44	1.39	1.34	
14	1.26	1.22	1.48	1.97	1.96	1.72	2.15	1.59	1.52	1.44	1.39	1.33	
15	1.26	1.22	1.50	1.91	1.95	1.70	2.01	1.59	1.52	1.43	1.39	1.32	
16	1.26	1.22	1.50	1.80	1.81	1.69	1.90	1.59	1.53	1.42	1.39	1.32	
17	1.26	1.22	1.50	1.74	1.75	1.68	1.81	1.60	1.53	1.42	1.40	1.32	
18	1.26	1.22	1.50	1.68	1.76	1.96	1.77	1.60	1.52	1.42	1.38	1.32	
19	1.24	1.22	1.50	1.65	1.77	1.82	1.82	1.60	1.54	1.42	1.37	1.30	
20	1.24	1.22	1.50	1.63	1.80	1.75	1.75	1.59	1.53	1.42	1.37	1.28	
21	1.24	1.22	1.62	1.60	1.74	1.70	1.71	1.59	1.53	1.42	1.37	1.28	
22	1.24	1.22	1.57	1.60	1.71	1.67	1.68	1.59	1.54	1.40	1.37	1.28	
23	1.24	1.22	1.56	1.58	1.68	1.66	1.65	1.60	1.52	1.40	1.36	1.28	
24	1.24	1.21	1.56	1.58	1.69	1.67	1.64	1.61	1.52	1.41	1.35	1.27	
25	1.24	1.21	1.68	1.57	1.67	1.65	1.63	1.61	1.52	1.44	1.35	1.27	
26	1.24	1.21	1.64	1.60	1.89	1.65	1.62	1.58	1.53	1.39	1.35	1.26	
27	1.24	1.21	1.64	1.57	1.76	1.63	1.61	1.58	1.53	1.39	1.35	1.26	
28	1.22	1.21	1.82	1.57	1.72	1.62	1.60	1.57	1.52	1.38	1.35	1.24	
29	1.22	1.22	1.91	1.56	1.69	1.62	1.59	1.57	1.53	1.38		1.23	
30	1.22	1.22	1.77	1.58	1.64	1.60	1.58	1.57	1.53	1.38		1.24	
31		1.22		2.34	1.63		1.58		1.53	1.38		1.24	
Mean	1.25	1.21	1.48	1.76	1.83	1.68	1.71	1.59	1.54	1.43	1.38	1.30	
Max	1.26	1.22	1.91	2.34	2.22	1.96	2.30	1.61	1.58	1.52	1.44	1.34	2.34
Min	1.22	1.20	1.24	1.56	1.63	1.60	1.56	1.57	1.52	1.38	1.33	1.23	1.20

Annual Max Momentary Gage Height 3.38 M (A.D), at 18.00 Hours, on Oct 12, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.85 M (A.D)
Left Bank Elevation 4.18 M (A.D)
Right Bank Elevation 4.17 M (A.D), Drainage Area 116 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	1.77	8.36	1.33	1.11	0.88	0.82	0.52	0.08	0.04	
2	0.00	0.00	0.00	13.82	8.36	1.33	1.00	0.94	0.88	0.46	0.03	0.04	
3	0.00	0.00	0.00	4.00	18.84	1.33	0.88	0.94	0.88	0.31	0.16	0.00	
4	0.00	0.00	0.00	2.48	9.04	1.33	0.88	0.94	0.82	0.28	0.22	0.00	
5	0.00	0.00	0.00	8.70	5.20	1.22	0.82	0.94	0.82	0.25	0.16	0.00	
6	0.00	0.00	0.00	5.50	3.43	1.22	0.82	1.00	0.82	0.25	0.19	0.02	
7	0.00	0.00	0.00	17.62	2.67	1.44	0.76	1.00	0.64	0.25	0.22	0.02	
8	0.00	0.00	0.00	9.72	7.68	1.44	0.76	0.94	0.58	0.28	0.19	0.02	
9	0.00	0.00	0.00	5.50	9.38	1.44	1.11	0.94	0.64	0.25	0.22	0.03	
10	0.00	0.00	0.94	7.00	12.68	1.44	2.29	0.94	0.58	0.25	0.05	0.03	
11	0.00	0.00	0.58	2.86	12.30	1.88	1.22	0.94	0.58	0.22	0.06	0.04	
12	0.00	0.00	0.34	2.67	6.70	2.29	17.24	0.94	0.58	0.19	0.09	0.04	
13	0.00	0.00	0.34	2.10	5.20	3.43	22.20	0.94	0.58	0.22	0.09	0.04	
14	0.00	0.00	0.34	9.38	9.04	2.48	16.10	0.94	0.52	0.22	0.09	0.03	
15	0.00	0.00	0.40	7.34	8.70	2.10	10.78	0.94	0.52	0.19	0.09	0.02	
16	0.00	0.00	0.40	4.00	4.30	1.99	7.00	0.94	0.58	0.16	0.09	0.02	
17	0.00	0.00	0.40	2.86	3.05	1.88	4.30	1.00	0.58	0.16	0.10	0.02	
18	0.00	0.00	0.40	1.88	3.24	9.04	3.43	1.00	0.52	0.16	0.08	0.02	
19	0.00	0.00	0.40	1.55	3.43	4.60	4.60	1.00	0.64	0.16	0.07	0.00	
20	0.00	0.00	0.40	1.33	4.00	3.05	3.05	0.94	0.58	0.16	0.07	0.00	
21	0.00	0.00	1.22	1.00	2.86	2.10	2.29	0.94	0.58	0.16	0.07	0.00	
22	0.00	0.00	0.82	1.00	2.29	1.77	1.88	0.94	0.64	0.10	0.07	0.00	
23	0.00	0.00	0.76	0.88	1.88	1.66	1.55	1.00	0.52	0.10	0.06	0.00	
24	0.00	0.00	0.76	0.88	1.99	1.77	1.44	1.11	0.52	0.13	0.05	0.00	
25	0.00	0.00	1.88	0.82	1.77	1.55	1.33	1.11	0.52	0.22	0.05	0.00	
26	0.00	0.00	1.44	1.00	6.70	1.55	1.22	0.88	0.58	0.09	0.05	0.00	
27	0.00	0.00	1.44	0.82	3.24	1.33	1.11	0.88	0.58	0.09	0.05	0.00	
28	0.00	0.00	4.60	0.82	2.48	1.22	1.00	0.82	0.52	0.08	0.05	0.00	
29	0.00	0.00	7.34	0.76	1.99	1.22	0.94	0.82	0.58	0.08		0.00	
30	0.00	0.00	3.43	0.88	1.44	1.00	0.88	0.82	0.58	0.08		0.00	
31		0.00		23.96	1.33		0.88		0.58	0.08		0.00	
Total	0.00	0.00	28.63	144.90	173.57	61.43	114.87	28.36	19.36	6.15	2.80	0.43	580.50 CMSDAY
Mean	0.00	0.00	0.95	4.67	5.60	2.05	3.71	0.95	0.62	0.20	0.10	0.01	1.59 CMS
Max	0.00	0.00	7.34	23.96	18.84	9.04	22.20	1.11	0.88	0.52	0.22	0.04	23.96 CMS
Min	0.00	0.00	0.00	0.76	1.33	1.00	0.76	0.82	0.52	0.08	0.03	0.00	0.00 CMS
Runoff	0.000	0.000	2.474	12.519	14.996	5.308	9.925	2.450	1.673	0.531	0.242	0.037	50.155 MCM

Momentary Peak 82.16 CMS, at 3.38 M (A.D), at 18.00 Hours, on Oct 12, 1998
Runoff Yield 13.71 Liters/Second/Square KM, Momentary Peak Yield 708.276 Liters/Second/Square KM

WATER YEAR 1998

PRACHIN BURI RIVER BASIN

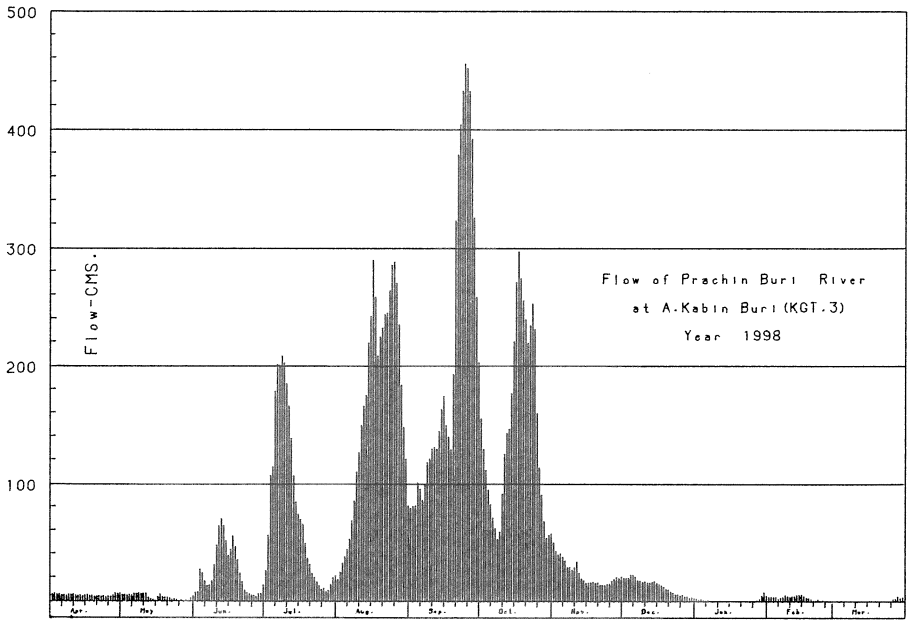
Prachin Buri River at Kabin Buri, Prachin Buri (Kgt.3)

Location	Lat. 13°-59'-05" N., Long. 101°-42'-32" E., on left bank infront of Amphoe Kabin Buri Office and about 500 meters downstream from the confluence of Lam Phra Prong and Lam Hanuman, Amphoe Kabin Buri, Prachin Buri.
Drainage Area	7,502 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 5 meters from the top staff gage.
Elevation	+11.410 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1941 to date.
Rating Operation	
Period of Rating	1941-1943, 1945, 1964 to date.
Rated by Float	-
Rated by Current Meter	1941-1943, 1945, 1964 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 39 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.48	0.46	0.51	1.29	1.01	2.69	4.21	1.99	1.06	0.22	0.34	0.04	
2	0.48	0.44	0.57	2.13	1.24	2.74	3.74	1.76	1.02	0.21	0.31	0.09	
3	0.47	0.43	1.30	3.29	1.47	2.74	3.37	1.69	1.06	0.21	0.35	0.09	
4	0.46	0.44	1.22	3.43	1.63	3.17	3.05	1.70	1.14	0.19	0.31	0.11	
5	0.44	0.43	0.94	4.61	1.81	3.05	2.76	1.64	1.16	0.15	0.25	0.11	
6	0.42	0.48	0.76	4.99	2.06	2.85	2.50	1.53	1.08	0.20	0.26	0.09	
7	0.42	0.50	0.78	4.99	2.44	3.13	2.29	1.39	0.98	0.15	0.35	0.10	
8	0.45	0.50	0.95	5.12	2.84	3.50	2.06	1.37	0.94	0.09	0.42	0.09	
9	0.46	0.49	1.43	5.01	3.34	3.57	2.20	1.31	0.92	0.06	0.40	0.08	
10	0.45	0.47	1.93	4.73	3.67	3.73	2.98	1.36	0.92	0.06	0.36	0.05	
11	0.43	0.51	2.33	4.41	4.11	3.76	3.64	1.52	0.90	0.08	0.35	-0.01	
12	0.42	0.31	2.50	3.90	4.40	3.74	3.99	1.20	0.87	0.05	0.40	-0.04	
13	0.41	0.19	2.35	3.29	4.56	4.01	4.04	1.04	0.93	0.04	0.42	-0.10	
14	0.40	0.16	2.01	2.81	5.29	4.36	4.58	0.95	0.93	0.08	0.45	-0.02	
15	0.41	0.13	1.67	2.59	5.63	4.54	5.32	0.89	0.89	0.10	0.44	-0.04	
16	0.43	0.36	1.80	2.47	6.29	4.10	6.04	0.87	0.82	0.07	0.37	-0.08	
17	0.41	0.45	2.11	2.37	5.87	3.93	6.38	0.90	0.80	0.05	0.31	-0.15	
18	0.40	0.34	1.88	1.95	5.11	3.72	6.08	0.90	0.73	0.06	0.26	-0.18	
19	0.38	0.29	1.55	1.60	5.39	4.86	5.82	0.89	0.68	0.02	0.23	-0.20	
20	0.38	0.29	1.22	1.44	5.49	6.70	5.60	0.88	0.64	0.01	0.18	-0.22	
21	0.37	0.27	0.91	1.21	5.66	7.31	5.29	0.83	0.59	0.00	0.19	-0.25	
22	0.37	0.21	0.64	1.06	5.67	7.57	5.53	0.79	0.52	0.01	0.19	-0.28	
23	0.36	0.18	0.52	0.92	5.95	7.87	5.79	0.80	0.48	0.01	0.16	-0.11	
24	0.34	0.15	0.50	0.77	6.23	8.08	5.47	0.82	0.45	0.00	0.12	-0.07	
25	0.35	0.11	0.44	0.67	6.26	8.05	4.30	0.86	0.43	0.06	0.10	0.10	
26	0.34	0.10	0.40	0.69	6.03	7.86	3.42	0.93	0.43	0.08	0.09	0.20	
27	0.44	0.11	0.37	0.59	5.54	7.45	2.94	1.02	0.38	0.10	0.08	0.25	
28	0.50	0.10	0.48	0.61	4.71	6.72	2.44	1.06	0.33	0.24	0.07	0.35	
29	0.49	0.15	0.51	0.83	4.08	5.87	2.07	1.05	0.30	0.41		0.28	
30	0.49	0.25	0.79	1.05	3.56	5.01	2.15	1.08	0.28	0.53		0.30	
31		0.39		1.11	2.75		2.16		0.27	0.38		0.30	
Mean	0.42	0.31	1.18	2.45	4.20	4.89	3.94	1.17	0.74	0.13	0.28	0.03	
Max	0.50	0.51	2.50	5.12	6.29	8.08	6.38	1.99	1.16	0.53	0.45	0.35	8.08
Min	0.34	0.10	0.37	0.59	1.01	2.69	2.06	0.79	0.27	0.00	0.07	-0.28	-0.28

Annual Max Momentary Gage Height 8.09 M (MSL), at 12.00 Hours, on Sep 24, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed -1.24 M (MSL)
Left Bank Elevation 9.85 M (MSL)
Right Bank Elevation 8.48 M (MSL), Drainage Area 7502 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.60	6.20	7.20	26.70	19.25	79.05	155.55	50.65	20.50	2.30	4.10	0.40	
2	6.60	5.80	8.40	56.20	25.20	81.30	130.00	42.60	19.50	2.15	3.65	0.90	
3	6.40	5.60	27.00	107.50	32.45	81.30	111.50	40.15	20.50	2.15	4.25	0.90	
4	6.20	5.80	24.60	114.50	38.05	101.50	95.50	40.50	22.50	1.90	3.65	1.10	
5	5.80	5.60	17.50	178.60	44.35	95.50	82.20	38.40	23.00	1.50	2.75	1.10	
6	5.40	6.60	13.00	201.40	53.40	86.25	71.00	34.55	21.00	2.00	2.90	0.90	
7	5.40	7.00	13.50	201.40	68.60	99.50	62.60	29.70	18.50	1.50	4.25	1.00	
8	6.00	7.00	17.75	209.20	85.80	118.00	53.40	29.10	17.50	0.90	5.40	0.90	
9	6.20	6.80	31.05	202.60	110.00	121.50	59.00	27.30	17.00	0.60	5.00	0.80	
10	6.00	6.40	48.55	185.80	126.50	129.50	92.10	28.80	17.00	0.60	4.40	0.50	
11	5.60	7.20	64.20	166.60	150.05	131.00	125.00	34.20	16.50	0.80	4.25	0.00	
12	5.40	3.65	71.00	138.50	166.00	130.00	143.45	24.00	15.75	0.50	5.00	0.00	
13	5.20	1.90	65.00	107.50	175.60	144.55	146.20	20.00	17.25	0.40	5.40	0.00	
14	5.00	1.60	51.40	84.45	219.40	163.80	176.80	17.75	17.25	0.80	6.00	0.00	
15	5.20	1.30	39.45	74.60	242.10	174.40	221.20	16.25	16.25	1.00	5.80	0.00	
16	5.60	4.40	44.00	69.80	290.20	149.50	271.00	15.75	14.50	0.70	4.55	0.00	
17	5.20	6.00	55.40	65.80	258.90	140.15	297.40	16.50	14.00	0.50	3.65	0.00	
18	5.00	4.10	46.80	49.25	208.60	129.00	274.00	16.50	12.25	0.60	2.90	0.00	
19	4.70	3.35	35.25	37.00	225.40	193.60	255.40	16.25	11.00	0.20	2.45	0.00	
20	4.70	3.35	24.60	31.40	232.30	323.50	240.00	16.00	10.00	0.10	1.80	0.00	
21	4.55	3.05	16.75	24.30	244.20	379.45	219.40	14.75	8.80	0.00	1.90	0.00	
22	4.55	2.15	10.00	20.50	244.90	404.15	235.10	13.75	7.40	0.10	1.90	0.00	
23	4.40	1.80	7.40	17.00	264.50	433.35	253.30	14.00	6.60	0.10	1.60	0.00	
24	4.10	1.50	7.00	13.25	285.40	455.40	230.90	14.50	6.00	0.00	1.20	0.00	
25	4.25	1.10	5.80	10.75	287.80	452.25	160.50	15.50	5.60	0.60	1.00	1.00	
26	4.10	1.00	5.00	11.25	270.25	432.30	114.00	17.25	5.60	0.80	0.90	2.00	
27	5.80	1.10	4.55	8.80	235.80	392.75	90.30	19.50	4.70	1.00	0.80	2.75	
28	7.00	1.00	6.60	9.25	184.60	325.20	68.60	20.50	3.95	2.60	0.70	4.25	
29	6.80	1.50	7.20	14.75	148.40	258.90	53.80	20.25	3.50	5.20		3.20	
30	6.80	2.75	13.75	20.25	121.00	202.60	57.00	21.00	3.20	7.60		3.50	
31		4.85		21.75	81.75		57.40		3.05	4.70		3.50	
Total	164.55	121.45	789.70	2480.65	5140.75	6409.25	4603.60	725.95	400.15	43.90	92.15	28.70	21000.80 CMSDAY
Mean	5.49	3.92	26.32	80.02	165.83	213.64	148.50	24.20	12.91	1.42	3.29	0.93	57.54 CMS
Max	7.00	7.20	71.00	209.20	290.20	455.40	297.40	50.65	23.00	7.60	6.00	4.25	455.40 CMS
Min	4.10	1.00	4.55	8.80	19.25	79.05	53.40	13.75	3.05	0.00	0.70	0.00	0.00 CMS
Runoff	14.217	10.493	68.230	214.328	444.161	553.759	397.751	62.722	34.573	3.793	7.962	2.480	1814.469 MCM

Momentary Peak 456.45 CMS, at 8.09 M (MSL), at 12.00 Hours, on Sep 24, 1998

Runoff Yield 7.67 Liters/Second/Square KM, Momentary Peak Yield 60.844 Liters/Second/Square KM

WATER YEAR 1998

PRACHIN BURI RIVER BASIN

Huai Yang at Ban Thung Faek, Prachin Buri (Kgt.14)

Location — Lat. 14°-09'-30" N., Long. 101°-52'-52" E., on left bank about 2 kilometers from Kabin Buri-Nakhon Ratchasima highway, Ban Thung Faek, Amphoe Na Di, Prachin Buri.

Drainage Area — 366 sq.km.

Type of Gage — Water-stage recorder.

Zero Gage at Bottom — +34.60 m.(M.S.L.)

Bench Mark — B.M.-H.D.

Location — Near the automatic gage building.

Elevation — +42.429 m. (M.S.L.)

Gage Reading Frequency — Recording.

Basis of Mean Daily Gage Height — Arithmetic mean of 24 readings.

Period of Available Gage Records — 1966 to date.

Rating Operation

Period of Rating — 1966 - 1981, 1986 to date.

Rated by Float — -

Rated by Current Meter — 1966 - 1981, 1986 to date.

Stability of Channel Regimes — Stable.

Overbank Flow Conditions — No overbank flow.

General Description — Records good. Stage-discharge relation defined by 29 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

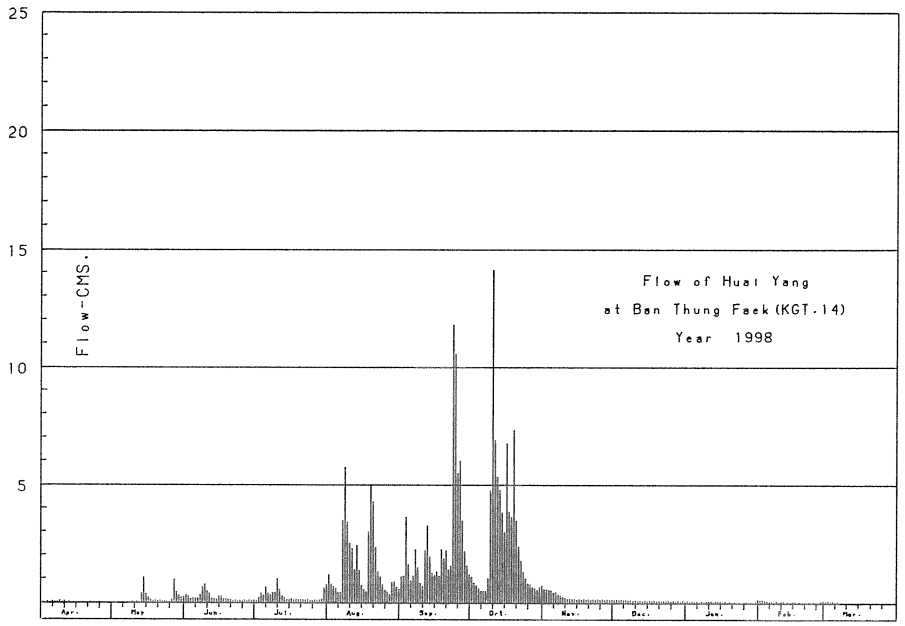
Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	34.76	34.74	34.96	34.82	35.15	35.14	35.14	35.03	34.86	34.80	34.85	34.80	
2	34.76	34.75	34.93	34.91	35.08	35.14	35.09	35.02	34.86	34.79	34.85	34.80	
3	34.77	34.75	34.90	34.97	35.05	35.44	35.07	35.02	34.86	34.79	34.83	34.80	
4	34.77	34.75	34.90	34.95	35.03	35.22	35.03	35.01	34.86	34.79	34.80	34.79	
5	34.77	34.74	34.91	35.05	34.99	35.11	35.01	34.99	34.86	34.79	34.80	34.78	
6	34.78	34.74	34.89	34.97	34.98	35.14	35.00	34.99	34.85	34.79	34.79	34.78	
7	34.79	34.75	34.96	34.96	35.43	35.30	35.01	34.96	34.85	34.79	34.79	34.77	
8	34.80	34.75	35.04	34.98	35.62	35.20	35.13	34.94	34.84	34.79	34.79	34.76	
9	34.79	34.76	35.08	34.99	35.42	35.09	35.54	34.93	34.83	34.79	34.79	34.75	
10	34.79	34.77	35.01	35.12	35.33	35.05	36.08	34.91	34.83	34.79	34.79	34.75	
11	34.77	34.77	34.97	35.02	35.30	35.29	35.70	34.90	34.82	34.79	34.78	34.75	
12	34.76	34.78	34.91	34.94	35.19	35.41	35.59	34.90	34.82	34.79	34.77	34.74	
13	34.75	34.98	34.87	34.91	35.32	35.26	35.54	34.90	34.82	34.79	34.76	34.74	
14	34.75	35.14	34.88	34.88	35.18	35.16	35.46	34.88	34.82	34.79	34.76	34.75	
15	34.74	34.96	34.93	34.87	35.07	35.15	35.38	34.88	34.82	34.79	34.77	34.75	
16	34.74	34.92	34.93	34.87	35.02	35.17	35.69	34.88	34.82	34.79	34.77	34.75	
17	34.74	34.85	34.90	34.86	35.00	35.14	35.46	34.88	34.82	34.79	34.76	34.75	
18	34.74	34.82	34.88	34.86	35.38	35.30	35.44	34.88	34.82	34.78	34.76	34.75	
19	34.74	34.81	34.87	34.85	35.56	35.25	35.73	34.88	34.82	34.78	34.75	34.75	
20	34.75	34.81	34.85	34.84	35.50	35.29	35.43	34.87	34.81	34.78	34.75	34.75	
21	34.76	34.81	34.83	34.84	35.31	35.19	35.31	34.87	34.81	34.77	34.75	34.74	
22	34.76	34.80	34.82	34.85	35.17	35.21	35.24	34.87	34.81	34.77	34.75	34.74	
23	34.76	34.79	34.81	34.85	35.14	35.97	35.17	34.87	34.81	34.76	34.75	34.75	
24	34.76	34.79	34.80	34.84	35.07	35.91	35.13	34.87	34.81	34.76	34.75	34.75	
25	34.75	34.78	34.81	34.83	35.02	35.60	35.09	34.87	34.81	34.76	34.75	34.75	
26	34.75	34.85	34.82	34.83	34.99	35.64	35.07	34.86	34.80	34.76	34.75	34.75	
27	34.75	35.12	34.82	34.83	34.96	35.43	35.05	34.86	34.80	34.76	34.77	34.74	
28	34.74	34.99	34.83	34.83	35.10	35.29	35.03	34.85	34.80	34.76	34.80	34.74	
29	34.74	34.95	34.83	34.89	35.10	35.21	35.02	34.86	34.80	34.76		34.75	
30	34.74	34.91	34.82	35.04	35.05	35.15	35.04	34.86	34.80	34.78		34.74	
31		34.92		35.07	35.02		35.06		34.80	34.85		34.74	
Mean	34.76	34.84	34.89	34.91	35.18	35.29	35.28	34.91	34.82	34.78	34.78	34.76	
Max	34.80	35.14	35.08	35.12	35.62	35.97	36.08	35.03	34.86	34.85	34.85	34.80	36.08
Min	34.74	34.74	34.80	34.82	34.96	35.05	35.00	34.85	34.80	34.76	34.75	34.74	34.74

Annual Max Momentary Gage Height — 36.39 M (MSL), at 2.00 Hours, on Oct 10, 1998

Zero Gage at Bottom Elevation — 34.60 M (MSL), River Bed — 33.24 M (MSL)

Left Bank Elevation — 41.70 M (MSL)

Right Bank Elevation — 42.08 M (MSL), Drainage Area — 366 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.06	0.04	0.38	0.12	1.20	1.14	1.14	0.62	0.16	0.10	0.15	0.10	
2	0.06	0.05	0.29	0.23	0.82	1.14	0.86	0.58	0.16	0.09	0.15	0.10	
3	0.07	0.05	0.20	0.41	0.70	3.64	0.78	0.58	0.16	0.09	0.13	0.10	
4	0.07	0.05	0.20	0.35	0.62	1.66	0.62	0.54	0.16	0.09	0.10	0.09	
5	0.07	0.04	0.23	0.70	0.47	0.96	0.54	0.47	0.16	0.09	0.10	0.08	
6	0.08	0.04	0.19	0.41	0.44	1.14	0.50	0.47	0.15	0.09	0.09	0.08	
7	0.09	0.05	0.38	0.38	3.53	2.30	0.54	0.38	0.15	0.09	0.09	0.07	
8	0.10	0.05	0.66	0.44	5.78	1.50	1.08	0.32	0.14	0.09	0.09	0.06	
9	0.09	0.06	0.82	0.47	3.42	0.86	4.78	0.29	0.13	0.09	0.09	0.05	
10	0.09	0.07	0.54	1.02	2.57	0.70	14.16	0.23	0.13	0.09	0.09	0.05	
11	0.07	0.07	0.41	0.58	2.30	2.22	6.90	0.20	0.12	0.09	0.08	0.05	
12	0.06	0.08	0.23	0.32	1.44	3.31	5.38	0.20	0.12	0.09	0.07	0.04	
13	0.05	0.44	0.17	0.23	2.48	1.98	4.78	0.20	0.12	0.09	0.06	0.04	
14	0.05	1.14	0.18	0.18	1.38	1.26	3.86	0.18	0.12	0.09	0.06	0.05	
15	0.04	0.38	0.29	0.17	0.78	1.20	3.02	0.18	0.12	0.09	0.07	0.05	
16	0.04	0.26	0.29	0.17	0.58	1.32	6.76	0.18	0.12	0.09	0.07	0.05	
17	0.04	0.15	0.20	0.16	0.50	1.14	3.86	0.18	0.12	0.09	0.06	0.05	
18	0.04	0.12	0.18	0.16	3.02	2.30	3.64	0.18	0.12	0.08	0.06	0.05	
19	0.04	0.11	0.17	0.15	5.02	1.90	7.38	0.18	0.12	0.08	0.05	0.05	
20	0.05	0.11	0.15	0.14	4.30	2.22	3.53	0.17	0.11	0.08	0.05	0.05	
21	0.06	0.11	0.13	0.14	2.39	1.44	2.39	0.17	0.11	0.07	0.05	0.04	
22	0.06	0.10	0.12	0.15	1.32	1.58	1.82	0.17	0.11	0.07	0.05	0.04	
23	0.06	0.09	0.11	0.15	1.14	11.80	1.32	0.17	0.11	0.06	0.05	0.05	
24	0.06	0.09	0.10	0.14	0.78	10.60	1.08	0.17	0.11	0.06	0.05	0.05	
25	0.05	0.08	0.11	0.13	0.58	5.50	0.86	0.17	0.11	0.06	0.05	0.05	
26	0.05	0.15	0.12	0.13	0.47	6.06	0.78	0.16	0.10	0.06	0.05	0.05	
27	0.05	1.02	0.12	0.13	0.38	3.53	0.70	0.16	0.10	0.06	0.07	0.04	
28	0.04	0.47	0.13	0.13	0.90	2.22	0.62	0.15	0.10	0.06	0.10	0.04	
29	0.04	0.35	0.13	0.19	0.90	1.58	0.58	0.16	0.10	0.06		0.05	
30	0.04	0.23	0.12	0.66	0.70	1.20	0.66	0.16	0.10	0.08		0.04	
31		0.26		0.78	0.58		0.74		0.10	0.15		0.04	
Total	1.77	6.31	7.35	9.52	51.49	79.40	85.66	7.97	3.84	2.57	2.18	1.75	259.81 CMSDAY
Mean	0.06	0.20	0.24	0.31	1.66	2.65	2.76	0.27	0.12	0.08	0.08	0.06	0.71 CMS
Max	0.10	1.14	0.82	1.02	5.78	11.80	14.16	0.62	0.16	0.15	0.15	0.10	14.16 CMS
Min	0.04	0.04	0.10	0.12	0.38	0.70	0.50	0.15	0.10	0.06	0.05	0.04	0.04 CMS
Runoff	0.153	0.545	0.635	0.823	4.449	6.860	7.401	0.689	0.332	0.222	0.188	0.151	22.448 MCM

Momentary Peak 22.70 CMS, at 36.39 M (MSL), at 2.00 Hours, on Oct 10, 1998

Runoff Yield 1.94 Liters/Second/Square KM, Momentary Peak Yield 62.022 Liters/Second/Square KM

WATER YEAR 1998

PRACHIN BURI RIVER BASIN

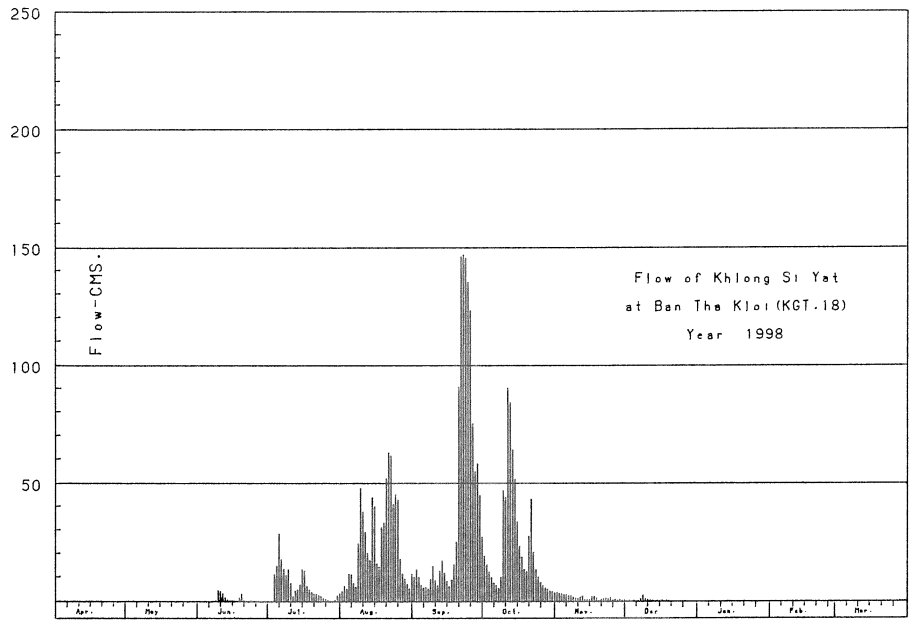
Khlong Si Yat at Ban Tha Kloi, Chachoengsao (Kgt.18)

Location	Lat. 13°-28'-29" N., Long. 101°-37'-44" E., on left bank at Ban Tha Kloi, Amphoe Tha Ta Kiap, Chachoengsao.
Drainage Area	951 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+34.20 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank near the automatic gage building.
Elevation	+41.426 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1969 to date.
Rating Operation	
Period of Rating	1969 to date.
Rated by Float	-
Rated by Current Meter	1969 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	Overbank flow starts at elevation +40.28 m.(M.S.L.) and is included.
General Description	Records good. Stage-discharge relation defined by 51 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	35.04	34.94	34.94	35.30	36.34	36.91	37.53	36.26	35.53	35.32	35.28	35.47	
2	35.04	34.93	34.94	35.41	36.56	37.17	37.31	36.22	35.48	35.32	35.28	35.40	
3	35.04	34.93	34.94	37.00	36.46	36.93	37.09	36.18	35.46	35.32	35.28	35.36	
4	35.05	34.93	34.94	37.28	37.01	36.62	36.92	36.15	35.46	35.31	35.28	35.35	
5	35.06	34.96	34.93	38.06	37.02	36.52	36.73	36.11	35.44	35.30	35.28	35.34	
6	35.04	34.96	34.95	37.44	36.69	36.51	36.60	36.06	35.45	35.30	35.27	35.32	
7	35.04	34.96	35.21	37.19	36.55	36.46	36.50	36.02	35.65	35.30	35.26	35.31	
8	35.04	34.97	35.56	36.97	37.83	36.83	36.91	35.92	36.10	35.30	35.26	35.30	
9	35.04	34.97	36.38	37.15	38.81	37.27	38.78	35.74	35.67	35.30	35.26	35.30	
10	35.03	34.96	36.29	36.72	38.44	36.79	38.67	35.78	35.65	35.29	35.25	35.29	
11	35.03	34.96	36.16	35.93	38.10	36.60	39.96	35.85	35.59	35.30	35.24	35.26	
12	35.02	34.96	35.90	36.37	37.61	37.11	39.82	36.02	35.51	35.42	35.24	35.26	
13	35.01	34.96	35.53	36.39	37.43	37.42	39.30	35.65	35.44	35.39	35.24	35.27	
14	35.02	34.96	35.41	36.66	38.67	37.07	38.92	35.57	35.43	35.35	35.42	35.26	
15	35.01	34.96	35.37	37.18	38.54	36.77	38.27	35.63	35.51	35.33	35.37	35.26	
16	35.00	34.96	35.35	37.11	37.34	36.58	37.77	35.91	35.53	35.31	35.38	35.25	
17	35.00	34.96	35.33	36.60	37.23	36.83	37.52	35.99	35.51	35.28	35.52	35.24	
18	35.00	34.96	35.85	36.38	38.18	37.29	37.18	35.79	35.49	35.27	35.38	35.24	
19	35.00	34.96	36.12	36.28	38.25	37.88	37.09	35.52	35.46	35.28	35.33	35.24	
20	35.00	34.94	35.58	36.15	38.94	39.97	38.01	35.58	35.40	35.28	35.33	35.23	
21	34.99	34.94	35.43	36.14	39.26	41.03	38.65	35.72	35.38	35.27	35.33	35.23	
22	34.99	34.93	35.39	36.09	39.23	41.04	37.63	35.74	35.37	35.26	35.28	35.22	
23	34.98	34.93	35.37	36.00	38.56	41.02	37.17	35.74	35.37	35.26	35.28	35.23	
24	34.98	34.93	35.35	35.71	38.71	40.84	36.92	35.92	35.37	35.26	35.28	35.22	
25	34.98	34.93	35.34	35.66	38.64	40.63	36.75	35.59	35.36	35.26	35.27	35.24	
26	34.97	34.93	35.32	35.59	37.47	39.60	36.60	35.61	35.36	35.27	35.26	35.25	
27	34.96	34.93	35.30	35.50	37.04	39.02	36.49	35.60	35.36	35.29	35.26	35.26	
28	34.96	34.93	35.29	35.48	36.84	39.13	36.41	35.58	35.34	35.30	35.31	35.46	
29	34.94	34.93	35.30	35.45	36.68	38.71	36.34	35.56	35.34	35.32		35.53	
30	34.94	34.93	35.30	36.05	36.44	37.98	36.28	35.55	35.33	35.31		35.37	
31		34.93		36.18	37.01		36.25		35.33	35.30		35.32	
Mean	35.01	34.95	35.44	36.37	37.67	38.02	37.50	35.82	35.47	35.30	35.30	35.30	
Max	35.06	34.97	36.38	38.06	39.26	41.04	39.96	36.26	36.10	35.42	35.52	35.53	41.04
Min	34.94	34.93	34.93	35.30	36.34	36.46	36.25	35.52	35.33	35.26	35.24	35.22	34.93

Annual Max Momentary Gage Height 41.10 M (MSL), at 18.00 Hours, on Sep 22, 1998
Zero Gage at Bottom Elevation 34.20 M (MSL), River Bed 34.09 M (MSL)
Left Bank Elevation 41.63 M (MSL)
Right Bank Elevation 40.27 M (MSL), Drainage Area 951 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.04	0.00	0.00	0.30	4.62	10.33	19.28	3.98	0.79	0.34	0.28	0.64	
2	0.04	0.00	0.00	0.52	6.44	13.78	15.85	3.66	0.66	0.34	0.28	0.50	
3	0.04	0.00	0.00	11.50	5.58	10.59	12.67	3.38	0.62	0.34	0.28	0.42	
4	0.05	0.00	0.00	15.40	11.63	7.00	10.46	3.20	0.62	0.32	0.28	0.40	
5	0.06	0.00	0.00	29.00	11.76	6.08	8.16	2.96	0.58	0.30	0.28	0.38	
6	0.04	0.00	0.00	17.84	7.70	5.99	6.80	2.73	0.60	0.30	0.27	0.34	
7	0.04	0.00	0.21	14.06	6.35	5.58	5.90	2.55	1.15	0.30	0.26	0.32	
8	0.04	0.00	0.88	11.11	24.57	9.36	10.33	2.12	2.90	0.30	0.26	0.30	
9	0.04	0.00	4.94	13.50	48.32	15.25	47.40	1.42	1.21	0.30	0.26	0.30	
10	0.03	0.00	4.22	8.04	38.04	8.88	44.16	1.54	1.15	0.29	0.25	0.29	
11	0.03	0.00	3.26	2.16	29.80	6.80	90.43	1.82	0.97	0.30	0.24	0.26	
12	0.02	0.00	2.03	4.86	20.58	12.94	84.59	2.55	0.73	0.54	0.24	0.26	
13	0.01	0.00	0.79	5.02	17.68	17.52	64.50	1.15	0.58	0.48	0.24	0.27	
14	0.02	0.00	0.52	7.40	44.16	12.41	51.84	0.91	0.56	0.40	0.54	0.26	
15	0.01	0.00	0.44	13.92	40.64	8.64	33.88	1.09	0.73	0.36	0.44	0.26	
16	0.00	0.00	0.40	12.94	16.30	6.62	23.46	2.08	0.79	0.32	0.46	0.25	
17	0.00	0.00	0.36	6.80	14.65	9.36	19.12	2.42	0.73	0.28	0.76	0.24	
18	0.00	0.00	1.82	4.94	31.72	15.55	13.92	1.57	0.68	0.27	0.46	0.24	
19	0.00	0.00	3.02	4.14	33.40	25.52	12.67	0.76	0.62	0.28	0.36	0.24	
20	0.00	0.00	0.94	3.20	52.48	90.85	28.00	0.94	0.50	0.28	0.36	0.23	
21	0.00	0.00	0.56	3.14	63.10	146.30	43.60	1.36	0.46	0.27	0.36	0.23	
22	0.00	0.00	0.48	2.86	62.05	146.90	20.94	1.42	0.44	0.26	0.28	0.22	
23	0.00	0.00	0.44	2.47	41.16	145.70	13.78	1.42	0.44	0.26	0.28	0.23	
24	0.00	0.00	0.40	1.33	45.30	135.28	10.46	2.12	0.44	0.26	0.28	0.22	
25	0.00	0.00	0.38	1.18	43.32	123.45	8.40	0.97	0.42	0.26	0.27	0.24	
26	0.00	0.00	0.34	0.97	18.32	75.40	6.80	1.03	0.42	0.27	0.26	0.25	
27	0.00	0.00	0.30	0.70	12.02	55.06	5.82	1.00	0.42	0.29	0.26	0.26	
28	0.00	0.00	0.29	0.66	9.48	58.69	5.18	0.94	0.38	0.30	0.32	0.62	
29	0.00	0.00	0.30	0.60	7.60	45.30	4.62	0.88	0.38	0.34		0.79	
30	0.00	0.00	0.30	2.68	5.42	27.42	4.14	0.85	0.36	0.32		0.44	
31		0.00		3.38	11.63		3.90		0.36	0.30		0.34	
Total	0.51	0.00	27.62	206.62	785.82	1258.55	731.06	54.82	21.69	9.77	9.11	10.24	3115.81 CMSDAY
Mean	0.02	0.00	0.92	6.67	25.35	41.95	23.58	1.83	0.70	0.32	0.33	0.33	8.54 CMS
Max	0.06	0.00	4.94	29.00	63.10	146.90	90.43	3.98	2.90	0.54	0.76	0.79	146.90 CMS
Min	0.00	0.00	0.00	0.30	4.62	5.58	3.90	0.76	0.36	0.26	0.24	0.22	0.00 CMS
Runoff	0.044	0.000	2.386	17.852	67.895	108.739	63.164	4.736	1.874	0.844	0.787	0.885	269.206 MCM

Momentary Peak 150.50 CMS, at 41.10 M (MSL), at 18.00 Hours, on Sep 22, 1998
Runoff Yield 8.98 Liters/Second/Square KM, Momentary Peak Yield 158.254 Liters/Second/Square KM

WATER YEAR 1998

EAST COAST-GULF BASIN

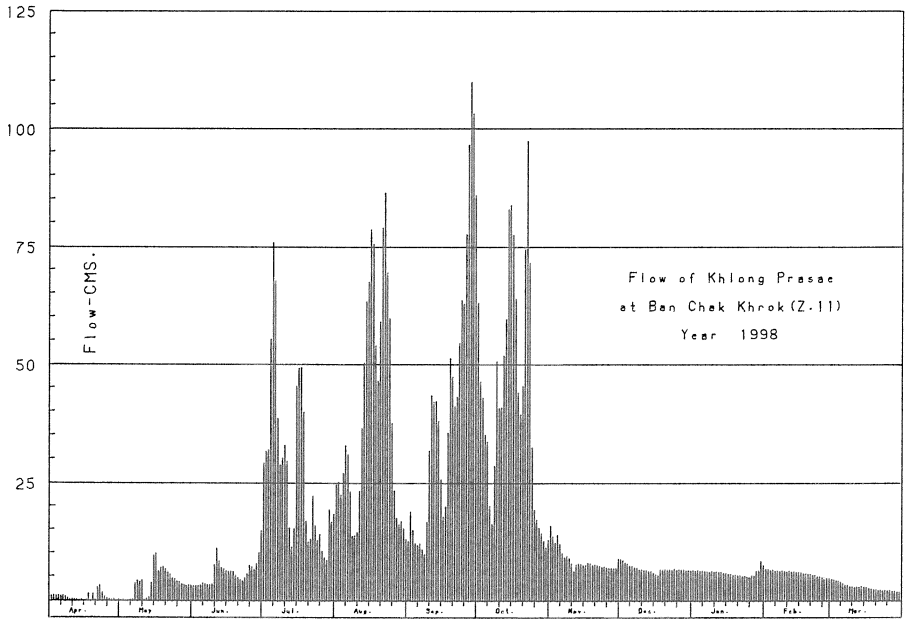
Khlong Prasae at Ban Chak Khrok, Rayong (Z.11)

Location	Lat. 12°-51'-20" N., Long. 101°-37'-10" E., on left bank near Khao Wang Sai at Ban Chak Khrok,Amphoe Klaeng, Rayong.
Drainage Area	1,280 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+2.63 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank near the Meteorological Station.
Elevation	+13.420 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1965-1974, 1989 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	Overbank flow starts at elevation +7.90 m.(M.S.L.) and is included.
General Description	Records good. Flow effected by the concrete weir about 7 kilometers downstream and 5 kilometers above gage site. Stage-discharge relation defined by 37 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.90	3.71	4.23	5.95	5.75	5.05	7.29	5.28	4.79	4.60	4.63	4.42	
2	3.90	3.71	4.25	6.07	5.77	5.45	6.69	5.12	4.76	4.60	4.62	4.40	
3	3.90	3.70	4.24	6.08	5.64	5.22	6.56	5.03	4.73	4.60	4.61	4.39	
4	3.90	3.69	4.27	7.02	5.86	5.03	6.23	5.15	4.71	4.59	4.61	4.37	
5	3.90	3.68	4.31	7.71	6.12	5.00	6.16	5.02	4.68	4.59	4.60	4.35	
6	3.89	3.75	4.29	7.44	6.04	5.02	5.52	4.88	4.67	4.59	4.59	4.30	
7	3.88	4.30	4.28	6.38	5.68	4.94	5.30	4.82	4.65	4.57	4.59	4.27	
8	3.77	4.39	4.26	5.94	5.13	4.86	5.93	4.83	4.64	4.57	4.59	4.26	
9	3.74	4.34	4.29	6.00	5.13	5.33	6.85	4.80	4.62	4.58	4.59	4.24	
10	3.73	4.40	4.70	6.13	5.18	6.07	6.47	4.71	4.61	4.58	4.58	4.22	
11	3.72	3.73	4.96	5.97	5.68	6.58	6.47	4.59	4.61	4.57	4.59	4.21	
12	3.72	3.73	4.75	5.25	6.29	6.52	6.90	4.69	4.60	4.57	4.58	4.21	
13	3.71	3.83	4.65	4.97	6.84	6.53	7.17	4.71	4.59	4.56	4.57	4.22	
14	3.71	4.31	4.62	5.23	7.30	6.35	7.92	4.70	4.58	4.55	4.57	4.23	
15	3.70	4.85	4.59	6.66	7.44	5.80	7.94	4.69	4.55	4.54	4.56	4.22	
16	3.69	4.87	4.58	6.80	7.79	5.39	7.76	4.68	4.51	4.53	4.55	4.20	
17	3.98	4.59	4.58	6.81	7.70	5.52	7.32	4.73	4.50	4.52	4.54	4.18	
18	3.68	4.64	4.58	6.43	6.97	6.25	6.60	4.71	4.61	4.51	4.53	4.15	
19	3.95	4.66	4.48	5.34	6.70	6.88	6.41	4.69	4.61	4.50	4.53	4.13	
20	3.67	4.62	4.45	5.04	7.15	6.73	6.66	4.69	4.61	4.50	4.52	4.12	
21	4.21	4.57	4.40	5.09	7.80	6.48	7.66	4.69	4.61	4.49	4.51	4.11	
22	4.24	4.51	4.38	5.63	8.02	6.57	8.32	4.67	4.61	4.48	4.50	4.10	
23	4.01	4.44	4.44	5.28	7.50	6.99	7.57	4.66	4.61	4.48	4.48	4.09	
24	3.85	4.42	4.53	5.06	7.18	7.31	6.11	4.66	4.62	4.47	4.47	4.09	
25	3.79	4.37	4.69	5.15	6.33	7.28	5.48	4.65	4.61	4.46	4.46	4.09	
26	3.72	4.34	4.65	4.92	5.69	7.76	5.35	4.63	4.61	4.48	4.45	4.09	
27	3.73	4.29	4.62	4.81	5.38	8.30	5.25	4.64	4.61	4.49	4.44	4.07	
28	3.72	4.26	4.71	4.76	5.29	8.64	5.16	4.63	4.61	4.58	4.43	4.06	
29	3.72	4.25	4.90	5.48	5.33	8.47	5.06	4.64	4.60	4.60		4.05	
30	3.71	4.26	5.20	5.32	5.24	8.00	4.96	4.78	4.60	4.75		4.03	
31		4.26		5.42	5.08		5.07		4.60	4.68		4.01	
Mean	3.82	4.24	4.53	5.81	6.29	6.34	6.46	4.77	4.62	4.55	4.55	4.19	
Max	4.24	4.87	5.20	7.71	8.02	8.64	8.32	5.28	4.79	4.75	4.63	4.42	8.64
Min	3.67	3.68	4.23	4.76	5.08	4.86	4.96	4.59	4.50	4.46	4.43	4.01	3.67

Annual Max Momentary Gage Height 8.69 M (MSL), at 15.00 Hours, on Sep 28, 1998
Zero Gage at Bottom Elevation 2.63 M (MSL), River Bed 2.09 M (MSL)
Left Bank Elevation 8.00 M (MSL)
Right Bank Elevation 7.89 M (MSL), Drainage Area 1280 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.16	0.34	3.14	29.20	24.80	12.65	63.20	16.10	8.97	6.50	6.89	4.70	
2	1.16	0.34	3.30	31.84	25.24	18.95	46.44	13.70	8.58	6.50	6.76	4.50	
3	1.16	0.30	3.22	32.06	22.50	15.20	43.14	12.35	8.19	6.50	6.63	4.42	
4	1.16	0.27	3.46	55.46	27.22	12.35	35.36	14.15	7.93	6.40	6.63	4.26	
5	1.16	0.24	3.78	76.03	32.94	11.90	33.82	12.20	7.54	6.40	6.50	4.10	
6	1.12	0.51	3.62	67.70	31.18	12.20	20.18	10.14	7.41	6.40	6.40	3.70	
7	1.07	3.70	3.54	38.82	23.30	11.00	16.40	9.36	7.15	6.20	6.40	3.46	
8	0.60	4.42	3.38	28.98	13.85	9.88	28.76	9.49	7.02	6.20	6.40	3.38	
9	0.47	4.02	3.62	30.30	13.85	16.91	50.70	9.10	6.76	6.30	6.40	3.22	
10	0.43	4.50	7.80	33.16	14.60	31.84	40.98	7.93	6.63	6.30	6.30	3.06	
11	0.39	0.43	11.30	29.64	23.30	43.62	40.98	6.40	6.63	6.20	6.40	2.98	
12	0.39	0.43	8.45	15.65	36.68	42.18	52.10	7.67	6.50	6.20	6.30	2.98	
13	0.34	0.86	7.15	11.45	50.42	42.42	59.66	7.93	6.40	6.10	6.20	3.06	
14	0.34	3.78	6.76	15.35	63.50	38.10	83.10	7.80	6.30	6.00	6.20	3.14	
15	0.30	9.75	6.40	45.66	67.70	25.90	83.80	7.67	6.00	5.90	6.10	3.06	
16	0.27	10.01	6.30	49.30	78.67	17.93	77.68	7.54	5.60	5.80	6.00	2.90	
17	1.62	6.40	6.30	49.58	75.70	20.18	64.10	8.19	5.50	5.70	5.90	2.78	
18	0.24	7.02	6.30	40.02	54.06	35.80	44.10	7.93	6.63	5.60	5.80	2.61	
19	1.45	7.28	5.30	17.08	46.70	51.54	39.54	7.67	6.63	5.50	5.80	2.49	
20	0.21	6.76	5.00	12.50	59.10	47.48	45.66	7.67	6.63	5.50	5.70	2.44	
21	2.98	6.20	4.50	13.25	79.00	41.22	74.42	7.67	6.63	5.40	5.60	2.38	
22	3.22	5.60	4.34	22.30	86.60	43.38	97.54	7.41	6.63	5.30	5.50	2.32	
23	1.80	4.90	4.90	16.10	69.50	54.62	71.60	7.28	6.63	5.30	5.30	2.26	
24	0.94	4.70	5.80	12.80	59.94	63.80	32.72	7.28	6.76	5.20	5.20	2.26	
25	0.69	4.26	7.67	14.15	37.62	62.90	19.46	7.15	6.63	5.10	5.10	2.26	
26	0.39	4.02	7.15	10.70	23.50	77.68	17.25	6.89	6.63	5.30	5.00	2.26	
27	0.43	3.62	6.76	9.23	17.76	96.80	15.65	7.02	6.63	5.40	4.90	2.15	
28	0.39	3.38	7.93	8.58	16.25	110.08	14.30	6.89	6.63	6.30	4.80	2.09	
29	0.39	3.30	10.40	19.46	16.91	103.23	12.80	7.02	6.50	6.50		2.03	
30	0.34	3.38	14.90	16.74	15.50	85.90	11.30	8.84	6.50	8.45		1.91	
31		3.38		18.44	13.10		12.95		6.50	7.54		1.80	
Total	26.61	118.10	182.47	871.53	1220.99	1257.64	1349.69	264.44	211.67	187.99	167.11	90.96	5949.20 CMSDAY
Mean	0.89	3.81	6.08	28.11	39.39	41.92	43.54	8.81	6.83	6.06	5.97	2.93	16.30 CMS
Max	3.22	10.01	14.90	76.03	86.60	110.08	97.54	16.10	8.97	8.45	6.89	4.70	110.08 CMS
Min	0.21	0.24	3.14	8.58	13.10	9.88	11.30	6.40	5.50	5.10	4.80	1.80	0.21 CMS
Runoff	2.299	10.204	15.765	75.300	105.494	108.660	116.613	22.848	18.288	16.242	14.438	7.859	514.011 MCM

Momentary Peak 112.18 CMS, at 8.69 M (MSL), at 15.00 Hours, on Sep 28, 1998
Runoff Yield 12.73 Liters/Second/Square KM, Momentary Peak Yield 87.641 Liters/Second/Square KM

WATER YEAR 1998

EAST COAST-GULF BASIN

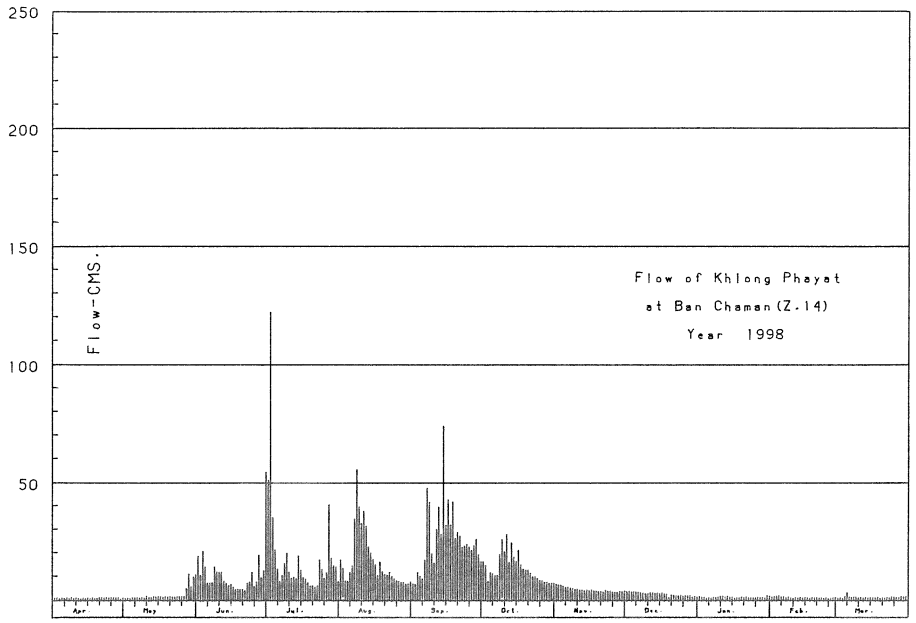
Khlong Phayat at Ban Chaman, Chanthaburi (Z.14)

Location	Lat. 12°-44'-25" N., Long. 102°-12'-39" E., on left bank at the bridge of Khlong Phayat near Wat Chaman, Amphoe Makham, Chanthaburi.
Drainage Area	245 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+5.40 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 30 meters from the top staff gage.
Elevation	+13.570 m.(M.S.L)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1968 to date.
Rating Operation	
Period of Rating	1986 to date.
Rated by Float	-
Rated by Current Meter	1986 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	Overbank flow starts at elevation +12.13 m.(M.S.L.) and is included.
General Description	Records good. Stage-discharge relation defined by 29 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.25	6.24	7.69	9.32	7.59	6.88	7.55	6.89	6.59	6.31	6.31	6.25	
2	6.23	6.22	7.18	11.88	7.38	6.88	7.44	6.85	6.60	6.31	6.31	6.25	
3	6.23	6.24	7.84	8.59	6.97	7.24	6.99	6.87	6.58	6.28	6.36	6.25	
4	6.23	6.25	7.40	7.85	6.99	7.13	7.26	6.81	6.56	6.25	6.37	6.32	
5	6.23	6.25	6.92	7.34	7.26	7.07	7.21	6.79	6.58	6.25	6.32	6.54	
6	6.24	6.26	6.91	6.98	7.43	7.60	7.15	6.77	6.54	6.25	6.31	6.29	
7	6.23	6.25	6.95	7.17	8.55	9.18	7.18	6.76	6.55	6.27	6.28	6.29	
8	6.26	6.25	7.42	7.49	9.53	8.91	7.73	6.73	6.49	6.28	6.29	6.29	
9	6.25	6.25	7.26	7.79	8.81	7.75	8.13	6.71	6.48	6.27	6.26	6.30	
10	6.23	6.32	7.27	7.27	8.47	7.52	7.83	6.70	6.46	6.35	6.25	6.28	
11	6.24	6.28	7.25	7.07	8.73	8.32	8.23	6.69	6.54	6.32	6.26	6.27	
12	6.21	6.29	6.98	7.10	8.40	8.82	7.54	6.66	6.50	6.31	6.26	6.26	
13	6.23	6.31	6.93	7.07	7.96	8.22	8.05	6.66	6.50	6.33	6.26	6.26	
14	6.23	6.31	6.82	7.71	7.77	10.22	7.66	6.65	6.49	6.30	6.26	6.26	
15	6.23	6.30	6.89	7.31	7.62	8.42	7.54	6.65	6.49	6.28	6.26	6.25	
16	6.21	6.30	6.77	7.11	7.46	8.96	7.86	6.66	6.50	6.25	6.24	6.25	
17	6.25	6.30	6.70	7.04	7.15	8.44	7.46	6.65	6.49	6.24	6.25	6.26	
18	6.21	6.30	6.69	6.95	7.55	8.93	7.36	6.59	6.45	6.27	6.26	6.28	
19	6.25	6.31	6.70	6.80	7.29	8.15	7.31	6.60	6.28	6.29	6.26	6.25	
20	6.26	6.31	6.68	6.83	7.19	8.27	7.33	6.57	6.40	6.28	6.25	6.25	
21	6.25	6.31	6.65	6.76	7.19	8.20	7.23	6.58	6.41	6.29	6.26	6.26	
22	6.26	6.31	6.90	6.80	7.25	7.92	7.14	6.65	6.36	6.27	6.25	6.26	
23	6.25	6.30	6.96	7.60	7.15	7.98	7.12	6.63	6.37	6.25	6.25	6.27	
24	6.26	6.33	7.24	7.33	7.06	8.00	7.09	6.60	6.38	6.27	6.25	6.30	
25	6.26	6.31	6.81	7.08	7.01	7.95	7.02	6.59	6.36	6.27	6.24	6.31	
26	6.26	6.32	6.95	7.25	6.97	7.85	6.99	6.54	6.36	6.27	6.23	6.26	
27	6.27	6.74	7.73	8.85	6.96	7.96	6.96	6.57	6.37	6.26	6.25	6.28	
28	6.25	7.20	7.10	7.63	6.93	8.12	6.94	6.59	6.37	6.26	6.26	6.32	
29	6.20	6.78	7.29	7.44	6.90	7.72	6.92	6.59	6.30	6.27		6.32	
30	6.23	7.13	9.47	7.39	6.88	7.54	6.91	6.61	6.32	6.37		6.31	
31		7.18		6.98	6.97		6.91		6.31	6.34		6.32	
Mean	6.24	6.40	7.14	7.54	7.53	8.07	7.36	6.67	6.45	6.28	6.27	6.29	
Max	6.27	7.20	9.47	11.88	9.53	10.22	8.23	6.89	6.60	6.37	6.37	6.54	11.88
Min	6.20	6.22	6.65	6.76	6.88	6.88	6.91	6.54	6.28	6.24	6.23	6.25	6.20

Annual Max Momentary Gage Height 12.35 M (MSL), at 12.00 Hours, on Jul 2, 1998
Zero Gage at Bottom Elevation 5.40 M (MSL), River Bed 5.35 M (MSL)
Left Bank Elevation 12.12 M (MSL)
Right Bank Elevation 12.17 M (MSL), Drainage Area 245 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.40	1.32	19.04	51.16	17.44	7.16	16.80	7.28	4.12	1.88	1.88	1.40	
2	1.24	1.16	11.12	122.60	14.10	7.16	15.04	6.80	4.20	1.88	1.88	1.40	
3	1.24	1.32	21.44	35.60	8.31	12.00	8.57	7.04	4.04	1.64	2.28	1.40	
4	1.24	1.40	14.40	21.60	8.57	10.42	12.30	6.32	3.88	1.40	2.36	1.96	
5	1.24	1.40	7.66	13.50	12.30	9.61	11.55	6.08	4.04	1.40	1.96	3.72	
6	1.32	1.48	7.53	8.44	14.88	17.60	10.70	5.84	3.72	1.40	1.88	1.72	
7	1.24	1.40	8.05	10.98	34.80	47.94	11.12	5.72	3.80	1.56	1.64	1.72	
8	1.48	1.40	14.72	15.84	55.99	42.00	19.68	5.36	3.32	1.64	1.72	1.72	
9	1.40	1.40	12.30	20.64	40.00	20.00	26.47	5.12	3.24	1.56	1.48	1.80	
10	1.24	1.96	12.45	12.45	33.20	16.32	21.28	5.00	3.08	2.20	1.40	1.64	
11	1.32	1.64	12.15	9.61	38.40	30.20	28.40	4.92	3.72	1.96	1.48	1.56	
12	1.08	1.72	8.44	10.00	31.80	40.20	16.64	4.68	3.40	1.88	1.48	1.48	
13	1.24	1.88	7.79	9.61	23.36	28.20	24.95	4.68	3.40	2.04	1.48	1.48	
14	1.24	1.88	6.44	19.36	20.32	74.46	18.56	4.60	3.32	1.80	1.48	1.48	
15	1.24	1.80	7.28	13.05	17.92	32.20	16.64	4.60	3.32	1.64	1.48	1.40	
16	1.08	1.80	5.84	10.14	15.36	43.00	21.76	4.68	3.40	1.40	1.32	1.40	
17	1.40	1.80	5.00	9.22	10.70	32.60	15.36	4.60	3.32	1.32	1.40	1.48	
18	1.08	1.80	4.92	8.05	16.80	42.40	13.80	4.12	3.00	1.56	1.48	1.64	
19	1.40	1.88	5.00	6.20	12.75	26.85	13.05	4.20	1.64	1.72	1.48	1.40	
20	1.48	1.88	4.84	6.56	11.26	29.20	13.35	3.96	2.60	1.64	1.40	1.40	
21	1.40	1.88	4.60	5.72	11.26	27.80	11.85	4.04	2.68	1.72	1.48	1.48	
22	1.48	1.88	7.40	6.20	12.15	22.72	10.56	4.60	2.28	1.56	1.40	1.48	
23	1.40	1.80	8.18	17.60	10.70	23.68	10.28	4.44	2.36	1.40	1.40	1.56	
24	1.48	2.04	12.00	13.35	9.48	24.00	9.87	4.20	2.44	1.56	1.40	1.80	
25	1.48	1.88	6.32	9.74	8.83	23.20	8.96	4.12	2.28	1.56	1.32	1.88	
26	1.48	1.96	8.05	12.15	8.31	21.60	8.57	3.72	2.28	1.56	1.24	1.48	
27	1.56	5.48	19.68	40.80	8.18	23.36	8.18	3.96	2.36	1.48	1.40	1.64	
28	1.40	11.40	10.00	18.08	7.79	26.28	7.92	4.12	2.36	1.48	1.48	1.96	
29	1.00	5.96	12.75	15.04	7.40	19.52	7.66	4.12	1.80	1.56		1.96	
30	1.24	10.42	54.61	14.25	7.16	16.64	7.53	4.28	1.96	2.36		1.88	
31		11.12		8.44	8.31		7.53		1.88	2.12		1.96	
Total	39.52	88.14	340.00	575.98	537.83	798.32	434.93	147.20	93.24	51.88	44.08	52.28	3203.40 CMSDAY
Mean	1.32	2.84	11.33	18.58	17.35	26.61	14.03	4.91	3.01	1.67	1.57	1.69	8.78 CMS
Max	1.56	11.40	54.61	122.60	55.99	74.46	28.40	7.28	4.20	2.36	2.36	3.72	122.60 CMS
Min	1.00	1.16	4.60	5.72	7.16	7.16	7.53	3.72	1.64	1.32	1.24	1.40	1.00 CMS
Runoff	3.415	7.615	29.376	49.765	46.469	68.975	37.578	12.718	8.056	4.482	3.809	4.517	276.774 MCM

Momentary Peak 137.35 CMS, at 12.35 M (MSL), at 12.00 Hours, on Jul 2, 1998

Runoff Yield 35.82 Liters/Second/Square KM, Momentary Peak Yield 560.612 Liters/Second/Square KM

WATER YEAR 1998

EAST COAST-GULF BASIN

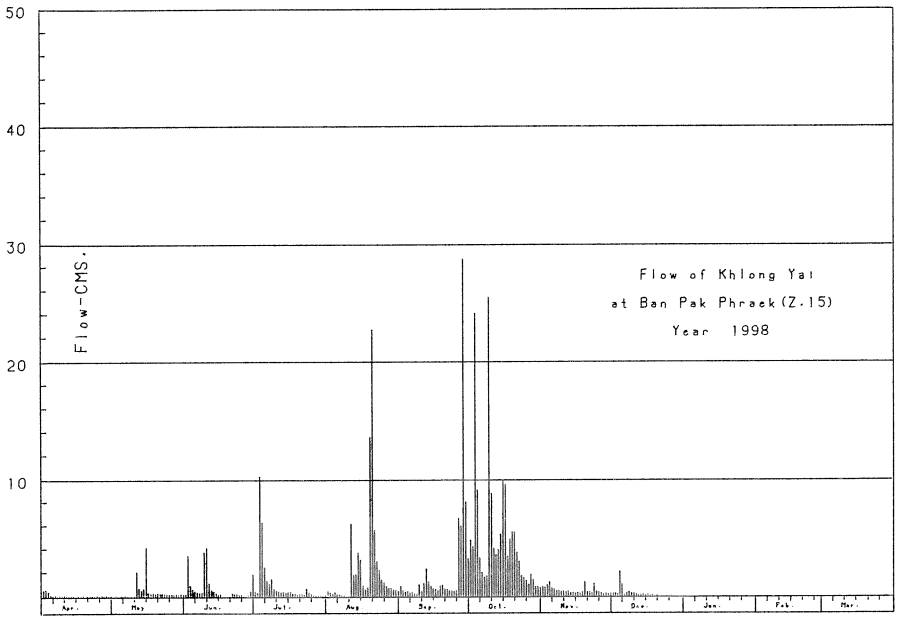
Khlong Yai at Ban Pak Phraek, Rayong (Z.15)

Location	Lat. 12°-55'-41" N., Long. 101°-19'-30" E., on right bank at Ban Pak Phraek, Amphoe Pluak Daeng, Rayong.
Drainage Area	244 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+29.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the Meteorological Station.
Elevation	+33.743 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1977 to date.
Rating Operation	
Period of Rating	1977 to date.
Rated by Float	-
Rated by Current Meter	1977 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	Overbank flow starts at elevation +31.65 m.(M.S.L.) and is included.
General Description	Records fair. Flow effected by the local weir during Dec.30,98-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 57 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	29.10	28.86	28.91	29.03	29.06	29.23	29.85	29.22	28.96	28.92	30.85	30.16	
2	29.10	28.85	29.67	29.00	28.97	29.07	29.77	29.19	28.94	28.90	30.84	30.14	
3	29.04	28.85	29.24	30.33	28.95	29.03	31.25	29.25	28.94	28.90	30.82	30.12	
4	28.87	28.85	29.11	30.01	28.99	29.03	30.24	29.29	29.48	28.90	30.80	30.10	
5	28.87	28.85	29.07	29.54	28.93	29.00	29.65	29.18	29.26	28.89	30.78	30.10	
6	28.87	28.84	29.00	29.32	28.90	29.00	29.45	29.12	28.91	28.87	30.75	30.09	
7	28.87	28.84	29.00	29.26	28.89	28.96	29.38	29.08	28.95	28.87	30.74	30.06	
8	28.87	28.84	28.97	29.35	28.86	28.92	29.39	29.06	29.00	28.87	30.73	30.03	
9	28.87	28.84	29.72	29.14	28.85	29.26	31.32	29.04	28.97	29.28	30.71	30.02	
10	28.87	28.90	29.76	29.08	28.87	29.05	30.22	29.04	28.94	29.43	30.69	30.00	
11	28.87	29.48	29.27	29.02	30.00	29.27	29.76	29.03	28.94	29.52	30.66	30.00	
12	28.87	29.20	29.11	29.01	29.41	29.52	29.69	29.03	28.90	29.56	30.86	29.98	
13	28.87	29.08	29.03	29.01	29.43	29.29	29.74	28.98	28.90	29.63	30.71	29.95	
14	28.86	29.17	28.98	29.00	29.71	29.23	29.91	28.96	28.89	29.69	30.67	29.93	
15	28.86	29.77	28.92	29.02	29.63	29.17	30.30	28.97	28.89	29.76	30.50	29.90	
16	28.86	28.98	28.92	29.02	29.23	29.11	30.28	28.97	28.89	29.81	30.45	29.88	
17	28.86	28.96	28.81	28.96	29.13	29.08	29.66	28.96	28.88	29.82	30.43	29.86	
18	28.86	28.96	28.79	28.94	29.19	29.23	29.85	29.00	28.87	29.83	30.41	29.84	
19	28.86	28.96	28.79	28.92	30.59	29.25	29.93	29.30	28.87	29.83	30.40	29.83	
20	28.86	28.96	28.78	28.92	31.17	29.14	29.92	29.02	28.86	29.85	30.37	29.84	
21	28.86	28.96	28.97	28.92	29.94	29.11	29.71	29.00	28.85	29.85	30.34	29.86	
22	28.86	28.95	28.95	28.92	29.61	29.08	29.61	28.98	28.86	29.81	30.31	29.84	
23	28.86	28.94	28.93	29.17	29.49	29.05	29.41	29.26	28.85	29.71	30.28	29.84	
24	28.86	28.93	28.91	28.98	29.34	29.05	29.36	29.06	28.84	29.73	30.26	29.83	
25	28.86	28.90	28.89	28.92	29.28	29.06	29.31	29.00	28.84	29.74	30.25	29.84	
26	28.86	28.91	28.83	28.89	29.22	30.04	29.26	28.95	28.84	29.77	30.23	29.85	
27	28.86	28.91	28.78	28.88	29.19	29.98	29.43	28.94	28.83	29.94	30.20	29.85	
28	28.86	28.92	28.90	28.87	29.17	31.49	29.33	28.94	28.82	30.08	30.18	29.80	
29	28.86	28.92	29.06	28.85	29.12	30.16	29.22	28.94	28.82	30.12		29.77	
30	28.86	28.93	29.42	28.87	29.09	29.64	29.21	28.94	29.11	30.55		29.75	
31		28.93		28.87	29.06		29.17		29.21	30.86		29.73	
Mean	28.89	28.98	29.05	29.10	29.33	29.32	29.76	29.06	28.94	29.59	30.54	29.93	
Max	29.10	29.77	29.76	30.33	31.17	31.49	31.32	29.30	29.48	30.86	30.86	30.16	31.49
Min	28.86	28.84	28.78	28.85	28.85	28.92	29.17	28.94	28.82	28.87	30.18	29.73	28.78

Annual Max Momentary Gage Height 31.76 M (MSL), at 15.00 Hours, on Aug 28, 1998
Zero Gage at Bottom Elevation 29.00 M (MSL), River Bed 28.67 M (MSL)
Left Bank Elevation 31.64 M (MSL)
Right Bank Elevation 31.89 M (MSL), Drainage Area 244 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.60	0.12	0.22	0.46	0.52	0.95	4.90	0.90	0.32	0.04	0.01	0.00	
2	0.60	0.10	3.49	0.40	0.34	0.54	4.26	0.78	0.28	0.03	0.01	0.00	
3	0.48	0.10	1.00	10.29	0.30	0.46	24.20	1.05	0.28	0.03	0.01	0.00	
4	0.14	0.10	0.62	6.40	0.38	0.46	9.12	1.25	2.20	0.03	0.01	0.00	
5	0.14	0.10	0.54	2.58	0.26	0.40	3.35	0.76	1.10	0.03	0.01	0.00	
6	0.14	0.08	0.40	1.40	0.20	0.40	2.05	0.64	0.22	0.03	0.01	0.00	
7	0.14	0.08	0.40	1.10	0.18	0.32	1.70	0.56	0.30	0.03	0.01	0.00	
8	0.14	0.08	0.34	1.55	0.12	0.24	1.75	0.52	0.40	0.03	0.01	0.00	
9	0.14	0.08	3.86	0.68	0.10	1.10	25.48	0.48	0.34	0.03	0.01	0.00	
10	0.14	0.20	4.18	0.56	0.14	0.50	8.86	0.48	0.28	0.03	0.01	0.00	
11	0.14	2.20	1.15	0.44	6.30	1.15	4.18	0.46	0.28	0.02	0.01	0.00	
12	0.14	0.80	0.62	0.42	1.85	2.44	3.63	0.46	0.20	0.02	0.01	0.00	
13	0.14	0.56	0.46	0.42	1.95	1.25	4.02	0.36	0.20	0.02	0.01	0.00	
14	0.12	0.74	0.36	0.40	3.78	0.95	5.40	0.32	0.18	0.02	0.01	0.00	
15	0.12	4.26	0.24	0.44	3.21	0.74	9.90	0.34	0.18	0.02	0.01	0.00	
16	0.12	0.36	0.24	0.44	0.95	0.62	9.64	0.34	0.18	0.02	0.01	0.00	
17	0.12	0.32	0.02	0.32	0.66	0.56	3.42	0.32	0.16	0.02	0.01	0.00	
18	0.12	0.32	0.00	0.28	0.78	0.95	4.90	0.40	0.14	0.02	0.01	0.00	
19	0.12	0.32	0.00	0.24	13.67	1.05	5.60	1.30	0.14	0.02	0.01	0.00	
20	0.12	0.32	0.00	0.24	22.76	0.68	5.50	0.44	0.12	0.02	0.01	0.00	
21	0.12	0.32	0.34	0.24	5.70	0.62	3.78	0.40	0.10	0.02	0.00	0.00	
22	0.12	0.30	0.30	0.24	3.07	0.56	3.07	0.36	0.12	0.02	0.00	0.00	
23	0.12	0.28	0.26	0.74	2.25	0.50	1.85	1.10	0.10	0.02	0.00	0.00	
24	0.12	0.26	0.22	0.36	1.50	0.50	1.60	0.52	0.08	0.01	0.00	0.00	
25	0.12	0.20	0.18	0.24	1.20	0.52	1.35	0.40	0.08	0.01	0.00	0.00	
26	0.12	0.22	0.06	0.18	0.90	6.70	1.10	0.30	0.08	0.01	0.00	0.00	
27	0.12	0.22	0.00	0.16	0.78	6.10	1.95	0.28	0.06	0.01	0.00	0.00	
28	0.12	0.24	0.20	0.14	0.74	28.80	1.45	0.28	0.04	0.01	0.00	0.00	
29	0.12	0.24	0.52	0.10	0.64	8.08	0.90	0.28	0.04	0.01		0.00	
30	0.12	0.26	1.90	0.14	0.58	3.28	0.85	0.28	0.04	0.01		0.00	
31		0.26		0.14	0.52		0.74		0.04	0.01		0.00	
Total	5.12	14.04	22.12	31.74	76.33	71.42	160.50	16.36	8.28	0.65	0.20	0.00	406.76 CMSDAY
Mean	0.17	0.45	0.74	1.02	2.46	2.38	5.18	0.55	0.27	0.02	0.01	0.00	1.11 CMS
Max	0.60	4.26	4.18	10.29	22.76	28.80	25.48	1.30	2.20	0.04	0.01	0.00	28.80 CMS
Min	0.12	0.08	0.00	0.10	0.10	0.24	0.74	0.28	0.04	0.01	0.00	0.00	0.00 CMS
Runoff	0.442	1.213	1.911	2.742	6.595	6.171	13.867	1.414	0.715	0.056	0.017	0.000	35.144 MCM

Momentary Peak 34.20 CMS, at 31.76 M (MSL), at 15.00 Hours, on Aug 28, 1998
Runoff Yield 4.57 Liters/Second/Square KM, Momentary Peak Yield 140.164 Liters/Second/Square KM

WATER YEAR 1998

CHANTHABURI RIVER BASIN

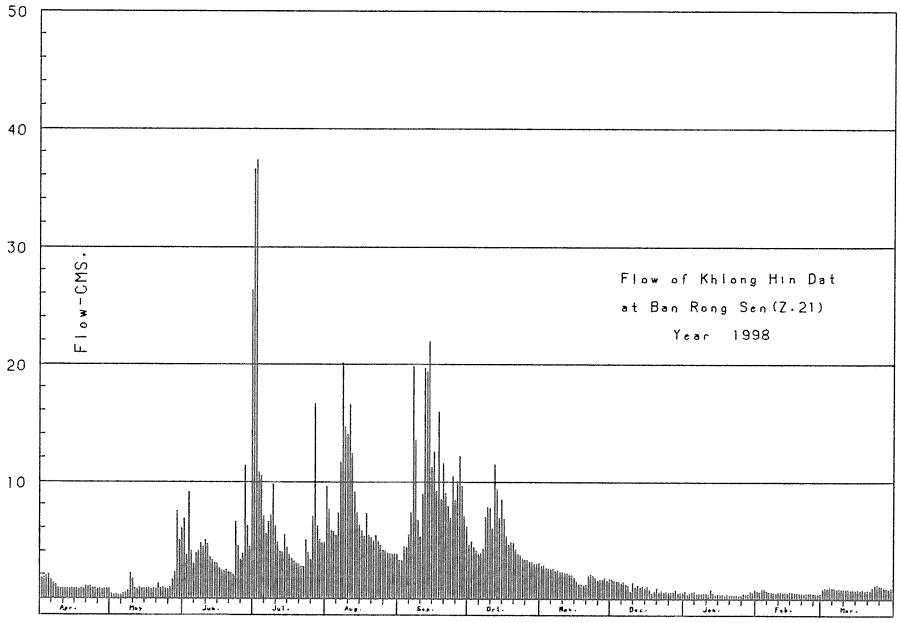
Khlong Hin Dat at Ban Rong Sen, Chanthaburi (Z.21)

Location	Lat. 12°-47'-23" N., Long. 102°-15'-33" E., on left bank at the bridge on highway, Ban Rong Sen, Amphoe Makham, Chanthaburi.
Drainage Area	66 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+21.20 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 40 meters from the top staff gage.
Elevation	+27.671 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 31 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	22.00	21.78	22.46	23.82	22.64	22.18	22.29	22.13	21.99	21.83	21.85	21.88	
2	22.00	21.77	22.22	23.85	22.51	22.18	22.32	22.13	21.97	21.78	21.82	21.89	
3	22.02	21.78	22.61	22.71	22.39	22.28	22.28	22.11	21.97	21.79	21.88	21.89	
4	22.04	21.77	22.25	22.69	22.38	22.28	22.25	22.10	21.96	21.83	21.87	21.90	
5	21.98	21.77	22.15	22.47	22.36	22.36	22.23	22.10	21.95	21.83	21.85	21.90	
6	21.94	21.80	22.24	22.37	22.49	22.49	22.23	22.10	21.96	21.79	21.82	21.89	
7	21.93	21.82	22.25	22.44	22.76	23.16	22.27	22.08	21.94	21.79	21.83	21.88	
8	21.88	21.84	22.31	22.48	23.17	22.86	22.47	22.08	21.92	21.80	21.81	21.88	
9	21.88	22.05	22.28	22.65	22.92	22.45	22.52	22.07	21.84	21.80	21.81	21.88	
10	21.87	22.00	22.33	22.42	22.89	22.35	22.52	22.06	21.95	21.80	21.82	21.87	
11	21.88	21.88	22.30	22.31	23.02	22.60	22.40	22.06	21.91	21.78	21.82	21.87	
12	21.87	21.88	22.21	22.25	22.80	23.15	22.75	22.05	21.92	21.87	21.82	21.87	
13	21.88	21.90	22.18	22.24	22.61	23.14	22.62	22.04	21.91	21.80	21.81	21.86	
14	21.88	21.89	22.16	22.36	22.49	23.25	22.46	22.03	21.91	21.77	21.81	21.86	
15	21.88	21.88	22.15	22.28	22.42	22.73	22.57	22.01	21.90	21.77	21.82	21.86	
16	21.88	21.89	22.11	22.22	22.39	22.81	22.46	21.96	21.91	21.78	21.82	21.86	
17	21.87	21.89	22.08	22.20	22.35	22.61	22.35	21.94	21.87	21.77	21.82	21.86	
18	21.88	21.88	22.08	22.17	22.49	22.99	22.30	21.93	21.80	21.75	21.81	21.86	
19	21.88	21.88	22.09	22.15	22.36	22.57	22.31	21.93	21.84	21.77	21.81	21.85	
20	21.91	21.88	22.07	22.14	22.34	22.75	22.31	21.93	21.89	21.77	21.80	21.85	
21	21.91	21.94	22.05	22.12	22.32	22.60	22.26	22.03	21.83	21.75	21.80	21.85	
22	21.91	21.90	22.04	22.12	22.36	22.53	22.23	22.04	21.84	21.76	21.80	21.89	
23	21.89	21.90	22.44	22.33	22.32	22.46	22.22	22.03	21.82	21.75	21.81	21.93	
24	21.88	21.89	22.29	22.24	22.29	22.69	22.20	22.00	21.83	21.75	21.80	21.93	
25	21.87	21.88	22.19	22.19	22.26	22.56	22.19	21.98	21.82	21.76	21.80	21.92	
26	21.87	21.90	22.23	22.47	22.25	22.66	22.18	21.98	21.81	21.79	21.79	21.91	
27	21.87	21.99	22.74	23.02	22.24	22.79	22.17	21.99	21.83	21.78	21.79	21.90	
28	21.87	22.06	22.42	22.42	22.23	22.64	22.16	22.00	21.85	21.78	21.79	21.88	
29	21.88	22.50	22.28	22.33	22.23	22.47	22.15	21.98	21.81	21.84		21.88	
30	21.87	22.33	23.44	22.31	22.23	22.41	22.14	21.99	21.81	21.81		21.89	
31		22.40		22.31	22.23		22.15		21.82	21.86		21.89	
Mean	21.91	21.93	22.29	22.45	22.48	22.63	22.32	22.03	21.88	21.79	21.82	21.88	
Max	22.04	22.50	23.44	23.85	23.17	23.25	22.75	22.13	21.99	21.87	21.88	21.93	23.85
Min	21.87	21.77	22.04	22.12	22.23	22.18	22.14	21.93	21.80	21.75	21.79	21.85	21.75

Annual Max Momentary Gage Height 25.66 M (MSL), at 18.00 Hours, on Jul 1, 1998
Zero Gage at Bottom Elevation 21.20 M (MSL), River Bed 20.88 M (MSL)
Left Bank Elevation 28.71 M (MSL)
Right Bank Elevation 28.72 M (MSL), Drainage Area 66 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.80	0.44	6.90	36.58	9.68	3.32	4.58	2.87	1.72	0.65	0.75	0.90	
2	1.80	0.41	3.74	37.45	7.65	3.32	4.96	2.87	1.56	0.44	0.60	0.95	
3	1.96	0.44	9.17	10.87	5.87	4.46	4.46	2.69	1.56	0.47	0.90	0.95	
4	2.12	0.41	4.10	10.53	5.74	4.46	4.10	2.60	1.48	0.65	0.85	1.00	
5	1.64	0.41	3.05	7.05	5.48	5.48	3.86	2.60	1.40	0.65	0.75	1.00	
6	1.32	0.50	3.98	5.61	7.35	7.35	3.86	2.60	1.48	0.47	0.60	0.95	
7	1.24	0.60	4.10	6.60	11.72	19.88	4.34	2.44	1.32	0.47	0.65	0.90	
8	0.90	0.70	4.83	7.20	20.11	13.54	7.05	2.44	1.16	0.50	0.55	0.90	
9	0.90	2.20	4.46	9.85	14.68	6.75	7.80	2.36	0.70	0.50	0.55	0.90	
10	0.85	1.80	5.09	6.30	14.11	5.35	7.80	2.28	1.40	0.50	0.60	0.85	
11	0.90	0.90	4.70	4.83	16.66	9.00	6.00	2.28	1.08	0.44	0.60	0.85	
12	0.85	0.90	3.62	4.10	12.40	19.65	11.55	2.20	1.16	0.85	0.60	0.85	
13	0.90	1.00	3.32	3.98	9.17	19.42	9.34	2.12	1.08	0.50	0.55	0.80	
14	0.90	0.95	3.14	5.48	7.35	21.95	6.90	2.04	1.08	0.41	0.55	0.80	
15	0.90	0.90	3.05	4.46	6.30	11.21	8.55	1.88	1.00	0.41	0.60	0.80	
16	0.90	0.95	2.69	3.74	5.87	12.59	6.90	1.48	1.08	0.44	0.60	0.80	
17	0.85	0.95	2.44	3.50	5.35	9.17	5.35	1.32	0.85	0.41	0.60	0.80	
18	0.90	0.90	2.44	3.23	7.35	16.01	4.70	1.24	0.50	0.35	0.55	0.80	
19	0.90	0.90	2.52	3.05	5.48	8.55	4.83	1.24	0.70	0.41	0.55	0.75	
20	1.08	0.90	2.36	2.96	5.22	11.55	4.83	1.24	0.95	0.41	0.50	0.75	
21	1.08	1.32	2.20	2.78	4.96	9.00	4.22	2.04	0.65	0.35	0.50	0.75	
22	1.08	1.00	2.12	2.78	5.48	7.95	3.86	2.12	0.70	0.38	0.50	0.95	
23	0.95	1.00	6.60	5.09	4.96	6.90	3.74	2.04	0.60	0.35	0.55	1.24	
24	0.90	0.95	4.58	3.98	4.58	10.53	3.50	1.80	0.65	0.35	0.50	1.24	
25	0.85	0.90	3.41	3.41	4.22	8.40	3.41	1.64	0.60	0.38	0.50	1.16	
26	0.85	1.00	3.86	7.05	4.10	10.02	3.32	1.64	0.55	0.47	0.47	1.08	
27	0.85	1.72	11.38	16.66	3.98	12.23	3.23	1.72	0.65	0.44	0.47	1.00	
28	0.85	2.28	6.30	6.30	3.86	9.68	3.14	1.80	0.75	0.44	0.47	0.90	
29	0.90	7.50	4.46	5.09	3.86	7.05	3.05	1.64	0.55	0.70		0.90	
30	0.85	5.09	26.40	4.83	3.86	6.15	2.96	1.72	0.55	0.55		0.95	
31		6.00		4.83	3.86		3.05		0.60	0.80		0.95	
Total	32.77	45.92	151.01	240.17	231.26	300.92	159.24	60.95	30.11	15.14	16.46	28.42	1312.37 CMSDAY
Mean	1.09	1.48	5.03	7.75	7.46	10.03	5.14	2.03	0.97	0.49	0.59	0.92	3.60 CMS
Max	2.12	7.50	26.40	37.45	20.11	21.95	11.55	2.87	1.72	0.85	0.90	1.24	37.45 CMS
Min	0.85	0.41	2.12	2.78	3.86	3.32	2.96	1.24	0.50	0.35	0.47	0.75	0.35 CMS
Runoff	2.831	3.967	13.047	20.751	19.981	25.999	13.758	5.266	2.602	1.308	1.422	2.455	113.389 MCM

Momentary Peak 100.94 CMS, at 25.66 M (MSL), at 18.00 Hours, on Jul 1, 1998

Runoff Yield 54.48 Liters/Second/Square KM, Momentary Peak Yield 1529.394 Liters/Second/Square KM

WATER YEAR 1998

EAST COAST-GULF BASIN

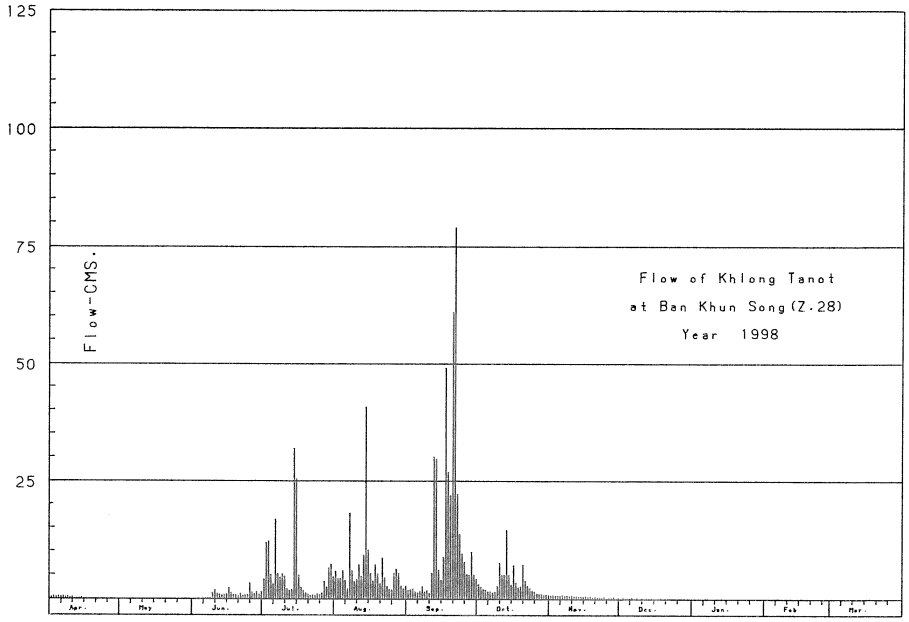
Khlong Tanot at Ban Khun Song, Chanthaburi (Z.28)

Location	Lat. 13°-04'-25" N., Long. 101°-56'-55" E., on right bank near Wat Khun Song, Amphoe Kaeng Hang Maeo, Chanthaburi.
Drainage Area	267 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+32.60 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 10 meters from the top staff gage.
Elevation	+40.318 M.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1986 to date.
Rated by Float	-
Rated by Current Meter	1986 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow effected by the local weir during Nov.13,98-Mar.31,99. discharge estimated by recession equation. Stage-discharge relation defined by 36 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	33.25	32.88	33.11	34.09	34.41	33.61	33.91	33.36	33.76	34.54	34.22	33.95	
2	33.25	32.88	33.11	34.97	34.08	33.68	33.77	33.36	33.71	34.53	34.22	33.95	
3	33.25	32.86	33.11	35.02	34.08	33.69	33.70	33.35	33.70	34.52	34.22	33.95	
4	33.25	32.85	33.11	34.21	34.43	33.57	33.64	33.33	33.70	34.50	34.22	34.03	
5	33.25	32.82	33.11	33.91	34.05	33.49	33.58	33.33	33.67	34.50	34.20	34.05	
6	33.25	32.81	33.11	35.42	33.70	33.59	33.54	33.33	33.60	34.50	34.19	34.06	
7	33.24	32.85	33.11	34.32	35.53	33.78	33.52	33.32	33.64	34.49	34.19	34.06	
8	33.22	32.85	33.11	34.12	34.42	33.57	33.53	33.31	33.64	34.48	34.18	34.08	
9	33.22	32.86	33.51	34.30	34.01	33.60	33.82	33.30	33.64	34.46	34.18	34.09	
10	33.20	32.87	33.62	34.15	34.06	33.49	34.55	33.30	33.62	34.44	34.16	34.10	
11	33.18	32.86	33.47	33.71	34.52	34.38	34.19	33.30	33.61	34.44	34.15	34.10	
12	33.15	32.86	33.41	33.60	34.15	36.38	34.24	33.28	33.59	34.44	34.13	34.11	
13	33.13	32.91	33.37	33.68	34.72	36.36	35.23	33.27	33.58	34.44	34.12	34.11	
14	33.13	33.01	33.39	36.50	37.02	34.43	34.19	33.78	33.56	34.43	34.10	34.09	
15	33.12	33.01	33.46	36.06	34.81	34.06	33.88	34.78	33.55	34.40	34.09	34.05	
16	33.11	33.02	33.76	34.19	34.36	34.66	34.51	34.96	33.55	34.36	34.08	34.04	
17	33.08	33.03	33.48	33.77	34.03	37.48	33.94	35.06	33.55	34.36	34.06	34.04	
18	33.07	33.04	33.42	33.61	34.52	36.15	33.76	35.13	33.55	34.36	34.06	34.02	
19	33.06	33.04	33.37	33.51	34.25	35.81	33.78	35.17	33.57	34.34	34.05	34.00	
20	33.05	33.04	33.33	33.43	33.90	38.08	34.53	35.20	33.51	34.35	34.04	34.00	
21	33.04	33.03	33.46	33.39	34.65	38.95	34.05	35.24	33.50	34.34	34.02	34.00	
22	33.03	33.03	33.35	33.37	34.13	35.82	33.84	35.29	33.50	34.32	34.00	34.00	
23	33.02	33.03	33.33	33.39	33.82	35.15	33.70	35.47	33.50	34.30	34.00	34.01	
24	33.01	33.02	33.43	33.45	33.66	34.74	33.61	34.57	33.51	34.29	33.98	34.01	
25	33.00	33.01	33.92	33.43	33.67	34.58	33.54	33.74	33.63	34.28	33.97	34.02	
26	32.99	33.01	33.51	33.47	34.32	34.29	33.49	33.69	34.08	34.28	33.96	34.02	
27	32.96	33.01	33.46	33.99	34.46	34.19	33.45	33.68	34.30	34.26	33.94	34.01	
28	32.95	33.00	33.54	33.79	34.31	34.77	33.42	33.68	34.43	34.26	33.95	34.00	
29	32.93	33.02	33.43	34.46	33.84	34.25	33.39	33.72	34.52	34.25		34.97	
30	32.90	33.05	33.54	34.54	33.68	34.07	33.38	33.77	34.54	34.25		33.68	
31		33.05		34.16	33.83		33.37		34.54	34.25		33.51	
Mean	33.11	32.96	33.38	34.13	34.30	34.82	33.84	34.00	33.75	34.39	34.10	34.04	
Max	33.25	33.05	33.92	36.50	37.02	38.95	35.23	35.47	34.54	34.54	34.22	34.97	38.95
Min	32.90	32.81	33.11	33.37	33.66	33.49	33.37	33.27	33.50	34.25	33.94	33.51	32.81

Annual Max Momentary Gage Height 39.32 M (MSL), at 8.00 Hours, on Sep 21, 1998
Zero Gage at Bottom Elevation 32.60 M (MSL), River Bed 32.29 M (MSL)
Left Bank Elevation 40.99 M (MSL)
Right Bank Elevation 39.27 M (MSL), Drainage Area 267 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.55	0.00	0.22	4.33	5.83	1.81	3.25	0.81	0.31	0.10	0.03	0.01	
2	0.55	0.00	0.22	11.90	4.26	2.11	2.55	0.81	0.30	0.01	0.03	0.01	
3	0.55	0.00	0.22	12.42	4.26	2.16	2.20	0.78	0.29	0.09	0.03	0.01	
4	0.55	0.00	0.22	5.13	6.09	1.64	1.94	0.74	0.28	0.09	0.03	0.01	
5	0.55	0.00	0.22	3.25	4.05	1.29	1.68	0.74	0.27	0.09	0.03	0.01	
6	0.55	0.00	0.22	17.04	2.20	1.72	1.51	0.74	0.26	0.08	0.03	0.01	
7	0.53	0.00	0.22	5.46	18.36	2.60	1.42	0.71	0.25	0.08	0.03	0.01	
8	0.48	0.00	0.22	4.54	5.96	1.64	1.46	0.69	0.24	0.08	0.02	0.01	
9	0.48	0.00	1.38	5.40	3.77	1.77	2.80	0.67	0.23	0.07	0.02	0.01	
10	0.43	0.00	1.85	4.75	4.12	1.29	7.65	0.67	0.22	0.07	0.02	0.01	
11	0.39	0.00	1.20	2.25	7.26	5.64	5.03	0.67	0.21	0.07	0.02	0.01	
12	0.32	0.00	0.94	1.77	4.75	30.12	5.22	0.62	0.21	0.07	0.02	0.01	
13	0.27	0.00	0.83	2.11	9.44	29.84	14.76	0.60	0.20	0.06	0.02	0.01	
14	0.27	0.02	0.88	31.95	40.96	6.09	5.03	0.58	0.19	0.06	0.02	0.01	
15	0.25	0.02	1.16	25.64	10.30	4.12	3.10	0.56	0.19	0.06	0.02	0.01	
16	0.22	0.04	2.50	5.03	5.58	8.87	7.13	0.54	0.18	0.06	0.02	0.01	
17	0.16	0.06	1.25	2.55	3.91	49.24	3.40	0.52	0.17	0.06	0.02	0.01	
18	0.14	0.08	0.99	1.81	7.26	26.90	2.50	0.50	0.17	0.05	0.02	0.01	
19	0.12	0.08	0.83	1.38	5.25	22.14	2.60	0.48	0.16	0.05	0.02	0.01	
20	0.10	0.08	0.74	1.03	3.20	61.00	7.39	0.46	0.15	0.05	0.02	0.01	
21	0.08	0.06	1.16	0.88	8.78	79.18	4.05	0.45	0.15	0.05	0.02	0.01	
22	0.06	0.06	0.78	0.83	4.61	22.28	2.90	0.43	0.14	0.05	0.02	0.01	
23	0.04	0.06	0.74	0.88	2.80	13.85	2.20	0.42	0.14	0.04	0.01	0.01	
24	0.02	0.04	1.03	1.12	2.03	9.63	1.81	0.40	0.13	0.04	0.01	0.00	
25	0.00	0.02	3.30	1.03	2.07	8.04	1.51	0.39	0.13	0.04	0.01	0.00	
26	0.00	0.02	1.38	1.20	5.46	5.37	1.29	0.37	0.12	0.04	0.01	0.00	
27	0.00	0.02	1.16	3.65	6.48	5.03	1.12	0.36	0.12	0.04	0.01	0.00	
28	0.00	0.00	1.51	2.65	5.43	9.92	0.99	0.35	0.12	0.04	0.01	0.00	
29	0.00	0.04	1.03	6.48	2.90	5.25	0.88	0.32	0.11	0.04		0.00	
30	0.00	0.10	1.51	7.52	2.11	4.19	0.85	0.31	0.11	0.03		0.00	
31		0.10		4.82	2.85		0.83		0.10	0.03		0.00	
Total	7.66	0.90	29.91	180.80	202.33	424.73	101.05	16.69	5.85	1.79	0.57	0.23	972.51 CMSDAY
Mean	0.26	0.03	1.00	5.83	6.53	14.16	3.26	0.56	0.19	0.06	0.02	0.01	2.66 CMS
Max	0.55	0.10	3.30	31.95	40.96	79.18	14.76	0.81	0.31	0.10	0.03	0.01	79.18 CMS
Min	0.00	0.00	0.22	0.83	2.03	1.29	0.83	0.31	0.10	0.01	0.01	0.00	0.00 CMS
Runoff	0.662	0.078	2.584	15.621	17.481	36.697	8.731	1.442	0.505	0.155	0.049	0.020	84.025 MCM

Momentary Peak 87.24 CMS, at 39.32 M (MSL), at 8.00 Hours, on Sep 21, 1998

Runoff Yield 9.98 Liters/Second/Square KM, Momentary Peak Yield 326.742 Liters/Second/Square KM

WATER YEAR 1998

EAST COAST-GULF BASIN

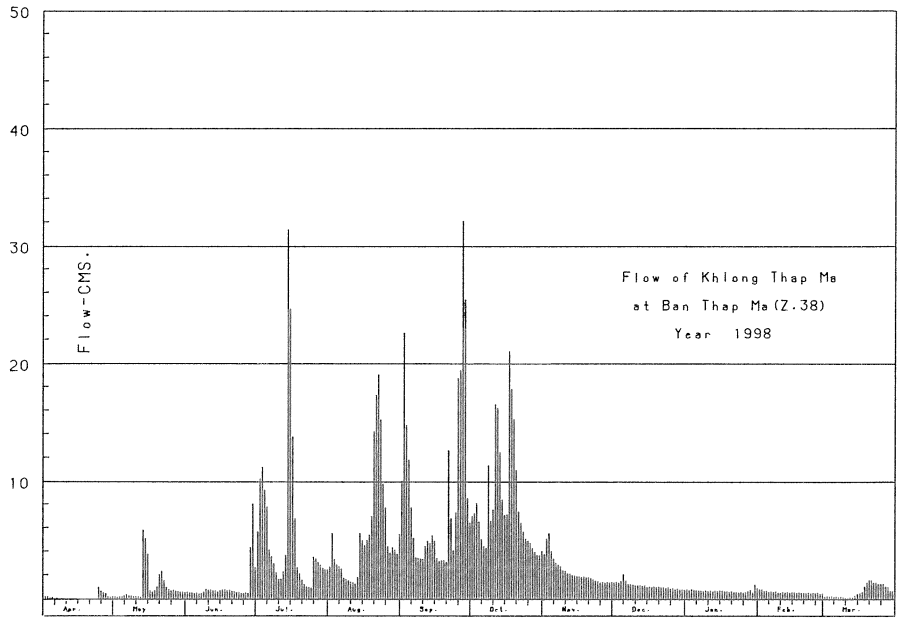
Khlong Thap Ma at Ban Khao Bot, Rayong (Z.38)

Location	Lat. 12°-44'-11" N., Long. 100°-46'-05" E., on left bank at the bridge on road, near Wat Khao Bot, Amphoe Muang, Rayong.
Drainage Area	151 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the top staff gage.
Elevation	+3.220 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1993 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (AD.), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.55	0.54	0.61	1.20	0.93	1.47	1.29	1.04	0.76	0.65	0.66	0.55	
2	0.54	0.54	0.61	1.48	1.19	1.96	1.31	1.15	0.76	0.65	0.65	0.55	
3	0.53	0.54	0.60	1.53	0.99	1.69	1.36	1.19	0.76	0.65	0.63	0.55	
4	0.53	0.55	0.60	1.43	0.95	1.56	1.26	1.06	0.77	0.65	0.63	0.55	
5	0.52	0.56	0.60	1.34	0.93	1.34	1.15	1.00	0.86	0.64	0.62	0.54	
6	0.52	0.57	0.59	1.07	0.91	1.16	1.10	0.96	0.78	0.64	0.62	0.54	
7	0.52	0.56	0.59	1.02	0.82	1.01	1.09	0.95	0.74	0.63	0.62	0.54	
8	0.51	0.55	0.62	0.96	0.80	1.00	1.54	0.93	0.73	0.63	0.62	0.54	
9	0.51	0.55	0.65	0.87	0.79	1.00	1.26	0.90	0.73	0.63	0.61	0.54	
10	0.51	0.54	0.65	0.80	0.76	0.99	1.33	0.89	0.71	0.63	0.61	0.53	
11	0.50	0.54	0.64	0.81	0.75	1.10	1.76	0.87	0.71	0.63	0.61	0.53	
12	0.50	0.54	0.64	0.88	0.74	1.14	1.75	0.86	0.71	0.63	0.61	0.53	
13	0.50	1.21	0.63	1.03	0.83	1.12	1.59	0.85	0.71	0.63	0.61	0.53	
14	0.49	1.15	0.62	2.20	1.19	1.17	1.38	0.84	0.71	0.63	0.61	0.56	
15	0.49	1.04	0.63	2.02	1.14	1.14	1.30	0.84	0.69	0.63	0.61	0.58	
16	0.49	0.63	0.65	1.65	1.11	1.00	1.30	0.83	0.69	0.63	0.61	0.60	
17	0.48	0.62	0.65	1.28	1.14	0.98	1.91	0.83	0.69	0.63	0.61	0.61	
18	0.48	0.63	0.64	0.92	1.18	0.98	1.81	0.83	0.69	0.62	0.61	0.70	
19	0.47	0.70	0.64	0.86	1.29	0.98	1.71	0.83	0.69	0.62	0.61	0.75	
20	0.47	0.85	0.63	0.80	1.67	0.97	1.52	0.82	0.69	0.62	0.60	0.80	
21	0.47	0.89	0.62	0.73	1.79	1.60	1.32	0.82	0.69	0.62	0.60	0.79	
22	0.46	0.78	0.61	0.70	1.85	1.28	1.25	0.80	0.68	0.61	0.60	0.76	
23	0.46	0.69	0.61	0.68	1.71	1.07	1.20	0.79	0.68	0.61	0.60	0.75	
24	0.69	0.65	0.60	0.68	1.46	1.31	1.15	0.77	0.68	0.61	0.60	0.74	
25	0.62	0.64	0.60	1.01	1.34	1.84	1.14	0.76	0.67	0.61	0.60	0.74	
26	0.60	0.64	0.60	1.00	1.10	1.86	1.12	0.76	0.67	0.61	0.60	0.73	
27	0.59	0.63	0.60	0.97	1.05	2.22	1.09	0.76	0.66	0.63	0.59	0.70	
28	0.54	0.62	1.09	0.94	1.09	2.04	1.05	0.76	0.66	0.64	0.59	0.68	
29	0.54	0.62	1.36	0.92	1.07	1.39	1.03	0.76	0.65	0.61		0.63	
30	0.54	0.61	0.92	0.90	1.04	1.25	1.02	0.76	0.65	0.73		0.62	
31		0.61		0.90	1.18		1.06		0.65	0.67		0.62	
Mean	0.52	0.67	0.67	1.08	1.12	1.32	1.33	0.87	0.71	0.63	0.61	0.63	
Max	0.69	1.21	1.36	2.20	1.85	2.22	1.91	1.19	0.86	0.73	0.66	0.80	2.22
Min	0.46	0.54	0.59	0.68	0.74	0.97	1.02	0.76	0.65	0.61	0.59	0.53	0.46

Annual Max Momentary Gage Height 2.24 M (AD.), at 9.00 Hours, on Jul 22, 1998
Zero Gage at Bottom Elevation 0.00 M (AD.), River Bed -0.09 M (AD.)
Left Bank Elevation 2.64 M (AD.)
Right Bank Elevation 3.41 M (AD.), Drainage Area 151 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.28	0.23	0.62	5.80	2.80	10.06	7.06	3.90	1.47	0.85	0.91	0.28	
2	0.23	0.23	0.62	10.24	5.67	22.68	7.36	5.15	1.47	0.85	0.85	0.28	
3	0.17	0.23	0.57	11.23	3.40	14.77	8.16	5.67	1.47	0.85	0.74	0.28	
4	0.17	0.28	0.57	9.34	3.00	11.86	6.64	4.10	1.53	0.85	0.74	0.28	
5	0.11	0.34	0.57	7.84	2.80	7.84	5.15	3.50	2.18	0.79	0.68	0.23	
6	0.11	0.40	0.51	4.20	2.60	5.28	4.50	3.10	1.59	0.79	0.68	0.23	
7	0.11	0.34	0.51	3.70	1.86	3.60	4.40	3.00	1.36	0.74	0.68	0.23	
8	0.06	0.28	0.68	3.10	1.70	3.50	11.44	2.80	1.30	0.74	0.68	0.23	
9	0.06	0.28	0.85	2.26	1.64	3.50	6.64	2.50	1.30	0.74	0.62	0.23	
10	0.06	0.23	0.85	1.70	1.47	3.40	7.68	2.42	1.19	0.74	0.62	0.17	
11	0.00	0.23	0.79	1.78	1.42	4.50	16.56	2.26	1.19	0.74	0.62	0.17	
12	0.00	0.23	0.79	2.34	1.36	5.02	16.30	2.18	1.19	0.74	0.62	0.17	
13	0.00	5.94	0.74	3.80	1.94	4.76	12.49	2.10	1.19	0.74	0.62	0.17	
14	0.00	5.15	0.68	31.40	5.67	5.41	8.48	2.02	1.19	0.74	0.62	0.34	
15	0.00	3.90	0.74	24.72	5.02	5.02	7.20	2.02	1.08	0.74	0.62	0.45	
16	0.00	0.74	0.85	13.85	4.63	3.50	7.20	1.94	1.08	0.74	0.62	0.57	
17	0.00	0.68	0.85	6.92	5.02	3.30	21.03	1.94	1.08	0.74	0.62	0.62	
18	0.00	0.74	0.79	2.70	5.54	3.30	17.91	1.94	1.08	0.68	0.62	1.13	
19	0.00	1.13	0.79	2.18	7.06	3.30	15.26	1.94	1.08	0.68	0.62	1.42	
20	0.00	2.10	0.74	1.70	14.31	3.20	11.02	1.86	1.08	0.68	0.57	1.70	
21	0.00	2.42	0.68	1.30	17.34	12.70	7.52	1.86	1.08	0.68	0.57	1.64	
22	0.00	1.59	0.62	1.13	19.15	6.92	6.50	1.70	1.02	0.62	0.57	1.47	
23	0.00	1.08	0.62	1.02	15.26	4.20	5.80	1.64	1.02	0.62	0.57	1.42	
24	1.08	0.85	0.57	1.02	9.88	7.36	5.15	1.53	1.02	0.62	0.57	1.36	
25	0.68	0.79	0.57	3.60	7.84	18.84	5.02	1.47	0.96	0.62	0.57	1.36	
26	0.57	0.79	0.57	3.50	4.50	19.46	4.76	1.47	0.96	0.62	0.57	1.30	
27	0.51	0.74	0.57	3.20	4.00	32.20	4.40	1.47	0.91	0.74	0.51	1.13	
28	0.23	0.68	4.40	2.90	4.40	25.44	4.00	1.47	0.91	0.79	0.51	1.02	
29	0.23	0.68	8.16	2.70	4.20	8.64	3.80	1.47	0.85	0.62		0.74	
30	0.23	0.62	2.70	2.50	3.90	6.50	3.70	1.47	0.85	1.30		0.68	
31		0.62		2.50	5.54		4.10		0.85	0.96		0.68	
Total	4.89	34.54	33.57	176.17	174.92	270.06	257.23	71.89	36.53	23.35	17.79	21.98	1122.92 CMSDAY
Mean	0.16	1.11	1.12	5.68	5.64	9.00	8.30	2.40	1.18	0.75	0.64	0.71	3.08 CMS
Max	1.08	5.94	8.16	31.40	19.15	32.20	21.03	5.67	2.18	1.30	0.91	1.70	32.20 CMS
Min	0.00	0.23	0.51	1.02	1.36	3.20	3.70	1.47	0.85	0.62	0.51	0.17	0.00 CMS
Runoff	0.422	2.984	2.900	15.221	15.113	23.333	22.225	6.211	3.156	2.017	1.537	1.899	97.020 MCM

Momentary Peak 33.00 CMS, at 2.24 M (AD.), at 9.00 Hours, on Jul 22, 1998
Runoff Yield 20.37 Liters/Second/Square KM, Momentary Peak Yield 218.543 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

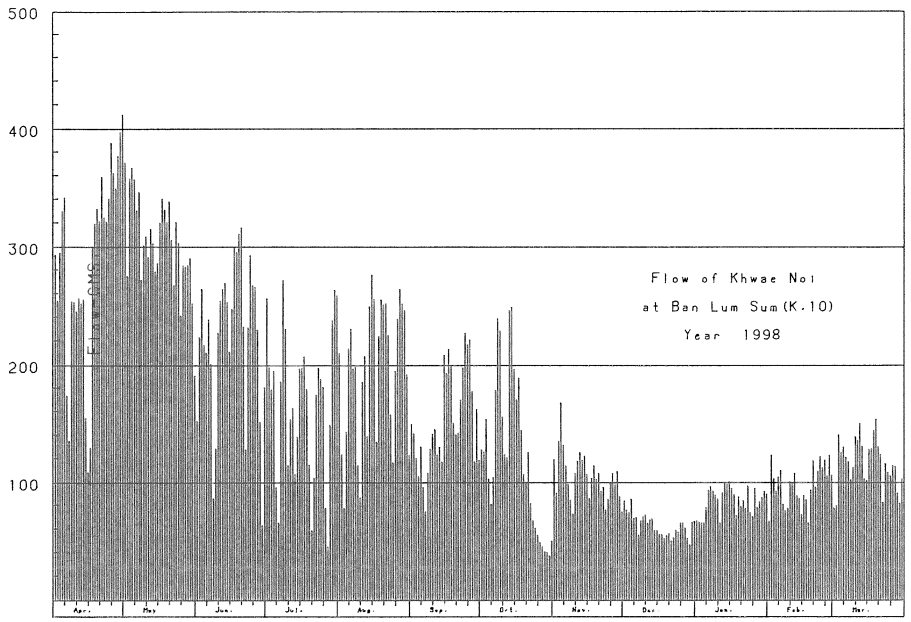
Khwae Noi River at Ban Lum Sum, Kanchanaburi (K.10)

Location	Lat. 14°-05'-40" N., Long. 99°-10'-28" E., on left bank about 100 meters upstream from Ban Lum Sum railway station, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	7,008 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+30.40 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the gage site.
Elevation	+52.057 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1965 to date.
Rating Operation	
Period of Rating	1965 to date.
Rated by Float	-
Rated by Current Meter	1965 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Khao Lam Dam. Stage-discharge relation defined by 202 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	34.20	34.98	32.68	33.83	33.32	32.65	32.41	32.30	31.85	31.61	31.61	31.77	
2	33.81	34.02	33.48	33.19	32.35	32.57	32.38	31.94	31.74	31.60	32.35	31.79	
3	34.21	34.84	33.91	32.98	31.77	32.31	32.70	32.50	31.71	31.58	32.10	32.56	
4	34.57	34.93	33.40	33.16	32.58	32.12	32.10	32.86	31.88	31.59	31.96	32.37	
5	34.68	34.84	33.33	32.00	33.37	32.44	31.82	32.45	31.64	31.77	32.11	32.43	
6	32.93	34.57	33.64	31.59	33.55	32.01	32.11	32.24	31.66	31.98	32.19	32.32	
7	32.50	34.73	33.22	33.06	33.18	31.72	32.98	32.04	31.44	32.01	31.82	32.28	
8	33.80	33.98	31.89	33.98	33.19	32.16	33.65	31.86	31.61	31.97	31.73	32.09	
9	33.79	34.28	32.42	33.55	32.24	32.41	33.54	31.70	31.66	31.92	31.77	32.21	
10	33.72	34.35	33.52	32.24	31.89	32.56	32.73	32.15	31.69	31.88	32.07	32.54	
11	33.83	34.18	33.80	32.70	33.05	32.61	32.35	32.28	31.59	31.58	32.04	32.50	
12	33.78	34.42	33.90	32.81	33.30	32.35	32.32	32.38	31.62	31.94	32.15	32.66	
13	33.82	34.29	33.96	32.14	32.54	32.43	33.73	32.29	31.64	32.05	31.92	32.44	
14	32.71	34.05	33.79	32.54	33.76	32.28	33.75	32.34	31.49	32.03	31.88	32.09	
15	32.17	34.12	33.34	33.18	34.03	33.31	33.17	32.14	31.50	32.07	31.68	32.08	
16	32.42	34.47	33.74	33.18	33.82	33.14	32.89	31.89	31.44	31.99	31.91	32.41	
17	34.27	34.67	34.26	33.29	32.49	33.36	33.09	32.10	31.45	31.93	31.87	32.41	
18	34.46	34.58	34.22	32.99	33.48	33.20	32.60	32.24	31.39	31.67	31.59	32.60	
19	34.59	34.47	34.37	32.24	33.82	32.67	32.14	32.09	31.44	31.90	31.97	32.70	
20	34.48	34.65	34.43	31.50	33.77	32.56	32.06	32.16	31.45	31.79	32.29	32.44	
21	34.86	34.32	33.57	32.11	33.78	32.57	32.38	31.96	31.36	31.86	32.01	32.35	
22	34.51	33.94	32.40	32.93	33.50	32.88	31.82	32.01	31.41	31.76	32.18	31.84	
23	34.48	34.47	33.57	33.19	32.75	33.19	31.62	31.74	31.50	32.02	32.33	32.26	
24	34.67	34.30	34.19	33.08	32.27	33.51	31.52	31.88	31.47	31.71	32.21	32.16	
25	35.15	33.68	33.94	33.01	33.16	33.41	31.44	32.05	31.59	31.67	32.30	32.13	
26	34.89	34.10	33.92	31.77	33.65	33.45	31.35	32.15	31.58	31.99	32.13	32.23	
27	34.76	34.09	33.55	31.29	33.91	32.97	31.29	32.06	31.53	31.78	32.34	32.23	
28	35.03	34.11	32.68	32.65	33.78	32.28	31.24	32.18	31.39	31.84	32.13	31.94	
29	35.23	34.17	31.55	33.63	33.73	32.79	31.22	31.91	31.32	31.90		31.83	
30	35.37	33.78	33.00	33.90	33.12	32.29	31.19	31.72	31.59	31.96		32.09	
31		33.11		33.85	32.34		31.36		31.61	31.93		32.13	
Mean	34.12	34.31	33.46	32.82	33.14	32.67	32.29	32.12	31.56	31.85	32.02	32.25	
Max	35.37	34.98	34.43	33.98	34.03	33.51	33.75	32.86	31.88	32.07	32.35	32.70	35.37
Min	32.17	33.11	31.55	31.29	31.77	31.72	31.19	31.70	31.32	31.58	31.59	31.77	31.19

Annual Max Momentary Gage Height 35.46 M (MSL), at 14.00 Hours, on Apr 30, 1998
Zero Gage at Bottom Elevation 30.40 M (MSL), River Bed 29.63 M (MSL)
Left Bank Elevation 51.64 M (MSL)
Right Bank Elevation 48.47 M (MSL), Drainage Area 7008 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	294.0	372.0	152.2	257.0	209.8	149.5	128.8	120.0	84.5	67.7	67.7	78.9	
2	255.0	276.0	224.2	198.1	124.0	142.3	126.4	91.2	76.8	67.0	124.0	80.3	
3	295.0	358.0	265.0	179.2	78.9	120.8	154.0	136.0	74.7	65.6	104.0	141.4	
4	331.0	367.0	217.0	195.4	143.2	105.6	104.0	168.4	86.6	66.3	92.8	125.6	
5	342.0	358.0	210.7	96.0	214.3	131.2	82.4	132.0	69.8	78.9	104.8	130.4	
6	174.7	331.0	238.6	66.3	230.5	96.8	104.8	115.2	71.2	94.4	111.2	121.6	
7	136.0	347.0	200.8	186.4	197.2	75.4	179.2	99.2	55.8	96.8	82.4	118.4	
8	254.0	272.0	87.3	272.0	198.1	108.8	239.5	85.2	67.7	93.6	76.1	103.2	
9	253.0	302.0	129.6	230.5	115.2	128.8	229.6	74.0	71.2	89.6	78.9	112.8	
10	246.0	309.0	227.8	115.2	87.3	141.4	156.7	108.0	73.3	86.6	101.6	139.6	
11	257.0	292.0	254.0	154.0	185.5	145.9	124.0	118.4	66.3	65.6	99.2	136.0	
12	252.0	316.0	264.0	163.9	208.0	124.0	121.6	126.4	68.4	91.2	108.0	150.4	
13	256.0	303.0	270.0	107.2	139.6	130.4	247.0	119.2	69.8	100.0	89.6	131.2	
14	154.9	279.0	253.0	139.6	250.0	118.4	249.0	123.2	59.3	98.4	86.6	103.2	
15	109.6	286.0	211.6	197.2	277.0	208.9	196.3	107.2	60.0	101.6	72.6	102.4	
16	129.6	321.0	248.0	197.2	256.0	193.6	171.1	87.3	55.8	95.2	88.8	128.8	
17	301.0	341.0	300.0	207.1	135.2	213.4	189.1	104.0	56.5	90.4	85.9	128.8	
18	320.0	332.0	296.0	180.1	224.2	199.0	145.0	115.2	52.3	71.9	66.3	145.0	
19	333.0	321.0	311.0	115.2	256.0	151.3	107.2	103.2	55.8	88.0	93.6	154.0	
20	322.0	339.0	317.0	60.0	251.0	141.4	100.8	108.8	56.5	80.3	119.2	131.2	
21	360.0	306.0	232.3	104.8	252.0	142.3	126.4	92.8	50.2	85.2	96.8	124.0	
22	325.0	268.0	128.0	174.7	226.0	170.2	82.4	96.8	53.7	78.2	110.4	83.8	
23	322.0	321.0	232.3	198.1	158.5	198.1	68.4	76.8	60.0	97.6	122.4	116.8	
24	341.0	304.0	293.0	188.2	117.6	226.9	61.4	86.6	57.9	74.7	112.8	108.8	
25	389.0	242.2	268.0	181.9	195.4	217.9	55.8	100.0	66.3	71.9	120.0	106.4	
26	363.0	284.0	266.0	78.9	239.5	221.5	49.5	108.0	65.6	95.2	106.4	114.4	
27	350.0	283.0	230.5	45.3	265.0	178.3	45.3	100.8	62.1	79.6	123.2	114.4	
28	377.0	285.0	152.2	149.5	252.0	118.4	41.8	110.4	52.3	83.8	106.4	91.2	
29	397.3	291.0	63.5	237.7	247.0	162.1	40.4	88.8	47.4	88.0		83.1	
30	412.7	252.0	181.0	264.0	191.8	119.2	38.3	75.4	66.3	92.8		103.2	
31		190.9		259.0	123.2		50.2		67.7	90.4		106.4	
Total	8652.8	9449.1	6724.6	5199.7	6049.0	4581.8	3816.4	3178.5	1981.8	2626.5	2751.7	3615.7	58627.6 CMSDAY
Mean	288.4	304.8	224.2	167.7	195.1	152.7	123.1	106.0	63.9	84.7	98.3	116.6	160.6 CMS
Max	412.7	372.0	317.0	272.0	277.0	226.9	249.0	168.4	86.6	101.6	124.0	154.0	412.7 CMS
Min	109.6	190.9	63.5	45.3	78.9	75.4	38.3	74.0	47.4	65.6	66.3	78.9	38.3 CMS
Runoff	747.60	816.40	581.01	449.25	522.63	395.87	329.74	274.62	171.23	226.93	237.75	312.40	5065.42 MCM

Momentary Peak 422.60 CMS, at 35.46 M (MSL), at 14.00 Hours, on Apr 30, 1998
Runoff Yield 22.92 Liters/Second/Square KM, Momentary Peak Yield 60.303 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

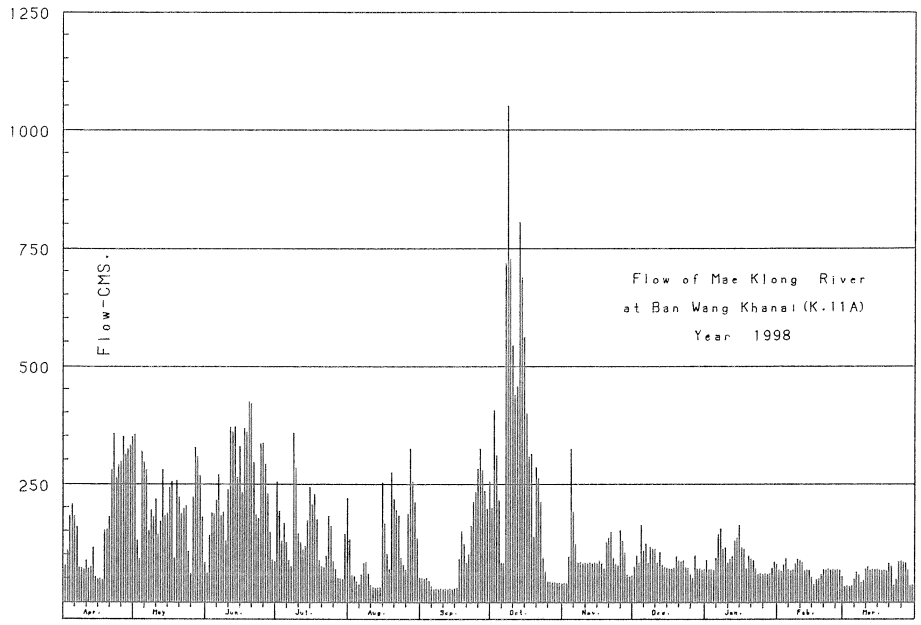
Mae Klong River at Ban Wang Khanai, Kanchanaburi (K.11A)

Location	Lat. 13°-56'-55" N., Long. 99°-38'-42" E., on left bank about 3 kilometers downstream from Amphoe Tha Muang Office, Amphoe Tha Muang, Kanchanaburi.
Drainage Area	26,449 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+9.81 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Along the gage line.
Elevation	+23.600 m. (M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1965 to date.
Rating Operation	
Period of Rating	1965-1969, 1972 to date.
Rated by Float	-
Rated by Current Meter	1965-1969, 1972 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Vachiralongkorn Diversion Dam. Stage-discharge relation defined by 70 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	11.12	12.47	11.01	12.08	11.50	10.91	11.84	10.82	11.11	11.20	11.05	10.77	
2	11.35	11.49	11.54	11.81	10.96	10.91	12.66	10.82	11.28	11.07	11.04	10.77	
3	11.76	11.22	11.80	11.47	10.95	10.91	12.30	11.25	11.16	11.06	11.13	10.77	
4	11.88	12.34	11.78	11.69	10.85	10.87	11.92	12.36	11.66	11.06	11.24	10.77	
5	11.76	12.25	11.92	11.46	10.80	10.76	11.17	11.81	11.34	11.24	11.06	10.91	
6	11.65	12.18	12.14	11.20	10.97	10.71	11.15	11.43	11.44	11.55	11.05	11.02	
7	11.10	11.61	11.77	11.12	11.17	10.71	13.64	11.17	11.17	11.63	11.05	10.98	
8	11.08	11.82	11.80	12.49	11.17	10.71	14.46	11.17	11.39	11.36	11.16	10.83	
9	11.07	11.75	11.48	12.20	11.00	10.71	13.66	11.16	11.37	11.39	11.22	10.88	
10	11.20	11.93	12.01	11.56	10.78	10.71	13.12	11.16	11.36	11.17	11.21	11.08	
11	11.07	11.55	12.53	11.46	10.74	10.71	12.77	11.16	11.16	11.22	11.17	11.10	
12	11.11	11.71	12.50	11.35	10.74	10.71	12.84	11.16	11.33	11.26	11.05	11.06	
13	11.39	12.19	12.54	11.41	10.73	10.71	13.87	11.16	11.14	11.48	11.05	11.06	
14	10.93	11.76	12.12	11.71	10.75	10.71	13.55	11.16	11.09	11.51	11.06	11.07	
15	10.90	11.79	12.38	12.04	12.08	10.71	13.17	11.16	11.08	11.66	10.93	11.06	
16	10.90	12.03	11.99	11.88	11.68	10.74	12.64	11.18	11.08	11.39	10.80	11.05	
17	10.89	12.08	12.52	11.97	11.31	11.22	12.29	11.15	11.08	11.36	10.90	11.05	
18	11.60	11.24	12.49	11.73	11.06	11.59	12.32	11.08	11.08	11.08	10.90	11.05	
19	11.62	12.10	12.73	11.20	12.16	11.44	11.53	11.46	11.27	11.27	10.99	11.05	
20	11.75	11.95	12.71	11.11	11.93	11.17	12.21	11.51	11.19	11.22	11.06	11.16	
21	12.19	11.78	12.25	11.10	11.82	11.29	12.11	11.58	11.19	11.21	11.06	11.12	
22	12.48	11.84	11.78	11.28	11.77	11.66	11.90	11.24	11.19	11.07	11.07	10.78	
23	12.12	11.86	11.73	11.76	11.23	11.90	11.24	11.14	11.10	10.99	11.06	10.90	
24	12.22	11.33	12.40	11.66	11.14	12.00	11.02	11.13	11.08	10.99	11.06	11.18	
25	12.25	11.00	12.40	11.18	11.05	12.19	10.85	11.61	10.99	10.99	11.06	11.20	
26	12.46	11.95	12.23	11.06	11.78	12.36	10.84	11.48	10.91	10.99	11.06	11.17	
27	12.31	12.37	11.98	10.92	12.36	12.18	10.84	11.31	11.28	10.99	11.06	11.17	
28	12.35	12.29	11.59	10.90	12.08	12.00	10.83	10.97	11.08	10.99	10.94	11.05	
29	12.39	12.14	11.21	10.90	11.90	11.84	10.83	10.95	11.07	11.09		10.79	
30	12.45	11.75	11.19	11.56	11.51	12.09	10.82	10.95	11.06	11.18		10.79	
31		11.17		11.94	10.93		10.82		11.06	11.14		10.79	
Mean	11.65	11.84	12.02	11.52	11.32	11.24	12.10	11.26	11.19	11.22	11.05	10.98	
Max	12.48	12.47	12.73	12.49	12.36	12.36	14.46	12.36	11.66	11.66	11.24	11.20	14.46
Min	10.89	11.00	11.01	10.90	10.73	10.71	10.82	10.82	10.91	10.99	10.80	10.77	10.71

Annual Max Momentary Gage Height 15.65 M (MSL), at 1.00 Hours, on Oct 8, 1998
Zero Gage at Bottom Elevation 9.81 M (MSL), River Bed 9.00 M (MSL)
Left Bank Elevation 23.06 M (MSL)
Right Bank Elevation 21.88 M (MSL), Drainage Area 26449 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	77.80	355.20	63.30	255.20	135.00	51.20	199.80	40.80	76.40	89.00	68.50	35.35	
2	111.00	133.40	141.80	193.20	57.20	51.20	406.80	40.80	100.20	71.10	67.20	35.35	
3	183.00	91.80	191.00	130.20	56.00	51.20	311.00	96.00	83.40	69.80	79.20	35.35	
4	208.60	321.40	187.00	169.10	44.25	46.55	217.60	326.60	163.40	69.80	94.60	35.35	
5	183.00	298.00	217.60	128.60	38.50	34.30	84.80	193.20	109.40	94.60	69.80	51.20	
6	161.50	280.00	270.00	89.00	58.40	29.05	82.00	123.80	125.40	143.50	68.50	64.60	
7	75.00	153.90	185.00	77.80	84.80	29.05	719.80	84.80	84.80	157.70	68.50	59.60	
8	72.40	195.40	191.00	360.40	84.80	29.05	1052.00	84.80	117.40	112.60	83.40	41.95	
9	71.10	181.00	131.80	285.00	62.00	29.05	727.20	83.40	114.20	117.40	91.80	47.70	
10	89.00	219.90	238.40	145.20	36.40	29.05	545.40	83.40	112.60	84.80	90.40	72.40	
11	71.10	143.50	371.10	128.60	32.20	29.05	438.30	83.40	83.40	91.80	84.80	75.00	
12	76.40	173.00	363.00	111.00	32.20	29.05	459.00	83.40	107.80	97.40	68.50	69.80	
13	117.40	282.50	373.80	120.60	31.15	29.05	806.60	83.40	80.60	131.80	68.50	69.80	
14	53.60	183.00	265.00	173.00	33.25	29.05	687.50	83.40	73.70	136.70	69.80	71.10	
15	50.00	189.00	331.80	245.60	255.20	29.05	561.40	83.40	72.40	163.40	53.60	69.80	
16	50.00	243.20	233.70	208.60	167.20	32.20	401.20	86.20	72.40	117.40	38.50	68.50	
17	48.85	255.20	368.40	229.10	104.60	91.80	308.40	82.00	72.40	112.60	50.00	68.50	
18	152.00	94.60	360.40	177.00	69.80	150.30	316.20	72.40	72.40	72.40	50.00	68.50	
19	155.80	260.00	426.70	89.00	275.00	125.40	140.10	128.60	98.80	98.80	60.80	68.50	
20	181.00	224.50	420.90	76.40	219.90	84.80	287.60	136.70	87.60	91.80	69.80	83.40	
21	282.50	187.00	298.00	75.00	195.40	101.60	262.50	148.60	87.60	90.40	69.80	77.80	
22	357.80	199.80	187.00	100.20	185.00	163.40	213.00	94.60	87.60	71.10	71.10	36.40	
23	265.00	204.20	177.00	183.00	93.20	213.00	94.60	80.60	75.00	60.80	69.80	50.00	
24	290.20	107.80	337.00	163.40	80.60	236.00	64.60	79.20	72.40	60.80	69.80	86.20	
25	298.00	62.00	337.00	86.20	68.50	282.50	44.25	153.90	60.80	60.80	69.80	89.00	
26	352.60	224.50	292.80	69.80	187.00	326.60	43.10	131.80	51.20	60.80	69.80	84.80	
27	313.60	329.20	231.40	52.40	326.60	280.00	43.10	104.60	100.20	60.80	69.80	84.80	
28	324.00	308.40	150.30	50.00	255.20	236.00	41.95	58.40	72.40	60.80	54.80	68.50	
29	334.40	270.00	90.40	50.00	213.00	199.80	41.95	56.00	71.10	73.70		37.45	
30	350.00	181.00	87.60	145.20	136.70	257.60	40.80	56.00	69.80	86.20		37.45	
31		84.80		222.20	53.60		40.80		69.80	80.60		37.45	
Total	5356.65	6437.20	7520.20	4590.00	3672.65	3305.95	9683.35	3044.20	2726.60	2891.20	1940.90	1881.60	53050.50 CMSDAY
Mean	178.55	207.65	250.67	148.06	118.47	110.20	312.37	101.47	87.95	93.26	69.32	60.70	145.34 CMS
Max	357.80	355.20	426.70	360.40	326.60	326.60	1052.00	326.60	163.40	163.40	94.60	89.00	1052.00 CMS
Min	48.85	62.00	63.30	50.00	31.15	29.05	40.80	40.80	51.20	60.80	38.50	35.35	29.05 CMS
Runoff	462.815	556.174	649.745	396.576	317.317	285.634	836.641	263.019	235.578	249.800	167.694	162.570	4583.563 MCM

Momentary Peak 1612.50 CMS, at 15.65 M (MSL), at 1.00 Hours, on Oct 8, 1998
Runoff Yield 5.50 Liters/Second/Square KM, Momentary Peak Yield 60.966 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

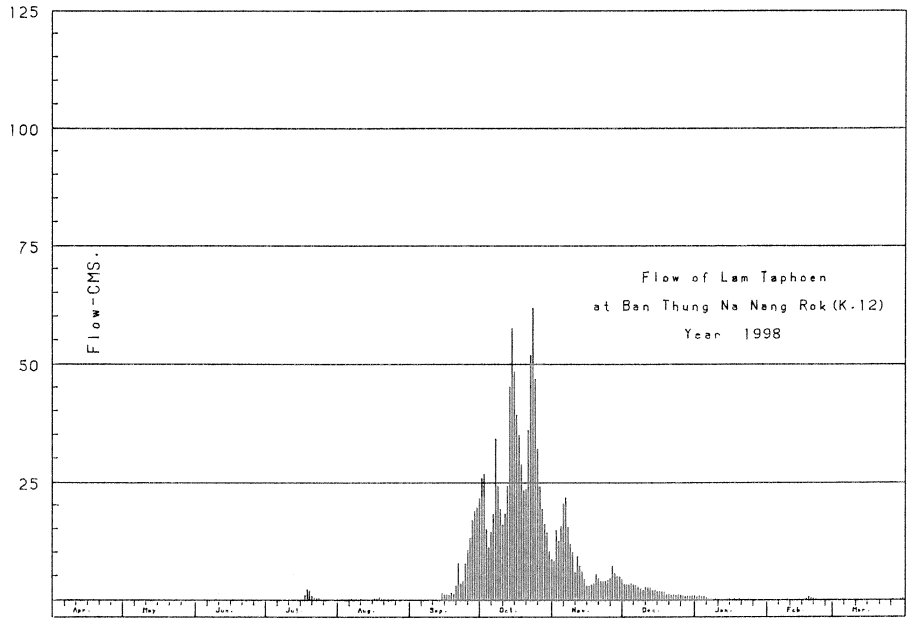
Lam Taphoen at Ban Thung Na Nang Rok, Kanchanaburi (K.12)

Location	Lat. 14°-09'-15" N., Long. 99°-25'-06" E., on left bank about 50 meters downstream from Wat Tung Na Nang Rok, Amphoe Muang, Kanchanaburi.
Drainage Area	2,340 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 6.00 meters from the top staff gage.
Elevation	+9.450 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1965 to date.
Rating Operation	
Period of Rating	1965 - 1968, 1995 to date.
Rated by Float	-
Rated by Current Meter	1965 - 1968, 1995 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 206 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.96	0.88	0.89	0.85	1.07	1.04	3.39	2.21	1.70	1.29	0.97	0.99	
2	0.99	0.89	0.90	0.85	1.06	0.90	3.43	2.74	1.68	1.30	0.97	0.99	
3	0.97	0.88	0.89	0.87	1.08	0.88	2.75	2.57	1.69	1.29	0.99	0.96	
4	0.95	0.88	0.88	0.89	1.07	0.88	2.47	2.79	1.71	1.28	1.01	0.96	
5	0.94	0.89	0.88	0.90	1.07	0.89	2.70	3.09	1.69	1.23	1.00	0.95	
6	0.95	0.89	0.88	0.87	1.08	0.88	2.95	3.16	1.66	1.15	0.99	0.94	
7	0.92	0.89	0.88	0.87	1.05	0.88	3.78	2.78	1.63	1.13	0.99	0.94	
8	0.92	0.90	0.88	0.87	1.06	0.88	3.30	2.51	1.56	1.09	1.03	0.94	
9	0.91	0.90	0.89	0.87	1.06	0.88	3.02	2.38	1.52	1.10	1.04	0.94	
10	0.90	0.93	0.88	0.88	1.10	0.88	2.82	1.98	1.61	1.07	0.98	0.94	
11	0.90	0.92	0.88	0.87	1.06	0.88	2.96	2.32	1.61	0.99	0.97	0.93	
12	0.90	0.88	0.87	0.86	1.03	0.88	3.30	2.11	1.59	0.96	0.96	0.93	
13	0.89	1.01	0.87	0.86	0.98	0.86	4.19	2.00	1.53	1.01	0.97	0.93	
14	0.91	0.97	0.87	0.85	0.98	1.43	4.55	1.82	1.51	1.13	1.04	0.91	
15	0.91	0.89	0.88	0.86	1.05	1.40	4.29	1.66	1.50	1.07	1.06	0.90	
16	0.91	0.88	0.87	0.94	1.10	1.37	3.98	1.64	1.48	1.07	1.05	0.90	
17	0.92	0.88	0.86	1.39	1.16	1.38	3.81	1.69	1.48	1.09	1.09	0.91	
18	0.93	0.89	0.85	1.56	1.21	1.44	3.53	1.71	1.46	1.12	1.28	0.89	
19	0.92	0.89	0.85	1.51	1.16	1.42	3.25	1.94	1.40	1.11	1.17	0.89	
20	0.91	0.89	0.87	1.33	1.07	1.66	3.26	1.84	1.40	1.08	1.17	0.89	
21	0.90	0.88	0.86	1.22	1.02	2.17	3.85	1.78	1.38	1.05	1.15	0.89	
22	0.91	0.89	0.87	1.17	1.09	1.71	4.40	1.76	1.38	1.05	1.05	0.89	
23	0.89	0.89	0.86	1.14	1.06	1.77	4.66	1.79	1.37	1.07	1.02	0.89	
24	0.89	0.88	0.86	1.08	1.05	2.17	4.24	1.79	1.38	1.06	1.02	0.91	
25	0.89	0.88	0.86	1.03	1.04	2.41	3.69	1.85	1.38	1.03	0.97	1.04	
26	0.90	0.88	0.84	1.02	1.00	2.61	3.30	2.11	1.31	0.99	0.98	1.05	
27	0.88	0.89	0.85	1.01	0.99	2.88	3.02	1.96	1.29	0.99	0.99	1.02	
28	0.89	0.89	0.85	1.00	0.94	2.99	2.83	1.88	1.30	0.98	0.98	1.08	
29	0.89	0.89	0.86	1.01	0.90	3.04	2.69	1.89	1.32	0.95		1.14	
30	0.88	0.88	0.86	1.01	0.87	3.15	2.39	1.82	1.30	0.96		1.15	
31		0.88		1.07	0.97		2.26		1.31	0.98		1.09	
Mean	0.91	0.90	0.87	1.02	1.05	1.55	3.39	2.12	1.49	1.09	1.03	0.96	
Max	0.99	1.01	0.90	1.56	1.21	3.15	4.66	3.16	1.71	1.30	1.28	1.15	4.66
Min	0.88	0.88	0.84	0.85	0.87	0.86	2.26	1.64	1.29	0.95	0.96	0.89	0.84

Annual Max Momentary Gage Height 4.80 M (A.D), at 23.00 Hours, on Oct 1, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.00 M (A.D)
Left Bank Elevation 6.09 M (A.D)
Right Bank Elevation 6.11 M (A.D), Drainage Area 2340 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.16	0.08	0.09	0.05	0.34	0.28	26.01	8.30	3.50	0.91	0.17	0.19	
2	0.19	0.09	0.10	0.05	0.32	0.10	26.80	15.06	3.34	0.95	0.17	0.19	
3	0.17	0.08	0.09	0.07	0.36	0.08	15.20	12.71	3.42	0.91	0.19	0.16	
4	0.15	0.08	0.08	0.09	0.34	0.08	11.41	15.76	3.58	0.88	0.22	0.16	
5	0.14	0.09	0.08	0.10	0.34	0.09	14.50	20.63	3.42	0.71	0.20	0.15	
6	0.15	0.09	0.08	0.07	0.36	0.08	18.30	21.82	3.18	0.50	0.19	0.14	
7	0.12	0.09	0.08	0.07	0.30	0.08	34.42	15.62	2.94	0.46	0.19	0.14	
8	0.12	0.10	0.08	0.07	0.32	0.08	24.30	11.93	2.42	0.38	0.26	0.14	
9	0.11	0.10	0.09	0.07	0.32	0.08	19.44	10.24	2.14	0.40	0.28	0.14	
10	0.10	0.13	0.08	0.08	0.40	0.08	16.22	6.00	2.78	0.34	0.18	0.14	
11	0.10	0.12	0.08	0.07	0.32	0.08	18.46	9.46	2.78	0.19	0.17	0.13	
12	0.10	0.08	0.07	0.06	0.26	0.08	24.30	7.30	2.63	0.16	0.16	0.13	
13	0.09	0.22	0.07	0.06	0.18	0.06	45.41	6.20	2.21	0.22	0.17	0.13	
14	0.11	0.17	0.07	0.05	0.18	1.51	57.65	4.48	2.07	0.46	0.28	0.11	
15	0.11	0.09	0.08	0.06	0.30	1.30	48.49	3.18	2.00	0.34	0.32	0.10	
16	0.11	0.08	0.07	0.14	0.40	1.20	39.38	3.02	1.86	0.34	0.30	0.10	
17	0.12	0.08	0.06	1.26	0.52	1.23	35.14	3.42	1.86	0.38	0.38	0.11	
18	0.13	0.09	0.05	2.42	0.64	1.58	28.80	3.58	1.72	0.44	0.88	0.09	
19	0.12	0.09	0.05	2.07	0.52	1.44	23.40	5.60	1.30	0.42	0.54	0.09	
20	0.11	0.09	0.07	1.06	0.34	3.18	23.58	4.66	1.30	0.36	0.54	0.09	
21	0.10	0.08	0.06	0.67	0.24	7.90	36.10	4.14	1.23	0.30	0.50	0.09	
22	0.11	0.09	0.07	0.54	0.38	3.58	52.10	3.98	1.23	0.30	0.30	0.09	
23	0.09	0.09	0.06	0.48	0.32	4.06	62.06	4.22	1.20	0.34	0.24	0.09	
24	0.09	0.08	0.06	0.36	0.30	7.90	46.94	4.22	1.23	0.32	0.24	0.11	
25	0.09	0.08	0.06	0.26	0.28	10.63	32.27	4.75	1.23	0.26	0.17	0.28	
26	0.10	0.08	0.04	0.24	0.20	13.24	24.30	7.30	0.98	0.19	0.18	0.30	
27	0.08	0.09	0.05	0.22	0.19	17.18	19.44	5.80	0.91	0.19	0.19	0.24	
28	0.09	0.09	0.05	0.20	0.14	18.94	16.38	5.02	0.95	0.18	0.18	0.36	
29	0.09	0.09	0.06	0.22	0.10	19.78	14.36	5.11	1.02	0.15		0.48	
30	0.08	0.08	0.06	0.22	0.07	21.65	10.37	4.48	0.95	0.16		0.50	
31		0.08		0.34	0.17		8.80		0.98	0.18		0.38	
Total	3.43	2.97	2.09	11.72	9.45	137.55	874.33	237.99	62.36	12.32	7.79	5.55	1367.55 CMSDAY
Mean	0.11	0.10	0.07	0.38	0.30	4.59	28.20	7.93	2.01	0.40	0.28	0.18	3.75 CMS
Max	0.19	0.22	0.10	2.42	0.64	21.65	62.06	21.82	3.58	0.95	0.88	0.50	62.06 CMS
Min	0.08	0.08	0.04	0.05	0.07	0.06	8.80	3.02	0.91	0.15	0.16	0.09	0.04 CMS
Runoff	0.296	0.257	0.181	1.013	0.816	11.884	75.542	20.562	5.388	1.064	0.673	0.480	118.156 MCM

Momentary Peak 68.00 CMS, at 4.80 M (A.D), at 23.00 Hours, on Oct 1, 1998

Runoff Yield 1.60 Liters/Second/Square KM, Momentary Peak Yield 29.060 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

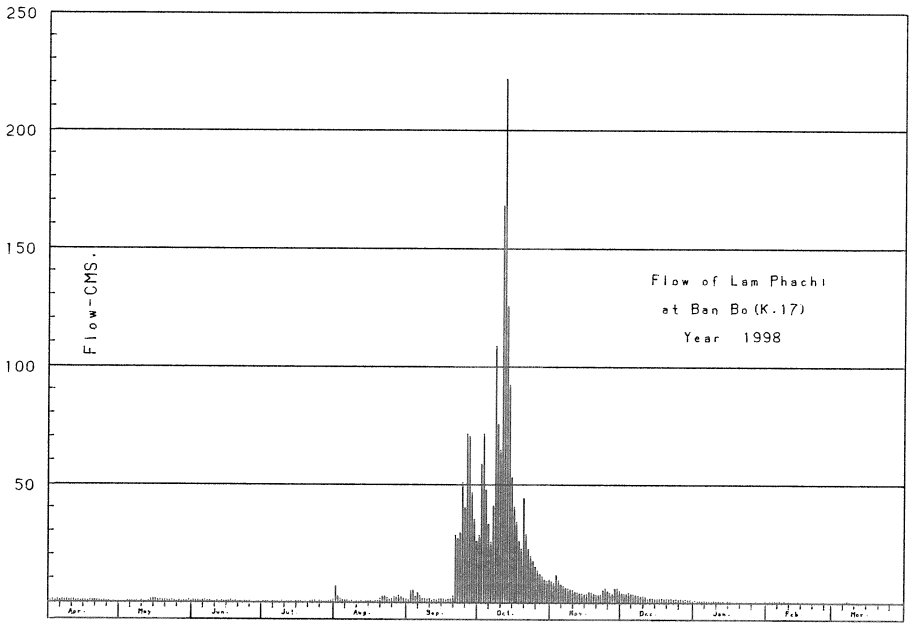
Lam Phachi at Ban Bo Khem, Ratchaburi (K.17)

Location	Lat. 13°-32'-41" N., Long. 99°-21'-22" E., on left bank opposite to the 'Sai Ngam' frontier police station, Amphoe Suan Phung, Ratchaburi.
Drainage Area	1,355 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+97.46 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Along the measuring line.
Elevation	+109.256 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1966 to date.
Rating Operation	
Period of Rating	1966 - 1988, 1993 to date.
Rated by Float	-
Rated by Current Meter	1966 - 1988, 1993 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 224 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	97.91	97.85	97.91	97.84	98.18	97.95	98.63	98.23	98.09	97.92	97.83	97.76	
2	97.93	97.80	97.93	97.89	98.04	98.12	99.07	98.21	98.08	97.91	97.85	97.82	
3	97.92	97.80	97.91	97.85	97.99	98.13	99.22	98.30	98.08	97.90	97.89	97.77	
4	97.93	97.87	97.90	97.84	97.95	98.04	98.93	98.24	98.10	97.91	97.87	97.75	
5	97.93	97.87	97.91	97.89	97.93	98.10	98.71	98.20	98.08	97.91	97.88	97.82	
6	97.94	97.83	97.93	97.86	97.91	98.04	98.58	98.18	98.07	97.91	97.89	97.83	
7	97.94	97.86	97.92	97.85	97.89	98.00	98.83	98.16	98.06	97.89	97.86	97.87	
8	97.93	97.84	97.88	97.85	97.89	97.98	99.59	98.15	98.05	97.90	97.86	97.85	
9	97.92	97.86	97.85	97.89	97.88	97.98	99.27	98.14	98.04	97.91	97.86	97.79	
10	97.93	97.90	97.88	97.84	97.86	97.97	99.14	98.13	98.04	97.89	97.87	97.80	
11	97.95	97.88	97.90	97.81	97.89	97.94	100.06	98.11	98.03	97.87	97.86	97.79	
12	97.91	97.84	97.86	97.88	97.90	97.95	100.40	98.10	97.97	97.89	97.81	97.76	
13	97.90	97.90	97.89	97.86	97.88	97.95	99.73	98.09	98.01	97.86	97.85	97.78	
14	97.91	97.95	97.90	97.84	97.86	97.97	99.44	98.08	98.00	97.86	97.85	97.76	
15	97.89	97.99	97.87	97.90	97.88	97.98	99.00	98.07	97.99	97.87	97.81	97.74	
16	97.91	97.96	97.91	97.91	97.88	97.96	98.82	98.07	97.99	97.90	97.83	97.72	
17	97.90	97.94	97.92	97.86	97.89	97.95	98.72	98.11	97.99	97.85	97.85	97.79	
18	97.92	97.93	97.90	97.85	97.88	97.96	98.59	98.10	97.99	97.83	97.83	97.82	
19	97.93	97.94	97.87	97.88	97.92	97.98	98.53	98.08	97.99	97.84	97.82	97.75	
20	97.92	97.91	97.86	97.83	97.99	98.04	98.88	98.06	97.99	97.86	97.82	97.71	
21	97.90	97.92	97.87	97.85	98.04	98.63	98.64	98.06	97.99	97.86	97.81	97.70	
22	97.90	97.92	97.85	97.92	98.04	98.61	98.53	98.06	97.99	97.81	97.83	97.77	
23	97.90	97.92	97.85	97.90	98.01	98.65	98.47	98.13	97.98	97.82	97.77	97.76	
24	97.88	97.90	97.88	97.87	97.97	98.97	98.43	98.15	97.97	97.85	97.84	97.73	
25	97.89	97.88	97.87	97.89	97.97	98.82	98.38	98.12	97.97	97.82	97.84	97.77	
26	97.89	97.89	97.81	97.90	98.03	99.22	98.34	98.09	97.96	97.80	97.77	97.79	
27	97.83	97.89	97.78	97.84	98.02	99.21	98.31	98.08	97.96	97.85	97.75	97.74	
28	97.83	97.89	97.85	97.87	98.05	98.91	98.28	98.15	97.96	97.84	97.74	97.76	
29	97.84	97.90	97.81	97.87	98.03	98.74	98.25	98.15	97.95	97.80		97.80	
30	97.86	97.92	97.79	97.92	97.99	98.59	98.23	98.12	97.94	97.84		97.78	
31		97.91		97.95	97.96		98.25		97.91	97.87		97.82	
Mean	97.90	97.89	97.88	97.87	97.95	98.28	98.85	98.13	98.01	97.87	97.83	97.78	
Max	97.95	97.99	97.93	97.95	98.18	99.22	100.40	98.30	98.10	97.92	97.89	97.87	100.40
Min	97.83	97.80	97.78	97.81	97.86	97.94	98.23	98.06	97.91	97.80	97.74	97.70	97.70

Annual Max Momentary Gage Height 101.05 M (MSL), at 20.00 Hours, on Oct 11, 1998
Zero Gage at Bottom Elevation 97.46 M (MSL), River Bed 97.39 M (MSL)
Left Bank Elevation 103.57 M (MSL)
Right Bank Elevation 102.30 M (MSL), Drainage Area 1355 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.10	0.75	1.10	0.70	7.30	1.50	28.80	9.20	4.25	1.20	0.65	0.30	
2	1.30	0.50	1.30	0.95	3.00	5.20	59.10	8.40	4.00	1.10	0.75	0.60	
3	1.20	0.50	1.10	0.75	1.90	5.55	71.70	12.00	4.00	1.00	0.95	0.35	
4	1.30	0.85	1.00	0.70	1.50	3.00	48.25	9.60	4.50	1.10	0.85	0.25	
5	1.30	0.85	1.10	0.95	1.30	4.50	33.65	8.00	4.00	1.10	0.90	0.60	
6	1.40	0.65	1.30	0.80	1.10	3.00	25.90	7.30	3.75	1.10	0.95	0.65	
7	1.40	0.80	1.20	0.75	0.95	2.00	41.45	6.60	3.50	0.95	0.80	0.85	
8	1.30	0.70	0.90	0.75	0.95	1.80	108.85	6.25	3.25	1.00	0.80	0.75	
9	1.20	0.80	0.75	0.95	0.90	1.80	75.95	5.90	3.00	1.10	0.80	0.45	
10	1.30	1.00	0.90	0.70	0.80	1.70	64.90	5.55	3.00	0.95	0.85	0.50	
11	1.50	0.90	1.00	0.55	0.95	1.40	168.40	4.85	2.75	0.85	0.80	0.45	
12	1.10	0.70	0.80	0.90	1.00	1.50	222.00	4.50	1.70	0.95	0.55	0.30	
13	1.00	1.00	0.95	0.80	0.90	1.50	125.75	4.25	2.25	0.80	0.75	0.40	
14	1.10	1.50	1.00	0.70	0.80	1.70	92.50	4.00	2.00	0.80	0.75	0.30	
15	0.95	1.90	0.85	1.00	0.90	1.80	53.50	3.75	1.90	0.85	0.55	0.20	
16	1.10	1.60	1.10	1.10	0.90	1.60	40.80	3.75	1.90	1.00	0.65	0.10	
17	1.00	1.40	1.20	0.80	0.95	1.50	34.30	4.85	1.90	0.75	0.75	0.45	
18	1.20	1.30	1.00	0.75	0.90	1.60	26.45	4.50	1.90	0.65	0.65	0.60	
19	1.30	1.40	0.85	0.90	1.20	1.80	23.15	4.00	1.90	0.70	0.60	0.25	
20	1.20	1.10	0.80	0.65	1.90	3.00	44.70	3.50	1.90	0.80	0.60	0.05	
21	1.00	1.20	0.85	0.75	3.00	28.80	29.40	3.50	1.90	0.80	0.55	0.00	
22	1.00	1.20	0.75	1.20	3.00	27.60	23.15	3.50	1.90	0.55	0.65	0.35	
23	1.00	1.20	0.75	1.00	2.25	30.00	20.00	5.55	1.80	0.60	0.35	0.30	
24	0.90	1.00	0.90	0.85	1.70	51.25	18.00	6.25	1.70	0.75	0.70	0.15	
25	0.95	0.90	0.85	0.95	1.70	40.80	15.60	5.20	1.70	0.60	0.70	0.35	
26	0.95	0.95	0.55	1.00	2.75	71.70	13.80	4.25	1.60	0.50	0.35	0.45	
27	0.65	0.95	0.40	0.70	2.50	70.85	12.45	4.00	1.60	0.75	0.25	0.20	
28	0.65	0.95	0.75	0.85	3.25	46.75	11.20	6.25	1.60	0.70	0.20	0.30	
29	0.70	1.00	0.55	0.85	2.75	35.60	10.00	6.25	1.50	0.50		0.50	
30	0.80	1.20	0.45	1.20	1.90	26.45	9.20	5.20	1.40	0.70		0.40	
31		1.10		1.50	1.60		10.00		1.10	0.85		0.60	
Total	32.85	31.85	27.00	27.00	56.50	477.25	1562.90	170.70	75.15	26.05	18.70	12.00	2517.95 CMSDAY
Mean	1.10	1.03	0.90	0.87	1.82	15.91	50.42	5.69	2.42	0.84	0.67	0.39	6.90 CMS
Max	1.50	1.90	1.30	1.50	7.30	71.70	222.00	12.00	4.50	1.20	0.95	0.85	222.00 CMS
Min	0.65	0.50	0.40	0.55	0.80	1.40	9.20	3.50	1.10	0.50	0.20	0.00	0.00 CMS
Runoff	2.838	2.752	2.333	2.333	4.882	41.234	135.035	14.748	6.493	2.251	1.616	1.037	217.551 MCM

Momentary Peak 345.00 CMS, at 101.05 M (MSL), at 20.00 Hours, on Oct 11, 1998

Runoff Yield 5.09 Liters/Second/Square KM, Momentary Peak Yield 254.613 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

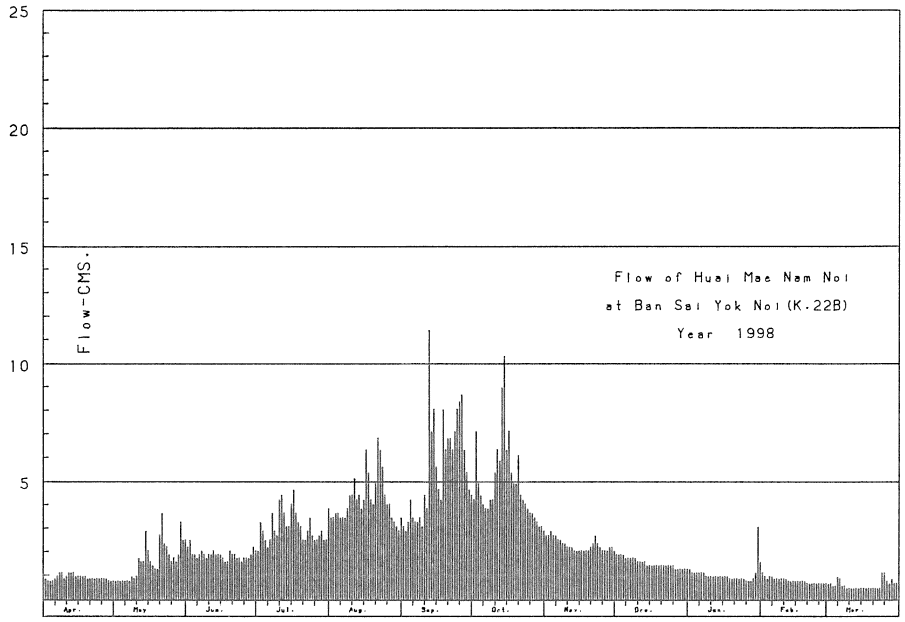
Huai Mae Nam Noi at Ban Sai Yok Noi, Kanchanaburi (K.22B)

Location	Lat. 14°-26'-59" N., Long. 98°-48'-08" E., on right bank about 640 meters upstream from station K.22A, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	320 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+67.00 m.(M.S.L)
Bench Mark	B.M.-H.D.
Location	On right bank about 10 meters from the top staff gage.
Elevation	+73.578 m.(M.S.L)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1989 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 72 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	68.49	68.48	68.58	68.57	68.65	68.63	68.69	68.61	68.56	68.52	68.51	68.47	
2	68.48	68.48	68.60	68.64	68.65	68.62	68.81	68.61	68.56	68.51	68.50	68.47	
3	68.48	68.48	68.56	68.62	68.66	68.64	68.72	68.62	68.56	68.51	68.49	68.46	
4	68.48	68.48	68.56	68.60	68.66	68.69	68.70	68.61	68.56	68.51	68.50	68.46	
5	68.49	68.48	68.55	68.58	68.65	68.65	68.68	68.61	68.55	68.51	68.50	68.50	
6	68.50	68.48	68.56	68.60	68.65	68.64	68.67	68.60	68.55	68.51	68.49	68.49	
7	68.51	68.48	68.57	68.66	68.65	68.64	68.67	68.60	68.55	68.51	68.49	68.46	
8	68.51	68.50	68.56	68.62	68.67	68.65	68.69	68.59	68.55	68.50	68.49	68.46	
9	68.49	68.49	68.55	68.61	68.70	68.63	68.69	68.59	68.55	68.50	68.49	68.45	
10	68.50	68.50	68.56	68.69	68.70	68.70	68.74	68.58	68.54	68.50	68.49	68.45	
11	68.51	68.55	68.56	68.70	68.73	68.67	68.78	68.58	68.54	68.50	68.49	68.45	
12	68.51	68.54	68.57	68.66	68.69	68.94	68.76	68.58	68.54	68.50	68.48	68.45	
13	68.51	68.54	68.56	68.63	68.70	68.81	68.87	68.57	68.54	68.50	68.48	68.45	
14	68.50	68.62	68.56	68.63	68.67	68.84	68.91	68.57	68.53	68.50	68.48	68.45	
15	68.50	68.57	68.56	68.68	68.69	68.75	68.78	68.57	68.53	68.50	68.48	68.45	
16	68.50	68.54	68.55	68.71	68.78	68.71	68.81	68.57	68.53	68.50	68.48	68.45	
17	68.50	68.53	68.54	68.66	68.74	68.69	68.74	68.57	68.53	68.50	68.48	68.45	
18	68.50	68.52	68.54	68.64	68.69	68.84	68.72	68.57	68.53	68.49	68.48	68.45	
19	68.49	68.52	68.57	68.63	68.68	68.78	68.72	68.57	68.53	68.49	68.48	68.45	
20	68.49	68.61	68.56	68.60	68.72	68.80	68.77	68.58	68.53	68.49	68.47	68.45	
21	68.49	68.66	68.56	68.60	68.80	68.80	68.70	68.59	68.53	68.49	68.47	68.45	
22	68.49	68.59	68.55	68.62	68.78	68.78	68.69	68.61	68.53	68.49	68.47	68.45	
23	68.49	68.58	68.55	68.65	68.75	68.81	68.68	68.59	68.53	68.49	68.47	68.45	
24	68.49	68.56	68.54	68.61	68.70	68.84	68.67	68.58	68.53	68.49	68.47	68.51	
25	68.49	68.54	68.55	68.60	68.68	68.85	68.66	68.57	68.53	68.48	68.47	68.51	
26	68.49	68.55	68.55	68.60	68.68	68.86	68.66	68.57	68.52	68.48	68.47	68.48	
27	68.49	68.54	68.55	68.61	68.65	68.78	68.65	68.57	68.52	68.48	68.47	68.47	
28	68.48	68.56	68.56	68.62	68.64	68.74	68.64	68.58	68.52	68.49	68.47	68.49	
29	68.48	68.64	68.58	68.60	68.63	68.71	68.63	68.58	68.52	68.51		68.47	
30	68.48	68.60	68.57	68.60	68.62	68.70	68.63	68.57	68.52	68.63		68.47	
31		68.60		68.67	68.65		68.62		68.52	68.54		68.46	
Mean	68.49	68.54	68.56	68.63	68.69	68.74	68.71	68.59	68.54	68.50	68.48	68.46	
Max	68.51	68.66	68.60	68.71	68.80	68.94	68.91	68.62	68.56	68.63	68.51	68.51	68.94
Min	68.48	68.48	68.54	68.57	68.62	68.62	68.62	68.57	68.52	68.48	68.47	68.45	68.45

Annual Max Momentary Gage Height 69.01 M (MSL), at 12.00 Hours, on Sep 12, 1998
Zero Gage at Bottom Elevation 67.00 M (MSL), River Bed 67.35 M (MSL)
Left Bank Elevation 75.93 M (MSL)
Right Bank Elevation 73.49 M (MSL), Drainage Area 320 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.90	0.80	2.24	2.09	3.50	3.12	4.26	2.74	1.93	1.31	1.16	0.70	
2	0.80	0.80	2.55	3.31	3.50	2.93	7.16	2.74	1.93	1.16	1.00	0.70	
3	0.80	0.80	1.93	2.93	3.69	3.31	4.93	2.93	1.93	1.16	0.90	0.60	
4	0.80	0.80	1.93	2.55	3.69	4.26	4.45	2.74	1.93	1.16	1.00	0.60	
5	0.90	0.80	1.78	2.24	3.50	3.50	4.07	2.74	1.78	1.16	1.00	1.00	
6	1.00	0.80	1.93	2.55	3.50	3.31	3.88	2.55	1.78	1.16	0.90	0.90	
7	1.16	0.80	2.09	3.69	3.50	3.31	3.88	2.55	1.78	1.16	0.90	0.60	
8	1.16	1.00	1.93	2.93	3.88	3.50	4.26	2.39	1.78	1.00	0.90	0.60	
9	0.90	0.90	1.78	2.74	4.45	3.12	4.26	2.39	1.78	1.00	0.90	0.50	
10	1.00	1.00	1.93	4.26	4.45	4.45	5.41	2.24	1.62	1.00	0.90	0.50	
11	1.16	1.78	1.93	4.45	5.17	3.88	6.37	2.24	1.62	1.00	0.90	0.50	
12	1.16	1.62	2.09	3.69	4.26	11.47	5.89	2.24	1.62	1.00	0.80	0.50	
13	1.16	1.62	1.93	3.12	4.45	7.16	9.02	2.09	1.62	1.00	0.80	0.50	
14	1.00	2.93	1.93	3.12	3.88	8.09	10.33	2.09	1.46	1.00	0.80	0.50	
15	1.00	2.09	1.93	4.07	4.26	5.65	6.37	2.09	1.46	1.00	0.80	0.50	
16	1.00	1.62	1.78	4.69	6.37	4.69	7.16	2.09	1.46	1.00	0.80	0.50	
17	1.00	1.46	1.62	3.69	5.41	4.26	5.41	2.09	1.46	1.00	0.80	0.50	
18	1.00	1.31	1.62	3.31	4.26	8.09	4.93	2.09	1.46	0.90	0.80	0.50	
19	0.90	1.31	2.09	3.12	4.07	6.37	4.93	2.09	1.46	0.90	0.80	0.50	
20	0.90	2.74	1.93	2.55	4.93	6.85	6.13	2.24	1.46	0.90	0.70	0.50	
21	0.90	3.69	1.93	2.55	6.85	6.85	4.45	2.39	1.46	0.90	0.70	0.50	
22	0.90	2.39	1.78	2.93	6.37	6.37	4.26	2.74	1.46	0.90	0.70	0.50	
23	0.90	2.24	1.78	3.50	5.65	7.16	4.07	2.39	1.46	0.90	0.70	0.50	
24	0.90	1.93	1.62	2.74	4.45	8.09	3.88	2.24	1.46	0.90	0.70	1.16	
25	0.90	1.62	1.78	2.55	4.07	8.40	3.69	2.09	1.46	0.80	0.70	1.16	
26	0.90	1.78	1.78	2.55	4.07	8.71	3.69	2.09	1.31	0.80	0.70	0.80	
27	0.90	1.62	1.78	2.74	3.50	6.37	3.50	2.09	1.31	0.80	0.70	0.70	
28	0.80	1.93	1.93	2.93	3.31	5.41	3.31	2.24	1.31	0.90	0.70	0.90	
29	0.80	3.31	2.24	2.55	3.12	4.69	3.12	2.24	1.31	1.16		0.70	
30	0.80	2.55	2.09	2.55	2.93	4.45	3.12	2.09	1.31	3.12		0.70	
31		2.55		3.88	3.50		2.93		1.31	1.62		0.60	
Total	28.40	52.59	57.65	96.57	132.54	167.82	153.12	69.96	48.48	33.77	23.16	19.92	883.98 CMSDAY
Mean	0.95	1.70	1.92	3.12	4.28	5.59	4.94	2.33	1.56	1.09	0.83	0.64	2.42 CMS
Max	1.16	3.69	2.55	4.69	6.85	11.47	10.33	2.93	1.93	3.12	1.16	1.16	11.47 CMS
Min	0.80	0.80	1.62	2.09	2.93	2.93	2.93	2.09	1.31	0.80	0.70	0.50	0.50 CMS
Runoff	2.454	4.544	4.981	8.344	11.451	14.500	13.230	6.045	4.189	2.918	2.001	1.721	76.376 MCM

Momentary Peak 14.20 CMS, at 69.01 M (MSL), at 12.00 Hours, on Sep 12, 1998

Runoff Yield 7.57 Liters/Second/Square KM, Momentary Peak Yield 44.375 Liters/Second/Square KM

WATER YEAR 1998

MAE KHLONG RIVER BASIN

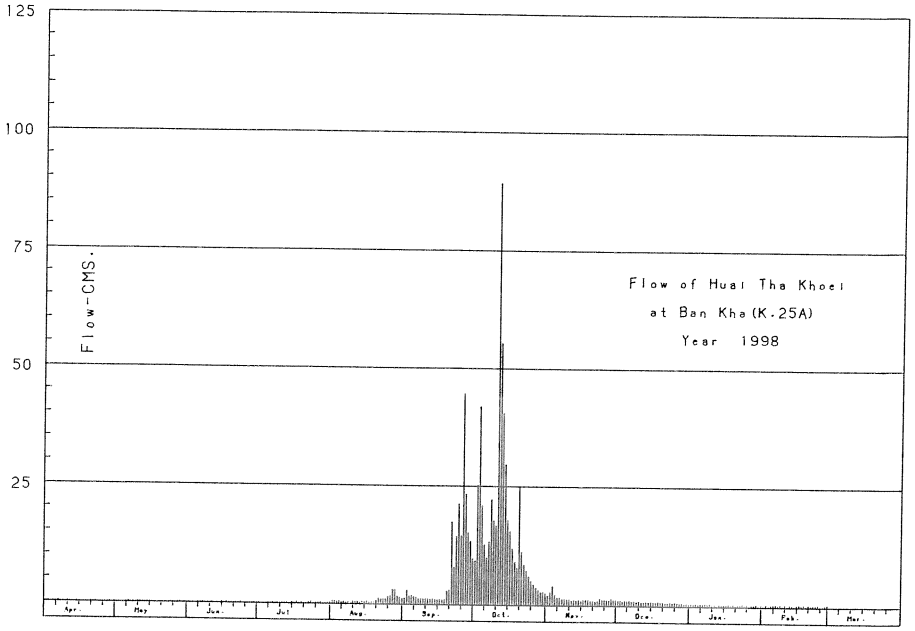
Huai Tha Khoei at Ban Kha, Ratchaburi (K.25A)

Location	Lat. 13°-24'-07" N., Long. 99°-25'-14" E., on right bank about 8 kilometers upstream from station K.25, Amphoe Suan Phung, Ratchaburi.
Drainage Area	250 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 1 meter from the top staff gage.
Elevation	+6.962 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1994 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 52 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.38	0.38	0.39	0.38	0.55	0.77	1.42	0.94	0.73	0.51	0.46	0.46	
2	0.38	0.38	0.39	0.39	0.51	1.03	1.95	1.00	0.72	0.51	0.46	0.46	
3	0.38	0.38	0.38	0.39	0.50	0.90	2.32	1.12	0.71	0.51	0.46	0.46	
4	0.38	0.38	0.38	0.39	0.49	0.91	1.83	0.95	0.70	0.52	0.46	0.46	
5	0.38	0.38	0.38	0.38	0.48	0.89	1.56	0.90	0.70	0.52	0.46	0.46	
6	0.38	0.38	0.39	0.38	0.48	0.83	1.44	0.86	0.69	0.50	0.46	0.46	
7	0.38	0.38	0.39	0.38	0.48	0.79	1.58	0.83	0.68	0.51	0.46	0.46	
8	0.38	0.38	0.39	0.38	0.48	0.76	1.87	0.82	0.66	0.50	0.46	0.46	
9	0.38	0.38	0.39	0.39	0.48	0.78	1.74	0.81	0.65	0.49	0.46	0.46	
10	0.39	0.38	0.38	0.39	0.49	0.75	1.70	0.79	0.64	0.47	0.46	0.46	
11	0.39	0.38	0.38	0.38	0.49	0.72	2.99	0.76	0.63	0.47	0.46	0.46	
12	0.38	0.38	0.39	0.38	0.49	0.72	2.55	0.75	0.63	0.47	0.46	0.46	
13	0.38	0.38	0.40	0.38	0.48	0.73	2.29	0.73	0.62	0.47	0.46	0.46	
14	0.38	0.39	0.40	0.38	0.49	0.73	2.06	0.72	0.61	0.47	0.46	0.46	
15	0.38	0.38	0.41	0.41	0.49	0.70	1.74	0.71	0.61	0.47	0.46	0.46	
16	0.38	0.38	0.39	0.40	0.49	0.68	1.66	0.76	0.60	0.47	0.46	0.46	
17	0.38	0.38	0.39	0.45	0.48	0.68	1.53	0.78	0.60	0.47	0.46	0.46	
18	0.38	0.40	0.38	0.42	0.48	0.68	1.41	0.74	0.60	0.48	0.46	0.46	
19	0.38	0.40	0.38	0.41	0.50	1.02	1.34	0.69	0.60	0.47	0.46	0.46	
20	0.38	0.40	0.38	0.40	0.56	1.03	1.94	0.65	0.59	0.46	0.46	0.46	
21	0.38	0.40	0.38	0.39	0.80	1.73	1.50	0.66	0.59	0.47	0.46	0.46	
22	0.39	0.39	0.38	0.44	0.74	1.35	1.38	0.71	0.58	0.47	0.46	0.46	
23	0.38	0.39	0.38	0.48	0.69	1.62	1.31	0.83	0.58	0.46	0.46	0.46	
24	0.38	0.39	0.38	0.44	0.74	1.84	1.25	0.79	0.57	0.46	0.46	0.46	
25	0.38	0.39	0.37	0.43	0.85	1.63	1.18	0.75	0.57	0.46	0.46	0.46	
26	0.38	0.39	0.37	0.42	0.89	2.37	1.14	0.72	0.56	0.46	0.46	0.46	
27	0.38	0.40	0.37	0.42	1.04	1.90	1.09	0.72	0.55	0.46	0.46	0.46	
28	0.38	0.39	0.37	0.41	1.03	1.65	1.04	0.84	0.54	0.46	0.46	0.46	
29	0.38	0.39	0.38	0.40	0.88	1.59	1.01	0.78	0.52	0.47		0.46	
30	0.38	0.39	0.38	0.41	0.83	1.43	1.00	0.75	0.52	0.47		0.46	
31		0.38		0.49	0.79		0.98		0.52	0.47		0.46	
Mean	0.38	0.39	0.38	0.41	0.62	1.11	1.61	0.80	0.62	0.48	0.46	0.46	
Max	0.39	0.40	0.41	0.49	1.04	2.37	2.99	1.12	0.73	0.52	0.46	0.46	2.99
Min	0.38	0.38	0.37	0.38	0.48	0.68	0.98	0.65	0.52	0.46	0.46	0.46	0.37

Annual Max Momentary Gage Height 3.31 M (AD), at 6.00 Hours, on Oct 11, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 200.85 M (AD)
Left Bank Elevation 6.87 M (AD)
Right Bank Elevation 6.87 M (AD), Drainage Area 250 Square Kilometers



Discharge in Cubic Meter per Second , Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual	
1	0.20	0.20	0.23	0.20	0.63	1.18	9.44	2.13	1.08	0.53	0.40	0.40		
2	0.20	0.20	0.23	0.23	0.53	3.03	25.40	2.70	1.05	0.53	0.40	0.40		
3	0.20	0.20	0.20	0.23	0.50	1.75	42.04	4.09	1.03	0.53	0.40	0.40		
4	0.20	0.20	0.20	0.23	0.48	1.85	20.91	2.23	1.00	0.55	0.40	0.40		
5	0.20	0.20	0.20	0.20	0.45	1.70	12.76	1.75	1.00	0.55	0.40	0.40		
6	0.20	0.20	0.23	0.20	0.45	1.40	9.88	1.55	0.98	0.50	0.40	0.40		
7	0.20	0.20	0.23	0.20	0.45	1.23	13.28	1.40	0.95	0.53	0.40	0.40		
8	0.20	0.20	0.23	0.20	0.45	1.15	22.39	1.35	0.90	0.50	0.40	0.40		
9	0.20	0.20	0.23	0.23	0.45	1.20	17.94	1.30	0.88	0.48	0.40	0.40		
10	0.23	0.20	0.20	0.23	0.48	1.13	16.70	1.23	0.85	0.43	0.40	0.40		
11	0.23	0.20	0.20	0.20	0.48	1.05	89.33	1.15	0.83	0.43	0.40	0.40		
12	0.20	0.20	0.23	0.20	0.48	1.05	55.35	1.13	0.83	0.43	0.40	0.40		
13	0.20	0.20	0.25	0.20	0.45	1.08	40.50	1.08	0.80	0.43	0.40	0.40		
14	0.20	0.23	0.25	0.20	0.48	1.08	29.76	1.05	0.78	0.43	0.40	0.40		
15	0.20	0.20	0.28	0.28	0.48	1.00	17.94	1.03	0.78	0.43	0.40	0.40		
16	0.20	0.20	0.23	0.25	0.48	0.95	15.54	1.15	0.75	0.43	0.40	0.40		
17	0.20	0.20	0.23	0.38	0.45	0.95	11.98	1.20	0.75	0.43	0.40	0.40		
18	0.20	0.25	0.20	0.30	0.45	0.95	9.22	1.10	0.75	0.45	0.40	0.40		
19	0.20	0.25	0.20	0.28	0.50	2.92	7.80	0.98	0.75	0.43	0.40	0.40		
20	0.20	0.25	0.20	0.25	0.65	3.03	25.02	0.88	0.73	0.40	0.40	0.40		
21	0.20	0.25	0.20	0.23	1.25	17.63	11.20	0.90	0.73	0.43	0.40	0.40		
22	0.23	0.23	0.20	0.35	1.10	8.00	8.60	1.03	0.70	0.43	0.40	0.40		
23	0.20	0.23	0.20	0.45	0.98	14.38	7.20	1.40	0.70	0.40	0.40	0.40		
24	0.20	0.23	0.20	0.35	1.10	21.28	6.13	1.23	0.68	0.40	0.40	0.40		
25	0.20	0.23	0.18	0.33	1.50	14.67	4.96	1.13	0.68	0.40	0.40	0.40		
26	0.20	0.23	0.18	0.30	1.70	44.64	4.38	1.05	0.65	0.40	0.40	0.40		
27	0.20	0.25	0.18	0.30	3.14	23.50	3.69	1.05	0.63	0.40	0.40	0.40		
28	0.20	0.23	0.18	0.28	3.03	15.25	3.14	1.45	0.60	0.40	0.40	0.40		
29	0.20	0.23	0.20	0.25	1.65	13.54	2.81	1.20	0.55	0.43		0.40		
30	0.20	0.23	0.20	0.28	1.40	9.66	2.70	1.13	0.55	0.43		0.40		
31		0.20		0.48	1.23		2.51		0.55	0.43		0.40		
ɪtal	6.09	6.72	6.37	8.29	27.85	212.23	550.50	42.05	24.49	13.97	11.20	12.40	922.16	CMSDAY
ɛan	0.20	0.22	0.21	0.27	0.90	7.07	17.76	1.40	0.79	0.45	0.40	0.40	2.51	CMS
x	0.23	0.25	0.28	0.48	3.14	44.64	89.33	4.09	1.08	0.55	0.40	0.40	89.33	CMS
n	0.20	0.20	0.18	0.20	0.45	0.95	2.51	0.88	0.55	0.40	0.40	0.40	0.18	CMS
noff	0.53	0.58	0.55	0.72	2.41	18.34	47.56	3.63	2.12	1.21	0.97	1.07	79.67	MCM

mentary Peak 119.75 CMS. at 3.31 m. (A.D.) at 06.00 Hours , on Oct 11, 1998

noff Yield 10.11 Liters/Second/SquareMomentary Peak Yield 479.00 Liters/Second/Square

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WATER YEAR 1998

MAE KHLONG RIVER BASIN

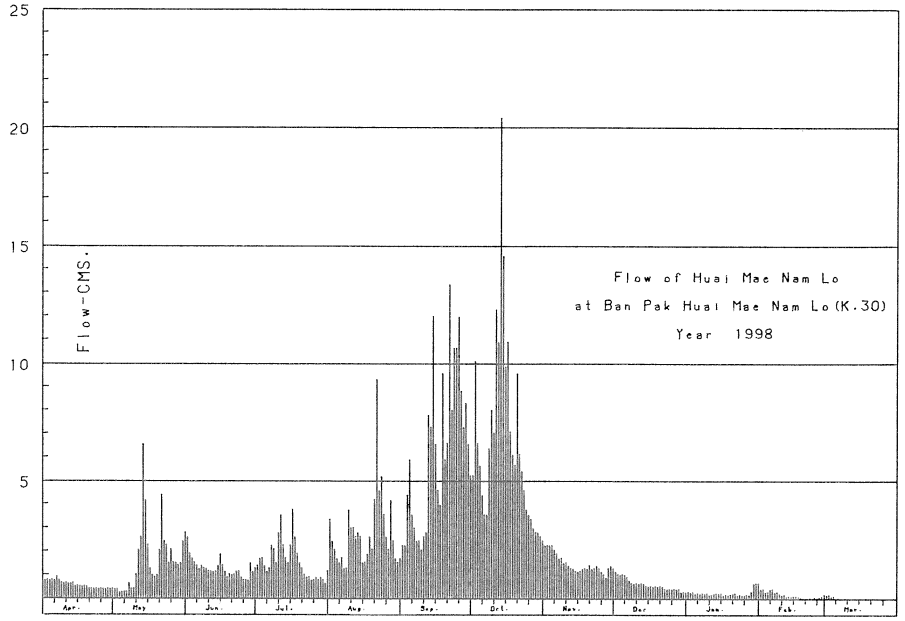
Huai Mae Nam Lo at Ban Pak Huai Mae Nam Lo, Kanchanaburi (K.30)

Location	Lat. 14°-26'-27" N., Long. 98°-47'-53" E., on left bank about 1 kilometer downstream from station K.22 A, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	435 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+68.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 30 meters from the top staff gage.
Elevation	+77.305 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1994 to date.
Rated by Float	-
Rated by Current Meter	1994 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 71 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	68.64	68.61	68.76	68.69	68.80	68.74	68.89	68.74	68.67	68.60	68.61	68.58	
2	68.64	68.61	68.72	68.71	68.75	68.74	69.09	68.74	68.66	68.60	68.61	68.58	
3	68.64	68.60	68.71	68.71	68.73	68.85	68.95	68.74	68.66	68.60	68.60	68.57	
4	68.64	68.60	68.70	68.69	68.71	68.92	68.91	68.74	68.66	68.59	68.60	68.57	
5	68.64	68.60	68.69	68.67	68.70	68.81	68.85	68.73	68.66	68.59	68.61	68.56	
6	68.65	68.60	68.68	68.68	68.71	68.78	68.81	68.72	68.65	68.59	68.61	68.56	
7	68.64	68.63	68.69	68.74	68.68	68.75	68.81	68.71	68.64	68.59	68.60	68.55	
8	68.63	68.61	68.68	68.73	68.68	68.75	68.94	68.71	68.63	68.59	68.60	68.55	
9	68.63	68.61	68.68	68.70	68.82	68.73	69.01	68.70	68.63	68.59	68.59	68.55	
10	68.63	68.66	68.67	68.77	68.78	68.76	68.97	68.70	68.63	68.58	68.58	68.55	
11	68.63	68.73	68.67	68.81	68.78	68.77	69.17	68.69	68.63	68.58	68.58	68.55	
12	68.63	68.76	68.67	68.74	68.76	69.00	69.12	68.68	68.63	68.59	68.57	68.54	
13	68.63	68.95	68.67	68.71	68.77	68.98	69.43	68.68	68.63	68.59	68.57	68.54	
14	68.62	68.84	68.69	68.70	68.76	69.16	69.25	68.67	68.62	68.59	68.57	68.54	
15	68.62	68.74	68.72	68.74	68.70	68.95	69.08	68.67	68.62	68.59	68.57	68.54	
16	68.62	68.68	68.69	68.82	68.70	68.86	69.12	68.67	68.62	68.58	68.57	68.54	
17	68.62	68.66	68.67	68.76	68.72	68.83	68.97	68.68	68.62	68.58	68.57	68.54	
18	68.62	68.65	68.65	68.72	68.76	69.07	68.93	68.68	68.62	68.58	68.56	68.54	
19	68.62	68.66	68.66	68.70	68.73	68.92	68.91	68.68	68.62	68.58	68.56	68.54	
20	68.61	68.73	68.66	68.68	68.84	68.95	69.07	68.69	68.62	68.59	68.56	68.54	
21	68.61	68.85	68.66	68.66	69.06	69.21	68.93	68.68	68.62	68.59	68.56	68.53	
22	68.61	68.75	68.67	68.65	68.86	69.01	68.90	68.68	68.61	68.58	68.56	68.53	
23	68.61	68.74	68.67	68.65	68.89	69.11	68.86	68.69	68.61	68.58	68.56	68.53	
24	68.61	68.70	68.65	68.64	68.81	69.11	68.82	68.68	68.61	68.58	68.56	68.53	
25	68.61	68.73	68.64	68.64	68.76	69.16	68.81	68.67	68.61	68.58	68.56	68.54	
26	68.61	68.70	68.64	68.65	68.73	69.04	68.80	68.66	68.61	68.58	68.56	68.54	
27	68.61	68.70	68.64	68.64	68.84	68.98	68.78	68.65	68.61	68.58	68.57	68.54	
28	68.61	68.69	68.70	68.65	68.75	69.02	68.77	68.68	68.61	68.60	68.58	68.54	
29	68.61	68.70	68.67	68.64	68.71	68.95	68.77	68.69	68.60	68.63		68.54	
30	68.61	68.75	68.68	68.63	68.70	68.89	68.76	68.68	68.60	68.63		68.54	
31		68.77		68.67	68.71		68.75		68.60	68.63		68.54	
Mean	68.62	68.70	68.68	68.70	68.76	68.93	68.94	68.69	68.63	68.59	68.58	68.55	
Max	68.65	68.95	68.76	68.82	69.06	69.21	69.43	68.74	68.67	68.63	68.61	68.58	69.43
Min	68.61	68.60	68.64	68.63	68.68	68.73	68.75	68.65	68.60	68.58	68.56	68.53	68.53

Annual Max Momentary Gage Height 69.50 M (MSL), at 12.00 Hours, on Oct 13, 1998
Zero Gage at Bottom Elevation 68.00 M (MSL), River Bed 68.15 M (MSL)
Left Bank Elevation 72.11 M (MSL)
Right Bank Elevation 79.87 M (MSL), Drainage Area 435 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.80	0.43	2.66	1.43	3.40	2.29	5.24	2.29	1.18	0.30	0.43	0.18	
2	0.80	0.43	1.92	1.74	2.48	2.29	10.14	2.29	1.05	0.30	0.43	0.18	
3	0.80	0.30	1.74	1.74	2.11	4.42	6.62	2.29	1.05	0.30	0.30	0.12	
4	0.80	0.30	1.55	1.43	1.74	5.92	5.69	2.29	1.05	0.24	0.30	0.12	
5	0.80	0.30	1.43	1.18	1.55	3.60	4.42	2.11	1.05	0.24	0.43	0.06	
6	0.93	0.30	1.30	1.30	1.74	3.03	3.60	1.92	0.93	0.24	0.43	0.06	
7	0.80	0.67	1.43	2.29	1.30	2.48	3.60	1.74	0.80	0.24	0.30	0.00	
8	0.67	0.43	1.30	2.11	1.30	2.48	6.39	1.74	0.67	0.24	0.30	0.00	
9	0.67	0.43	1.30	1.55	3.81	2.11	8.06	1.55	0.67	0.24	0.24	0.00	
10	0.67	1.05	1.18	2.84	3.03	2.66	7.10	1.55	0.67	0.18	0.18	0.00	
11	0.67	2.11	1.18	3.60	3.03	2.84	12.29	1.43	0.67	0.18	0.18	0.00	
12	0.67	2.66	1.18	2.29	2.66	7.80	10.94	1.30	0.67	0.24	0.12	0.00	
13	0.67	6.62	1.18	1.74	2.84	7.33	20.45	1.30	0.67	0.24	0.12	0.00	
14	0.55	4.22	1.43	1.55	2.66	12.02	14.60	1.18	0.55	0.24	0.12	0.00	
15	0.55	2.29	1.92	2.29	1.55	6.62	9.88	1.18	0.55	0.24	0.12	0.00	
16	0.55	1.30	1.43	3.81	1.55	4.63	10.94	1.18	0.55	0.18	0.12	0.00	
17	0.55	1.05	1.18	2.66	1.92	4.01	7.10	1.30	0.55	0.18	0.12	0.00	
18	0.55	0.93	0.93	1.92	2.66	9.62	6.15	1.30	0.55	0.18	0.06	0.00	
19	0.55	1.05	1.05	1.55	2.11	5.92	5.69	1.30	0.55	0.18	0.06	0.00	
20	0.43	2.11	1.05	1.30	4.22	6.62	9.62	1.43	0.55	0.24	0.06	0.00	
21	0.43	4.42	1.05	1.05	9.36	13.40	6.15	1.30	0.55	0.24	0.06	0.00	
22	0.43	2.48	1.18	0.93	4.63	8.06	5.45	1.30	0.43	0.18	0.06	0.00	
23	0.43	2.29	1.18	0.93	5.24	10.67	4.63	1.43	0.43	0.18	0.06	0.00	
24	0.43	1.55	0.93	0.80	3.60	10.67	3.81	1.30	0.43	0.18	0.06	0.00	
25	0.43	2.11	0.80	0.80	2.66	12.02	3.60	1.18	0.43	0.18	0.06	0.00	
26	0.43	1.55	0.80	0.93	2.11	8.84	3.40	1.05	0.43	0.18	0.06	0.00	
27	0.43	1.55	0.80	0.80	4.22	7.33	3.03	0.93	0.43	0.18	0.12	0.00	
28	0.43	1.43	1.55	0.93	2.48	8.32	2.84	1.30	0.43	0.30	0.18	0.00	
29	0.43	1.55	1.18	0.80	1.74	6.62	2.84	1.43	0.30	0.67		0.00	
30	0.43	2.48	1.30	0.67	1.55	5.24	2.66	1.30	0.30	0.67		0.00	
31		2.84		1.18	1.74		2.48		0.30	0.67		0.00	
Total	17.78	53.23	39.11	50.14	86.99	189.86	209.41	45.19	19.44	8.25	5.08	0.72	725.20 CMSDAY
Mean	0.59	1.72	1.30	1.62	2.81	6.33	6.76	1.51	0.63	0.27	0.18	0.02	1.99 CMS
Max	0.93	6.62	2.66	3.81	9.36	13.40	20.45	2.29	1.18	0.67	0.43	0.18	20.45 CMS
Min	0.43	0.30	0.80	0.67	1.30	2.11	2.48	0.93	0.30	0.18	0.06	0.00	0.00 CMS
Runoff	1.536	4.599	3.379	4.332	7.516	16.404	18.093	3.904	1.680	0.713	0.439	0.062	62.657 MCM

Momentary Peak 22.90 CMS, at 69.50 M (MSL), at 12.00 Hours, on Oct 13, 1998
Runoff Yield 4.57 Liters/Second/Square KM, Momentary Peak Yield 52.644 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

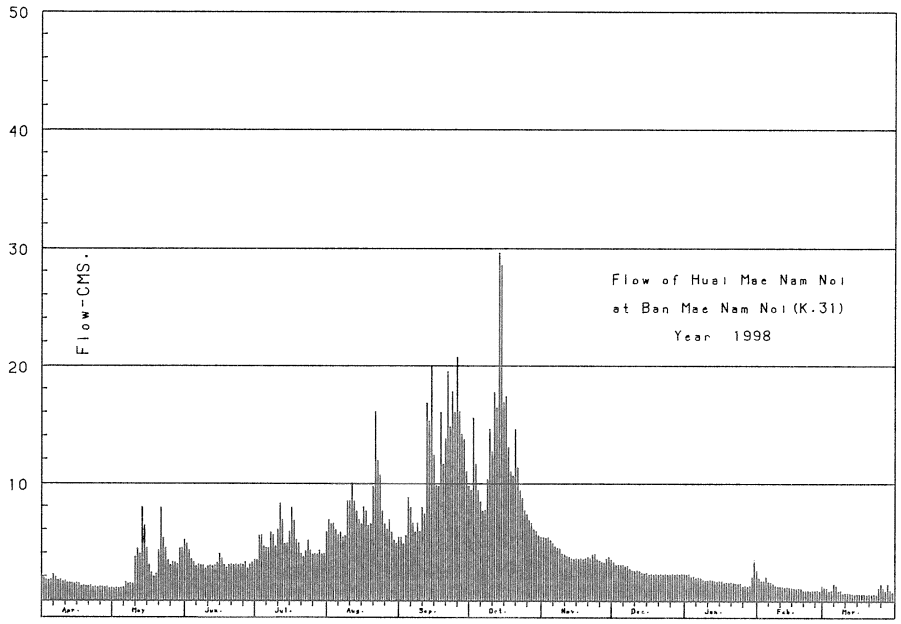
Huai Mae Nam Noi at Ban Mae Nam Noi, Kanchanaburi (K.31)

Location	Lat. 14°-26'-21" N., Long. 98°-49'-21" E., on right bank about 2 kilometers downstream from station K.22A, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	777 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+62.72 m.(M.S.L)
Bench Mark	B.M.-H.D.
Location	On right bank about 5 meters from the top staff gage.
Elevation	+70.537 m.(M.S.L)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 72 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	65.69	65.62	65.85	65.78	65.93	65.87	66.02	65.87	65.77	65.71	65.69	65.63	
2	65.68	65.62	65.82	65.88	65.92	65.85	66.20	65.87	65.76	65.71	65.67	65.62	
3	65.68	65.62	65.79	65.88	65.92	65.88	66.09	65.87	65.76	65.70	65.67	65.61	
4	65.68	65.62	65.77	65.84	65.90	66.00	66.02	65.86	65.76	65.70	65.70	65.61	
5	65.71	65.63	65.75	65.83	65.88	65.97	65.99	65.85	65.76	65.69	65.67	65.65	
6	65.69	65.66	65.76	65.83	65.89	65.92	65.96	65.84	65.75	65.69	65.66	65.64	
7	65.68	65.65	65.76	65.89	65.87	65.89	65.96	65.83	65.75	65.69	65.65	65.61	
8	65.68	65.65	65.75	65.88	65.88	65.92	66.05	65.83	65.74	65.68	65.64	65.61	
9	65.67	65.65	65.74	65.84	65.99	65.89	66.17	65.81	65.73	65.68	65.64	65.59	
10	65.67	65.80	65.75	65.90	65.99	65.97	66.12	65.81	65.73	65.68	65.64	65.59	
11	65.66	65.83	65.75	65.98	66.04	65.95	66.25	65.80	65.73	65.68	65.63	65.59	
12	65.66	65.81	65.75	65.93	65.99	66.23	66.22	65.80	65.73	65.68	65.63	65.59	
13	65.65	65.97	65.75	65.85	65.96	66.19	66.50	65.79	65.72	65.67	65.63	65.58	
14	65.65	65.91	65.77	65.85	65.93	66.30	66.48	65.79	65.72	65.67	65.63	65.58	
15	65.65	65.83	65.81	65.89	65.92	66.11	66.23	65.79	65.72	65.67	65.62	65.58	
16	65.65	65.76	65.79	65.97	65.97	66.03	66.24	65.79	65.71	65.67	65.62	65.58	
17	65.64	65.72	65.76	65.93	65.96	66.03	66.13	65.79	65.71	65.66	65.62	65.58	
18	65.64	65.70	65.74	65.86	65.91	66.21	66.07	65.79	65.71	65.66	65.62	65.58	
19	65.64	65.71	65.76	65.85	65.92	66.09	66.06	65.79	65.71	65.66	65.62	65.58	
20	65.64	65.82	65.76	65.81	66.03	66.15	66.17	65.80	65.71	65.66	65.61	65.58	
21	65.64	65.97	65.76	65.80	66.21	66.29	66.08	65.79	65.71	65.66	65.61	65.58	
22	65.63	65.87	65.76	65.82	66.10	66.18	66.02	65.81	65.71	65.65	65.61	65.58	
23	65.63	65.83	65.76	65.86	66.06	66.25	66.00	65.81	65.71	65.65	65.61	65.58	
24	65.63	65.78	65.76	65.82	65.96	66.21	65.96	65.79	65.71	65.65	65.61	65.62	
25	65.63	65.76	65.76	65.81	65.92	66.32	65.95	65.78	65.71	65.64	65.61	65.65	
26	65.63	65.77	65.77	65.81	65.90	66.21	65.93	65.77	65.71	65.64	65.61	65.62	
27	65.63	65.77	65.74	65.81	65.93	66.16	65.92	65.77	65.71	65.64	65.61	65.61	
28	65.63	65.76	65.76	65.82	65.89	66.15	65.90	65.79	65.71	65.64	65.64	65.65	
29	65.62	65.83	65.77	65.81	65.86	66.07	65.89	65.80	65.71	65.70		65.61	
30	65.62	65.83	65.78	65.81	65.85	66.03	65.88	65.78	65.71	65.78		65.60	
31		65.86		65.89	65.87		65.87		65.71	65.73		65.60	
Mean	65.65	65.76	65.77	65.86	65.95	66.08	66.08	65.81	65.73	65.68	65.63	65.60	
Max	65.71	65.97	65.85	65.98	66.21	66.32	66.50	65.87	65.77	65.78	65.70	65.65	66.50
Min	65.62	65.62	65.74	65.78	65.85	65.85	65.87	65.77	65.71	65.64	65.61	65.58	65.58

Annual Max Momentary Gage Height 66.62 M (MSL), at 14.00 Hours, on Oct 13, 1998
Zero Gage at Bottom Elevation 62.72 M (MSL), River Bed 64.94 M (MSL)
Left Bank Elevation 70.61 M (MSL)
Right Bank Elevation 81.25 M (MSL), Drainage Area 777 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.97	1.06	4.95	3.46	6.91	5.41	9.44	5.41	3.29	2.27	1.97	1.19	
2	1.84	1.06	4.26	5.64	6.64	4.95	15.65	5.41	3.12	2.27	1.71	1.06	
3	1.84	1.06	3.63	5.64	6.64	5.64	11.68	5.41	3.12	2.10	1.71	0.93	
4	1.84	1.06	3.29	4.72	6.10	8.80	9.44	5.18	3.12	2.10	2.10	0.93	
5	2.27	1.19	2.95	4.49	5.64	7.99	8.53	4.95	3.12	1.97	1.71	1.45	
6	1.97	1.58	3.12	4.49	5.87	6.64	7.72	4.72	2.95	1.97	1.58	1.32	
7	1.84	1.45	3.12	5.87	5.41	5.87	7.72	4.49	2.95	1.97	1.45	0.93	
8	1.84	1.45	2.95	5.64	5.64	6.64	10.40	4.49	2.78	1.84	1.32	0.93	
9	1.71	1.45	2.78	4.72	8.53	5.87	14.56	4.03	2.61	1.84	1.32	0.72	
10	1.71	3.80	2.95	6.10	8.53	7.99	12.73	4.03	2.61	1.84	1.32	0.72	
11	1.58	4.49	2.95	8.26	10.08	7.45	17.80	3.80	2.61	1.84	1.19	0.72	
12	1.58	4.03	2.95	6.91	8.53	16.94	16.51	3.80	2.61	1.84	1.19	0.72	
13	1.45	7.99	2.95	4.95	7.72	15.29	29.60	3.63	2.44	1.71	1.19	0.64	
14	1.45	6.37	3.29	4.95	6.91	19.95	28.56	3.63	2.44	1.71	1.19	0.64	
15	1.45	4.49	4.03	5.87	6.64	12.37	16.94	3.63	2.44	1.71	1.06	0.64	
16	1.45	3.12	3.63	7.99	7.99	9.76	17.37	3.63	2.27	1.71	1.06	0.64	
17	1.32	2.44	3.12	6.91	7.72	9.76	13.09	3.63	2.27	1.58	1.06	0.64	
18	1.32	2.10	2.78	5.18	6.37	16.08	11.04	3.63	2.27	1.58	1.06	0.64	
19	1.32	2.27	3.12	4.95	6.64	11.68	10.72	3.63	2.27	1.58	1.06	0.64	
20	1.32	4.26	3.12	4.03	9.76	13.83	14.56	3.80	2.27	1.58	0.93	0.64	
21	1.32	7.99	3.12	3.80	16.08	19.52	11.36	3.63	2.27	1.58	0.93	0.64	
22	1.19	5.41	3.12	4.26	12.00	14.92	9.44	4.03	2.27	1.45	0.93	0.64	
23	1.19	4.49	3.12	5.18	10.72	17.80	8.80	4.03	2.27	1.45	0.93	0.64	
24	1.19	3.46	3.12	4.26	7.72	16.08	7.72	3.63	2.27	1.45	0.93	1.06	
25	1.19	3.12	3.12	4.03	6.64	20.84	7.45	3.46	2.27	1.32	0.93	1.45	
26	1.19	3.29	3.29	4.03	6.10	16.08	6.91	3.29	2.27	1.32	0.93	1.06	
27	1.19	3.29	2.78	4.03	6.91	14.19	6.64	3.29	2.27	1.32	0.93	0.93	
28	1.19	3.12	3.12	4.26	5.87	13.83	6.10	3.63	2.27	1.32	1.32	1.45	
29	1.06	4.49	3.29	4.03	5.18	11.04	5.87	3.80	2.27	2.10		0.93	
30	1.06	4.49	3.46	4.03	4.95	9.76	5.64	3.46	2.27	3.46		0.80	
31		5.18		5.87	5.41		5.41		2.27	2.61		0.80	
Total	44.84	105.05	97.48	158.55	231.85	352.97	365.40	121.18	78.53	56.39	35.01	27.14	1674.39 CMSDAY
Mean	1.49	3.39	3.25	5.11	7.48	11.77	11.79	4.04	2.53	1.82	1.25	0.88	4.59 CMS
Max	2.27	7.99	4.95	8.26	16.08	20.84	29.60	5.41	3.29	3.46	2.10	1.45	29.60 CMS
Min	1.06	1.06	2.78	3.46	4.95	4.95	5.41	3.29	2.27	1.32	0.93	0.64	0.64 CMS
Runoff	3.874	9.076	8.422	13.699	20.032	30.497	31.571	10.470	6.785	4.872	3.025	2.345	144.667 MCM

Momentary Peak 36.38 CMS, at 66.62 M (MSL), at 14.00 Hours, on Oct 13, 1998

Runoff Yield 5.90 Liters/Second/Square KM, Momentary Peak Yield 46.821 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

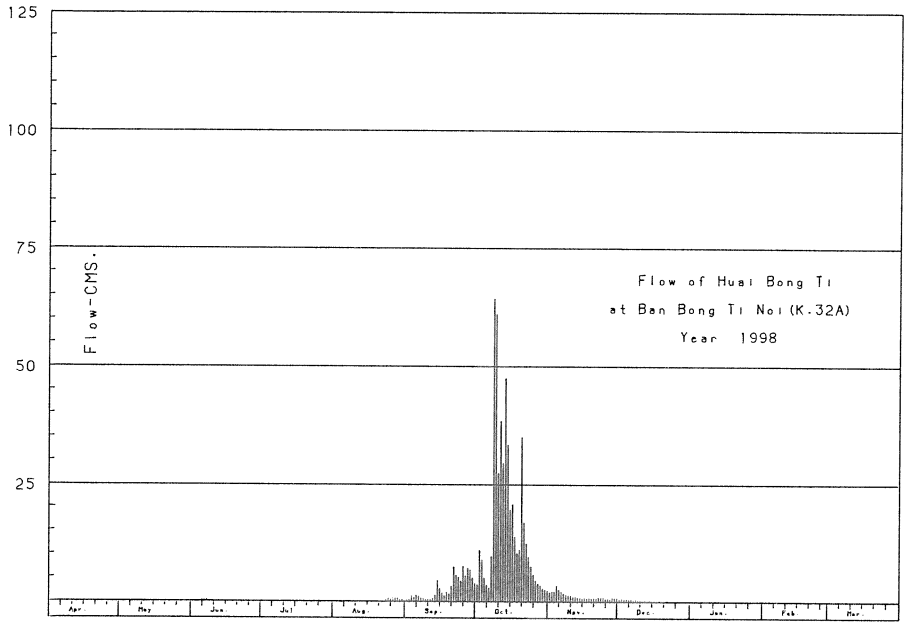
Huai Bong Ti at Ban Bong Ti Noi, Kanchanaburi (K.32A)

Location	Lat. 14°-16'-25" N., Long. 98°-56'-04" E., on right bank at Ban Bong Ti Noi,Amphoe Sai Yok, Kanchanaburi.
Drainage Area	512 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 6.50 meters from the top staff gage.
Elevation	+6.055 m.(A.D.)
Gage Reading Frequency	16-time daily readings at 03.00, 06.00-18.00, 21.00 and 24.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 16 readings.
Period of Available Gage Records	1984 to date
Rating Operation	
Period of Rating	1984 to date
Rated by Float	-
Rated by Current Meter	1984 to date
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 91 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.75	0.63	0.77	0.81	0.79	0.88	1.28	0.84	0.69	0.59	0.53	0.50	
2	0.75	0.63	0.77	0.81	0.79	0.95	1.57	0.84	0.69	0.59	0.53	0.50	
3	0.77	0.63	0.78	0.81	0.79	1.06	1.52	0.85	0.68	0.58	0.53	0.50	
4	0.77	0.63	0.89	0.80	0.79	1.03	1.38	0.93	0.68	0.58	0.53	0.50	
5	0.76	0.63	0.90	0.80	0.79	1.09	1.29	0.88	0.68	0.58	0.54	0.51	
6	0.76	0.63	0.90	0.80	0.79	1.04	1.23	0.84	0.67	0.58	0.54	0.51	
7	0.76	0.63	0.89	0.80	0.79	1.00	1.54	0.82	0.66	0.58	0.54	0.50	
8	0.75	0.63	0.87	0.80	0.81	0.96	2.22	0.79	0.66	0.58	0.54	0.50	
9	0.75	0.63	0.86	0.80	0.81	0.94	2.18	0.78	0.65	0.58	0.54	0.49	
10	0.75	0.63	0.85	0.80	0.80	0.92	1.65	0.77	0.64	0.58	0.54	0.48	
11	0.75	0.63	0.84	0.79	0.81	0.92	1.85	0.75	0.64	0.58	0.54	0.47	
12	0.75	0.63	0.83	0.79	0.81	0.97	1.69	0.74	0.64	0.57	0.54	0.47	
13	0.75	0.75	0.83	0.79	0.80	1.10	1.99	0.73	0.63	0.57	0.54	0.47	
14	0.75	0.75	0.84	0.81	0.80	1.34	1.77	0.72	0.63	0.57	0.53	0.47	
15	0.75	0.75	0.83	0.82	0.80	1.23	1.48	0.71	0.62	0.57	0.53	0.47	
16	0.75	0.74	0.82	0.80	0.80	1.13	1.51	0.71	0.62	0.57	0.53	0.47	
17	0.74	0.76	0.81	0.80	0.80	1.08	1.33	0.71	0.62	0.56	0.52	0.47	
18	0.74	0.76	0.81	0.82	0.79	1.15	1.22	0.71	0.62	0.56	0.52	0.47	
19	0.74	0.76	0.81	0.81	0.79	1.12	1.24	0.71	0.62	0.56	0.52	0.47	
20	0.71	0.77	0.80	0.80	0.81	1.26	1.80	0.71	0.62	0.56	0.52	0.47	
21	0.69	0.76	0.79	0.79	0.80	1.48	1.42	0.71	0.62	0.56	0.52	0.46	
22	0.66	0.76	0.79	0.79	0.81	1.41	1.29	0.73	0.62	0.55	0.52	0.46	
23	0.63	0.76	0.79	0.80	0.93	1.38	1.19	0.73	0.61	0.55	0.52	0.46	
24	0.60	0.75	0.78	0.80	0.97	1.34	1.12	0.72	0.61	0.55	0.52	0.47	
25	0.60	0.75	0.78	0.79	0.95	1.48	1.05	0.70	0.60	0.54	0.51	0.47	
26	0.60	0.76	0.78	0.79	1.02	1.40	0.99	0.69	0.60	0.54	0.51	0.46	
27	0.60	0.77	0.78	0.79	1.00	1.47	0.96	0.69	0.60	0.54	0.50	0.46	
28	0.60	0.77	0.79	0.79	0.98	1.45	0.93	0.72	0.60	0.53	0.50	0.46	
29	0.60	0.76	0.80	0.78	0.93	1.38	0.90	0.72	0.60	0.53		0.46	
30	0.60	0.76	0.81	0.79	0.91	1.30	0.87	0.71	0.59	0.53		0.46	
31		0.77		0.80	0.89		0.86		0.59	0.53		0.46	
Mean	0.71	0.71	0.82	0.80	0.84	1.18	1.40	0.76	0.63	0.56	0.53	0.48	
Max	0.77	0.77	0.90	0.82	1.02	1.48	2.22	0.93	0.69	0.59	0.54	0.51	2.22
Min	0.60	0.63	0.77	0.78	0.79	0.88	0.86	0.69	0.59	0.53	0.50	0.46	0.46

Annual Max Momentary Gage Height 2.74 M (AD), at 24.00 Hours, on Oct 8, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.38 M (AD)
Left Bank Elevation 9.02 M (AD)
Right Bank Elevation 10.18 M (AD), Drainage Area 512 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.05	0.00	0.07	0.13	0.09	0.34	3.54	2.12	0.65	0.18	0.07	0.01	
2	0.05	0.00	0.07	0.13	0.09	0.60	11.08	2.12	0.65	0.18	0.07	0.01	
3	0.07	0.00	0.08	0.13	0.09	1.22	8.88	2.25	0.60	0.16	0.07	0.01	
4	0.07	0.00	0.37	0.10	0.09	1.01	5.16	3.44	0.60	0.16	0.07	0.01	
5	0.06	0.00	0.40	0.10	0.09	1.43	3.67	2.64	0.60	0.16	0.09	0.03	
6	0.06	0.00	0.40	0.10	0.09	1.08	2.89	2.12	0.55	0.16	0.09	0.03	
7	0.06	0.00	0.37	0.10	0.09	0.80	9.76	1.86	0.50	0.16	0.09	0.01	
8	0.05	0.00	0.31	0.10	0.13	0.64	64.36	1.51	0.50	0.16	0.09	0.01	
9	0.05	0.00	0.28	0.10	0.13	0.56	61.22	1.42	0.45	0.16	0.09	0.01	
10	0.05	0.00	0.25	0.10	0.10	0.48	27.50	1.33	0.40	0.16	0.09	0.01	
11	0.05	0.00	0.22	0.09	0.13	0.48	38.35	1.15	0.40	0.16	0.09	0.01	
12	0.05	0.00	0.19	0.09	0.13	0.68	29.50	1.06	0.40	0.14	0.09	0.01	
13	0.05	0.05	0.19	0.09	0.10	1.50	47.64	0.97	0.35	0.14	0.09	0.01	
14	0.05	0.05	0.22	0.13	0.10	4.48	33.50	0.88	0.35	0.14	0.07	0.01	
15	0.05	0.05	0.19	0.16	0.10	2.89	19.54	0.79	0.30	0.14	0.07	0.01	
16	0.05	0.04	0.16	0.10	0.10	1.80	20.86	0.79	0.30	0.14	0.07	0.01	
17	0.04	0.06	0.13	0.10	0.10	1.36	13.79	0.79	0.30	0.12	0.05	0.01	
18	0.04	0.06	0.13	0.16	0.09	2.00	10.40	0.79	0.30	0.12	0.05	0.01	
19	0.04	0.06	0.13	0.13	0.09	1.70	11.00	0.79	0.30	0.12	0.05	0.01	
20	0.01	0.07	0.10	0.10	0.13	3.28	35.00	0.79	0.30	0.12	0.05	0.01	
21	0.00	0.06	0.09	0.09	0.10	7.50	16.96	0.79	0.30	0.12	0.05	0.01	
22	0.00	0.06	0.09	0.09	0.13	5.75	12.50	0.97	0.30	0.11	0.05	0.01	
23	0.00	0.06	0.09	0.10	0.52	5.16	9.53	0.97	0.25	0.11	0.05	0.01	
24	0.00	0.05	0.08	0.10	0.68	4.48	7.64	0.88	0.25	0.11	0.05	0.01	
25	0.00	0.05	0.08	0.09	0.60	7.50	5.90	0.70	0.20	0.09	0.03	0.01	
26	0.00	0.06	0.08	0.09	0.94	5.50	4.52	0.65	0.20	0.09	0.03	0.01	
27	0.00	0.07	0.08	0.09	0.80	7.25	3.98	0.65	0.20	0.09	0.01	0.01	
28	0.00	0.07	0.09	0.09	0.72	6.75	3.44	0.88	0.20	0.07	0.01	0.01	
29	0.00	0.06	0.10	0.08	0.52	5.16	2.90	0.88	0.20	0.07		0.01	
30	0.00	0.06	0.13	0.09	0.44	3.80	2.51	0.79	0.18	0.07		0.01	
31		0.07		0.10	0.37		2.38		0.18	0.07		0.01	
Total	1.00	1.11	5.17	3.25	7.88	87.18	529.90	37.77	11.26	3.98	1.78	0.35	690.63 CMSDAY
Mean	0.03	0.04	0.17	0.10	0.25	2.91	17.09	1.26	0.36	0.13	0.06	0.01	1.89 CMS
Max	0.07	0.07	0.40	0.16	0.94	7.50	64.36	3.44	0.65	0.18	0.09	0.03	64.36 CMS
Min	0.00	0.00	0.07	0.08	0.09	0.34	2.38	0.65	0.18	0.07	0.01	0.01	0.00 CMS
Runoff	0.086	0.096	0.447	0.281	0.681	7.532	45.783	3.263	0.973	0.344	0.154	0.030	59.670 MCM

Momentary Peak 115.10 CMS, at 2.74 M (AD), at 24.00 Hours, on Oct 8, 1998

Runoff Yield 3.70 Liters/Second/Square KM, Momentary Peak Yield 224.805 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

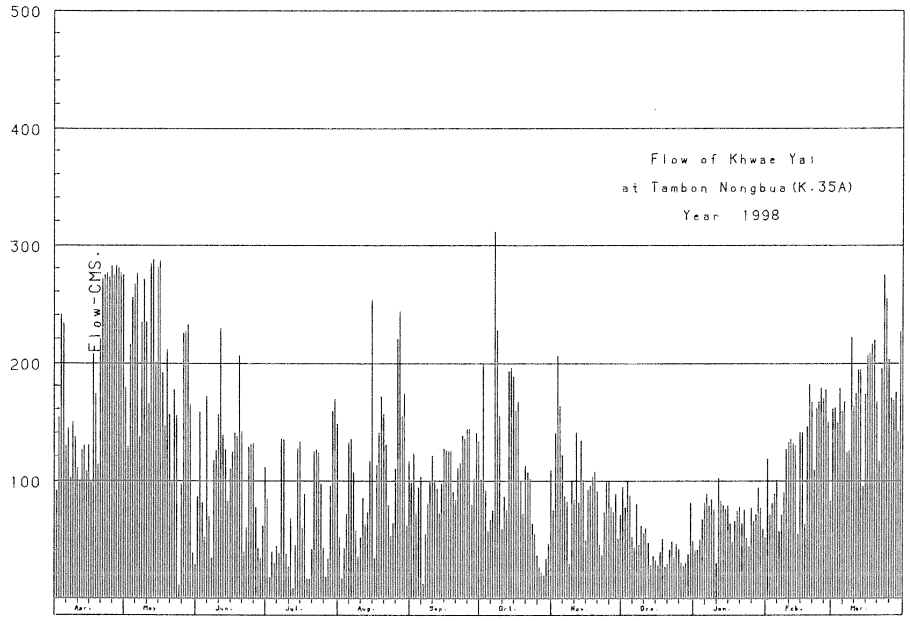
Khwae Yai River at Ban Nong Bua, Kanchanaburi (K.35A)

Location	Lat. 14°-03'-22" N., Long. 99°-27'-35" E., on left bank at Ban Nong Bua, Amphoe Muang, Kanchanaburi.
Drainage Area	14,528 sq.km.
Type of Gage	Water-Stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 3 meters from the third staff gage.
Elevation	+7.667 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1984 to date
Rating Operation	
Period of Rating	1984 - 1985, 1987 to date
Rated by Float	-
Rated by Current Meter	1984 - 1985, 1987 to date
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Sri Nakarindra Dam. Stage-discharge relation defined by 75 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.86	3.66	2.81	2.79	2.45	2.95	2.96	2.69	2.89	2.32	3.13	3.51	
2	3.45	3.22	3.49	1.93	1.91	3.17	3.83	3.33	2.72	2.32	2.66	3.52	
3	4.18	3.97	2.76	2.30	2.34	2.67	2.86	3.89	2.94	2.43	2.75	3.41	
4	4.12	4.30	2.45	2.16	2.66	2.89	2.51	3.53	2.82	2.62	2.83	3.66	
5	3.23	4.39	3.60	2.36	3.25	2.98	2.61	3.16	2.45	2.76	2.95	3.50	
6	3.36	4.46	2.64	2.29	3.28	1.82	2.69	2.81	2.34	2.83	2.51	3.56	
7	2.97	3.30	2.23	3.28	3.02	2.48	4.73	2.77	2.75	2.73	2.66	3.18	
8	3.41	4.12	3.12	3.28	2.51	2.75	4.07	2.14	2.37	2.79	2.85	3.19	
9	3.30	4.42	3.19	2.27	2.24	2.94	3.46	2.95	2.56	2.70	3.20	4.02	
10	3.05	4.13	3.47	2.11	2.45	3.15	2.53	2.78	2.49	2.16	3.26	3.53	
11	2.94	3.55	4.08	2.62	2.80	2.95	2.81	3.33	2.53	2.97	3.28	3.62	
12	3.20	4.52	3.31	1.73	2.57	2.88	2.69	2.76	2.40	2.77	3.25	3.79	
13	3.23	4.55	3.20	2.37	2.68	2.67	3.78	3.27	2.12	2.74	3.23	3.79	
14	3.03	3.84	2.77	3.21	3.11	2.92	3.80	2.95	2.25	2.70	2.48	2.90	
15	3.23	4.50	3.05	3.26	4.28	3.21	3.74	2.42	2.19	2.73	3.33	3.62	
16	2.93	4.54	3.18	2.54	2.23	3.19	3.50	2.87	2.13	2.58	3.33	3.89	
17	3.90	3.77	3.33	2.83	3.08	3.19	3.56	2.90	2.29	2.40	2.57	3.91	
18	3.62	3.38	3.30	1.90	3.33	3.19	2.95	2.98	2.43	2.60	3.38	3.97	
19	3.08	3.93	3.89	1.89	3.60	2.85	2.66	3.02	2.11	2.69	3.69	4.00	
20	4.01	3.47	3.34	2.33	3.47	2.78	3.07	2.86	2.14	2.72	3.56	3.56	
21	4.42	2.93	2.29	3.18	3.24	3.05	3.02	2.37	2.33	2.58	3.04	3.11	
22	4.45	3.65	2.54	3.20	2.74	3.10	2.96	2.26	2.41	2.70	3.52	3.80	
23	4.46	3.46	3.22	3.17	2.46	3.31	2.58	2.68	2.23	2.44	3.56	4.45	
24	4.43	1.80	3.24	2.92	2.58	3.28	2.48	2.94	2.38	2.36	3.66	4.29	
25	4.51	2.92	3.25	2.34	3.05	3.36	2.26	2.95	2.33	2.71	3.59	3.86	
26	4.45	4.05	2.72	1.94	4.01	3.36	2.10	2.72	2.16	2.60	3.65	3.59	
27	4.51	4.06	2.34	2.22	4.20	2.74	2.00	2.68	2.12	2.66	3.41	3.57	
28	4.50	4.11	2.22	2.90	3.46	2.96	1.96	2.83	2.17	2.89	2.77	3.63	
29	4.46	3.54	2.56	3.50	3.62	3.33	2.21	2.44	2.27	2.71		3.34	
30	4.45	2.29	3.06	3.58	2.56	3.26	2.39	2.65	2.76	2.53		4.06	
31		2.13		3.40	3.11		3.03		2.41	2.44		4.30	
Mean	3.72	3.71	3.02	2.64	2.98	2.98	2.96	2.86	2.40	2.62	3.15	3.68	
Max	4.51	4.55	4.08	3.58	4.28	3.36	4.73	3.89	2.94	2.97	3.69	4.45	4.73
Min	2.86	1.80	2.22	1.73	1.91	1.82	1.96	2.14	2.11	2.16	2.48	2.90	1.73

Annual Max Momentary Gage Height 5.60 M (AD), at 18.00 Hours, on Oct 7, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.28 M (AD)
Left Bank Elevation 10.53 M (AD)
Right Bank Elevation 10.66 M (AD), Drainage Area 14528 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	92.00	179.20	87.00	85.00	52.50	101.00	102.00	75.00	95.00	41.60	119.30	161.20	
2	154.50	129.20	158.90	18.50	17.50	123.70	199.60	141.30	78.00	41.60	72.00	162.40	
3	241.60	216.40	82.00	40.00	43.20	73.00	92.00	206.80	100.00	50.70	81.00	150.10	
4	234.40	256.00	52.50	30.60	72.00	95.00	57.90	163.60	88.00	68.00	89.00	179.20	
5	130.30	267.70	172.00	44.80	132.50	104.00	67.00	122.60	52.50	82.00	101.00	160.00	
6	144.60	276.80	70.00	39.30	135.80	13.00	75.00	87.00	43.20	89.00	57.90	167.20	
7	103.00	138.00	35.10	135.80	108.00	55.20	312.20	83.00	81.00	79.00	72.00	124.80	
8	150.10	234.40	118.20	135.80	57.90	81.00	228.40	29.40	45.60	85.00	91.00	125.90	
9	138.00	271.60	125.90	37.90	35.80	100.00	155.60	101.00	62.40	76.00	127.00	222.40	
10	111.00	235.60	156.70	27.60	52.50	121.50	59.70	84.00	56.10	30.60	133.60	163.60	
11	100.00	166.00	229.60	68.00	86.00	101.00	87.00	141.30	59.70	103.00	135.80	174.40	
12	127.00	284.60	139.10	9.20	63.30	94.00	75.00	82.00	48.00	83.00	132.50	194.80	
13	130.30	288.50	127.00	45.60	74.00	73.00	193.60	134.70	28.20	80.00	130.30	194.80	
14	109.00	200.80	83.00	128.10	117.10	98.00	196.00	101.00	36.50	76.00	55.20	96.00	
15	130.30	282.00	111.00	133.60	253.60	128.10	188.80	49.80	32.40	79.00	141.30	174.40	
16	99.00	287.20	124.80	60.60	35.10	125.90	160.00	93.00	28.80	64.20	141.30	206.80	
17	208.00	192.40	141.30	89.00	114.00	125.90	167.20	96.00	39.30	48.00	63.30	209.20	
18	174.40	146.80	138.00	17.00	141.30	125.90	101.00	104.00	50.70	66.00	146.80	216.40	
19	114.00	211.60	206.80	16.50	172.00	91.00	72.00	108.00	27.60	75.00	182.80	220.00	
20	221.20	156.70	142.40	42.40	156.70	84.00	113.00	92.00	29.40	78.00	167.20	167.20	
21	271.60	99.00	39.30	124.80	131.40	111.00	108.00	45.60	42.40	64.20	110.00	117.10	
22	275.50	178.00	60.60	127.00	80.00	116.00	102.00	37.20	48.90	76.00	162.40	196.00	
23	276.80	155.60	129.20	123.70	53.40	139.10	64.20	74.00	35.10	51.60	167.20	275.50	
24	272.90	12.00	131.40	98.00	64.20	135.80	55.20	100.00	46.40	44.80	179.20	254.80	
25	283.30	98.00	132.50	43.20	111.00	144.60	37.20	101.00	42.40	77.00	170.80	203.20	
26	275.50	226.00	78.00	19.00	221.20	144.60	27.00	78.00	30.60	66.00	178.00	170.80	
27	283.30	227.20	43.20	34.40	244.00	80.00	22.00	74.00	28.20	72.00	150.10	168.40	
28	282.00	233.20	34.40	96.00	155.60	102.00	20.00	89.00	31.20	95.00	83.00	175.60	
29	276.80	164.80	62.40	160.00	174.40	141.30	33.70	51.60	37.90	77.00		142.40	
30	275.50	39.30	112.00	169.60	62.40	133.60	47.20	71.00	82.00	59.70		227.20	
31		28.80		149.00	117.10		109.00		48.90	51.60		256.00	
Total	5685.90	5883.40	3324.30	2350.00	3335.50	3162.20	3328.50	2816.90	1556.40	2130.60	3441.00	5657.80	42672.50 CMSDAY
Mean	189.53	189.79	110.81	75.81	107.60	105.41	107.37	93.90	50.21	68.73	122.89	182.51	116.91 CMS
Max	283.30	288.50	229.60	169.60	253.60	144.60	312.20	206.80	100.00	103.00	182.80	275.50	312.20 CMS
Min	92.00	12.00	34.40	9.20	17.50	13.00	20.00	29.40	27.60	30.60	55.20	96.00	9.20 CMS
Runoff	491.262	508.326	287.220	203.040	288.187	273.214	287.582	243.380	134.473	184.084	297.302	488.834	3686.905 MCM

Momentary Peak 435.00 CMS, at 5.60 M (AD), at 18.00 Hours, on Oct 7, 1998

Runoff Yield 8.05 Liters/Second/Square KM, Momentary Peak Yield 29.942 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

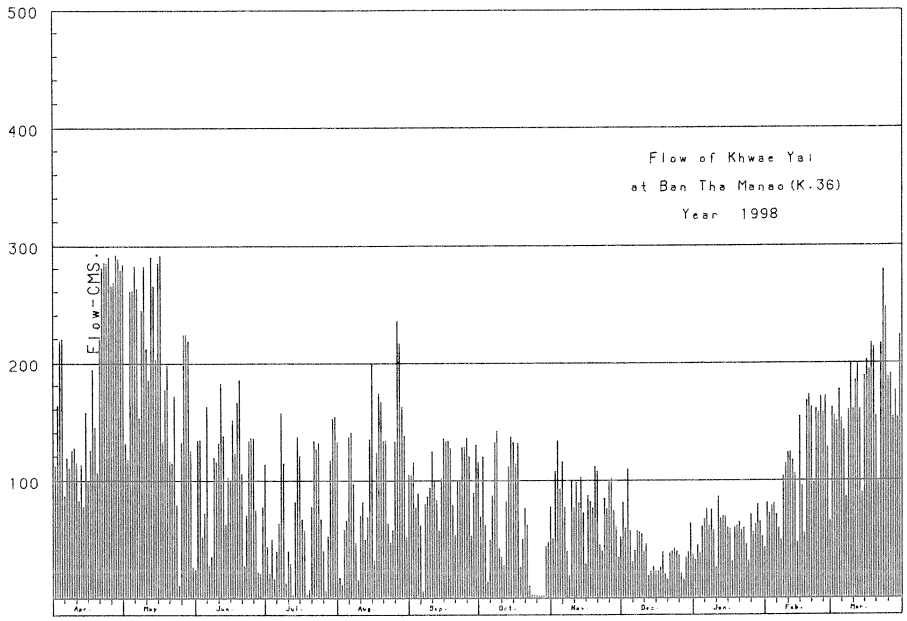
Khwae Yai River at Ban Tha Manao, Kanchanaburi (K.36)

Location	Lat. 14°-09'-48" N., Long. 99°-16'-38" E., on left bank at Ban Tha Manao, Amphoe Muang, Kanchanaburi.
Drainage Area	11,787 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 10 meters from the top staff gage.
Elevation	+6.888 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date
Rating Operation	
Period of Rating	1984 to date
Rated by Float	-
Rated by Current Meter	1984 to date
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Sri Nakarindra Dam. Stage-discharge relation defined by 67 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.17	3.35	3.37	2.45	2.04	3.10	2.74	2.53	2.87	2.29	2.87	3.61	
2	3.63	3.22	3.38	2.10	1.89	3.20	3.25	3.13	2.63	2.46	2.77	3.55	
3	4.08	4.40	2.55	2.52	2.62	2.82	2.66	3.37	3.15	2.37	2.84	3.51	
4	4.09	4.41	2.77	2.02	2.70	2.95	1.96	2.99	2.61	2.65	2.86	3.74	
5	2.93	4.56	3.62	2.39	3.40	2.66	2.52	3.21	2.26	2.72	2.76	3.53	
6	3.24	4.42	2.21	2.68	3.43	1.76	2.93	2.83	2.40	2.81	2.63	3.45	
7	3.16	3.54	2.33	3.57	3.03	2.86	3.36	2.39	2.61	2.65	2.51	2.92	
8	3.29	4.28	3.24	3.20	2.48	2.92	3.44	2.06	2.59	2.81	3.09	3.59	
9	3.32	4.56	3.21	1.94	2.00	3.00	2.43	3.06	2.58	2.61	3.19	3.92	
10	3.20	4.03	3.35	2.40	2.75	3.29	2.32	2.82	2.39	2.19	3.28	3.60	
11	2.89	3.81	3.78	2.24	2.87	3.05	2.21	3.04	2.47	2.92	3.28	3.80	
12	3.18	4.62	3.41	1.67	2.52	2.89	2.88	2.87	2.07	2.72	3.22	3.92	
13	2.83	4.44	2.67	2.88	2.74	2.61	3.17	3.08	2.13	2.75	3.11	3.60	
14	3.58	3.95	3.08	3.40	3.38	3.07	3.40	2.78	2.20	2.74	2.49	2.95	
15	3.05	4.58	3.06	3.25	3.92	3.39	3.36	2.24	2.13	2.64	3.55	3.83	
16	3.30	4.63	3.52	2.72	2.27	3.36	3.19	2.93	2.14	2.62	3.01	3.95	
17	3.88	3.36	3.27	2.61	3.28	3.37	3.35	2.88	2.18	2.27	2.58	3.88	
18	3.47	3.74	3.65	1.69	3.71	3.31	2.20	2.82	2.38	2.64	3.66	4.06	
19	3.12	3.91	3.81	1.79	3.65	2.85	2.52	3.17	2.10	2.65	3.70	4.03	
20	4.09	3.21	3.11	2.83	3.37	2.56	2.82	3.13	2.00	2.69	3.61	3.55	
21	4.55	3.20	2.21	3.37	3.37	3.05	2.66	2.46	2.37	2.61	3.04	3.04	
22	4.59	3.69	2.75	3.31	2.68	3.05	1.87	2.40	2.39	2.63	3.60	4.06	
23	4.58	2.85	3.37	3.35	2.49	3.32	1.67	2.91	2.42	2.47	3.57	4.54	
24	4.62	1.89	3.39	2.72	2.61	3.32	1.64	2.81	2.39	2.27	3.69	4.29	
25	4.44	3.36	3.39	2.40	3.36	3.39	1.63	3.05	2.34	2.76	3.57	3.82	
26	4.46	4.12	2.80	1.76	4.21	3.25	1.63	3.07	2.10	2.59	3.69	3.85	
27	4.63	4.12	2.12	2.55	4.06	2.56	1.63	2.80	2.00	2.67	3.32	3.54	
28	4.61	4.08	2.09	3.22	3.62	2.95	1.64	2.64	2.32	2.85	2.70	3.73	
29	4.54	3.29	2.83	3.53	3.41	3.34	2.45	2.32	2.38	2.69		3.54	
30	4.57	2.19	3.19	3.55	2.54	3.20	2.49	2.54	2.68	2.55		4.11	
31		2.16		3.36	3.10		2.83		2.35	2.43		4.38	
Mean	3.77	3.74	3.05	2.69	3.02	3.01	2.54	2.81	2.38	2.60	3.15	3.74	
Max	4.63	4.63	3.81	3.57	4.21	3.39	3.44	3.37	3.15	2.92	3.70	4.54	4.63
Min	2.83	1.89	2.09	1.67	1.89	1.76	1.63	2.06	2.00	2.19	2.49	2.92	1.63

Annual Max Momentary Gage Height 4.94 M (A.D), at 22.00 Hours, on Aug 26, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.45 M (A.D)
Left Bank Elevation 8.89 M (A.D)
Right Bank Elevation 6.85 M (A.D), Drainage Area 11787 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	112.35	132.00	134.20	44.50	18.00	105.00	69.60	51.05	81.65	32.85	81.65	162.20	
2	164.60	117.70	135.30	21.00	11.10	115.50	121.00	108.15	59.70	45.30	72.30	155.00	
3	219.40	261.00	52.75	50.20	58.80	76.90	62.40	134.20	110.25	38.40	78.80	150.20	
4	220.70	262.30	72.30	17.00	66.00	89.50	14.20	93.50	57.90	61.50	80.70	177.80	
5	87.50	282.40	163.40	39.80	137.50	62.40	50.20	116.60	30.90	67.80	71.40	152.60	
6	119.90	263.60	27.65	64.20	140.95	6.10	87.50	77.85	40.50	75.95	59.70	143.25	
7	111.30	153.80	35.60	157.40	97.65	80.70	133.10	39.80	57.90	61.50	49.35	86.50	
8	125.40	245.40	119.90	115.50	46.90	86.50	142.10	19.00	56.15	75.95	103.95	159.80	
9	128.70	282.40	116.60	13.30	16.00	94.50	42.90	100.80	55.30	57.90	114.45	199.40	
10	115.50	212.90	132.00	40.50	70.50	125.40	34.90	76.90	39.80	26.40	124.30	161.00	
11	83.55	186.20	182.60	29.60	81.65	99.75	27.65	98.70	46.10	86.50	124.30	185.00	
12	113.40	290.80	138.65	3.40	50.20	83.55	82.60	81.65	19.50	67.80	117.70	199.40	
13	77.85	266.20	63.30	82.60	69.60	57.90	112.35	102.90	22.80	70.50	106.05	161.00	
14	158.60	203.00	102.90	137.50	135.30	101.85	137.50	73.20	27.00	69.60	47.70	89.50	
15	99.75	285.20	100.80	121.00	199.40	136.40	133.10	29.60	22.80	60.60	155.00	188.60	
16	126.50	292.20	151.40	67.80	31.55	133.10	114.45	87.50	23.40	58.80	95.55	203.00	
17	194.60	133.10	123.20	57.90	124.30	134.20	132.00	82.60	25.80	31.55	55.30	194.60	
18	145.55	177.80	167.00	3.80	174.20	127.60	27.00	76.90	39.10	60.60	168.20	216.80	
19	107.10	198.20	186.20	7.15	167.00	79.75	50.20	112.35	21.00	61.50	173.00	212.90	
20	220.70	116.60	106.05	77.85	134.20	53.60	76.90	108.15	16.00	65.10	162.20	155.00	
21	281.00	115.50	27.65	134.20	134.20	99.75	62.40	45.30	38.40	57.90	98.70	98.70	
22	286.60	171.80	70.50	127.60	64.20	99.75	10.30	40.50	39.80	59.70	161.00	216.80	
23	285.20	79.75	134.20	132.00	47.70	128.70	3.40	85.50	42.10	46.10	157.40	279.60	
24	290.80	11.10	136.40	67.80	57.90	128.70	2.80	75.95	39.80	31.55	171.80	246.70	
25	266.20	133.10	136.40	40.50	133.10	136.40	2.60	99.75	36.30	71.40	157.40	187.40	
26	268.80	224.60	75.00	6.10	236.30	121.00	2.60	101.85	21.00	56.15	171.80	191.00	
27	292.20	224.60	22.20	52.75	216.80	53.60	2.60	75.00	16.00	63.30	128.70	153.80	
28	289.40	219.40	20.50	117.70	163.40	89.50	2.80	60.60	34.90	79.75	66.00	176.60	
29	279.60	125.40	77.85	152.60	138.65	130.90	44.50	34.90	39.10	65.10		153.80	
30	283.80	26.40	114.45	155.00	51.90	115.50	47.70	51.90	64.20	52.75		223.30	
31		24.60		133.10	105.00		77.85		37.00	42.90		258.40	
Total	5556.55	5719.05	3126.95	2271.35	3179.95	2954.00	1911.20	2342.65	1262.15	1802.70	3154.40	5539.65	38820.60 CMSDAY
Mean	185.22	184.49	104.23	73.27	102.58	98.47	61.65	78.09	40.71	58.15	112.66	178.70	106.36 CMS
Max	292.20	292.20	186.20	157.40	236.30	136.40	142.10	134.20	110.25	86.50	173.00	279.60	292.20 CMS
Min	77.85	11.10	20.50	3.40	11.10	6.10	2.60	19.00	16.00	26.40	47.70	86.50	2.60 CMS
Runoff	480.086	494.126	270.168	196.245	274.748	255.226	165.128	202.405	109.050	155.753	272.540	478.626	3354.100 MCM

Momentary Peak 335.60 CMS, at 4.94 M (A.D), at 22.00 Hours, on Aug 26, 1998

Runoff Yield 9.02 Liters/Second/Square KM, Momentary Peak Yield 28.472 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

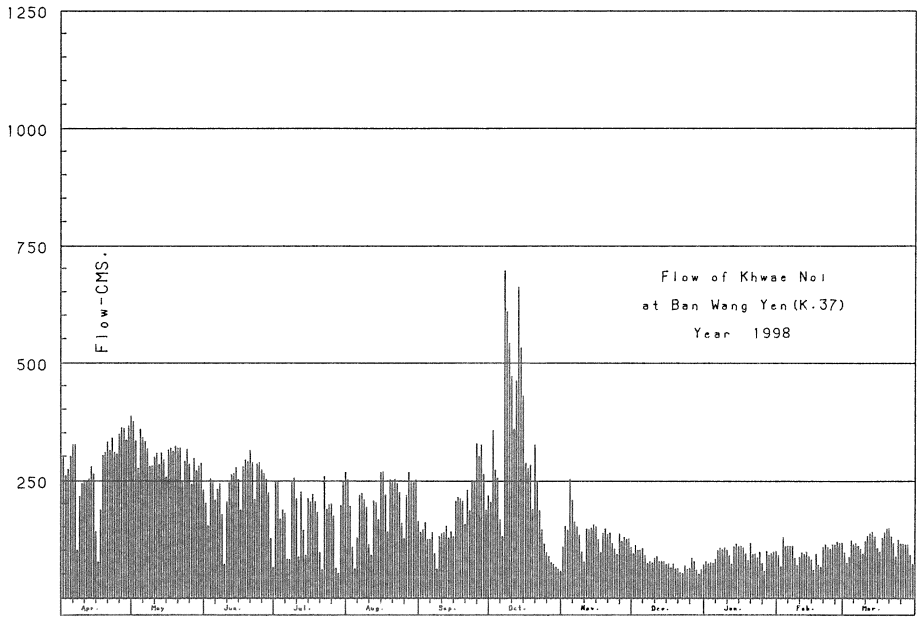
Khwae Noi River at Ban Wang Yen, Kanchanaburi (K.37)

Location	Lat. 13°-55'-57" N., Long. 99°-25'-37" E., on left bank at Ban Wang Yen, Amphoe Muang, Kanchanaburi.
Drainage Area	10,603 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+19.84 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 5 meters from the automatic gage building.
Elevation	+33.266 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1984 to date
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Khao Laem Dam. Stage-discharge relation defined by 87 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	24.52	24.91	23.93	24.22	24.24	23.54	23.95	23.32	23.21	23.06	23.17	23.22	
2	24.29	24.70	23.63	24.20	23.89	23.57	24.81	23.62	23.34	23.03	22.98	23.03	
3	24.36	24.37	24.25	23.73	23.31	23.68	24.36	23.57	23.27	23.04	23.46	23.15	
4	24.52	24.83	24.22	23.85	22.94	23.43	24.25	24.24	23.26	23.04	23.33	23.41	
5	24.65	24.73	23.98	23.80	23.46	23.44	23.71	23.98	23.30	23.10	23.33	23.36	
6	24.66	24.69	24.12	23.10	24.04	23.53	23.48	23.68	23.17	23.27	23.33	23.37	
7	23.27	24.60	24.18	23.10	24.07	23.21	26.41	23.62	23.04	23.30	23.34	23.34	
8	24.02	24.40	23.78	24.20	23.98	22.93	26.04	23.49	23.06	23.28	23.13	23.28	
9	24.19	24.40	23.02	24.26	23.88	23.48	25.73	23.24	23.05	23.30	22.99	23.21	
10	24.22	24.51	23.95	24.00	23.35	23.51	25.39	23.05	23.12	23.27	23.15	23.41	
11	24.22	24.55	24.20	23.14	23.18	23.53	24.83	23.59	23.16	23.17	23.22	23.48	
12	24.24	24.42	24.30	24.08	23.97	23.62	25.35	23.57	23.06	23.01	23.20	23.52	
13	24.39	24.56	24.31	23.57	23.94	23.46	26.26	23.60	23.07	23.33	23.23	23.54	
14	24.31	24.47	24.38	23.17	23.72	23.55	25.69	23.64	23.06	23.36	23.16	23.47	
15	23.54	24.27	24.24	24.00	24.33	23.47	25.18	23.62	23.02	23.33	23.09	23.30	
16	23.06	24.59	23.85	23.95	24.33	23.97	24.44	23.43	23.02	23.33	22.90	23.23	
17	23.85	24.61	24.39	24.05	24.05	24.02	24.37	23.23	22.96	23.30	23.20	23.46	
18	24.53	24.58	24.47	23.96	23.54	23.99	24.42	23.52	23.02	23.21	23.00	23.53	
19	24.56	24.64	24.46	23.81	24.24	23.96	23.85	23.59	22.94	23.08	22.97	23.59	
20	24.68	24.61	24.59	23.23	24.22	23.65	24.65	23.50	22.94	23.38	23.31	23.59	
21	24.59	24.62	24.44	22.91	24.24	24.10	24.21	23.53	22.86	23.20	23.36	23.48	
22	24.73	24.19	23.98	24.28	24.19	23.84	23.84	23.37	22.85	23.20	23.31	23.37	
23	24.56	24.46	24.43	23.86	24.08	24.23	23.57	23.28	23.00	23.13	23.29	23.15	
24	24.55	24.60	24.44	23.91	23.66	24.20	23.37	23.20	22.92	23.24	23.35	23.43	
25	24.77	24.42	24.36	23.93	23.45	24.67	23.22	23.52	22.95	23.04	23.36	23.37	
26	24.84	24.18	24.31	23.76	24.04	24.52	23.15	23.41	23.12	22.88	23.40	23.36	
27	24.84	24.49	24.24	22.95	24.33	24.65	23.05	23.46	23.07	23.25	23.37	23.36	
28	24.71	24.35	24.07	22.84	24.22	24.31	23.01	23.44	22.90	23.17	23.38	23.35	
29	24.86	24.40	23.45	23.91	24.20	23.84	22.97	23.44	22.84	23.21		23.19	
30	24.97	24.44	22.96	24.20	24.23	24.03	22.92	23.31	22.91	23.23		23.02	
31		24.10		24.33	23.69		22.89		23.01	23.25		23.33	
Mean	24.38	24.51	24.10	23.75	23.90	23.80	24.30	23.50	23.05	23.19	23.23	23.35	
Max	24.97	24.91	24.59	24.33	24.33	24.67	26.41	24.24	23.34	23.38	23.46	23.59	26.41
Min	23.06	24.10	22.96	22.84	22.94	22.93	22.89	23.05	22.84	22.88	22.90	23.02	22.84

Annual Max Momentary Gage Height 27.90 M (MSL), at 18.00 Hours, on Oct 7, 1998
Zero Gage at Bottom Elevation 19.84 M (MSL), River Bed 19.96 M (MSL)
Left Bank Elevation 27.59 M (MSL)
Right Bank Elevation 29.24 M (MSL), Drainage Area 10603 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	303.4	376.9	202.4	250.6	254.0	142.0	205.6	110.4	96.4	78.4	91.6	97.6	
2	262.5	336.4	155.5	247.2	196.0	146.5	357.3	154.0	113.0	74.8	68.8	74.8	
3	274.6	276.4	255.7	170.5	109.1	163.0	274.6	146.5	103.9	76.0	130.0	89.2	
4	303.4	361.1	250.6	189.6	64.0	125.6	255.7	254.0	102.6	76.0	111.7	122.8	
5	326.9	342.1	210.4	181.6	130.0	127.0	167.5	210.4	107.8	83.2	111.7	115.8	
6	328.8	334.5	233.6	83.2	220.0	140.5	133.0	163.0	91.6	103.9	111.7	117.2	
7	103.9	317.8	243.8	83.2	225.1	96.4	698.5	154.0	76.0	107.8	113.0	113.0	
8	216.8	281.8	178.4	247.2	210.4	62.9	611.0	134.5	78.4	105.2	86.8	105.2	
9	245.5	281.8	73.6	257.4	194.4	133.0	542.9	100.0	77.2	107.8	70.0	96.4	
10	250.6	301.6	205.6	213.6	114.4	137.5	472.1	77.2	85.6	103.9	89.2	122.8	
11	250.6	308.8	247.2	88.0	92.8	140.5	361.1	149.5	90.4	91.6	97.6	133.0	
12	254.0	285.4	264.2	226.8	208.8	154.0	464.1	146.5	78.4	72.4	95.2	139.0	
13	280.0	310.6	265.9	146.5	204.0	130.0	661.8	151.0	79.6	111.7	98.8	142.0	
14	265.9	294.4	278.2	91.6	169.0	143.5	534.5	157.0	78.4	115.8	90.4	131.5	
15	142.0	259.1	254.0	213.6	269.3	131.5	430.4	154.0	73.6	111.7	82.0	107.8	
16	78.4	316.0	189.6	205.6	269.3	208.8	289.0	125.6	73.6	111.7	59.6	98.8	
17	189.6	319.6	280.0	221.7	221.7	216.8	276.4	98.8	66.4	107.8	95.2	130.0	
18	305.2	314.2	294.4	207.2	142.0	212.0	285.4	139.0	73.6	96.4	71.2	140.5	
19	310.6	325.0	292.6	183.2	254.0	207.2	189.6	149.5	64.0	80.8	67.6	149.5	
20	332.6	319.6	316.0	98.8	250.6	158.5	326.9	136.0	64.0	118.6	109.1	149.5	
21	316.0	321.4	289.0	60.7	254.0	230.2	248.9	140.5	55.2	95.2	115.8	133.0	
22	342.1	245.5	210.4	260.8	245.5	188.0	188.0	117.2	54.1	95.2	109.1	117.2	
23	310.6	292.6	287.2	191.2	226.8	252.3	146.5	105.2	71.2	86.8	106.5	89.2	
24	308.8	317.8	289.0	199.2	160.0	247.2	117.2	95.2	61.8	100.0	114.4	125.6	
25	349.7	285.4	274.6	202.4	128.5	330.7	97.6	139.0	65.2	76.0	115.8	117.2	
26	363.0	243.8	265.9	175.2	220.0	303.4	89.2	122.8	85.6	57.4	121.4	115.8	
27	363.0	298.0	254.0	65.2	269.3	326.9	77.2	130.0	79.6	101.3	117.2	115.8	
28	338.3	272.8	225.1	53.0	250.6	265.9	72.4	127.0	59.6	91.6	118.6	114.4	
29	367.0	281.8	128.5	199.2	247.2	188.0	67.6	127.0	53.0	96.4		94.0	
30	388.8	289.0	66.4	247.2	252.3	218.4	61.8	109.1	60.7	98.8		73.6	
31		230.2		269.3	164.5		58.5		72.4	101.3		111.7	
Total	8472.6	9341.4	6981.8	5530.5	6217.6	5528.2	8762.3	4123.9	2392.9	2935.5	2770.0	3583.9	66640.6 CMSDAY
Mean	282.4	301.3	232.7	178.4	200.6	184.3	282.7	137.5	77.2	94.7	98.9	115.6	182.6 CMS
Max	388.8	376.9	316.0	269.3	269.3	330.7	698.5	254.0	113.0	118.6	130.0	149.5	698.5 CMS
Min	78.4	230.2	66.4	53.0	64.0	62.9	58.5	77.2	53.0	57.4	59.6	73.6	53.0 CMS
Runoff	732.03	807.10	603.23	477.84	537.20	477.64	757.06	356.30	206.75	253.63	239.33	309.65	5757.75 MCM

Momentary Peak 1096.00 CMS, at 27.90 M (MSL), at 18.00 Hours, on Oct 7, 1998

Runoff Yield 17.22 Liters/Second/Square KM, Momentary Peak Yield 103.367 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

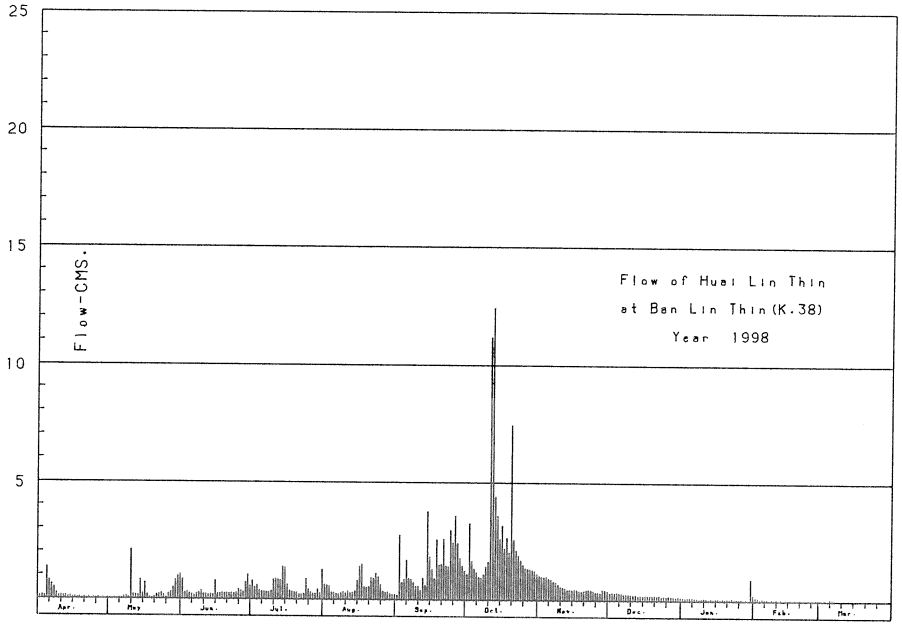
Huai Lin Thin at Ban Lin Thin, Kanchanaburi (K.38)

Location	Lat. 14°-33'-40" N., Long. 98°-47'-41" E., on left bank at k.m.95+700 on Kanchanaburi-Thong Pha Phume highway, Amphoe Thong Pha Phum, Kanchanaburi.
Drainage Area	144 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 35 meters from the thrid staff gage.
Elevation	+8.986 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1984 - 1990, 1996 to date.
Rated by Float	- -
Rated by Current Meter	1984 - 1990, 1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 65 discharge measurements made in 1998.

Gage Height in Meter (AD.), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.52	0.47	0.68	0.67	0.64	0.54	0.72	0.71	0.58	0.51	0.52	0.46	
2	0.52	0.47	0.57	0.62	0.64	0.97	1.03	0.70	0.58	0.51	0.51	0.46	
3	0.52	0.47	0.58	0.64	0.63	0.66	0.81	0.70	0.58	0.51	0.50	0.46	
4	0.76	0.46	0.56	0.60	0.58	0.68	0.76	0.70	0.58	0.51	0.50	0.46	
5	0.67	0.46	0.54	0.59	0.57	0.82	0.73	0.69	0.58	0.51	0.50	0.50	
6	0.64	0.49	0.53	0.58	0.56	0.69	0.70	0.68	0.57	0.51	0.49	0.50	
7	0.62	0.50	0.55	0.58	0.55	0.68	0.69	0.67	0.56	0.50	0.48	0.48	
8	0.55	0.52	0.57	0.57	0.57	0.66	0.72	0.66	0.56	0.50	0.48	0.47	
9	0.52	0.48	0.59	0.60	0.58	0.63	0.77	0.65	0.56	0.50	0.48	0.46	
10	0.52	0.89	0.55	0.68	0.57	0.63	0.81	0.63	0.55	0.50	0.48	0.46	
11	0.52	0.54	0.54	0.68	0.59	0.60	1.61	0.63	0.55	0.49	0.48	0.46	
12	0.52	0.53	0.54	0.68	0.57	0.69	1.68	0.62	0.55	0.49	0.48	0.46	
13	0.51	0.53	0.54	0.67	0.57	0.64	1.14	0.61	0.54	0.49	0.48	0.46	
14	0.51	0.67	0.54	0.77	0.60	1.08	1.06	0.61	0.54	0.50	0.48	0.46	
15	0.50	0.55	0.67	0.76	0.67	0.84	0.95	0.61	0.54	0.49	0.47	0.45	
16	0.50	0.65	0.55	0.64	0.77	0.75	1.02	0.61	0.54	0.49	0.47	0.45	
17	0.50	0.54	0.56	0.60	0.79	0.69	0.90	0.61	0.54	0.49	0.47	0.45	
18	0.49	0.48	0.56	0.58	0.63	0.95	0.96	0.60	0.54	0.49	0.47	0.45	
19	0.49	0.49	0.56	0.58	0.62	0.78	0.87	0.60	0.54	0.49	0.47	0.45	
20	0.49	0.50	0.56	0.57	0.63	0.79	1.37	0.60	0.54	0.49	0.47	0.45	
21	0.49	0.54	0.56	0.55	0.69	0.95	0.95	0.61	0.54	0.50	0.47	0.45	
22	0.49	0.54	0.56	0.54	0.69	0.78	0.89	0.61	0.54	0.50	0.47	0.45	
23	0.48	0.56	0.56	0.56	0.72	0.77	0.85	0.61	0.53	0.49	0.47	0.45	
24	0.48	0.53	0.56	0.68	0.70	1.00	0.82	0.60	0.53	0.48	0.47	0.44	
25	0.48	0.50	0.61	0.61	0.64	0.93	0.79	0.59	0.53	0.48	0.47	0.45	
26	0.48	0.55	0.59	0.57	0.60	1.06	0.76	0.58	0.53	0.48	0.47	0.45	
27	0.48	0.57	0.58	0.56	0.58	0.93	0.76	0.58	0.53	0.48	0.47	0.44	
28	0.48	0.62	0.66	0.55	0.58	0.83	0.75	0.61	0.52	0.48	0.46	0.44	
29	0.48	0.67	0.71	0.61	0.56	0.78	0.75	0.61	0.52	0.48		0.45	
30	0.48	0.70	0.63	0.56	0.54	0.74	0.74	0.60	0.52	0.69		0.45	
31		0.71		0.75	0.54		0.72		0.52	0.55		0.44	
Mean	0.52	0.55	0.58	0.62	0.62	0.78	0.91	0.63	0.55	0.50	0.48	0.46	
Max	0.76	0.89	0.71	0.77	0.79	1.08	1.68	0.71	0.58	0.69	0.52	0.50	1.68
Min	0.48	0.46	0.53	0.54	0.54	0.54	0.69	0.58	0.52	0.48	0.46	0.44	0.44

Annual Max Momentary Gage Height 2.20 M (AD.), at 6.00 Hours, on Oct 2, 1998
Zero Gage at Bottom Elevation 0.00 M (AD.), River Bed 0.41 M (AD.)
Left Bank Elevation 3.73 M (AD.)
Right Bank Elevation 2.62 M (AD.), Drainage Area 144 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.16	0.07	0.88	0.82	0.64	0.22	1.12	1.06	0.34	0.13	0.16	0.06	
2	0.16	0.07	0.31	0.52	0.64	2.76	3.30	1.00	0.34	0.13	0.13	0.06	
3	0.16	0.07	0.34	0.64	0.58	0.76	1.66	1.00	0.34	0.13	0.10	0.06	
4	1.36	0.06	0.28	0.40	0.34	0.88	1.36	1.00	0.34	0.13	0.10	0.06	
5	0.82	0.06	0.22	0.37	0.31	1.72	1.18	0.94	0.34	0.13	0.10	0.10	
6	0.64	0.09	0.19	0.34	0.28	0.94	1.00	0.88	0.31	0.13	0.09	0.10	
7	0.52	0.10	0.25	0.34	0.25	0.88	0.94	0.82	0.28	0.10	0.08	0.08	
8	0.25	0.16	0.31	0.31	0.31	0.76	1.12	0.76	0.28	0.10	0.08	0.07	
9	0.16	0.08	0.37	0.40	0.34	0.58	1.42	0.70	0.28	0.10	0.08	0.06	
10	0.16	2.14	0.25	0.88	0.31	0.58	1.66	0.58	0.25	0.10	0.08	0.06	
11	0.16	0.22	0.22	0.88	0.37	0.40	11.18	0.58	0.25	0.09	0.08	0.06	
12	0.16	0.19	0.22	0.88	0.31	0.94	12.44	0.52	0.25	0.09	0.08	0.06	
13	0.13	0.19	0.22	0.82	0.31	0.64	4.44	0.46	0.22	0.09	0.08	0.06	
14	0.13	0.82	0.22	1.42	0.40	3.80	3.60	0.46	0.22	0.10	0.08	0.06	
15	0.10	0.25	0.82	1.36	0.82	1.84	2.60	0.46	0.22	0.09	0.07	0.05	
16	0.10	0.70	0.25	0.64	1.42	1.30	3.20	0.46	0.22	0.09	0.07	0.05	
17	0.10	0.22	0.28	0.40	1.54	0.94	2.20	0.46	0.22	0.09	0.07	0.05	
18	0.09	0.08	0.28	0.34	0.58	2.60	2.68	0.40	0.22	0.09	0.07	0.05	
19	0.09	0.09	0.28	0.34	0.52	1.48	2.02	0.40	0.22	0.09	0.07	0.05	
20	0.09	0.10	0.28	0.31	0.58	1.54	7.45	0.40	0.22	0.09	0.07	0.05	
21	0.09	0.22	0.28	0.25	0.94	2.60	2.60	0.46	0.22	0.10	0.07	0.05	
22	0.09	0.22	0.28	0.22	0.94	1.48	2.14	0.46	0.22	0.10	0.07	0.05	
23	0.08	0.28	0.28	0.28	1.12	1.42	1.90	0.46	0.19	0.09	0.07	0.05	
24	0.08	0.19	0.28	0.88	1.00	3.00	1.72	0.40	0.19	0.08	0.07	0.04	
25	0.08	0.10	0.46	0.46	0.64	2.44	1.54	0.37	0.19	0.08	0.07	0.05	
26	0.08	0.25	0.37	0.31	0.40	3.60	1.36	0.34	0.19	0.08	0.07	0.05	
27	0.08	0.31	0.34	0.28	0.34	2.44	1.36	0.34	0.19	0.08	0.07	0.04	
28	0.08	0.52	0.76	0.25	0.34	1.78	1.30	0.46	0.16	0.08	0.06	0.04	
29	0.08	0.82	1.06	0.46	0.28	1.48	1.30	0.46	0.16	0.08		0.05	
30	0.08	1.00	0.58	0.28	0.22	1.24	1.24	0.40	0.16	0.94		0.05	
31		1.06		1.30	0.22		1.12		0.16	0.25		0.04	
Total	6.36	10.73	11.16	17.38	17.29	47.04	84.15	17.49	7.39	4.05	2.29	1.76	227.09 CMSDAY
Mean	0.21	0.35	0.37	0.56	0.56	1.57	2.71	0.58	0.24	0.13	0.08	0.06	0.62 CMS
Max	1.36	2.14	1.06	1.42	1.54	3.80	12.44	1.06	0.34	0.94	0.16	0.10	12.44 CMS
Min	0.08	0.06	0.19	0.22	0.22	0.22	0.94	0.34	0.16	0.08	0.06	0.04	0.04 CMS
Runoff	0.550	0.927	0.964	1.502	1.494	4.064	7.271	1.511	0.638	0.350	0.198	0.152	19.621 MCM

Momentary Peak 23.80 CMS, at 2.20 M (AD.), at 6.00 Hours, on Oct 2, 1998
Runoff Yield 4.32 Liters/Second/Square KM, Momentary Peak Yield 165.278 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

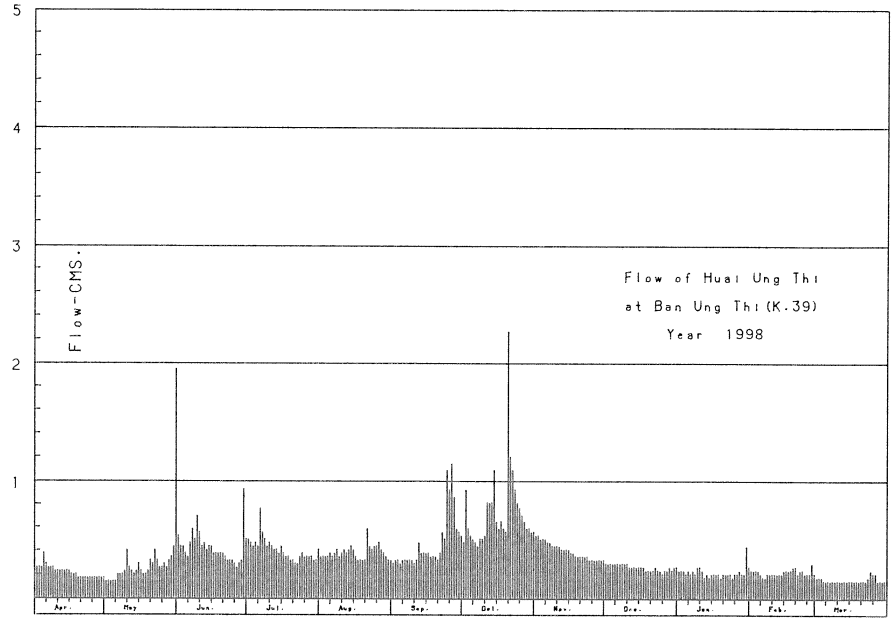
Huai Bong Thi at Ban Bong Thi, Kanchanaburi (K.39)

Location	Lat. 14°-42'-20" N., Long. 98°-40'-18" E., on right bank at k.m.121+600 on Kanchanaburi-Thong Pha Phum highway, Amphoe Thong Pha Phum, Kanchanaburi.
Drainage Area	54 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 16.00 meters from the third staff gage.
Elevation	+3.414 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1985 - 1990, 1996 to date.
Rated by Float	-
Rated by Current Meter	1985 - 1990, 1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 65 discharge measurements made in 1998.

Gage Height in Meter (AD.), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.29	0.25	0.38	0.37	0.32	0.30	0.36	0.38	0.30	0.28	0.28	0.26	
2	0.29	0.25	0.35	0.36	0.32	0.31	0.46	0.38	0.30	0.28	0.28	0.26	
3	0.29	0.25	0.35	0.35	0.32	0.31	0.40	0.37	0.30	0.28	0.28	0.26	
4	0.33	0.25	0.33	0.36	0.32	0.30	0.38	0.37	0.30	0.27	0.28	0.25	
5	0.30	0.25	0.32	0.35	0.33	0.31	0.37	0.37	0.30	0.28	0.27	0.25	
6	0.29	0.27	0.36	0.43	0.32	0.31	0.36	0.36	0.30	0.27	0.26	0.25	
7	0.29	0.27	0.40	0.39	0.33	0.31	0.35	0.36	0.30	0.28	0.26	0.25	
8	0.29	0.27	0.37	0.37	0.34	0.31	0.37	0.35	0.30	0.27	0.27	0.25	
9	0.28	0.28	0.42	0.35	0.32	0.31	0.37	0.35	0.30	0.29	0.27	0.25	
10	0.28	0.34	0.39	0.36	0.33	0.30	0.38	0.35	0.30	0.29	0.27	0.25	
11	0.28	0.29	0.35	0.35	0.34	0.31	0.44	0.35	0.29	0.28	0.27	0.25	
12	0.28	0.28	0.36	0.34	0.33	0.36	0.44	0.34	0.29	0.26	0.27	0.25	
13	0.28	0.27	0.34	0.34	0.34	0.33	0.44	0.34	0.29	0.27	0.27	0.25	
14	0.28	0.28	0.35	0.33	0.35	0.33	0.49	0.34	0.29	0.26	0.27	0.25	
15	0.28	0.30	0.35	0.35	0.34	0.33	0.41	0.34	0.29	0.27	0.28	0.25	
16	0.27	0.28	0.33	0.33	0.32	0.33	0.40	0.33	0.29	0.27	0.28	0.25	
17	0.27	0.27	0.33	0.32	0.31	0.32	0.41	0.33	0.29	0.27	0.28	0.25	
18	0.27	0.27	0.33	0.32	0.31	0.32	0.40	0.32	0.28	0.27	0.28	0.25	
19	0.26	0.28	0.33	0.31	0.31	0.32	0.39	0.32	0.28	0.26	0.29	0.25	
20	0.26	0.31	0.33	0.31	0.31	0.31	0.66	0.32	0.28	0.27	0.29	0.25	
21	0.26	0.30	0.32	0.30	0.40	0.33	0.51	0.32	0.28	0.27	0.27	0.25	
22	0.26	0.34	0.31	0.30	0.35	0.39	0.49	0.32	0.29	0.27	0.28	0.25	
23	0.26	0.31	0.31	0.32	0.34	0.37	0.46	0.32	0.28	0.27	0.28	0.26	
24	0.26	0.29	0.31	0.33	0.35	0.49	0.44	0.31	0.28	0.26	0.27	0.28	
25	0.26	0.29	0.30	0.32	0.35	0.46	0.43	0.31	0.27	0.27	0.27	0.27	
26	0.26	0.30	0.29	0.32	0.36	0.50	0.42	0.31	0.28	0.27	0.27	0.27	
27	0.26	0.29	0.30	0.32	0.34	0.45	0.41	0.31	0.28	0.28	0.30	0.25	
28	0.26	0.31	0.31	0.32	0.33	0.40	0.40	0.31	0.29	0.27	0.27	0.25	
29	0.26	0.32	0.46	0.31	0.32	0.39	0.40	0.31	0.28	0.27		0.25	
30	0.26	0.35	0.37	0.31	0.31	0.38	0.39	0.31	0.29	0.35		0.25	
31		0.62		0.34	0.31		0.39		0.29	0.29		0.25	
Mean	0.28	0.30	0.35	0.34	0.33	0.35	0.42	0.34	0.29	0.28	0.28	0.25	
Max	0.33	0.62	0.46	0.43	0.40	0.50	0.66	0.38	0.30	0.35	0.30	0.28	0.66
Min	0.26	0.25	0.29	0.30	0.31	0.30	0.35	0.31	0.27	0.26	0.26	0.25	0.25

Annual Max Momentary Gage Height 0.78 M (AD.), at 15.00 Hours, on May 31, 1998
Zero Gage at Bottom Elevation 0.00 M (AD.), River Bed 0.08 M (AD.)
Left Bank Elevation 3.68 M (AD.)
Right Bank Elevation 2.88 M (AD.), Drainage Area 54 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.27	0.15	0.54	0.51	0.36	0.30	0.48	0.54	0.30	0.24	0.24	0.18	
2	0.27	0.15	0.45	0.48	0.36	0.33	0.93	0.54	0.30	0.24	0.24	0.18	
3	0.27	0.15	0.45	0.45	0.36	0.33	0.60	0.51	0.30	0.24	0.24	0.18	
4	0.39	0.15	0.39	0.48	0.36	0.30	0.54	0.51	0.30	0.21	0.24	0.15	
5	0.30	0.15	0.36	0.45	0.39	0.33	0.51	0.51	0.30	0.24	0.21	0.15	
6	0.27	0.21	0.48	0.77	0.36	0.33	0.48	0.48	0.30	0.21	0.18	0.15	
7	0.27	0.21	0.60	0.57	0.39	0.33	0.45	0.48	0.30	0.24	0.18	0.15	
8	0.27	0.21	0.51	0.51	0.42	0.33	0.51	0.45	0.30	0.21	0.21	0.15	
9	0.24	0.24	0.71	0.45	0.36	0.33	0.51	0.45	0.30	0.27	0.21	0.15	
10	0.24	0.42	0.57	0.48	0.39	0.30	0.54	0.45	0.30	0.27	0.21	0.15	
11	0.24	0.27	0.45	0.45	0.42	0.33	0.82	0.45	0.27	0.24	0.21	0.15	
12	0.24	0.24	0.48	0.42	0.39	0.48	0.82	0.42	0.27	0.18	0.21	0.15	
13	0.24	0.21	0.42	0.42	0.42	0.39	0.82	0.42	0.27	0.21	0.21	0.15	
14	0.24	0.24	0.45	0.39	0.45	0.39	1.10	0.42	0.27	0.18	0.21	0.15	
15	0.24	0.30	0.45	0.45	0.42	0.39	0.66	0.42	0.27	0.21	0.24	0.15	
16	0.21	0.24	0.39	0.39	0.36	0.39	0.60	0.39	0.27	0.21	0.24	0.15	
17	0.21	0.21	0.39	0.36	0.33	0.36	0.66	0.39	0.27	0.21	0.24	0.15	
18	0.21	0.21	0.39	0.36	0.33	0.36	0.60	0.36	0.24	0.21	0.24	0.15	
19	0.18	0.24	0.39	0.33	0.33	0.36	0.57	0.36	0.24	0.18	0.27	0.15	
20	0.18	0.33	0.39	0.33	0.33	0.33	2.28	0.36	0.24	0.21	0.27	0.15	
21	0.18	0.30	0.36	0.30	0.60	0.39	1.21	0.36	0.24	0.21	0.21	0.15	
22	0.18	0.42	0.33	0.30	0.45	0.57	1.10	0.36	0.27	0.21	0.24	0.15	
23	0.18	0.33	0.33	0.36	0.42	0.51	0.93	0.36	0.24	0.21	0.24	0.18	
24	0.18	0.27	0.33	0.39	0.45	1.10	0.82	0.33	0.24	0.18	0.21	0.24	
25	0.18	0.27	0.30	0.36	0.45	0.93	0.77	0.33	0.21	0.21	0.21	0.21	
26	0.18	0.30	0.27	0.36	0.48	1.15	0.71	0.33	0.24	0.21	0.21	0.21	
27	0.18	0.27	0.30	0.36	0.42	0.87	0.66	0.33	0.24	0.24	0.30	0.15	
28	0.18	0.33	0.33	0.36	0.39	0.60	0.60	0.33	0.27	0.21	0.21	0.15	
29	0.18	0.36	0.93	0.33	0.36	0.57	0.60	0.33	0.24	0.21		0.15	
30	0.18	0.45	0.51	0.33	0.33	0.54	0.57	0.33	0.27	0.45		0.15	
31		1.96		0.42	0.33		0.57		0.27	0.27		0.15	
Total	6.78	9.79	13.25	12.92	12.21	14.22	23.02	12.30	8.34	7.02	6.33	4.98	131.16 CMSDAY
Mean	0.23	0.32	0.44	0.42	0.39	0.47	0.74	0.41	0.27	0.23	0.23	0.16	0.36 CMS
Max	0.39	1.96	0.93	0.77	0.60	1.15	2.28	0.54	0.30	0.45	0.30	0.24	2.28 CMS
Min	0.18	0.15	0.27	0.30	0.33	0.30	0.45	0.33	0.21	0.18	0.18	0.15	0.15 CMS
Runoff	0.586	0.846	1.145	1.116	1.055	1.229	1.989	1.063	0.721	0.607	0.547	0.430	11.332 MCM

Momentary Peak 3.36 CMS, at 0.78 M (AD.), at 15.00 Hours, on May 31, 1998

Runoff Yield 6.65 Liters/Second/Square KM, Momentary Peak Yield 62.222 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

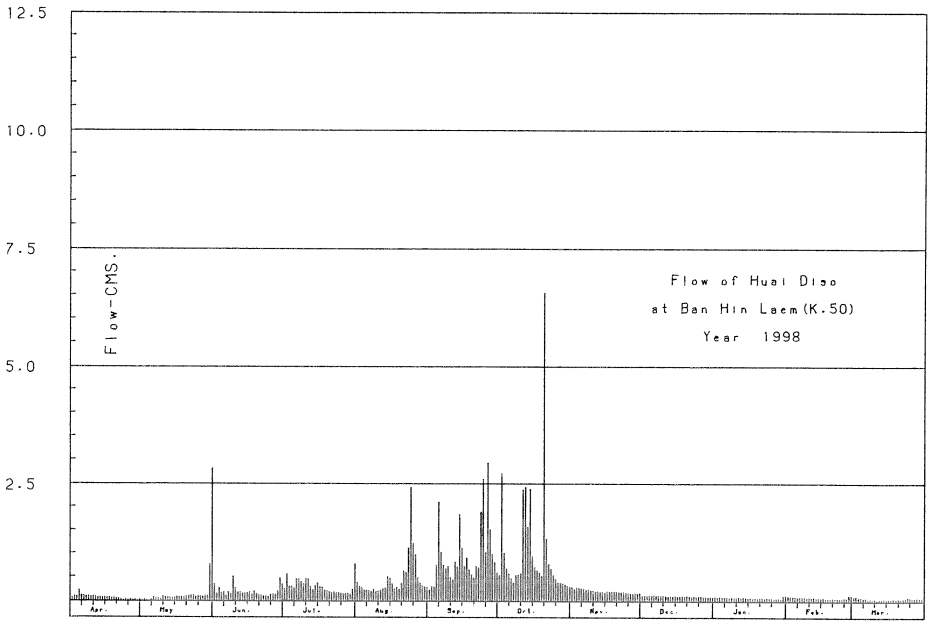
Huai Diso at Ban Hin Laem, Kanchanaburi (K.50)

Location	Lat. 14°-38'-39" N., Long. 98°-42'-04" E., on right bank at the bridge on Kanchanaburi-Thong Pha Phum highway, Tambon Tha Khanun, Amphoe Thong Pha Phum, Kanchanaburi.
Drainage Area	101 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+4.837 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1987, 1996 to date.
Rated by Float	-
Rated by Current Meter	1987, 1996 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 65 discharge measurements made in 1998.

Gage Height in Meter (AD.), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.41	0.32	0.67	0.61	0.69	0.59	0.78	0.63	0.50	0.43	0.47	0.46	
2	0.45	0.32	0.54	0.79	0.65	0.64	1.48	0.61	0.50	0.43	0.45	0.44	
3	0.46	0.32	0.63	0.65	0.62	0.64	0.99	0.63	0.50	0.43	0.44	0.41	
4	0.59	0.32	0.54	0.64	0.59	0.88	0.85	0.63	0.50	0.43	0.43	0.40	
5	0.51	0.32	0.56	0.62	0.59	1.32	0.79	0.62	0.51	0.42	0.43	0.38	
6	0.47	0.40	0.49	0.74	0.58	1.00	0.74	0.61	0.51	0.41	0.42	0.36	
7	0.47	0.37	0.55	0.73	0.57	0.88	0.70	0.60	0.50	0.41	0.42	0.35	
8	0.46	0.36	0.53	0.71	0.60	0.85	0.78	0.60	0.50	0.41	0.42	0.35	
9	0.46	0.35	0.76	0.67	0.57	0.87	0.78	0.59	0.50	0.41	0.41	0.34	
10	0.45	0.45	0.62	0.74	0.57	0.75	0.80	0.58	0.49	0.41	0.41	0.34	
11	0.43	0.42	0.55	0.74	0.59	0.73	1.39	0.57	0.49	0.41	0.41	0.33	
12	0.40	0.41	0.55	0.64	0.61	0.91	1.41	0.57	0.48	0.40	0.40	0.34	
13	0.40	0.39	0.54	0.60	0.63	0.87	1.17	0.56	0.47	0.40	0.39	0.34	
14	0.40	0.39	0.53	0.65	0.76	1.24	1.40	0.56	0.48	0.40	0.39	0.34	
15	0.40	0.39	0.54	0.69	0.75	1.03	0.96	0.55	0.47	0.39	0.39	0.34	
16	0.40	0.43	0.55	0.64	0.68	0.87	0.86	0.57	0.47	0.39	0.39	0.34	
17	0.38	0.42	0.52	0.63	0.61	0.95	0.83	0.57	0.47	0.38	0.37	0.34	
18	0.38	0.41	0.57	0.59	0.63	0.84	0.80	0.56	0.47	0.38	0.37	0.34	
19	0.38	0.43	0.53	0.57	0.61	0.78	0.77	0.57	0.47	0.38	0.37	0.34	
20	0.37	0.46	0.51	0.57	0.69	0.75	2.26	0.56	0.47	0.38	0.39	0.34	
21	0.35	0.49	0.50	0.54	0.82	0.87	1.09	0.56	0.47	0.38	0.37	0.34	
22	0.33	0.51	0.47	0.56	0.81	0.86	0.90	0.56	0.46	0.38	0.37	0.37	
23	0.33	0.49	0.45	0.54	1.03	1.26	0.84	0.55	0.45	0.38	0.37	0.36	
24	0.33	0.45	0.46	0.55	1.41	1.45	0.78	0.55	0.44	0.38	0.37	0.42	
25	0.32	0.44	0.51	0.53	1.06	1.00	0.73	0.54	0.44	0.37	0.38	0.38	
26	0.32	0.45	0.52	0.53	0.98	1.54	0.69	0.53	0.44	0.37	0.38	0.38	
27	0.32	0.46	0.52	0.54	0.75	1.15	0.69	0.54	0.44	0.37	0.51	0.38	
28	0.32	0.47	0.57	0.53	0.69	0.98	0.68	0.54	0.43	0.37	0.49	0.38	
29	0.32	0.49	0.75	0.52	0.65	0.91	0.67	0.54	0.43	0.37		0.38	
30	0.32	0.89	0.67	0.60	0.64	0.80	0.65	0.54	0.43	0.48		0.37	
31		1.51		0.90	0.63		0.64		0.43	0.50		0.35	
Mean	0.40	0.46	0.56	0.63	0.71	0.94	0.93	0.57	0.47	0.40	0.41	0.37	
Max	0.59	1.51	0.76	0.90	1.41	1.54	2.26	0.63	0.51	0.50	0.51	0.46	2.26
Min	0.32	0.32	0.45	0.52	0.57	0.59	0.64	0.53	0.43	0.37	0.37	0.33	0.32

Annual Max Momentary Gage Height 2.43 M (AD.), at 7.00 Hours, on Oct 20, 1998
Zero Gage at Bottom Elevation 0.00 M (AD.), River Bed 0.32 M (AD.)
Left Bank Elevation 3.16 M (AD.)
Right Bank Elevation 3.03 M (AD.), Drainage Area 101 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.08	0.04	0.36	0.26	0.39	0.24	0.56	0.29	0.12	0.09	0.11	0.10	
2	0.10	0.04	0.17	0.58	0.32	0.31	2.72	0.26	0.12	0.09	0.10	0.10	
3	0.10	0.04	0.29	0.32	0.28	0.31	1.02	0.29	0.12	0.09	0.10	0.08	
4	0.24	0.04	0.17	0.31	0.24	0.76	0.70	0.29	0.12	0.09	0.09	0.08	
5	0.13	0.04	0.20	0.28	0.24	2.12	0.58	0.28	0.13	0.09	0.09	0.07	
6	0.11	0.08	0.12	0.48	0.22	1.05	0.48	0.26	0.13	0.08	0.09	0.06	
7	0.11	0.06	0.19	0.46	0.21	0.76	0.40	0.25	0.12	0.08	0.09	0.05	
8	0.10	0.06	0.16	0.42	0.25	0.70	0.56	0.25	0.12	0.08	0.09	0.05	
9	0.10	0.05	0.52	0.36	0.21	0.74	0.56	0.24	0.12	0.08	0.08	0.05	
10	0.10	0.10	0.28	0.48	0.21	0.50	0.60	0.22	0.12	0.08	0.08	0.05	
11	0.09	0.09	0.19	0.48	0.24	0.46	2.37	0.21	0.12	0.08	0.08	0.04	
12	0.08	0.08	0.19	0.31	0.26	0.83	2.44	0.21	0.11	0.08	0.08	0.05	
13	0.08	0.07	0.17	0.25	0.29	0.74	1.59	0.20	0.11	0.08	0.07	0.05	
14	0.08	0.07	0.16	0.32	0.52	1.84	2.40	0.20	0.11	0.08	0.07	0.05	
15	0.08	0.07	0.17	0.39	0.50	1.14	0.95	0.19	0.11	0.07	0.07	0.05	
16	0.08	0.09	0.19	0.31	0.37	0.74	0.72	0.21	0.11	0.07	0.07	0.05	
17	0.07	0.09	0.15	0.29	0.26	0.93	0.66	0.21	0.11	0.07	0.06	0.05	
18	0.07	0.08	0.21	0.24	0.29	0.68	0.60	0.20	0.11	0.07	0.06	0.05	
19	0.07	0.09	0.16	0.21	0.26	0.56	0.54	0.21	0.11	0.07	0.06	0.05	
20	0.06	0.10	0.13	0.21	0.39	0.50	6.58	0.20	0.11	0.07	0.07	0.05	
21	0.05	0.12	0.12	0.17	0.64	0.74	1.32	0.20	0.11	0.07	0.06	0.05	
22	0.04	0.13	0.11	0.20	0.62	0.72	0.80	0.20	0.10	0.07	0.06	0.06	
23	0.04	0.12	0.10	0.17	1.14	1.91	0.68	0.19	0.10	0.07	0.06	0.06	
24	0.04	0.10	0.10	0.19	2.44	2.60	0.56	0.19	0.10	0.07	0.06	0.09	
25	0.04	0.10	0.13	0.16	1.23	1.05	0.46	0.17	0.10	0.06	0.07	0.07	
26	0.04	0.10	0.15	0.16	1.00	2.96	0.39	0.16	0.10	0.06	0.07	0.07	
27	0.04	0.10	0.15	0.17	0.50	1.52	0.39	0.17	0.10	0.06	0.13	0.07	
28	0.04	0.11	0.21	0.16	0.39	1.00	0.37	0.17	0.09	0.06	0.12	0.07	
29	0.04	0.12	0.50	0.15	0.32	0.83	0.36	0.17	0.09	0.06		0.07	
30	0.04	0.78	0.36	0.25	0.31	0.60	0.32	0.17	0.09	0.11		0.06	
31		2.84		0.80	0.29		0.31		0.09	0.12		0.05	
Total	2.34	6.00	6.11	9.54	14.83	29.84	32.99	6.46	3.40	2.40	2.24	1.90	118.05 CMSDAY
Mean	0.08	0.19	0.20	0.31	0.48	0.99	1.06	0.22	0.11	0.08	0.08	0.06	0.32 CMS
Max	0.24	2.84	0.52	0.80	2.44	2.96	6.58	0.29	0.13	0.12	0.13	0.10	6.58 CMS
Min	0.04	0.04	0.10	0.15	0.21	0.24	0.31	0.16	0.09	0.06	0.06	0.04	0.04 CMS
Runoff	0.202	0.518	0.528	0.824	1.281	2.578	2.850	0.558	0.294	0.207	0.194	0.164	10.200 MCM

Momentary Peak 7.60 CMS, at 2.43 M (AD.), at 7.00 Hours, on Oct 20, 1998

Runoff Yield 3.20 Liters/Second/Square KM, Momentary Peak Yield 75.248 Liters/Second/Square KM

WATER YEAR 1998

MAE KLONG RIVER BASIN

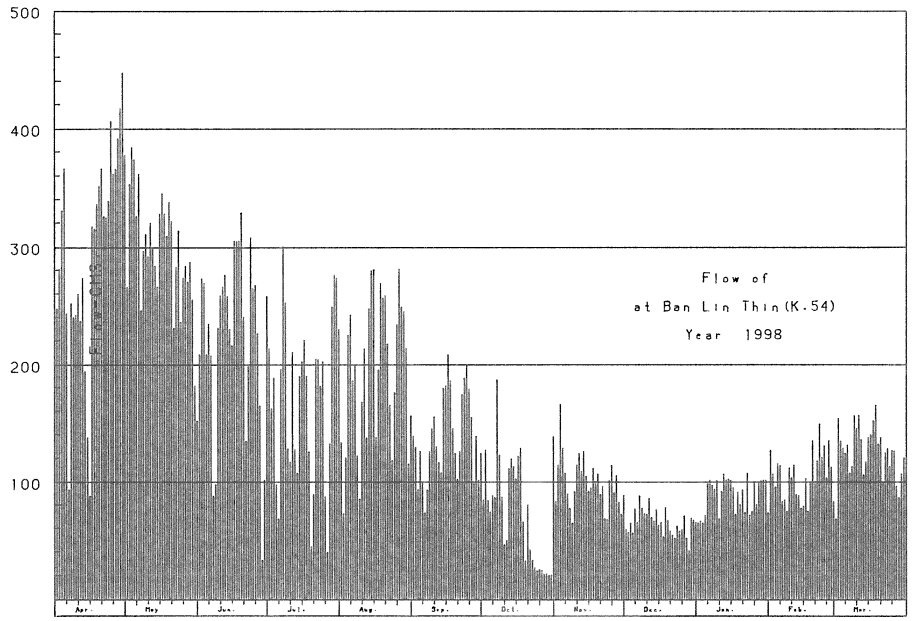
Khwae Noi River at Ban Lin Thin, Kanchanaburi (K.54)

Location	Lat. 14°-32'-02" N.,Long. 98°-47'-27" E., on right bank at the bridge on road, Ban Lin Thin, Amphoe Thong Pha Phume, Kanchanaburi.
Drainage Area	5,300 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 40 meters from the gage observer s house.
Elevation	+14.615 m.(A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Khao Laem Dam. Stage-discharge relation defined by 65 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.01	3.13	2.75	2.78	2.21	2.25	1.83	1.82	1.63	1.68	2.16	1.71	
2	3.23	3.70	3.18	2.42	1.74	2.18	2.16	2.06	1.61	1.69	2.00	2.36	
3	3.56	3.89	3.15	2.61	2.11	1.90	1.83	2.45	1.68	1.68	1.92	2.22	
4	3.78	3.83	2.75	1.93	2.86	2.15	1.75	2.17	1.61	1.73	2.07	2.17	
5	2.98	3.53	2.92	1.71	2.97	1.94	1.86	2.01	1.77	1.94	2.06	2.14	
6	1.90	3.75	2.74	2.66	2.59	1.75	1.85	1.87	1.68	1.96	1.82	2.19	
7	3.04	3.00	1.86	3.36	2.69	1.90	2.60	1.78	1.86	1.93	1.83	2.01	
8	2.96	3.33	1.93	3.04	2.12	2.15	2.13	1.68	1.78	1.90	1.76	2.05	
9	2.97	3.43	2.90	2.17	1.84	2.30	1.85	1.89	1.74	1.96	2.04	2.38	
10	3.09	3.30	3.08	2.08	2.46	2.37	1.52	2.06	1.74	1.71	1.98	2.30	
11	2.94	3.49	3.13	2.76	2.78	2.18	1.55	2.14	1.84	1.89	2.06	2.38	
12	3.18	3.35	3.20	2.16	2.24	2.08	2.04	2.02	1.72	2.00	1.87	2.23	
13	2.65	3.25	3.08	2.01	3.01	2.01	2.10	2.15	1.69	1.96	1.86	2.00	
14	2.24	3.13	2.89	2.62	3.22	2.55	2.05	1.99	1.77	1.97	1.78	2.08	
15	1.86	3.54	2.80	2.71	3.23	2.56	1.97	1.89	1.66	1.96	1.79	2.24	
16	3.47	3.65	3.39	2.83	2.24	2.75	2.12	1.91	1.68	1.91	1.97	2.26	
17	3.46	3.54	3.39	2.62	2.66	2.59	2.17	2.04	1.58	1.74	1.76	2.35	
18	3.59	3.42	3.39	2.15	3.15	2.30	1.69	1.95	1.78	1.88	1.94	2.44	
19	3.69	3.60	3.55	1.50	3.07	2.14	1.39	2.00	1.70	1.80	2.22	2.20	
20	3.78	3.50	2.96	1.87	3.08	1.97	1.80	1.87	1.62	1.90	1.95	2.24	
21	3.53	2.90	2.22	2.72	2.81	2.15	1.48	1.92	1.59	1.75	2.09	1.95	
22	3.52	3.24	2.68	2.72	2.44	2.51	1.40	1.71	1.57	2.01	2.33	2.14	
23	3.61	3.45	3.41	2.56	2.09	2.61	1.33	1.70	1.66	1.73	2.11	2.17	
24	4.03	2.93	3.12	2.71	2.52	2.68	1.31	1.96	1.62	1.76	2.19	2.05	
25	3.75	3.18	3.14	1.85	2.92	2.54	1.32	2.06	1.63	1.95	1.98	2.16	
26	3.78	3.25	2.87	1.46	3.23	2.37	1.31	1.88	1.73	1.80	2.22	2.15	
27	3.94	3.16	2.44	2.20	3.02	1.94	1.28	1.99	1.57	1.94	2.05	1.92	
28	4.09	3.27	1.40	3.02	2.99	2.25	1.28	1.82	1.47	1.96	1.82	1.85	
29	4.27	3.06	1.96	3.20	2.78	1.96	1.27	1.74	1.71	1.96		2.00	
30	3.85	2.56	3.08	3.18	2.07	2.14	1.27	1.86	1.70	1.96		2.11	
31		2.35		2.89	2.38		2.25		1.68	1.75		2.07	
Mean	3.33	3.31	2.85	2.47	2.63	2.24	1.73	1.95	1.68	1.86	1.99	2.15	
Max	4.27	3.89	3.55	3.36	3.23	2.75	2.60	2.45	1.86	2.01	2.33	2.44	4.27
Min	1.86	2.35	1.40	1.46	1.74	1.75	1.27	1.68	1.47	1.68	1.76	1.71	1.27

Annual Max Momentary Gage Height 4.68 M (A.D), at 5.00 Hours, on Oct 19, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -1.79 M (A.D)
Left Bank Elevation 7.67 M (A.D)
Right Bank Elevation 7.67 M (A.D), Drainage Area 5300 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	248.50	266.50	209.50	214.00	134.30	139.50	84.90	83.60	59.60	65.60	127.80	69.30	
2	281.50	354.00	274.00	162.80	73.20	130.40	127.80	114.80	57.20	66.80	107.00	154.40	
3	331.60	384.40	269.50	189.40	121.30	94.00	84.90	167.00	65.60	65.60	96.60	135.60	
4	366.80	374.80	209.50	97.90	226.00	126.50	74.50	129.10	57.20	71.90	116.10	129.10	
5	244.00	326.80	235.00	69.30	242.50	99.20	88.80	108.30	77.10	99.20	114.80	125.20	
6	94.00	362.00	208.00	196.40	186.60	74.50	87.50	90.10	65.60	101.80	83.60	131.70	
7	253.00	247.00	88.80	301.00	200.60	94.00	188.00	78.40	88.80	97.90	84.90	108.30	
8	241.00	296.50	97.90	253.00	122.60	126.50	123.90	65.60	78.40	94.00	75.80	113.50	
9	242.50	311.50	232.00	129.10	86.20	146.00	87.50	92.70	73.20	101.80	112.20	157.20	
10	260.50	292.00	259.00	117.40	168.40	155.80	47.20	114.80	73.20	69.30	104.40	146.00	
11	238.00	320.50	266.50	211.00	214.00	130.40	50.50	125.20	86.20	92.70	114.80	157.20	
12	274.00	299.50	277.00	127.80	138.20	117.40	112.20	109.60	70.60	107.00	90.10	136.90	
13	195.00	284.50	259.00	108.30	248.50	108.30	120.00	126.50	66.80	101.80	88.80	107.00	
14	138.20	266.50	230.50	190.80	280.00	181.00	113.50	105.70	77.10	103.10	78.40	117.40	
15	88.80	328.40	217.00	203.50	281.50	182.40	103.10	92.70	63.20	101.80	79.70	138.20	
16	317.50	346.00	305.50	221.50	138.20	209.50	122.60	95.30	65.60	95.30	103.10	140.80	
17	316.00	328.40	305.50	190.80	196.40	186.60	129.10	112.20	53.80	73.20	75.80	153.00	
18	336.40	310.00	305.50	126.50	269.50	146.00	66.80	100.50	78.40	91.40	99.20	165.60	
19	352.40	338.00	330.00	45.00	257.50	125.20	33.00	107.00	68.00	81.00	135.60	133.00	
20	366.80	322.00	241.00	90.10	259.00	103.10	81.00	90.10	58.40	94.00	100.50	138.20	
21	326.80	232.00	135.60	205.00	218.50	126.50	42.80	96.60	54.90	74.50	118.70	100.50	
22	325.20	283.00	199.20	205.00	165.60	175.40	34.00	69.30	52.70	108.30	150.20	125.20	
23	339.60	314.50	308.50	182.40	118.70	189.40	27.00	68.00	63.20	71.90	121.30	129.10	
24	407.10	236.50	265.00	203.50	176.80	199.20	25.00	101.80	58.40	75.80	131.70	113.50	
25	362.00	274.00	268.00	87.50	235.00	179.60	26.00	114.80	59.60	100.50	104.40	127.80	
26	366.80	284.50	227.50	40.60	281.50	155.80	25.00	91.40	71.90	81.00	135.60	126.50	
27	392.40	271.00	165.60	133.00	250.00	99.20	22.00	105.70	52.70	99.20	113.50	96.60	
28	417.30	287.50	34.00	250.00	245.50	139.50	22.00	83.60	41.70	101.80	83.60	87.50	
29	447.90	256.00	101.80	277.00	214.00	101.80	21.00	73.20	69.30	101.80		107.00	
30	378.00	182.40	259.00	274.00	116.10	125.20	21.00	88.80	68.00	101.80		121.30	
31		153.00		230.50	157.20		139.50		65.60	74.50		116.10	
Total	8949.60	9133.70	6784.90	5334.10	6023.40	4167.90	2332.10	3002.40	2042.00	2766.30	2948.20	3908.70	57393.30 CMSDAY
Mean	298.32	294.64	226.16	172.07	194.30	138.93	75.23	100.08	65.87	89.24	105.29	126.09	157.24 CMS
Max	447.90	384.40	330.00	301.00	281.50	209.50	188.00	167.00	88.80	108.30	150.20	165.60	447.90 CMS
Min	88.80	153.00	34.00	40.60	73.20	74.50	21.00	65.60	41.70	65.60	75.80	69.30	21.00 CMS
Runoff	773.245	789.152	586.215	460.866	520.422	360.107	201.493	259.407	176.429	239.008	254.724	337.712	4958.782 MCM

Momentary Peak 517.60 CMS, at 4.68 M (A.D), at 5.00 Hours, on Oct 19, 1998

Runoff Yield 29.67 Liters/Second/Square KM, Momentary Peak Yield 97.660 Liters/Second/Square KM

WATER YEAR 1998

PHETCHABURI RIVER BASIN

Phetchaburi River at Ban Rai Phaniat, Phetchaburi (B.1A)

Location — Lat. 13°-04'-22" N., Long. 99°-56'-37" E., on left bank, next to Muang Thamon Regulator, Ban Rai Phaniat, Amphoe Muang, Phetchaburi.

Drainage Area — 4,188 sq.km.

Type of Gage — Staff gage.

Zero Gage at Bottom — -0.060 m.(M.S.L.)

Bench Mark — B.M.-H.D.

Location — On left bank along the gage line.

Elevation — +4.667 m.(M.S.L.)

Gage Reading Frequency — 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height — Arithmetic mean of 5 readings.

Period of Available Gage Records — 1961 to date.

Rating Operation

Period of Rating — 1965, 1967 - 1971, 1990 to date.

Rated by Float — -

Rated by Current Meter — 1965, 1967 - 1971, 1990 to date.

Stability of Channel Regimes — Rather unstable because of backwater effect.

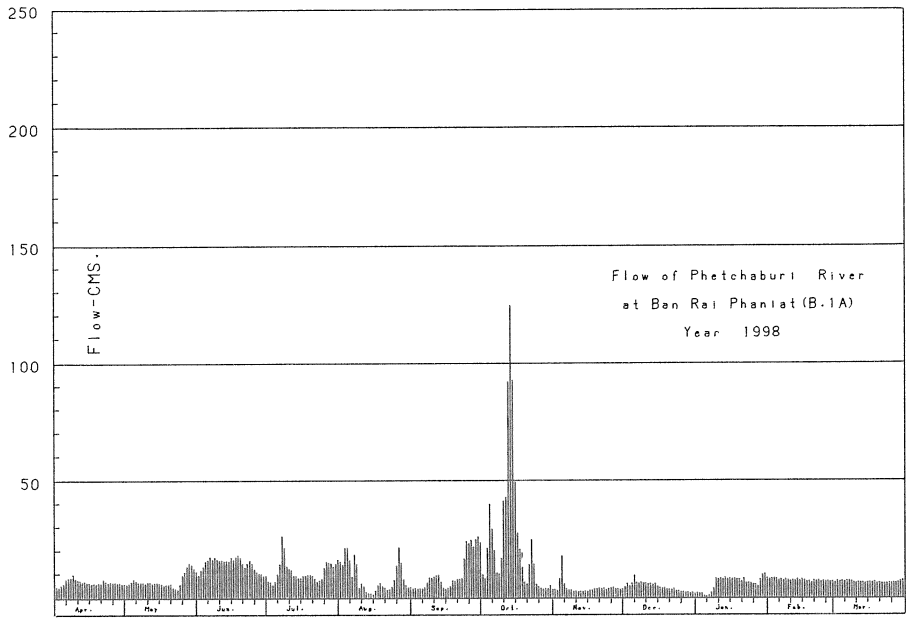
Overbank Flow Conditions — No overbank flow.

General Description — Records fair. Flow regulated by Kaeng Krachan Reservoir and Phet Diversion Dam. Stage-discharge relation defined by 51 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.09	1.15	1.35	1.22	1.62	1.06	1.36	1.03	1.10	0.95	1.27	1.20	
2	1.09	1.15	1.44	1.19	1.57	1.06	1.26	1.02	1.16	0.95	1.27	1.22	
3	1.12	1.21	1.53	1.14	1.85	1.06	1.85	1.26	1.12	0.94	1.29	1.22	
4	1.17	1.25	1.62	1.20	1.87	1.05	2.51	1.73	1.16	0.89	1.27	1.22	
5	1.27	1.23	1.66	1.37	1.64	1.06	2.16	1.17	1.35	0.85	1.25	1.22	
6	1.28	1.18	1.70	1.57	1.32	1.07	1.81	1.05	1.18	0.91	1.25	1.22	
7	1.30	1.19	1.67	2.05	1.75	1.19	1.40	1.03	1.18	0.95	1.24	1.24	
8	1.36	1.18	1.69	1.85	1.57	1.28	1.36	1.02	1.19	1.07	1.25	1.21	
9	1.28	1.17	1.67	1.54	1.08	1.29	1.69	1.00	1.18	1.27	1.25	1.20	
10	1.24	1.20	1.65	1.49	1.16	1.30	2.54	0.99	1.17	1.27	1.23	1.19	
11	1.23	1.18	1.64	1.44	1.11	1.33	2.59	0.99	1.17	1.27	1.23	1.19	
12	1.21	1.17	1.64	1.34	0.97	1.34	3.92	0.99	1.16	1.27	1.24	1.20	
13	1.21	1.17	1.63	1.32	0.95	1.21	4.70	0.99	1.15	1.29	1.25	1.18	
14	1.20	1.19	1.64	1.29	0.93	1.08	3.93	0.99	1.16	1.27	1.24	1.18	
15	1.18	1.16	1.69	1.27	0.92	1.05	2.79	1.00	1.11	1.27	1.25	1.18	
16	1.17	1.15	1.65	1.32	1.00	1.06	2.10	1.01	1.07	1.27	1.23	1.19	
17	1.16	1.13	1.71	1.34	1.14	1.11	1.83	1.03	1.07	1.27	1.22	1.20	
18	1.17	1.13	1.73	1.34	1.17	1.22	1.52	1.04	1.07	1.27	1.21	1.20	
19	1.17	1.15	1.70	1.36	1.11	1.21	1.19	1.06	1.05	1.25	1.20	1.18	
20	1.18	1.15	1.58	1.32	1.07	1.26	1.16	1.06	1.03	1.22	1.23	1.18	
21	1.26	1.08	1.52	1.26	1.03	1.25	1.56	1.06	1.04	1.27	1.23	1.18	
22	1.20	1.05	1.58	1.21	1.03	1.28	2.00	1.06	1.05	1.19	1.23	1.16	
23	1.19	1.04	1.66	1.22	1.10	1.68	1.57	1.04	1.01	1.18	1.22	1.18	
24	1.19	1.14	1.58	1.27	1.23	1.96	1.16	1.05	1.00	1.18	1.22	1.18	
25	1.19	1.35	1.48	1.51	1.55	1.94	1.09	1.08	0.99	1.16	1.22	1.18	
26	1.18	1.40	1.40	1.63	1.87	1.99	1.07	1.07	0.97	1.14	1.21	1.18	
27	1.18	1.53	1.38	1.60	1.60	1.87	1.05	1.06	0.97	1.12	1.21	1.19	
28	1.17	1.59	1.36	1.60	1.26	2.00	1.05	1.04	0.96	1.25	1.21	1.19	
29	1.16	1.57	1.32	1.51	1.12	2.03	1.06	1.04	0.96	1.36		1.23	
30	1.15	1.47	1.34	1.59	1.08	1.94	1.11	1.04	0.95	1.36		1.23	
31		1.41		1.65	1.08		1.04		0.94	1.28		1.22	
Mean	1.20	1.23	1.57	1.42	1.28	1.37	1.85	1.07	1.09	1.17	1.24	1.20	
Max	1.36	1.59	1.73	2.05	1.87	2.03	4.70	1.73	1.35	1.36	1.29	1.24	4.70
Min	1.09	1.04	1.32	1.14	0.92	1.05	1.04	0.99	0.94	0.85	1.20	1.16	0.85

Annual Max Momentary Gage Height 4.74 M (MSL), at 12.00 Hours, on Oct 13, 1998
Zero Gage at Bottom Elevation -0.06 M (MSL), River Bed -0.93 M (MSL)
Left Bank Elevation 6.63 M (MSL)
Right Bank Elevation 6.70 M (MSL), Drainage Area 4188 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.81	6.00	10.00	7.40	15.50	4.24	10.20	3.67	5.00	2.25	8.40	7.00	
2	4.81	6.00	11.80	6.80	14.40	4.24	8.20	3.48	6.20	2.25	8.40	7.40	
3	5.40	7.20	13.60	5.80	21.25	4.24	21.25	8.20	5.40	2.08	8.80	7.40	
4	6.40	8.00	15.50	7.00	21.75	4.05	40.32	18.25	6.20	1.26	8.40	7.40	
5	8.40	7.60	16.50	10.40	16.00	4.24	29.68	6.40	10.00	0.70	8.00	7.40	
6	8.60	6.60	17.50	14.40	9.40	4.43	20.25	4.05	6.60	1.57	8.00	7.40	
7	9.00	6.80	16.75	26.60	18.75	6.80	11.00	3.67	6.60	2.25	7.80	7.80	
8	10.20	6.60	17.25	21.25	14.40	8.60	10.20	3.48	6.80	4.43	8.00	7.20	
9	8.60	6.40	16.75	13.80	4.62	8.80	17.25	3.10	6.60	8.40	8.00	7.00	
10	7.80	7.00	16.25	12.80	6.20	9.00	41.28	2.93	6.40	8.40	7.60	6.80	
11	7.60	6.60	16.00	11.80	5.20	9.60	42.88	2.93	6.40	8.40	7.60	6.80	
12	7.20	6.40	16.00	9.80	2.59	9.80	92.40	2.93	6.20	8.40	7.80	7.00	
13	7.20	6.40	15.75	9.40	2.25	7.20	124.80	2.93	6.00	8.80	8.00	6.60	
14	7.00	6.80	16.00	8.80	1.91	4.62	92.80	2.93	6.20	8.40	7.80	6.60	
15	6.60	6.20	17.25	8.40	1.74	4.05	49.66	3.10	5.20	8.40	8.00	6.60	
16	6.40	6.00	16.25	9.40	3.10	4.24	28.00	3.29	4.43	8.40	7.60	6.80	
17	6.20	5.60	17.75	9.80	5.80	5.20	20.75	3.67	4.43	8.40	7.40	7.00	
18	6.40	5.60	18.25	9.80	6.40	7.40	13.40	3.86	4.43	8.40	7.20	7.00	
19	6.40	6.00	17.50	10.20	5.20	7.20	6.80	4.24	4.05	8.00	7.00	6.60	
20	6.60	6.00	14.60	9.40	4.43	8.20	6.20	4.24	3.67	7.40	7.60	6.60	
21	8.20	4.62	13.40	8.20	3.67	8.00	14.20	4.24	3.86	8.40	7.60	6.60	
22	7.00	4.05	14.60	7.20	3.67	8.60	25.20	4.24	4.05	6.80	7.60	6.20	
23	6.80	3.86	16.50	7.40	5.00	17.00	14.40	3.86	3.29	6.60	7.40	6.60	
24	6.80	5.80	14.60	8.40	7.60	24.12	6.20	4.05	3.10	6.60	7.40	6.60	
25	6.80	10.00	12.60	13.20	14.00	23.58	4.81	4.62	2.93	6.20	7.40	6.60	
26	6.60	11.00	11.00	15.75	21.75	24.93	4.43	4.43	2.59	5.80	7.20	6.60	
27	6.60	13.60	10.60	15.00	15.00	21.75	4.05	4.24	2.59	5.40	7.20	6.80	
28	6.40	14.80	10.20	15.00	8.20	25.20	4.05	3.86	2.42	8.00	7.20	6.80	
29	6.20	14.40	9.40	13.20	5.40	26.04	4.24	3.86	2.42	10.20		7.60	
30	6.00	12.40	9.80	14.80	4.62	23.58	5.20	3.86	2.25	10.20		7.60	
31		11.20		16.25	4.62		3.86		2.08	8.60		7.40	
Total	209.02	235.53	439.95	357.45	274.42	328.95	777.96	132.61	148.39	199.39	216.40	215.80	3535.87 CMSDAY
Mean	6.97	7.60	14.67	11.53	8.85	10.97	25.10	4.42	4.79	6.43	7.73	6.96	9.69 CMS
Max	10.20	14.80	18.25	26.60	21.75	26.04	124.80	18.25	10.00	10.20	8.80	7.80	124.80 CMS
Min	4.81	3.86	9.40	5.80	1.74	4.05	3.86	2.93	2.08	0.70	7.00	6.20	0.70 CMS
Runoff	18.059	20.350	38.012	30.884	23.710	28.421	67.216	11.458	12.821	17.227	18.697	18.645	305.499 MCM

Momentary Peak 126.48 CMS, at 4.74 M (MSL), at 12.00 Hours, on Oct 13, 1998

Runoff Yield 2.31 Liters/Second/Square KM, Momentary Peak Yield 30.201 Liters/Second/Square KM

WATER YEAR 1998

PHETCHABURI RIVER BASIN

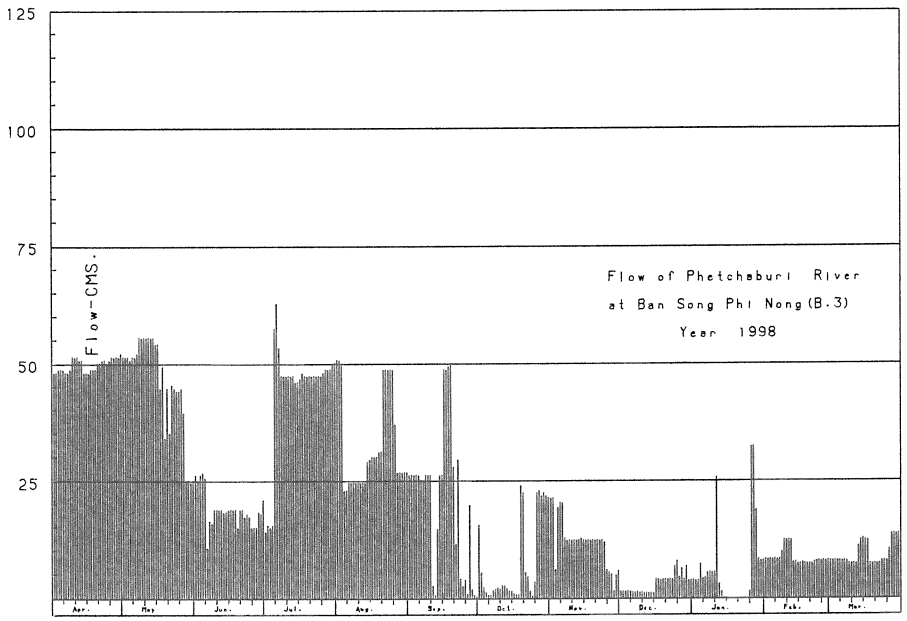
Phetchaburi River at Ban Song Phi Nong, Phetchaburi (B.3)

Location	Lat. 12°-52'-04" N., Long. 99°-40'-40" E., on left bank at Ban Song Phi Nong, Amphoe Kaeng Krachan, Phetchaburi.
Drainage Area	2,244 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+41.00 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 24 meters from the top staff gage.
Elevation	+50.534 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1930 - 1942, 1954 to date.
Rating Operation	
Period of Rating	1954 - 1959, 1968 to date.
Rated by Float	-
Rated by Current Meter	1954 - 1959, 1968 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow regulated by Kaeng Krachan Reservoir. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	42.84	42.89	42.48	42.24	42.88	42.48	42.27	42.39	41.83	41.94	42.10	42.09	
2	42.84	42.89	42.46	42.27	42.88	42.48	42.01	42.39	41.83	41.94	42.10	42.09	
3	42.85	42.89	42.48	42.26	42.87	42.48	41.87	42.03	41.83	41.94	42.10	42.09	
4	42.85	42.88	42.49	42.27	42.42	42.48	41.82	42.35	41.83	42.07	42.10	42.09	
5	42.85	42.89	42.47	42.98	42.42	42.48	41.78	42.37	41.83	41.96	42.10	42.09	
6	42.84	42.89	42.16	43.05	42.45	42.46	41.77	42.37	41.82	41.96	42.10	42.09	
7	42.84	42.90	42.29	42.92	42.45	42.46	41.84	42.21	41.82	42.01	42.10	42.09	
8	42.85	42.95	42.28	42.83	42.45	42.48	41.85	42.20	41.82	42.01	42.14	42.09	
9	42.89	42.95	42.34	42.83	42.45	42.48	41.87	42.20	41.82	42.01	42.20	42.07	
10	42.89	42.95	42.34	42.83	42.45	42.48	41.85	42.20	41.82	42.01	42.20	42.07	
11	42.89	42.95	42.34	42.83	42.45	41.89	41.89	42.20	41.81	42.47	42.20	42.07	
12	42.88	42.95	42.34	42.83	42.45	41.77	41.89	42.20	41.81	41.91	42.20	42.07	
13	42.88	42.95	42.33	42.83	42.45	42.25	41.86	42.20	41.81	41.83	42.08	42.17	
14	42.84	42.95	42.33	42.81	42.53	42.48	41.83	42.21	41.81	41.73	42.08	42.20	
15	42.84	42.93	42.34	42.81	42.54	42.48	41.83	42.20	41.81	41.69	42.07	42.21	
16	42.84	42.93	42.34	42.82	42.55	42.85	41.80	42.20	41.95	41.68	42.07	42.20	
17	42.85	42.79	42.34	42.84	42.55	42.85	41.78	42.20	41.95	41.68	42.08	42.20	
18	42.85	42.86	42.34	42.83	42.55	42.86	41.78	42.20	41.94	41.67	42.07	42.07	
19	42.85	42.62	42.26	42.83	42.57	42.87	42.44	42.20	41.95	41.67	42.07	42.07	
20	42.87	42.79	42.34	42.83	42.57	42.51	42.41	42.20	41.95	41.66	42.07	42.07	
21	42.87	42.64	42.34	42.83	42.85	42.18	42.01	42.20	41.95	41.66	42.07	42.07	
22	42.88	42.80	42.31	42.83	42.85	42.54	41.97	42.20	41.95	41.66	42.08	42.07	
23	42.88	42.79	42.32	42.83	42.85	41.95	41.83	42.20	41.95	41.66	42.09	42.09	
24	42.87	42.78	42.31	42.83	42.85	41.88	41.74	42.19	42.05	41.65	42.09	42.09	
25	42.88	42.78	42.26	42.83	42.85	41.94	41.92	42.03	42.09	41.83	42.09	42.09	
26	42.89	42.79	42.26	42.84	42.67	41.79	42.41	42.01	41.97	42.59	42.09	42.15	
27	42.89	42.71	42.26	42.85	42.49	42.36	42.42	42.00	42.04	42.59	42.09	42.23	
28	42.89	42.46	42.33	42.85	42.49	41.85	42.40	41.83	41.95	42.34	42.09	42.23	
29	42.89	42.46	42.32	42.85	42.49	41.76	42.41	41.99	42.05	42.10		42.23	
30	42.90	42.45	42.38	42.87	42.49	41.74	42.40	42.02	41.94	42.09		42.23	
31		42.46		42.87	42.49		42.39		41.94	42.09		42.23	
Mean	42.87	42.80	42.34	42.77	42.59	42.32	42.01	42.18	41.90	41.94	42.10	42.13	
Max	42.90	42.95	42.49	43.05	42.88	42.87	42.44	42.39	42.09	42.59	42.20	42.23	43.05
Min	42.84	42.45	42.16	42.24	42.42	41.74	41.74	41.83	41.81	41.65	42.07	42.07	41.65

Annual Max Momentary Gage Height 43.37 M (MSL), at 18.00 Hours, on Oct 1, 1998
Zero Gage at Bottom Elevation 41.00 M (MSL), River Bed 40.27 M (MSL)
Left Bank Elevation 48.83 M (MSL)
Right Bank Elevation 48.81 M (MSL), Drainage Area 2244 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	48.20	51.57	26.40	14.30	50.90	26.40	15.65	21.50	1.60	3.92	8.40	8.09	
2	48.20	51.57	25.30	15.65	50.90	26.40	5.61	21.50	1.60	3.92	8.40	8.09	
3	48.87	51.57	26.40	15.20	50.22	26.40	2.40	6.23	1.60	3.92	8.40	8.09	
4	48.87	50.90	26.95	15.65	23.10	26.40	1.40	19.50	1.60	7.47	8.40	8.09	
5	48.87	51.57	25.85	57.65	23.10	26.40	0.83	20.50	1.60	4.38	8.40	8.09	
6	48.20	51.57	10.86	63.00	24.75	25.30	0.75	20.50	1.40	4.38	8.40	8.09	
7	48.20	52.25	16.55	53.60	24.75	25.30	1.80	12.95	1.40	5.61	8.40	8.09	
8	48.87	55.63	16.10	47.53	24.75	26.40	2.00	12.50	1.40	5.61	10.04	8.09	
9	51.57	55.63	19.00	47.53	24.75	26.40	2.40	12.50	1.40	5.61	12.50	7.47	
10	51.57	55.63	19.00	47.53	24.75	26.40	2.00	12.50	1.40	5.61	12.50	7.47	
11	51.57	55.63	19.00	47.53	24.75	2.80	2.80	12.50	1.20	25.85	12.50	7.47	
12	50.90	55.63	19.00	47.53	24.75	0.75	2.80	12.50	1.20	3.23	12.50	7.47	
13	50.90	55.63	18.50	47.53	24.75	14.75	2.20	12.50	1.20	1.60	7.78	11.27	
14	48.20	55.63	18.50	46.18	29.15	26.40	1.60	12.95	1.20	0.42	7.78	12.50	
15	48.20	54.28	19.00	46.18	29.70	26.40	1.60	12.50	1.20	0.15	7.47	12.95	
16	48.20	54.28	19.00	46.85	30.25	48.87	1.00	12.50	4.15	0.14	7.47	12.50	
17	48.87	44.85	19.00	48.20	30.25	48.87	0.83	12.50	4.15	0.14	7.78	12.50	
18	48.87	49.55	19.00	47.53	30.25	49.55	0.83	12.50	3.92	0.12	7.47	7.47	
19	48.87	34.20	15.20	47.53	31.35	50.22	24.20	12.50	4.15	0.12	7.47	7.47	
20	50.22	44.85	19.00	47.53	31.35	28.05	22.55	12.50	4.15	0.10	7.47	7.47	
21	50.22	35.40	19.00	47.53	48.87	11.68	5.61	12.50	4.15	0.10	7.47	7.47	
22	50.90	45.50	17.50	47.53	48.87	29.70	4.61	12.50	4.15	0.10	7.78	7.47	
23	50.90	44.85	18.00	47.53	48.87	4.15	1.60	12.50	4.15	0.10	8.09	8.09	
24	50.22	44.20	17.50	47.53	48.87	2.60	0.50	12.09	6.85	0.09	8.09	8.09	
25	50.90	44.20	15.20	47.53	48.87	3.92	3.46	6.23	8.09	1.60	8.09	8.09	
26	51.57	44.85	15.20	48.20	37.20	0.92	22.55	5.61	4.61	32.45	8.09	10.45	
27	51.57	39.65	15.20	48.87	26.95	20.00	23.10	5.30	6.54	32.45	8.09	13.85	
28	51.57	25.30	18.50	48.87	26.95	2.00	22.00	1.60	4.15	19.00	8.09	13.85	
29	51.57	25.30	18.00	48.87	26.95	0.67	22.55	5.07	6.85	8.40		13.85	
30	52.25	24.75	21.00	50.22	26.95	0.50	22.00	5.92	3.92	8.09		13.85	
31		25.30		50.22	26.95		21.50		3.92	8.09		13.85	
Total	1497.89	1431.72	572.71	1383.13	1024.82	634.60	244.73	364.95	98.90	192.77	243.32	297.64	7987.18 CMSDAY
Mean	49.93	46.18	19.09	44.62	33.06	21.15	7.89	12.16	3.19	6.22	8.69	9.60	21.88 CMS
Max	52.25	55.63	26.95	63.00	50.90	50.22	24.20	21.50	8.09	32.45	12.50	13.85	63.00 CMS
Min	48.20	24.75	10.86	14.30	23.10	0.50	0.50	1.60	1.20	0.09	7.47	7.47	0.09 CMS
Runoff	129.418	123.701	49.482	119.502	88.544	54.829	21.145	31.532	8.545	16.655	21.023	25.716	690.092 MCM

Momentary Peak 89.80 CMS, at 43.37 M (MSL), at 18.00 Hours, on Oct 1, 1998

Runoff Yield 9.75 Liters/Second/Square KM, Momentary Peak Yield 40.018 Liters/Second/Square KM

WATER YEAR 1998

PHETCHABURI RIVER BASIN

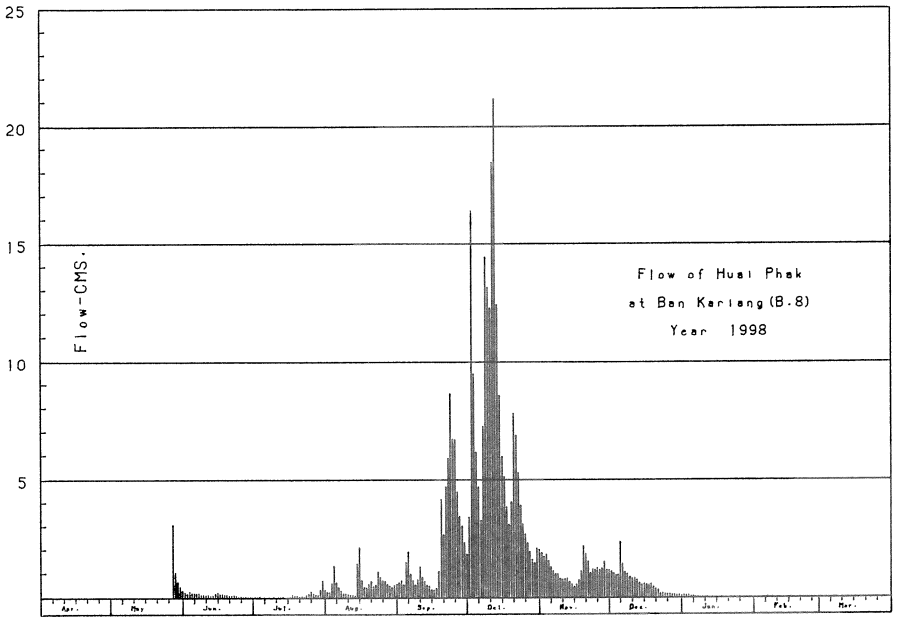
Huai Phak at Ban Kariang, Phetchaburi (B.8)

Location	Lat. 12°-48'-49" N., Long. 99°-41'-32" E., on left bank at Ban Kariang, Amphoe Tha Yang, Phetchaburi.
Drainage Area	264 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	Infront of gage observer's house.
Elevation	+8.879 m. (A.D.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1973 to date.
Rating Operation	
Period of Rating	1973 to date.
Rated by Float	-
Rated by Current Meter	1973 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 55 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.87	0.53	1.61	1.46	1.62	1.74	2.26	2.02	1.88	1.51	1.42	1.36	
2	0.87	0.51	1.60	1.47	1.61	1.76	3.54	1.99	1.85	1.51	1.42	1.35	
3	0.84	0.50	1.62	1.46	1.72	1.71	2.95	2.01	1.83	1.50	1.42	1.33	
4	0.82	0.49	1.61	1.45	1.93	1.95	2.60	1.96	1.83	1.49	1.43	1.33	
5	0.80	0.48	1.60	1.44	1.74	2.03	2.43	1.92	2.10	1.48	1.43	1.33	
6	0.74	0.49	1.60	1.43	1.68	1.85	2.24	1.88	1.94	1.45	1.44	1.38	
7	0.68	0.55	1.60	1.44	1.63	1.76	2.72	1.85	1.87	1.44	1.44	1.39	
8	0.65	0.55	1.55	1.45	1.60	1.71	3.39	1.84	1.84	1.43	1.44	1.39	
9	0.64	0.48	1.54	1.45	1.58	1.77	3.28	1.79	1.81	1.44	1.43	1.39	
10	0.63	0.46	1.53	1.44	1.55	1.92	3.21	1.77	1.78	1.45	1.43	1.39	
11	0.62	0.43	1.53	1.45	1.54	1.81	3.69	1.79	1.79	1.44	1.43	1.38	
12	0.61	0.41	1.50	1.46	1.52	1.75	3.88	1.79	1.77	1.44	1.41	1.38	
13	0.58	0.40	1.51	1.46	1.50	1.71	3.22	1.75	1.73	1.45	1.41	1.37	
14	0.55	0.38	1.60	1.44	1.94	1.69	2.86	1.71	1.70	1.45	1.41	1.35	
15	0.54	0.36	1.61	1.44	2.06	1.65	2.58	1.69	1.71	1.44	1.40	1.35	
16	0.54	0.31	1.58	1.46	1.77	1.64	2.48	1.71	1.71	1.44	1.40	1.35	
17	0.53	0.31	1.56	1.54	1.68	1.67	2.32	1.77	1.70	1.44	1.41	1.35	
18	0.53	0.32	1.55	1.50	1.67	1.88	2.22	1.88	1.71	1.44	1.40	1.34	
19	0.54	0.33	1.53	1.49	1.71	2.36	2.35	2.07	1.68	1.43	1.39	1.29	
20	0.52	0.33	1.51	1.48	1.76	2.15	2.78	2.01	1.65	1.43	1.39	1.21	
21	0.51	0.36	1.51	1.47	1.68	2.43	2.68	1.96	1.64	1.43	1.38	1.16	
22	0.52	0.37	1.53	1.46	1.71	2.57	2.50	1.86	1.60	1.43	1.38	1.13	
23	0.55	0.39	1.49	1.52	1.88	2.87	2.33	1.90	1.59	1.42	1.38	1.13	
24	0.57	0.42	1.48	1.59	1.80	2.66	2.22	1.90	1.58	1.42	1.38	1.16	
25	0.59	0.43	1.47	1.62	1.76	2.66	2.15	1.91	1.55	1.43	1.38	1.18	
26	0.56	0.96	1.47	1.58	1.76	2.40	2.09	1.89	1.55	1.41	1.38	1.19	
27	0.56	2.22	1.46	1.55	1.72	2.27	2.03	1.91	1.54	1.41	1.38	1.19	
28	0.55	1.86	1.46	1.54	1.69	2.21	1.97	1.96	1.53	1.41	1.37	1.17	
29	0.53	1.75	1.46	1.65	1.68	2.09	1.95	1.89	1.52	1.41		1.19	
30	0.51	1.68	1.46	1.76	1.70	2.01	2.05	1.89	1.52	1.41		1.22	
31		1.64		1.64	1.71		2.04		1.51	1.41		1.26	
Mean	0.62	0.67	1.54	1.50	1.71	2.02	2.61	1.88	1.71	1.44	1.41	1.29	
Max	0.87	2.22	1.62	1.76	2.06	2.87	3.88	2.07	2.10	1.51	1.44	1.39	3.88
Min	0.51	0.31	1.46	1.43	1.50	1.64	1.95	1.69	1.51	1.41	1.37	1.13	0.31

Annual Max Momentary Gage Height 5.04 M (A.D), at 23.00 Hours, on Oct 11, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.40 M (A.D)
Left Bank Elevation 6.66 M (A.D)
Right Bank Elevation 8.70 M (A.D), Drainage Area 264 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.23	0.06	0.27	0.67	3.42	1.92	1.13	0.11	0.02	0.00	
2	0.00	0.00	0.20	0.07	0.23	0.73	16.42	1.74	1.03	0.11	0.02	0.00	
3	0.00	0.00	0.27	0.06	0.60	0.57	9.50	1.86	0.97	0.10	0.02	0.00	
4	0.00	0.00	0.23	0.05	1.38	1.50	6.20	1.56	0.97	0.09	0.03	0.00	
5	0.00	0.00	0.20	0.04	0.67	1.98	4.74	1.32	2.40	0.08	0.03	0.00	
6	0.00	0.00	0.20	0.03	0.47	1.03	3.28	1.13	1.44	0.05	0.04	0.00	
7	0.00	0.00	0.20	0.04	0.30	0.73	7.28	1.03	1.10	0.04	0.04	0.00	
8	0.00	0.00	0.15	0.05	0.20	0.57	14.48	1.00	1.00	0.03	0.04	0.00	
9	0.00	0.00	0.14	0.05	0.18	0.77	13.16	0.83	0.90	0.04	0.03	0.00	
10	0.00	0.00	0.13	0.04	0.15	1.32	12.32	0.77	0.80	0.05	0.03	0.00	
11	0.00	0.00	0.13	0.05	0.14	0.90	18.46	0.83	0.83	0.04	0.03	0.00	
12	0.00	0.00	0.10	0.06	0.12	0.70	21.20	0.83	0.77	0.04	0.01	0.00	
13	0.00	0.00	0.11	0.06	0.10	0.57	12.44	0.70	0.63	0.05	0.01	0.00	
14	0.00	0.00	0.20	0.04	1.44	0.50	8.60	0.57	0.53	0.05	0.01	0.00	
15	0.00	0.00	0.23	0.04	2.16	0.37	6.02	0.50	0.57	0.04	0.00	0.00	
16	0.00	0.00	0.18	0.06	0.77	0.33	5.14	0.57	0.57	0.04	0.00	0.00	
17	0.00	0.00	0.16	0.14	0.47	0.43	3.86	0.77	0.53	0.04	0.01	0.00	
18	0.00	0.00	0.15	0.10	0.43	1.13	3.14	1.13	0.57	0.04	0.00	0.00	
19	0.00	0.00	0.13	0.09	0.57	4.18	4.10	2.22	0.47	0.03	0.00	0.00	
20	0.00	0.00	0.11	0.08	0.73	2.70	7.82	1.86	0.37	0.03	0.00	0.00	
21	0.00	0.00	0.11	0.07	0.47	4.74	6.92	1.56	0.33	0.03	0.00	0.00	
22	0.00	0.00	0.13	0.06	0.57	5.93	5.30	1.07	0.20	0.03	0.00	0.00	
23	0.00	0.00	0.09	0.12	1.13	8.70	3.94	1.20	0.19	0.02	0.00	0.00	
24	0.00	0.00	0.08	0.19	0.87	6.74	3.14	1.20	0.18	0.02	0.00	0.00	
25	0.00	0.00	0.07	0.27	0.73	6.74	2.70	1.26	0.15	0.03	0.00	0.00	
26	0.00	0.00	0.07	0.18	0.73	4.50	2.34	1.17	0.15	0.01	0.00	0.00	
27	0.00	3.14	0.06	0.15	0.60	3.49	1.98	1.26	0.14	0.01	0.00	0.00	
28	0.00	1.07	0.06	0.14	0.50	3.07	1.62	1.56	0.13	0.01	0.00	0.00	
29	0.00	0.70	0.06	0.37	0.47	2.34	1.50	1.17	0.12	0.01		0.00	
30	0.00	0.47	0.06	0.73	0.53	1.86	2.10	1.17	0.12	0.01		0.00	
31		0.33		0.33	0.57		2.04		0.11	0.01		0.00	
Total	0.00	5.71	4.24	3.82	18.55	69.79	215.16	35.76	19.40	1.29	0.37	0.00	374.09 CMSDAY
Mean	0.00	0.18	0.14	0.12	0.60	2.33	6.94	1.19	0.63	0.04	0.01	0.00	1.02 CMS
Max	0.00	3.14	0.27	0.73	2.16	8.70	21.20	2.22	2.40	0.11	0.04	0.00	21.20 CMS
Min	0.00	0.00	0.06	0.03	0.10	0.33	1.50	0.50	0.11	0.01	0.00	0.00	0.00 CMS
Runoff	0.000	0.493	0.366	0.330	1.603	6.030	18.590	3.090	1.676	0.111	0.032	0.000	32.321 MCM

Momentary Peak 40.62 CMS, at 5.04 M (A.D), at 23.00 Hours, on Oct 11, 1998
Runoff Yield 3.88 Liters/Second/Square KM, Momentary Peak Yield 153.864 Liters/Second/Square KM

WATER YEAR 1998

PHETCHABURI RIVER BASIN

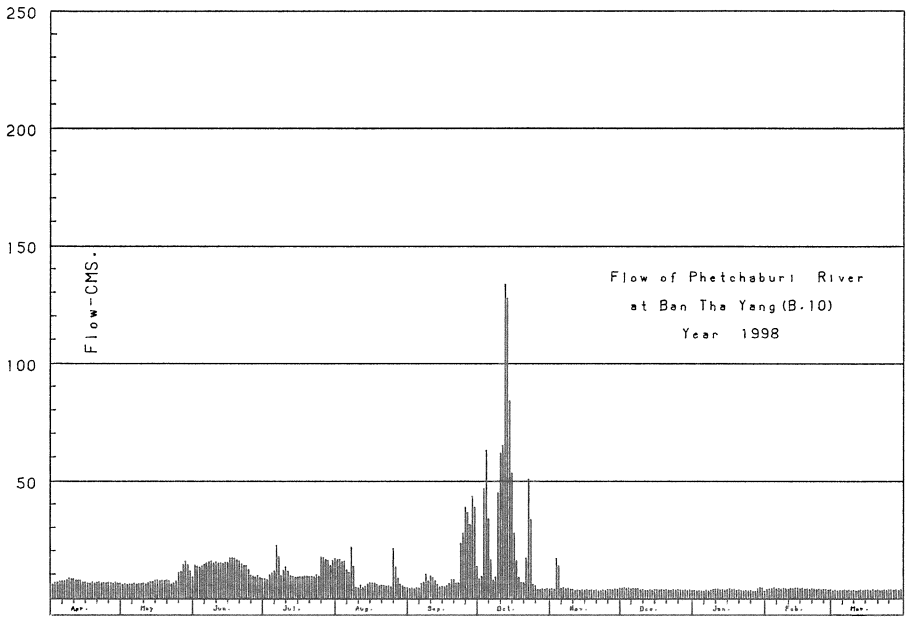
Phetchaburi River at Ban Tha Yang, Phetchaburi (B.10)

Location	Lat. 12°-58'-24" N., Long. 99°-53'-10" E., on left bank at the bridge of Ban Tha Yang, Amphoe Tha Yang, Phetchaburi.
Drainage Area	4,111 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+5.63 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 2.00 meters from the top staff gage.
Elevation	+15.068 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1985 to date.
Rated by Float	-
Rated by Current Meter	1985 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow regulated by Phet Dam. Stage-discharge relation defined by 51 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.77	6.76	7.37	6.94	7.52	6.59	6.94	6.58	6.61	6.50	6.55	6.50	
2	6.81	6.77	7.32	6.93	7.51	6.58	7.05	6.58	6.62	6.48	6.55	6.50	
3	6.85	6.77	7.31	7.09	7.47	6.57	9.02	7.55	6.60	6.47	6.59	6.49	
4	6.86	6.76	7.33	7.11	7.46	6.59	9.66	7.36	6.60	6.48	6.61	6.49	
5	6.88	6.77	7.39	7.20	7.23	6.61	8.42	6.60	6.58	6.47	6.58	6.50	
6	6.87	6.78	7.41	7.84	7.13	6.78	7.51	6.61	6.57	6.48	6.57	6.50	
7	6.93	6.76	7.46	7.61	7.81	6.86	6.92	6.59	6.59	6.48	6.57	6.50	
8	6.97	6.76	7.47	7.04	7.33	7.09	7.01	6.58	6.57	6.49	6.57	6.49	
9	6.97	6.78	7.43	7.21	6.61	6.90	8.96	6.57	6.53	6.55	6.58	6.49	
10	6.94	6.78	7.44	7.30	6.61	7.07	9.63	6.53	6.53	6.54	6.57	6.49	
11	6.93	6.78	7.42	7.18	6.71	6.99	9.73	6.51	6.52	6.55	6.57	6.49	
12	6.90	6.82	7.41	7.07	6.62	6.91	11.90	6.52	6.51	6.54	6.58	6.50	
13	6.90	6.83	7.41	7.03	6.65	6.74	11.72	6.52	6.51	6.53	6.59	6.51	
14	6.83	6.87	7.43	7.02	6.78	6.66	10.37	6.53	6.52	6.53	6.59	6.50	
15	6.83	6.89	7.44	7.03	6.80	6.65	9.30	6.52	6.52	6.55	6.58	6.50	
16	6.79	6.90	7.55	7.01	6.80	6.67	8.10	6.53	6.53	6.56	6.58	6.51	
17	6.82	6.89	7.57	7.03	6.82	6.68	7.50	6.52	6.53	6.55	6.56	6.50	
18	6.83	6.88	7.54	7.03	6.72	6.81	7.02	6.51	6.52	6.53	6.55	6.52	
19	6.82	6.90	7.51	7.05	6.69	6.92	6.82	6.51	6.53	6.52	6.56	6.51	
20	6.83	6.90	7.46	7.01	6.70	6.95	6.83	6.50	6.53	6.51	6.56	6.51	
21	6.83	6.87	7.39	7.02	6.69	6.79	7.55	6.49	6.53	6.49	6.57	6.50	
22	6.81	6.77	7.36	7.03	6.68	6.83	9.18	6.50	6.52	6.48	6.54	6.50	
23	6.80	6.79	7.33	7.07	6.67	7.90	8.41	6.51	6.52	6.47	6.53	6.51	
24	6.82	6.88	7.24	7.05	6.66	8.10	6.74	6.51	6.52	6.47	6.53	6.51	
25	6.81	7.14	7.06	7.60	7.77	8.67	6.70	6.53	6.53	6.47	6.53	6.51	
26	6.81	7.19	7.05	7.56	7.32	8.54	6.56	6.54	6.51	6.46	6.53	6.52	
27	6.80	7.38	7.03	7.53	6.99	8.30	6.55	6.54	6.51	6.46	6.53	6.52	
28	6.82	7.46	7.05	7.48	6.74	8.89	6.56	6.55	6.51	6.55	6.52	6.51	
29	6.81	7.37	7.01	7.36	6.70	8.67	6.56	6.56	6.50	6.64		6.51	
30	6.78	7.18	6.95	7.48	6.60	7.32	6.57	6.58	6.51	6.58		6.52	
31		7.01		7.54	6.59		6.57		6.52	6.44		6.51	
Mean	6.85	6.92	7.34	7.21	6.95	7.19	8.01	6.60	6.54	6.51	6.56	6.50	
Max	6.97	7.46	7.57	7.84	7.81	8.89	11.90	7.55	6.62	6.64	6.61	6.52	11.90
Min	6.77	6.76	6.95	6.93	6.59	6.57	6.55	6.49	6.50	6.44	6.52	6.49	6.44

Annual Max Momentary Gage Height 11.96 M (MSL), at 12.00 Hours, on Oct 12, 1998
Zero Gage at Bottom Elevation 5.63 M (MSL), River Bed 4.68 M (MSL)
Left Bank Elevation 9.88 M (MSL)
Right Bank Elevation 11.12 M (MSL), Drainage Area 4111 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.4	6.3	14.6	8.4	16.8	4.6	8.4	4.5	4.8	3.7	4.2	3.7	
2	6.8	6.4	13.8	8.3	16.7	4.5	9.8	4.5	4.9	3.6	4.2	3.7	
3	7.3	6.4	13.7	10.4	16.0	4.4	47.0	17.3	4.7	3.5	4.6	3.6	
4	7.4	6.3	14.0	10.7	15.9	4.6	63.3	14.4	4.7	3.6	4.8	3.6	
5	7.7	6.4	14.8	12.0	12.5	4.8	34.4	4.7	4.5	3.5	4.5	3.7	
6	7.5	6.5	15.1	22.8	11.0	6.5	16.7	4.8	4.4	3.6	4.4	3.7	
7	8.3	6.3	15.9	18.2	22.2	7.4	8.1	4.6	4.6	3.6	4.4	3.7	
8	8.7	6.3	16.0	9.7	14.0	10.4	9.2	4.5	4.4	3.6	4.4	3.6	
9	8.7	6.5	15.4	12.2	4.8	7.9	45.5	4.4	4.0	4.2	4.5	3.6	
10	8.4	6.5	15.6	13.5	4.8	10.1	62.4	4.0	4.0	4.1	4.4	3.6	
11	8.3	6.5	15.3	11.7	5.8	9.0	65.4	3.8	3.9	4.2	4.4	3.6	
12	7.9	6.9	15.1	10.1	4.9	8.0	134.1	3.9	3.8	4.1	4.5	3.7	
13	7.9	7.1	15.1	9.5	5.2	6.1	127.9	3.9	3.8	4.0	4.6	3.8	
14	7.1	7.5	15.4	9.4	6.5	5.3	84.6	4.0	3.9	4.0	4.6	3.7	
15	7.1	7.8	15.6	9.5	6.7	5.2	54.0	3.9	3.9	4.2	4.5	3.7	
16	6.6	7.9	17.3	9.2	6.7	5.4	28.0	4.0	4.0	4.3	4.5	3.8	
17	6.9	7.8	17.6	9.5	6.9	5.5	16.5	3.9	4.0	4.2	4.3	3.7	
18	7.1	7.7	17.1	9.5	5.9	6.8	9.4	3.8	3.9	4.0	4.2	3.9	
19	6.9	7.9	16.7	9.8	5.6	8.1	6.9	3.8	4.0	3.9	4.3	3.8	
20	7.1	7.9	15.9	9.2	5.7	8.5	7.1	3.7	4.0	3.8	4.3	3.8	
21	7.1	7.5	14.8	9.4	5.6	6.6	17.3	3.6	4.0	3.6	4.4	3.7	
22	6.8	6.4	14.4	9.5	5.5	7.1	51.0	3.7	3.9	3.6	4.1	3.7	
23	6.7	6.6	14.0	10.1	5.4	24.0	34.2	3.8	3.9	3.5	4.0	3.8	
24	6.9	7.7	12.6	9.8	5.3	28.0	6.1	3.8	3.9	3.5	4.0	3.8	
25	6.8	11.1	9.9	18.0	21.4	39.4	5.7	4.0	4.0	3.5	4.0	3.8	
26	6.8	11.9	9.8	17.4	13.8	36.8	4.3	4.1	3.8	3.4	4.0	3.9	
27	6.7	14.7	9.5	17.0	9.0	32.0	4.2	4.1	3.8	3.4	4.0	3.9	
28	6.9	15.9	9.8	16.2	6.1	43.8	4.3	4.2	3.8	4.2	3.9	3.8	
29	6.8	14.6	9.2	14.4	5.7	39.4	4.3	4.3	3.7	5.1		3.8	
30	6.5	11.7	8.5	16.2	4.7	13.8	4.4	4.5	3.8	4.5		3.9	
31		9.2		17.1	4.6		4.4		3.9	3.3		3.8	
Total	218.1	256.2	422.5	378.7	281.7	404.0	978.9	146.5	126.7	119.3	121.0	115.9	3569.5 CMSDAY
Mean	7.3	8.3	14.1	12.2	9.1	13.5	31.6	4.9	4.1	3.8	4.3	3.7	9.8 CMS
Max	8.7	15.9	17.6	22.8	22.2	43.8	134.1	17.3	4.9	5.1	4.8	3.9	134.1 CMS
Min	6.4	6.3	8.5	8.3	4.6	4.4	4.2	3.6	3.7	3.3	3.9	3.6	3.3 CMS
Runoff	18.84	22.14	36.50	32.72	24.34	34.91	84.58	12.66	10.95	10.31	10.45	10.01	308.40 MCM

Momentary Peak 136.21 CMS, at 11.96 M (MSL), at 12.00 Hours, on Oct 12, 1998

Runoff Yield 2.38 Liters/Second/Square KM, Momentary Peak Yield 33.133 Liters/Second/Square KM

WATER YEAR 1998

KHLONG KUI BASIN

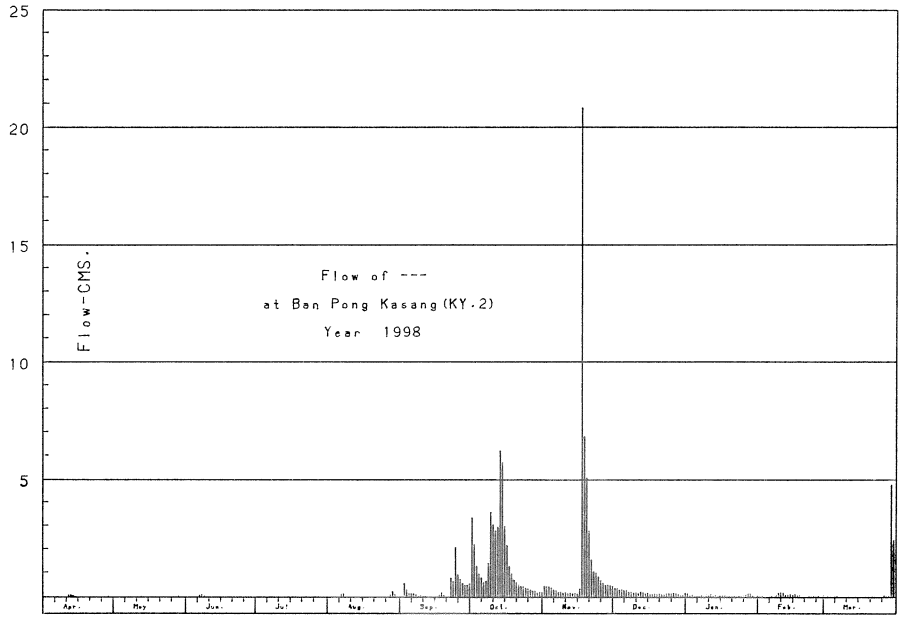
Khlong Kui at Ban Pong Kasang, Prachuap Khiri Khan (Ky.2)

Location	Lat. 12°-06'-55" N., Long. 99°-44'-20" E., on right bank at the culvert of the left irrigation canal of Yang Chum Project, Ban Pong Kasang, Amphoe Kui Buri, Prachuap Khiri Khan.
Drainage Area	92 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the measuring line.
Elevation	+8.405 m.(A.D.)
Gage Reading Frequency	16-time daily readings at 03.00 - 18.00, 21.00 and 24.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 16 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Rather unstable by some silting.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 32 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.50	0.53	0.50	0.56	0.46	0.61	1.38	0.93	0.90	0.73	0.64	0.63	
2	0.50	0.47	0.49	0.57	0.46	0.98	1.26	0.91	0.88	0.69	0.64	0.66	
3	0.50	0.47	0.48	0.57	0.46	0.85	1.14	0.92	0.86	0.68	0.63	0.66	
4	0.48	0.48	0.55	0.56	0.46	0.78	1.07	0.89	0.85	0.67	0.63	0.65	
5	0.50	0.55	0.59	0.55	0.57	0.76	1.04	0.86	0.85	0.66	0.63	0.64	
6	0.62	0.55	0.70	0.54	0.74	0.73	0.98	0.83	0.84	0.66	0.63	0.63	
7	0.51	0.55	0.70	0.53	0.73	0.70	1.01	0.81	0.82	0.66	0.63	0.62	
8	0.57	0.53	0.69	0.52	0.60	0.68	1.16	0.80	0.80	0.66	0.69	0.61	
9	0.51	0.52	0.55	0.51	0.61	0.67	1.40	0.79	0.79	0.73	0.79	0.61	
10	0.50	0.49	0.49	0.51	0.60	0.65	1.35	0.78	0.78	0.69	0.79	0.60	
11	0.67	0.50	0.48	0.53	0.50	0.63	1.32	0.77	0.78	0.72	0.80	0.63	
12	0.68	0.66	0.48	0.50	0.47	0.62	1.34	0.77	0.82	0.67	0.68	0.63	
13	0.68	0.47	0.47	0.49	0.46	0.61	1.61	0.76	0.78	0.68	0.72	0.63	
14	0.48	0.47	0.47	0.49	0.46	0.61	1.57	0.76	0.76	0.68	0.71	0.61	
15	0.47	0.50	0.47	0.50	0.50	0.60	1.34	0.75	0.76	0.67	0.70	0.63	
16	0.47	0.46	0.46	0.50	0.47	0.60	1.26	0.87	0.73	0.67	0.72	0.66	
17	0.47	0.46	0.46	0.46	0.48	0.71	1.14	2.26	0.73	0.66	0.70	0.66	
18	0.51	0.46	0.46	0.46	0.46	0.78	1.07	1.65	0.73	0.66	0.67	0.64	
19	0.51	0.47	0.46	0.46	0.46	0.67	1.02	1.52	0.73	0.65	0.65	0.66	
20	0.47	0.60	0.45	0.46	0.46	0.63	0.98	1.32	0.73	0.64	0.65	0.60	
21	0.47	0.61	0.45	0.46	0.47	0.65	0.96	1.19	0.72	0.63	0.65	0.58	
22	0.47	0.62	0.45	0.46	0.48	1.04	0.93	1.10	0.72	0.63	0.65	0.58	
23	0.47	0.56	0.45	0.46	0.49	1.00	0.91	1.08	0.74	0.65	0.65	0.59	
24	0.47	0.48	0.45	0.46	0.50	1.25	0.90	1.05	0.77	0.67	0.65	0.60	
25	0.47	0.48	0.45	0.46	0.50	1.07	0.87	1.01	0.73	0.68	0.65	0.64	
26	0.50	0.68	0.45	0.64	0.59	1.02	0.86	0.97	0.76	0.71	0.65	0.66	
27	0.48	0.65	0.45	0.63	0.71	0.98	0.84	0.95	0.77	0.76	0.67	0.66	
28	0.63	0.64	0.56	0.61	0.83	0.93	0.82	0.94	0.70	0.73	0.67	0.64	
29	0.63	0.60	0.56	0.47	0.70	0.95	0.80	0.94	0.70	0.65		1.50	
30	0.62	0.59	0.56	0.47	0.60	0.96	0.79	0.92	0.68	0.63		1.28	
31		0.57		0.46	0.62		0.78		0.78	0.64		1.05	
Mean	0.53	0.54	0.51	0.51	0.55	0.79	1.09	1.00	0.77	0.67	0.68	0.69	
Max	0.68	0.68	0.70	0.64	0.83	1.25	1.61	2.26	0.90	0.76	0.80	1.50	2.26
Min	0.47	0.46	0.45	0.46	0.46	0.60	0.78	0.75	0.68	0.63	0.63	0.58	0.45

Annual Max Momentary Gage Height 3.46 M (A.D), at 13.00 Hours, on Nov 17, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.67 M (A.D)
Left Bank Elevation 5.21 M (A.D)
Right Bank Elevation 8.53 M (A.D), Drainage Area 92 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.00	0.01	3.40	0.48	0.40	0.13	0.04	0.03	
2	0.00	0.00	0.00	0.00	0.00	0.60	2.22	0.43	0.36	0.09	0.04	0.06	
3	0.00	0.00	0.00	0.00	0.00	0.30	1.32	0.45	0.32	0.08	0.03	0.06	
4	0.00	0.00	0.00	0.00	0.00	0.18	0.97	0.38	0.30	0.07	0.03	0.05	
5	0.00	0.00	0.00	0.00	0.00	0.16	0.83	0.32	0.30	0.06	0.03	0.04	
6	0.02	0.00	0.10	0.00	0.14	0.13	0.60	0.26	0.28	0.06	0.03	0.03	
7	0.00	0.00	0.10	0.00	0.13	0.10	0.69	0.22	0.24	0.06	0.03	0.02	
8	0.00	0.00	0.09	0.00	0.00	0.08	1.43	0.20	0.20	0.06	0.09	0.01	
9	0.00	0.00	0.00	0.00	0.01	0.07	3.60	0.19	0.19	0.13	0.19	0.01	
10	0.00	0.00	0.00	0.00	0.00	0.05	3.10	0.18	0.18	0.09	0.19	0.00	
11	0.07	0.00	0.00	0.00	0.00	0.03	2.80	0.17	0.18	0.12	0.20	0.03	
12	0.08	0.06	0.00	0.00	0.00	0.02	3.00	0.17	0.24	0.07	0.08	0.03	
13	0.08	0.00	0.00	0.00	0.00	0.01	6.25	0.16	0.18	0.08	0.12	0.03	
14	0.00	0.00	0.00	0.00	0.00	0.01	5.71	0.16	0.16	0.08	0.11	0.01	
15	0.00	0.00	0.00	0.00	0.00	0.00	3.00	0.15	0.16	0.07	0.10	0.03	
16	0.00	0.00	0.00	0.00	0.00	0.00	2.22	0.34	0.13	0.07	0.12	0.06	
17	0.00	0.00	0.00	0.00	0.00	0.11	1.32	20.86	0.13	0.06	0.10	0.06	
18	0.00	0.00	0.00	0.00	0.00	0.18	0.97	6.85	0.13	0.06	0.07	0.04	
19	0.00	0.00	0.00	0.00	0.00	0.07	0.74	5.06	0.13	0.05	0.05	0.06	
20	0.00	0.00	0.00	0.00	0.00	0.03	0.60	2.80	0.13	0.04	0.05	0.00	
21	0.00	0.01	0.00	0.00	0.00	0.05	0.55	1.60	0.12	0.03	0.05	0.00	
22	0.00	0.02	0.00	0.00	0.00	0.83	0.48	1.10	0.12	0.03	0.05	0.00	
23	0.00	0.00	0.00	0.00	0.00	0.65	0.43	1.01	0.14	0.05	0.05	0.00	
24	0.00	0.00	0.00	0.00	0.00	2.13	0.40	0.87	0.17	0.07	0.05	0.00	
25	0.00	0.00	0.00	0.00	0.00	0.97	0.34	0.69	0.13	0.08	0.05	0.04	
26	0.00	0.08	0.00	0.04	0.00	0.74	0.32	0.58	0.16	0.11	0.05	0.06	
27	0.00	0.05	0.00	0.03	0.11	0.60	0.28	0.52	0.17	0.16	0.07	0.06	
28	0.03	0.04	0.00	0.01	0.26	0.48	0.24	0.50	0.10	0.13	0.07	0.04	
29	0.03	0.00	0.00	0.00	0.10	0.52	0.20	0.50	0.10	0.05		4.80	
30	0.02	0.00	0.00	0.00	0.00	0.55	0.19	0.45	0.08	0.03		2.41	
31		0.00		0.00	0.02		0.18		0.18	0.04		0.87	
Total	0.33	0.26	0.29	0.08	0.77	9.66	48.38	47.65	5.81	2.31	2.14	8.94	126.62 CMSDAY
Mean	0.01	0.01	0.01	0.00	0.02	0.32	1.56	1.59	0.19	0.07	0.08	0.29	0.35 CMS
Max	0.08	0.08	0.10	0.04	0.26	2.13	6.25	20.86	0.40	0.16	0.20	4.80	20.86 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.15	0.08	0.03	0.03	0.00	0.00 CMS
Runoff	0.029	0.022	0.025	0.007	0.067	0.835	4.180	4.117	0.502	0.200	0.185	0.772	10.940 MCM

Momentary Peak 78.40 CMS, at 3.46 M (A.D), at 13.00 Hours, on Nov 17, 1998
Runoff Yield 3.77 Liters/Second/Square KM, Momentary Peak Yield 852.174 Liters/Second/Square KM

WATER YEAR 1998

KHLONG KUI BASIN

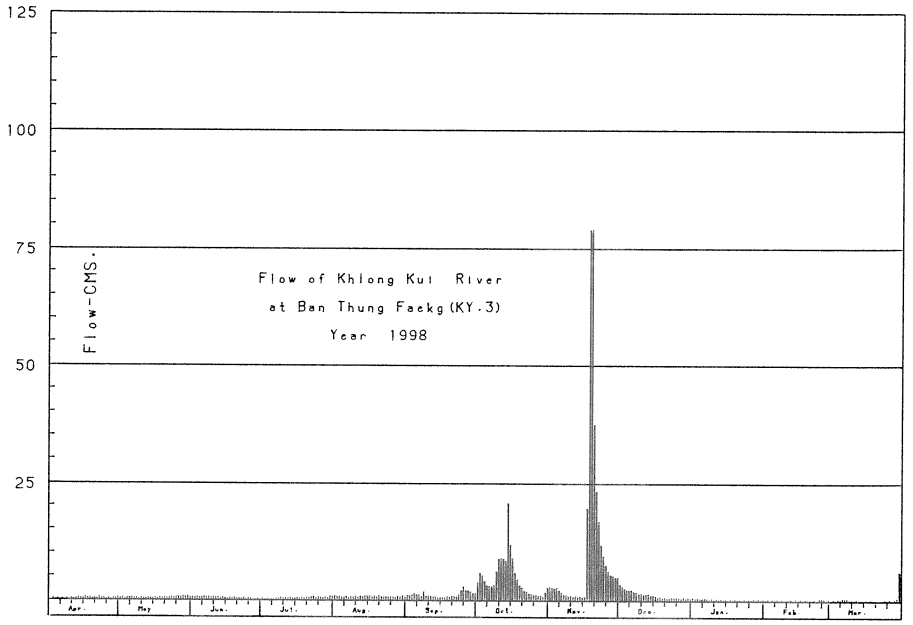
Khlong Kui at Ban Thung Faek, Prachuap Khiri Khan (Ky.3)

Location	Lat. 12°-05'-46" N., Long. 99°-47'-22" E., on left bank at Bunchuai Bamrungrat Bridge near Wat Udom Wararam, Ban Hat Kham, Amphoe Kui Buri, Prachuap Khiri Khan.
Drainage Area	538 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 1.00 meter from the top staff gage.
Elevation	+6.136 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1997 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Rather unstable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 53 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.77	1.80	1.81	1.77	1.86	1.89	2.10	2.04	2.08	1.75	1.67	1.66	
2	1.77	1.80	1.83	1.77	1.86	1.90	2.20	2.03	2.04	1.74	1.67	1.66	
3	1.77	1.79	1.83	1.76	1.85	1.90	2.17	2.03	2.02	1.73	1.66	1.67	
4	1.76	1.79	1.83	1.76	1.84	1.94	2.12	2.03	1.98	1.73	1.67	1.67	
5	1.75	1.80	1.83	1.75	1.83	1.92	2.07	2.00	1.98	1.72	1.66	1.69	
6	1.75	1.80	1.83	1.76	1.83	1.90	2.05	1.95	1.97	1.71	1.66	1.73	
7	1.77	1.79	1.83	1.78	1.82	1.87	2.05	1.92	1.95	1.70	1.67	1.73	
8	1.77	1.78	1.82	1.80	1.83	1.96	2.06	1.90	1.92	1.69	1.66	1.72	
9	1.77	1.78	1.82	1.80	1.84	1.88	2.21	1.88	1.90	1.69	1.65	1.68	
10	1.77	1.78	1.82	1.80	1.85	1.86	2.30	1.88	1.89	1.69	1.64	1.66	
11	1.78	1.79	1.82	1.79	1.84	1.85	2.30	1.87	1.88	1.69	1.64	1.65	
12	1.79	1.79	1.81	1.80	1.85	1.86	2.30	1.86	1.88	1.69	1.66	1.65	
13	1.79	1.78	1.81	1.80	1.86	1.84	2.28	1.85	1.87	1.69	1.67	1.64	
14	1.78	1.78	1.80	1.80	1.87	1.83	2.57	1.85	1.85	1.68	1.66	1.64	
15	1.80	1.79	1.80	1.79	1.87	1.82	2.37	1.84	1.83	1.67	1.66	1.65	
16	1.82	1.79	1.79	1.79	1.86	1.81	2.30	1.83	1.82	1.68	1.67	1.65	
17	1.81	1.79	1.79	1.80	1.85	1.83	2.20	2.55	1.78	1.68	1.66	1.65	
18	1.79	1.79	1.80	1.80	1.85	1.84	2.13	3.35	1.78	1.68	1.66	1.65	
19	1.79	1.80	1.80	1.80	1.85	1.85	2.07	3.35	1.75	1.68	1.67	1.64	
20	1.77	1.79	1.80	1.80	1.88	1.85	2.03	2.93	1.75	1.68	1.67	1.66	
21	1.79	1.80	1.79	1.80	1.86	1.85	1.99	2.71	1.74	1.67	1.66	1.63	
22	1.82	1.81	1.79	1.85	1.85	1.86	1.96	2.57	1.75	1.67	1.65	1.63	
23	1.80	1.81	1.79	1.83	1.83	1.91	1.94	2.44	1.75	1.66	1.65	1.64	
24	1.78	1.81	1.78	1.82	1.84	2.00	1.92	2.36	1.76	1.66	1.74	1.65	
25	1.77	1.82	1.79	1.83	1.83	2.04	1.91	2.29	1.75	1.65	1.73	1.66	
26	1.77	1.82	1.79	1.83	1.83	2.00	1.90	2.23	1.74	1.65	1.66	1.65	
27	1.76	1.83	1.76	1.82	1.83	2.00	1.89	2.20	1.73	1.68	1.67	1.64	
28	1.78	1.84	1.76	1.82	1.85	1.96	1.87	2.18	1.75	1.68	1.66	1.65	
29	1.80	1.85	1.77	1.82	1.85	1.94	1.85	2.17	1.74	1.69		1.76	
30	1.80	1.84	1.77	1.85	1.86	1.93	1.96	2.16	1.73	1.67		2.23	
31		1.83		1.86	1.85		2.04		1.74	1.67		1.94	
Mean	1.78	1.80	1.80	1.80	1.85	1.90	2.10	2.21	1.84	1.69	1.67	1.69	
Max	1.82	1.85	1.83	1.86	1.88	2.04	2.57	3.35	2.08	1.75	1.74	2.23	3.35
Min	1.75	1.78	1.76	1.75	1.82	1.81	1.85	1.83	1.73	1.65	1.64	1.63	1.63

Annual Max Momentary Gage Height 3.50 M (A.D), at 18.00 Hours, on Nov 17, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.67 M (A.D)
Left Bank Elevation 4.46 M (A.D)
Right Bank Elevation 4.77 M (A.D), Drainage Area 538 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.42	0.60	0.66	0.42	0.96	1.14	3.80	2.90	3.54	0.70	0.41	0.38	
2	0.42	0.60	0.78	0.42	0.96	1.20	6.00	2.75	3.02	0.66	0.41	0.38	
3	0.42	0.54	0.78	0.36	0.90	1.20	5.34	2.75	2.76	0.62	0.38	0.41	
4	0.36	0.54	0.78	0.36	0.84	1.64	4.24	2.75	2.32	0.62	0.41	0.41	
5	0.30	0.60	0.78	0.30	0.78	1.42	3.35	2.30	2.32	0.58	0.38	0.47	
6	0.30	0.60	0.78	0.36	0.78	1.20	3.05	1.75	2.23	0.54	0.38	0.62	
7	0.42	0.54	0.78	0.48	0.72	1.02	3.05	1.42	2.05	0.50	0.41	0.62	
8	0.42	0.48	0.72	0.60	0.78	1.86	3.20	1.20	1.78	0.47	0.38	0.58	
9	0.42	0.48	0.72	0.60	0.84	1.08	6.30	1.08	1.60	0.47	0.35	0.44	
10	0.42	0.48	0.72	0.60	0.90	0.96	9.00	1.08	1.53	0.47	0.32	0.38	
11	0.48	0.54	0.72	0.54	0.84	0.90	9.00	1.02	1.46	0.47	0.32	0.35	
12	0.54	0.54	0.66	0.60	0.90	0.96	9.00	0.96	1.46	0.47	0.38	0.35	
13	0.54	0.48	0.66	0.60	0.96	0.84	8.40	0.90	1.39	0.47	0.41	0.32	
14	0.48	0.48	0.60	0.60	1.02	0.78	20.85	0.90	1.25	0.44	0.38	0.32	
15	0.60	0.54	0.60	0.54	1.02	0.72	11.80	0.84	1.11	0.41	0.38	0.35	
16	0.72	0.54	0.54	0.54	0.96	0.66	9.00	0.78	1.04	0.44	0.41	0.35	
17	0.66	0.54	0.54	0.60	0.90	0.78	6.00	19.75	0.82	0.44	0.38	0.35	
18	0.54	0.54	0.60	0.60	0.90	0.84	4.46	79.00	0.82	0.44	0.38	0.35	
19	0.54	0.60	0.60	0.60	0.90	0.90	3.35	79.00	0.70	0.44	0.41	0.32	
20	0.42	0.54	0.60	0.60	1.08	0.90	2.75	37.40	0.70	0.44	0.41	0.38	
21	0.54	0.60	0.54	0.60	0.96	0.90	2.19	23.36	0.66	0.41	0.38	0.29	
22	0.72	0.66	0.54	0.90	0.90	0.96	1.86	16.80	0.70	0.41	0.35	0.29	
23	0.60	0.66	0.54	0.78	0.78	1.31	1.64	11.90	0.70	0.38	0.35	0.32	
24	0.48	0.66	0.48	0.72	0.84	2.30	1.42	9.46	0.74	0.38	0.66	0.35	
25	0.42	0.72	0.54	0.78	0.78	2.90	1.31	7.67	0.70	0.35	0.62	0.38	
26	0.42	0.72	0.54	0.78	0.78	2.30	1.20	6.29	0.66	0.35	0.38	0.35	
27	0.36	0.78	0.36	0.72	0.78	2.30	1.14	5.60	0.62	0.44	0.41	0.32	
28	0.48	0.84	0.36	0.72	0.90	1.86	1.02	5.24	0.70	0.44	0.38	0.35	
29	0.60	0.90	0.42	0.72	0.90	1.64	0.90	5.06	0.66	0.47		0.74	
30	0.60	0.84	0.42	0.90	0.96	1.53	1.86	4.88	0.62	0.41		6.29	
31		0.78		0.96	0.90		2.90		0.66	0.41		1.96	
Total	14.64	18.96	18.36	18.90	27.42	39.00	149.38	336.79	41.32	14.54	11.22	19.77	710.30 CMSDAY
Mean	0.49	0.61	0.61	0.61	0.88	1.30	4.82	11.23	1.33	0.47	0.40	0.64	1.95 CMS
Max	0.72	0.90	0.78	0.96	1.08	2.90	20.85	79.00	3.54	0.70	0.66	6.29	79.00 CMS
Min	0.30	0.48	0.36	0.30	0.72	0.66	0.90	0.78	0.62	0.35	0.32	0.29	0.29 CMS
Runoff	1.265	1.638	1.586	1.633	2.369	3.370	12.906	29.099	3.570	1.256	0.969	1.708	61.370 MCM

Momentary Peak 94.00 CMS, at 3.50 M (A.D), at 18.00 Hours, on Nov 17, 1998

Runoff Yield 3.62 Liters/Second/Square KM, Momentary Peak Yield 174.721 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

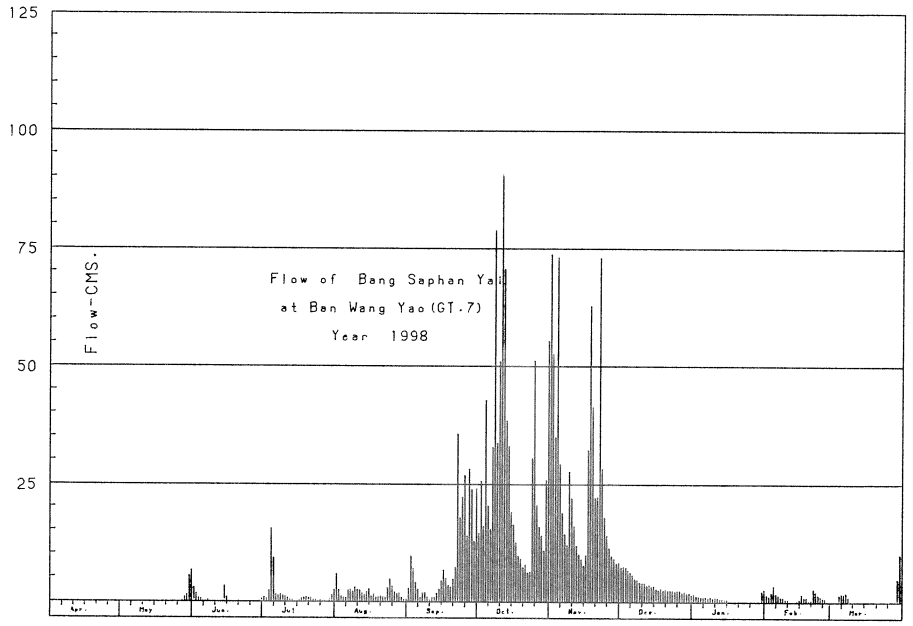
Khlong Bang Saphan Yai at Ban Wang Yao, Prachuap Khiri Khan (Gt.7)

Location	Lat. 11°-14'-02" N., Long. 99°-26'-35" E., on left bank near the bridge of Phet Kasem Highway at Ban Wang Yao, Amphoe Bang Saphan, Prachuap Khiri Khan.
Drainage Area	346 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Highways Dept.
Location	On left bank at the abutment of the bridge.
Elevation	+8.084 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1980 to date.
Rated by Float	-
Rated by Current Meter	1980 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 69 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.05	0.82	1.77	1.45	1.87	1.77	2.07	2.95	1.91	1.72	1.72	1.54	
2	1.05	0.80	1.63	1.40	1.76	1.97	2.28	2.68	1.91	1.71	1.70	1.53	
3	1.04	0.78	1.42	1.73	1.71	1.90	2.10	2.43	1.91	1.70	1.74	1.50	
4	1.03	0.88	1.35	2.09	1.68	1.82	2.54	2.94	1.89	1.70	1.79	1.72	
5	1.02	0.83	1.25	1.96	1.69	1.77	2.19	2.34	1.88	1.70	1.73	1.73	
6	1.04	0.79	1.24	1.58	1.76	1.70	2.09	2.16	1.86	1.69	1.71	1.72	
7	1.01	0.83	1.30	1.56	1.76	1.73	2.40	2.07	1.84	1.69	1.70	1.74	
8	0.78	0.89	1.21	1.59	1.75	1.74	3.01	2.02	1.83	1.69	1.68	1.69	
9	0.78	0.86	1.11	1.56	1.78	1.69	2.41	2.31	1.82	1.68	1.66	1.62	
10	0.76	0.85	1.05	1.48	1.76	1.65	2.66	2.22	1.81	1.68	1.64	1.53	
11	0.74	0.83	0.98	1.41	1.76	1.68	3.16	2.10	1.81	1.67	1.60	1.47	
12	0.72	0.81	0.94	1.36	1.73	1.70	2.91	2.02	1.80	1.66	1.58	1.43	
13	0.70	0.80	1.20	1.29	1.72	1.73	2.48	1.98	1.80	1.65	1.59	1.40	
14	0.70	0.77	1.79	1.24	1.74	1.77	2.40	1.95	1.79	1.65	1.61	1.39	
15	0.68	0.77	1.47	1.22	1.77	1.83	2.16	1.92	1.79	1.65	1.66	1.36	
16	0.68	0.86	1.14	1.31	1.71	1.89	2.11	1.97	1.77	1.60	1.72	1.34	
17	0.67	0.85	0.82	1.39	1.72	1.84	2.03	2.39	1.76	1.58	1.70	1.33	
18	0.66	1.02	0.61	1.45	1.70	1.80	1.97	2.81	1.77	1.54	1.68	1.38	
19	0.64	0.91	0.55	1.45	1.69	1.78	1.95	2.52	1.76	1.51	1.63	1.34	
20	0.61	0.86	0.46	1.44	1.71	1.84	1.91	2.22	1.76	1.48	1.64	1.31	
21	0.64	0.91	0.38	1.40	1.69	1.91	1.92	2.22	1.75	1.44	1.77	1.29	
22	0.73	0.91	0.44	1.35	1.70	2.44	1.88	2.94	1.76	1.42	1.74	1.28	
23	0.73	1.00	0.46	1.29	1.78	2.14	1.88	2.32	1.75	1.38	1.72	1.32	
24	0.73	1.03	0.43	1.29	1.84	2.22	2.36	2.14	1.75	1.37	1.70	1.45	
25	0.76	1.06	0.46	1.29	1.79	2.30	2.66	2.06	1.75	1.41	1.69	1.47	
26	0.74	1.07	0.57	1.26	1.74	2.06	2.19	2.01	1.75	1.44	1.66	1.44	
27	0.69	1.30	0.93	1.26	1.73	2.32	2.10	1.97	1.74	1.46	1.62	1.45	
28	0.66	1.48	1.17	1.30	1.73	2.25	2.06	1.95	1.74	1.47	1.58	1.44	
29	0.84	1.57	1.24	1.39	1.70	2.04	2.00	1.93	1.73	1.52		1.84	
30	0.83	1.86	1.39	1.59	1.64	2.25	2.28	1.93	1.73	1.75		1.98	
31		1.89		1.73	1.66		2.72		1.72	1.76		1.83	
Mean	0.79	1.00	1.03	1.46	1.73	1.92	2.29	2.25	1.79	1.59	1.68	1.51	
Max	1.05	1.89	1.79	2.09	1.87	2.44	3.16	2.95	1.91	1.76	1.79	1.98	3.16
Min	0.61	0.77	0.38	1.22	1.64	1.65	1.88	1.92	1.72	1.37	1.58	1.28	0.38

Annual Max Momentary Gage Height 3.43 M (AD), at 7.00 Hours, on Oct 11, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.50 M (AD)
Left Bank Elevation 9.73 M (AD)
Right Bank Elevation 9.78 M (AD), Drainage Area 346 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	3.05	0.90	5.95	2.75	14.50	74.00	7.40	1.50	1.50	0.00	
2	0.00	0.00	1.65	0.70	2.50	9.80	25.80	52.60	7.40	1.25	1.00	0.00	
3	0.00	0.00	0.78	2.45	1.25	7.00	16.00	35.10	7.40	1.00	2.00	0.00	
4	0.00	0.00	0.50	15.50	0.80	4.20	42.80	73.20	6.65	1.00	3.25	1.50	
5	0.00	0.00	0.20	9.40	0.90	2.75	20.50	29.40	6.30	1.00	1.75	1.75	
6	0.00	0.00	0.18	1.42	2.50	1.00	15.50	19.00	5.60	0.90	1.25	1.50	
7	0.00	0.00	0.30	1.34	2.50	1.75	33.00	14.50	4.90	0.90	1.00	2.00	
8	0.00	0.00	0.12	1.46	2.25	2.00	78.80	12.00	4.55	0.90	0.80	0.90	
9	0.00	0.00	0.00	1.34	3.00	0.90	33.70	27.60	4.20	0.80	0.60	0.20	
10	0.00	0.00	0.00	1.02	2.50	0.50	51.20	22.20	3.85	0.80	0.40	0.00	
11	0.00	0.00	0.00	0.74	2.50	0.80	90.80	16.00	3.85	0.70	0.00	0.00	
12	0.00	0.00	0.00	0.54	1.75	1.00	70.80	12.00	3.50	0.60	0.00	0.00	
13	0.00	0.00	0.10	0.28	1.50	1.75	38.60	10.20	3.50	0.50	0.00	0.00	
14	0.00	0.00	3.35	0.18	2.00	2.75	33.00	9.00	3.25	0.50	0.10	0.00	
15	0.00	0.00	0.98	0.14	2.75	4.55	19.00	7.80	3.25	0.50	0.60	0.00	
16	0.00	0.00	0.00	0.34	1.25	6.65	16.50	9.80	2.75	0.00	1.50	0.00	
17	0.00	0.00	0.00	0.66	1.50	4.90	12.50	32.40	2.50	0.00	1.00	0.00	
18	0.00	0.00	0.00	0.90	1.00	3.50	9.80	62.80	2.75	0.00	0.80	0.00	
19	0.00	0.00	0.00	0.90	0.90	3.00	9.00	41.40	2.50	0.00	0.30	0.00	
20	0.00	0.00	0.00	0.86	1.25	4.90	7.40	22.20	2.50	0.00	0.40	0.00	
21	0.00	0.00	0.00	0.70	0.90	7.40	7.80	22.20	2.25	0.00	2.75	0.00	
22	0.00	0.00	0.00	0.50	1.00	35.80	6.30	73.20	2.50	0.00	2.00	0.00	
23	0.00	0.00	0.00	0.28	3.00	18.00	6.30	28.20	2.25	0.00	1.50	0.00	
24	0.00	0.00	0.00	0.28	4.90	22.20	30.60	18.00	2.25	0.00	1.00	0.00	
25	0.00	0.00	0.00	0.28	3.25	27.00	51.20	14.00	2.25	0.00	0.90	0.00	
26	0.00	0.00	0.00	0.22	2.00	14.00	20.50	11.50	2.25	0.00	0.60	0.00	
27	0.00	0.30	0.00	0.22	1.75	28.20	16.00	9.80	2.00	0.00	0.20	0.00	
28	0.00	1.02	0.04	0.30	1.75	24.00	14.00	9.00	2.00	0.00	0.00	0.00	
29	0.00	1.38	0.18	0.66	1.00	13.00	11.00	8.20	1.75	0.00		4.90	
30	0.00	5.60	0.66	1.46	0.40	24.00	25.80	8.20	1.75	2.25		10.20	
31		6.65		2.45	0.60		55.60		1.50	2.50		4.55	
Total	0.00	14.95	12.09	48.42	61.10	280.05	884.30	785.50	111.35	17.60	27.20	27.50	2270.06 CMSDAY
Mean	0.00	0.48	0.40	1.56	1.97	9.34	28.53	26.18	3.59	0.57	0.97	0.89	6.22 CMS
Max	0.00	6.65	3.35	15.50	5.95	35.80	90.80	74.00	7.40	2.50	3.25	10.20	90.80 CMS
Min	0.00	0.00	0.00	0.14	0.40	0.50	6.30	7.80	1.50	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	1.292	1.045	4.183	5.279	24.196	76.404	67.867	9.621	1.521	2.350	2.376	196.133 MCM

Momentary Peak 114.70 CMS, at 3.43 M (AD), at 7.00 Hours, on Oct 11, 1998

Runoff Yield 17.97 Liters/Second/Square KM, Momentary Peak Yield 331.503 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

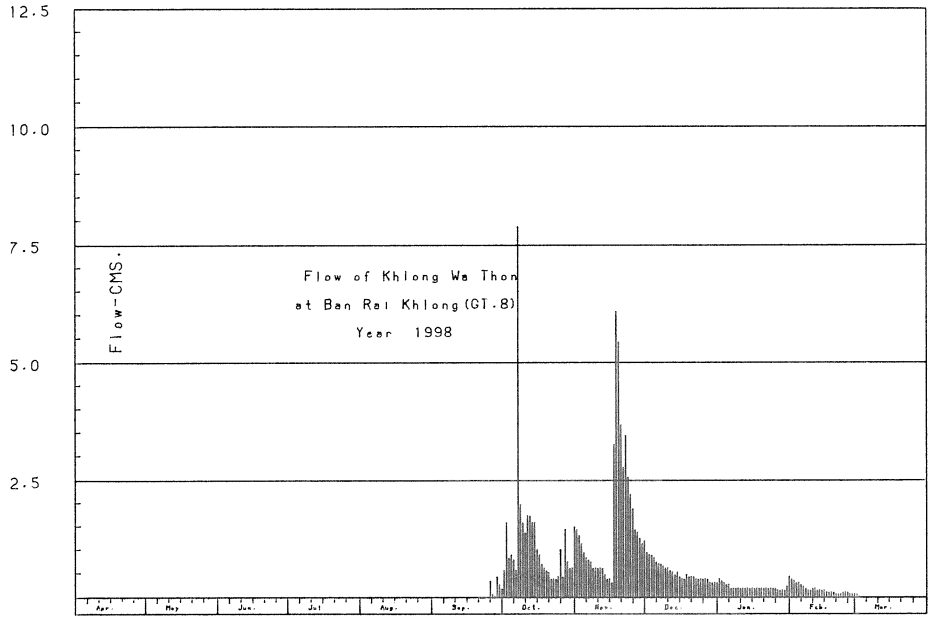
Khlong Wa Thon at Ban Rai Khlong, Prachuap Khiri Khan (Gt.8)

Location	Lat. 11°-43'-29" N., Long. 99°-43'-53" E., on right bank at the bridge of Phet Kasem Highway near the guidepost 335-336, Amphoe Muang, Prachuap Khiri Khan.
Drainage Area	44 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+5.292 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1997 to date.
Rated by Float	-
Rated by Current Meter	1997 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 27 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.05	1.05	1.05	1.05	1.05	1.05	1.24	1.40	1.32	1.20	1.20	1.12	
2	1.05	1.05	1.05	1.05	1.05	1.05	1.42	1.38	1.31	1.19	1.19	1.11	
3	1.05	1.05	1.05	1.05	1.05	1.05	1.30	1.35	1.31	1.18	1.18	1.10	
4	1.05	1.05	1.05	1.05	1.05	1.05	1.31	1.32	1.30	1.17	1.18	1.09	
5	1.05	1.05	1.05	1.05	1.05	1.05	1.29	1.30	1.28	1.17	1.17	1.06	
6	1.05	1.05	1.05	1.05	1.05	1.05	1.24	1.29	1.27	1.15	1.16	1.03	
7	1.05	1.05	1.05	1.05	1.05	1.05	1.98	1.28	1.27	1.15	1.15	1.03	
8	1.05	1.05	1.05	1.05	1.05	1.05	1.47	1.25	1.26	1.15	1.14	1.03	
9	1.05	1.05	1.05	1.05	1.05	1.05	1.42	1.25	1.25	1.15	1.14	1.03	
10	1.05	1.05	1.05	1.05	1.05	1.05	1.39	1.25	1.25	1.15	1.15	1.03	
11	1.05	1.05	1.05	1.05	1.05	1.05	1.44	1.25	1.24	1.15	1.15	1.03	
12	1.05	1.05	1.05	1.05	1.05	1.05	1.44	1.25	1.23	1.15	1.14	1.03	
13	1.05	1.05	1.05	1.05	1.05	1.05	1.42	1.22	1.22	1.15	1.14	1.03	
14	1.05	1.05	1.05	1.05	1.05	1.05	1.42	1.20	1.23	1.15	1.14	1.03	
15	1.05	1.05	1.05	1.05	1.05	1.05	1.33	1.20	1.21	1.15	1.14	1.03	
16	1.05	1.05	1.05	1.05	1.05	1.05	1.31	1.18	1.20	1.15	1.13	1.03	
17	1.05	1.05	1.05	1.05	1.05	1.05	1.27	1.61	1.20	1.15	1.13	1.03	
18	1.05	1.05	1.05	1.05	1.05	1.05	1.25	1.85	1.22	1.15	1.13	1.03	
19	1.05	1.05	1.05	1.05	1.05	1.05	1.24	1.80	1.21	1.15	1.13	1.03	
20	1.05	1.05	1.05	1.05	1.05	1.05	1.23	1.65	1.21	1.15	1.12	1.03	
21	1.05	1.05	1.05	1.05	1.05	1.05	1.20	1.56	1.21	1.15	1.12	1.03	
22	1.05	1.05	1.05	1.05	1.05	1.05	1.20	1.63	1.20	1.15	1.12	1.03	
23	1.05	1.05	1.05	1.05	1.05	1.05	1.20	1.54	1.20	1.15	1.13	1.03	
24	1.05	1.05	1.05	1.05	1.05	1.05	1.21	1.50	1.20	1.15	1.13	1.03	
25	1.05	1.05	1.05	1.05	1.05	1.19	1.33	1.46	1.20	1.15	1.13	1.03	
26	1.05	1.05	1.05	1.05	1.05	1.12	1.21	1.40	1.20	1.14	1.12	1.03	
27	1.05	1.05	1.05	1.05	1.05	1.11	1.40	1.39	1.20	1.14	1.12	1.03	
28	1.05	1.05	1.05	1.05	1.05	1.21	1.28	1.37	1.18	1.14	1.12	1.03	
29	1.05	1.05	1.05	1.05	1.05	1.17	1.25	1.35	1.18	1.14		1.03	
30	1.05	1.05	1.05	1.05	1.05	1.15	1.25	1.36	1.18	1.16		1.03	
31		1.05		1.05	1.05		1.41		1.18	1.21		1.03	
Mean	1.05	1.05	1.05	1.05	1.05	1.07	1.33	1.39	1.23	1.16	1.14	1.04	
Max	1.05	1.05	1.05	1.05	1.05	1.21	1.98	1.85	1.32	1.21	1.20	1.12	1.98
Min	1.05	1.05	1.05	1.05	1.05	1.05	1.20	1.18	1.18	1.14	1.12	1.03	1.03

Annual Max Momentary Gage Height 2.50 M (A.D), at 6.00 Hours, on Oct 7, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.14 M (A.D)
Left Bank Elevation 5.20 M (A.D)
Right Bank Elevation 5.19 M (A.D), Drainage Area 44 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.00	0.00	0.58	1.45	0.97	0.40	0.40	0.08	
2	0.00	0.00	0.00	0.00	0.00	0.00	1.60	1.33	0.91	0.36	0.36	0.04	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.85	1.15	0.91	0.32	0.32	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.97	0.85	0.28	0.32	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.81	0.85	0.76	0.28	0.28	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.58	0.81	0.72	0.20	0.24	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	7.90	0.76	0.72	0.20	0.20	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	1.98	0.63	0.67	0.20	0.16	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.63	0.63	0.20	0.16	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	1.39	0.63	0.63	0.20	0.20	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.63	0.58	0.20	0.20	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	1.75	0.63	0.54	0.20	0.16	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.49	0.49	0.20	0.16	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.40	0.54	0.20	0.16	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.40	0.45	0.20	0.16	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.91	0.32	0.40	0.20	0.12	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.72	3.26	0.40	0.20	0.12	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.63	6.08	0.49	0.20	0.12	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.58	5.45	0.45	0.20	0.12	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.54	3.67	0.45	0.20	0.08	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.00	0.40	2.77	0.45	0.20	0.08	0.00	
22	0.00	0.00	0.00	0.00	0.00	0.00	0.40	3.46	0.40	0.20	0.08	0.00	
23	0.00	0.00	0.00	0.00	0.00	0.00	0.40	2.58	0.40	0.20	0.12	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.00	0.45	2.20	0.40	0.20	0.12	0.00	
25	0.00	0.00	0.00	0.00	0.00	0.36	1.03	1.90	0.40	0.20	0.12	0.00	
26	0.00	0.00	0.00	0.00	0.00	0.08	0.45	1.45	0.40	0.16	0.08	0.00	
27	0.00	0.00	0.00	0.00	0.00	0.04	1.45	1.39	0.40	0.16	0.08	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.45	0.76	1.27	0.32	0.16	0.08	0.00	
29	0.00	0.00	0.00	0.00	0.00	0.28	0.63	1.15	0.32	0.16		0.00	
30	0.00	0.00	0.00	0.00	0.00	0.20	0.63	1.21	0.32	0.24		0.00	
31		0.00		0.00	0.00		1.52		0.32	0.45		0.00	
Total	0.00	0.00	0.00	0.00	0.00	1.41	37.43	49.92	16.69	6.97	4.80	0.12	117.34 CMSDAY
Mean	0.00	0.00	0.00	0.00	0.00	0.05	1.21	1.66	0.54	0.22	0.17	0.00	0.32 CMS
Max	0.00	0.00	0.00	0.00	0.00	0.45	7.90	6.08	0.97	0.45	0.40	0.08	7.90 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.32	0.32	0.16	0.08	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	0.000	0.000	0.122	3.234	4.313	1.442	0.602	0.415	0.010	10.138 MCM

Momentary Peak 17.25 CMS, at 2.50 M (A.D), at 6.00 Hours, on Oct 7, 1998
Runoff Yield 7.31 Liters/Second/Square KM, Momentary Peak Yield 392.045 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

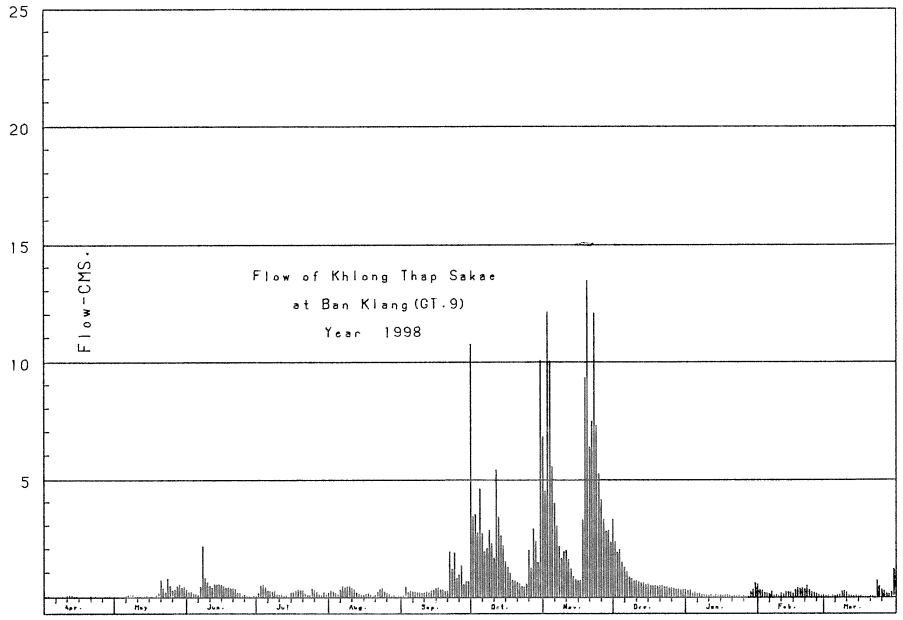
Khlong Thap Sakae at Ban Klang, Prachuap Khiri Khan (Gt.9)

Location	Lat. 11°-29'-39" N., Long. 99°-36'-21" E., on right bank at Ban Klang, Amphoe Thap Sakae, Prachuap Khiri Khan.
Drainage Area	120 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Highways Dept.
Location	On right bank at the abutment of the bridge.
Elevation	+5.141 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1980 to date.
Rated by Float	-
Rated by Current Meter	1980 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 78 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.62	0.58	0.78	0.75	0.81	0.65	1.41	1.50	1.30	0.83	0.85	0.68	
2	0.61	0.60	0.77	0.95	0.79	0.93	1.42	1.96	1.25	0.83	0.82	0.67	
3	0.59	0.59	0.74	0.96	0.74	0.78	1.34	1.86	1.26	0.75	0.77	0.68	
4	0.58	0.63	0.71	0.91	0.72	0.80	1.51	1.58	1.20	0.77	0.74	0.67	
5	0.57	0.63	0.68	0.81	0.86	0.80	1.34	1.46	1.17	0.74	0.74	0.67	
6	0.57	0.65	0.93	0.80	0.93	0.77	1.25	1.37	1.14	0.73	0.79	0.67	
7	0.61	0.70	1.28	0.80	0.91	0.77	1.27	1.28	1.11	0.72	0.70	0.72	
8	0.58	0.69	1.10	0.80	0.92	0.76	1.35	1.22	1.09	0.70	0.68	0.81	
9	0.56	0.64	1.01	0.72	0.94	0.76	1.29	1.25	1.05	0.69	0.69	0.81	
10	0.63	0.61	0.95	0.69	0.88	0.75	1.22	1.26	1.05	0.70	0.75	0.77	
11	0.70	0.59	0.89	0.69	0.85	0.78	1.57	1.21	1.02	0.70	0.73	0.71	
12	0.68	0.57	0.98	0.67	0.78	0.77	1.41	1.16	1.01	0.69	0.78	0.70	
13	0.62	0.65	0.96	0.64	0.72	0.81	1.33	1.11	1.00	0.70	0.80	0.68	
14	0.60	0.66	0.98	0.63	0.71	0.85	1.28	1.08	0.97	0.70	0.77	0.67	
15	0.59	0.62	0.96	0.78	0.71	0.90	1.20	1.06	0.97	0.70	0.75	0.65	
16	0.60	0.61	0.93	0.76	0.72	0.89	1.17	1.05	0.95	0.69	0.86	0.66	
17	0.59	0.68	0.91	0.82	0.75	0.86	1.13	1.40	0.95	0.68	0.90	0.65	
18	0.59	0.65	0.90	0.83	0.69	0.84	1.07	1.82	0.94	0.72	0.89	0.65	
19	0.60	0.76	0.89	0.84	0.66	0.81	1.04	2.02	0.94	0.66	0.88	0.65	
20	0.61	1.07	0.87	0.81	0.67	0.80	1.02	1.64	0.94	0.66	0.88	0.64	
21	0.60	0.88	0.85	0.74	0.79	1.25	0.98	1.71	0.94	0.66	0.95	0.65	
22	0.59	0.77	0.77	0.69	0.87	1.16	0.94	1.96	0.93	0.66	0.86	0.64	
23	0.59	1.09	0.74	0.66	0.88	1.25	0.91	1.70	0.91	0.65	0.78	1.07	
24	0.59	0.95	0.66	0.87	0.80	1.10	0.99	1.56	0.90	0.65	0.77	0.93	
25	0.57	0.83	0.68	0.82	0.74	1.12	1.26	1.47	0.89	0.65	0.73	0.86	
26	0.57	0.84	0.67	0.77	0.71	1.18	1.16	1.40	0.89	0.65	0.71	0.81	
27	0.58	0.94	0.65	0.72	0.66	0.98	1.36	1.35	0.87	0.65	0.70	0.75	
28	0.60	0.96	0.63	0.71	0.66	1.03	1.30	1.35	0.86	0.80	0.69	0.72	
29	0.59	0.91	0.64	0.76	0.62	1.05	1.20	1.30	0.85	0.85		0.79	
30	0.59	0.91	0.65	0.72	0.65	1.90	1.86	1.40	0.84	1.01		1.16	
31		0.84		0.75	0.63		1.67		0.84	0.97		1.01	
Mean	0.60	0.75	0.84	0.77	0.77	0.94	1.27	1.45	1.00	0.73	0.78	0.75	
Max	0.70	1.09	1.28	0.96	0.94	1.90	1.86	2.02	1.30	1.01	0.95	1.16	2.02
Min	0.56	0.57	0.63	0.63	0.62	0.65	0.91	1.05	0.84	0.65	0.68	0.64	0.56

Annual Max Momentary Gage Height 2.26 M (AD), at 18.00 Hours, on Nov 2, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.14 M (AD)
Left Bank Elevation 5.20 M (AD)
Right Bank Elevation 5.19 M (AD), Drainage Area 120 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.05	0.02	0.22	0.18	0.27	0.07	3.42	4.50	2.35	0.30	0.33	0.09	
2	0.04	0.03	0.21	0.50	0.24	0.46	3.54	12.12	1.92	0.30	0.28	0.08	
3	0.03	0.03	0.16	0.52	0.16	0.22	2.73	10.08	2.01	0.18	0.21	0.09	
4	0.02	0.05	0.11	0.42	0.13	0.25	4.63	5.54	1.50	0.21	0.16	0.08	
5	0.01	0.05	0.09	0.27	0.34	0.25	2.73	4.02	1.29	0.16	0.16	0.08	
6	0.01	0.07	0.46	0.25	0.46	0.21	1.92	3.02	1.08	0.15	0.24	0.08	
7	0.04	0.10	2.18	0.25	0.42	0.21	2.10	2.18	0.87	0.13	0.10	0.13	
8	0.02	0.09	0.80	0.25	0.44	0.19	2.83	1.67	0.78	0.10	0.09	0.27	
9	0.01	0.06	0.62	0.13	0.48	0.19	2.27	1.92	0.70	0.09	0.09	0.27	
10	0.05	0.04	0.50	0.09	0.37	0.18	1.67	2.01	0.70	0.10	0.18	0.21	
11	0.10	0.03	0.39	0.09	0.33	0.22	5.41	1.59	0.64	0.10	0.15	0.11	
12	0.09	0.01	0.56	0.08	0.22	0.21	3.42	1.22	0.62	0.09	0.22	0.10	
13	0.05	0.07	0.52	0.06	0.13	0.27	2.64	0.87	0.60	0.10	0.25	0.09	
14	0.03	0.07	0.56	0.05	0.11	0.33	2.18	0.76	0.54	0.10	0.21	0.08	
15	0.03	0.05	0.52	0.22	0.11	0.40	1.50	0.72	0.54	0.10	0.18	0.07	
16	0.03	0.04	0.46	0.19	0.13	0.39	1.29	0.70	0.50	0.09	0.34	0.07	
17	0.03	0.09	0.42	0.28	0.18	0.34	1.01	3.30	0.50	0.09	0.40	0.07	
18	0.03	0.07	0.40	0.30	0.09	0.31	0.74	9.36	0.48	0.13	0.39	0.07	
19	0.03	0.19	0.39	0.31	0.07	0.27	0.68	13.46	0.48	0.07	0.37	0.07	
20	0.04	0.74	0.36	0.27	0.08	0.25	0.64	6.40	0.48	0.07	0.37	0.06	
21	0.03	0.37	0.33	0.16	0.24	1.92	0.56	7.47	0.48	0.07	0.50	0.07	
22	0.03	0.21	0.21	0.09	0.36	1.22	0.48	12.12	0.46	0.07	0.34	0.06	
23	0.03	0.78	0.16	0.07	0.37	1.92	0.42	7.30	0.42	0.07	0.22	0.74	
24	0.03	0.50	0.07	0.36	0.25	0.80	0.58	5.28	0.40	0.07	0.21	0.46	
25	0.01	0.30	0.09	0.28	0.16	0.94	2.01	4.14	0.39	0.07	0.15	0.34	
26	0.01	0.31	0.08	0.21	0.11	1.36	1.22	3.30	0.39	0.07	0.11	0.27	
27	0.02	0.48	0.07	0.13	0.07	0.56	2.92	2.83	0.36	0.07	0.10	0.18	
28	0.03	0.52	0.05	0.11	0.07	0.66	2.35	2.83	0.34	0.25	0.09	0.13	
29	0.03	0.42	0.06	0.19	0.05	0.70	1.50	2.35	0.33	0.33		0.24	
30	0.03	0.42	0.07	0.13	0.07	10.80	10.08	3.30	0.31	0.62		1.22	
31		0.31		0.18	0.05		6.85		0.31	0.54		0.62	
Total	0.99	6.52	11.12	6.62	6.56	26.10	76.32	136.36	22.77	4.89	6.44	6.50	311.19 CMSDAY
Mean	0.03	0.21	0.37	0.21	0.21	0.87	2.46	4.55	0.73	0.16	0.23	0.21	0.85 CMS
Max	0.10	0.78	2.18	0.52	0.48	10.80	10.08	13.46	2.35	0.62	0.50	1.22	13.46 CMS
Min	0.01	0.01	0.05	0.05	0.05	0.07	0.42	0.70	0.31	0.07	0.09	0.06	0.01 CMS
Runoff	0.086	0.563	0.961	0.572	0.567	2.255	6.594	11.782	1.967	0.422	0.556	0.562	26.887 MCM

Momentary Peak 19.74 CMS, at 2.26 M (AD), at 18.00 Hours, on Nov 2, 1998

Runoff Yield 7.10 Liters/Second/Square KM, Momentary Peak Yield 164.500 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

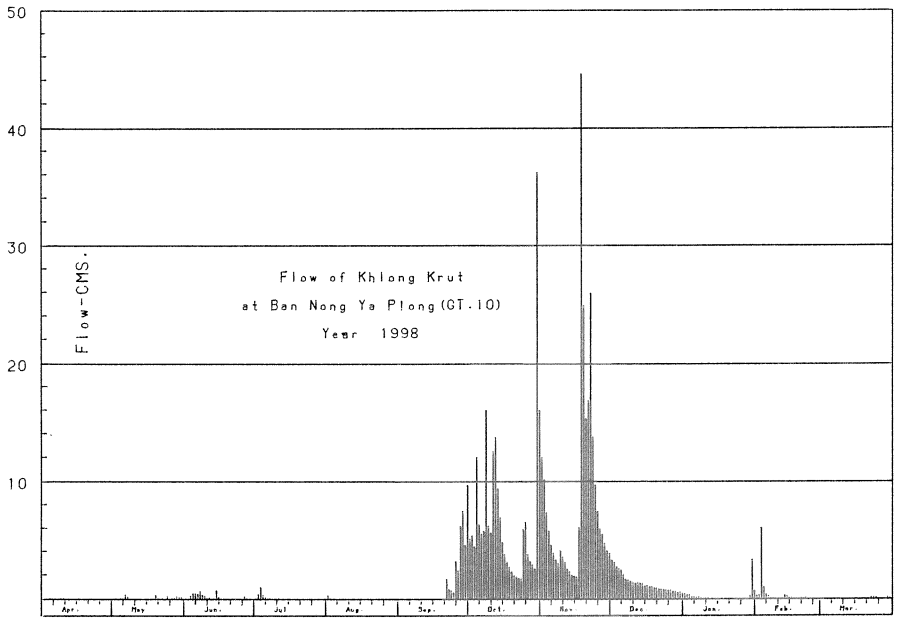
Khlong Krut at Ban Nong Ya Plong, Prachuap Khiri Khan (Gt.10)

Location	Lat. 11°-24'-08" N., Long. 99°-31'-20" E., on left bank at the bridge of Phet Kasem Highway near the guidepost 379, Ban Nong Ya Plong, Amphoe Bang Saphan, Prachuap Khiri Khan.
Drainage Area	112 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+5.285 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1980 to date.
Rated by Float	-
Rated by Current Meter	1980 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 79 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.93	-0.90	-0.91	-0.92	-0.83	-0.95	-0.29	0.18	-0.44	-0.80	-0.85	-0.96	
2	-0.93	-0.91	-0.89	-0.82	-0.88	-0.96	-0.27	0.06	-0.46	-0.82	-0.84	-0.96	
3	-0.93	-0.91	-0.85	-0.69	-0.92	-0.95	-0.34	-0.13	-0.49	-0.83	-0.22	-0.96	
4	-0.93	-0.91	-0.79	-0.83	-0.92	-0.93	0.18	-0.24	-0.51	-0.86	-0.69	-0.96	
5	-0.93	-0.92	-0.80	-0.87	-0.91	-0.93	-0.20	-0.33	-0.52	-0.87	-0.81	-0.96	
6	-0.94	-0.83	-0.80	-0.88	-0.91	-0.94	-0.26	-0.39	-0.57	-0.87	-0.85	-0.92	
7	-0.94	-0.86	-0.76	-0.89	-0.91	-0.94	-0.24	-0.44	-0.61	-0.87	-0.88	-0.92	
8	-0.94	-0.90	-0.82	-0.89	-0.91	-0.95	0.41	-0.47	-0.62	-0.88	-0.89	-0.92	
9	-0.94	-0.91	-0.84	-0.90	-0.92	-0.95	-0.21	-0.37	-0.63	-0.88	-0.90	-0.93	
10	-0.94	-0.91	-0.89	-0.90	-0.92	-0.96	-0.25	-0.42	-0.65	-0.89	-0.92	-0.97	
11	-0.94	-0.93	-0.89	-0.90	-0.91	-0.97	0.21	-0.46	-0.65	-0.90	-0.93	-0.97	
12	-0.94	-0.93	-0.90	-0.91	-0.92	-0.97	0.28	-0.51	-0.65	-0.91	-0.92	-0.97	
13	-0.94	-0.93	-0.88	-0.91	-0.92	-0.97	0.01	-0.54	-0.65	-0.92	-0.83	-0.96	
14	-0.94	-0.94	-0.74	-0.91	-0.93	-0.94	-0.16	-0.57	-0.66	-0.93	-0.86	-0.95	
15	-0.94	-0.94	-0.88	-0.92	-0.93	-0.93	-0.31	-0.58	-0.68	-0.93	-0.88	-0.95	
16	-0.94	-0.94	-0.89	-0.93	-0.93	-0.93	-0.40	-0.59	-0.68	-0.94	-0.88	-0.96	
17	-0.94	-0.93	-0.90	-0.92	-0.93	-0.93	-0.46	-0.22	-0.69	-0.94	-0.91	-0.98	
18	-0.94	-0.93	-0.90	-0.92	-0.93	-0.94	-0.50	1.67	-0.69	-0.95	-0.93	-0.98	
19	-0.94	-0.82	-0.92	-0.92	-0.93	-0.94	-0.54	0.85	-0.70	-0.95	-0.93	-0.98	
20	-0.94	-0.88	-0.93	-0.93	-0.93	-0.95	-0.58	0.37	-0.71	-0.95	-0.88	-0.98	
21	-0.94	-0.89	-0.90	-0.93	-0.92	-0.61	-0.59	0.45	-0.72	-0.96	-0.88	-0.99	
22	-0.94	-0.89	-0.91	-0.94	-0.91	-0.72	-0.60	0.90	-0.73	-0.96	-0.88	-0.88	
23	-0.94	-0.90	-0.91	-0.94	-0.92	-0.75	-0.61	0.28	-0.73	-0.96	-0.90	-0.87	
24	-0.95	-0.84	-0.91	-0.94	-0.92	-0.78	-0.23	0.03	-0.74	-0.96	-0.92	-0.89	
25	-0.95	-0.91	-0.91	-0.94	-0.93	-0.45	-0.19	-0.12	-0.74	-0.96	-0.93	-0.96	
26	-0.95	-0.90	-0.85	-0.94	-0.93	-0.53	-0.40	-0.23	-0.75	-0.97	-0.94	-0.94	
27	-0.95	-0.88	-0.91	-0.94	-0.93	-0.21	-0.45	-0.26	-0.76	-0.98	-0.94	-0.93	
28	-0.95	-0.86	-0.92	-0.96	-0.94	-0.12	-0.48	-0.32	-0.77	-0.98	-0.95	-0.93	
29	-0.95	-0.87	-0.92	-0.95	-0.94	-0.33	-0.51	-0.37	-0.78	-0.84		-0.87	
30	-0.95	-0.88	-0.92	-0.95	-0.96	0.03	1.34	-0.39	-0.78	-0.44		-0.90	
31		-0.91		-0.94	-0.96		0.41		-0.80	-0.75		-0.82	
Mean	-0.94	-0.90	-0.87	-0.91	-0.92	-0.78	-0.20	-0.11	-0.66	-0.89	-0.86	-0.94	
Max	-0.93	-0.82	-0.74	-0.69	-0.83	0.03	1.34	1.67	-0.44	-0.44	-0.22	-0.82	1.67
Min	-0.95	-0.94	-0.93	-0.96	-0.96	-0.97	-0.61	-0.59	-0.80	-0.98	-0.95	-0.99	-0.99

Annual Max Momentary Gage Height 2.42 M (AD), at 7.00 Hours, on Oct 30, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -0.59 M (AD)
Left Bank Elevation 5.36 M (AD)
Right Bank Elevation 5.37 M (AD), Drainage Area 112 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.07	0.10	0.09	0.08	0.38	0.05	5.14	12.08	3.36	0.50	0.30	0.04	
2	0.07	0.09	0.14	0.42	0.18	0.04	5.42	10.20	3.14	0.42	0.34	0.04	
3	0.07	0.09	0.30	1.08	0.08	0.05	4.52	7.38	2.81	0.38	6.12	0.04	
4	0.07	0.09	0.55	0.38	0.08	0.07	12.08	5.84	2.61	0.26	1.08	0.04	
5	0.07	0.08	0.50	0.22	0.09	0.07	6.40	4.64	2.52	0.22	0.46	0.04	
6	0.06	0.38	0.50	0.18	0.09	0.06	5.56	3.92	2.07	0.22	0.30	0.08	
7	0.06	0.26	0.70	0.14	0.09	0.06	5.84	3.36	1.72	0.22	0.18	0.08	
8	0.06	0.10	0.42	0.14	0.09	0.05	16.09	3.03	1.64	0.18	0.14	0.08	
9	0.06	0.09	0.34	0.10	0.08	0.05	6.26	4.16	1.56	0.18	0.10	0.07	
10	0.06	0.09	0.14	0.10	0.08	0.04	5.70	3.58	1.40	0.14	0.08	0.03	
11	0.06	0.07	0.14	0.10	0.09	0.03	12.57	3.14	1.40	0.10	0.07	0.03	
12	0.06	0.07	0.10	0.09	0.08	0.03	13.76	2.61	1.40	0.09	0.08	0.03	
13	0.06	0.07	0.18	0.09	0.08	0.03	9.45	2.34	1.40	0.08	0.38	0.04	
14	0.06	0.06	0.80	0.09	0.07	0.06	6.96	2.07	1.32	0.07	0.26	0.05	
15	0.06	0.06	0.18	0.08	0.07	0.07	4.88	1.98	1.16	0.07	0.18	0.05	
16	0.06	0.06	0.14	0.07	0.07	0.07	3.80	1.89	1.16	0.06	0.18	0.04	
17	0.06	0.07	0.10	0.08	0.07	0.07	3.14	6.12	1.08	0.06	0.09	0.02	
18	0.06	0.07	0.10	0.08	0.07	0.06	2.70	44.62	1.08	0.05	0.07	0.02	
19	0.06	0.42	0.08	0.08	0.07	0.06	2.34	24.90	1.00	0.05	0.07	0.02	
20	0.06	0.18	0.07	0.07	0.07	0.05	1.98	15.36	0.95	0.05	0.18	0.02	
21	0.06	0.14	0.10	0.07	0.08	1.72	1.89	16.85	0.90	0.04	0.18	0.01	
22	0.06	0.14	0.09	0.06	0.09	0.90	1.80	26.00	0.85	0.04	0.18	0.18	
23	0.06	0.10	0.09	0.06	0.08	0.75	1.72	13.76	0.85	0.04	0.10	0.22	
24	0.05	0.34	0.09	0.06	0.08	0.60	5.98	9.75	0.80	0.04	0.08	0.14	
25	0.05	0.09	0.09	0.06	0.07	3.25	6.54	7.52	0.80	0.04	0.07	0.04	
26	0.05	0.10	0.30	0.06	0.07	2.43	3.80	5.98	0.75	0.03	0.06	0.06	
27	0.05	0.18	0.09	0.06	0.07	6.26	3.25	5.56	0.70	0.02	0.06	0.07	
28	0.05	0.26	0.08	0.04	0.06	7.52	2.92	4.76	0.65	0.02	0.05	0.07	
29	0.05	0.22	0.08	0.05	0.06	4.64	2.61	4.16	0.60	0.34		0.22	
30	0.05	0.18	0.08	0.05	0.04	9.75	36.20	3.92	0.60	3.36		0.10	
31		0.09		0.06	0.04		16.09		0.50	0.75		0.42	
Total	1.78	4.34	6.66	4.30	2.72	38.89	217.39	261.48	42.78	8.12	11.44	2.39	602.29 CMSDAY
Mean	0.06	0.14	0.22	0.14	0.09	1.30	7.01	8.72	1.38	0.26	0.41	0.08	1.65 CMS
Max	0.07	0.42	0.80	1.08	0.38	9.75	36.20	44.62	3.36	3.36	6.12	0.42	44.62 CMS
Min	0.05	0.06	0.07	0.04	0.04	0.03	1.72	1.89	0.50	0.02	0.05	0.01	0.01 CMS
Runoff	0.154	0.375	0.575	0.372	0.235	3.360	18.782	22.592	3.696	0.702	0.988	0.206	52.038 MCM

Momentary Peak 66.84 CMS, at 2.42 M (AD), at 7.00 Hours, on Oct 30, 1998
Runoff Yield 14.73 Liters/Second/Square KM, Momentary Peak Yield 596.786 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

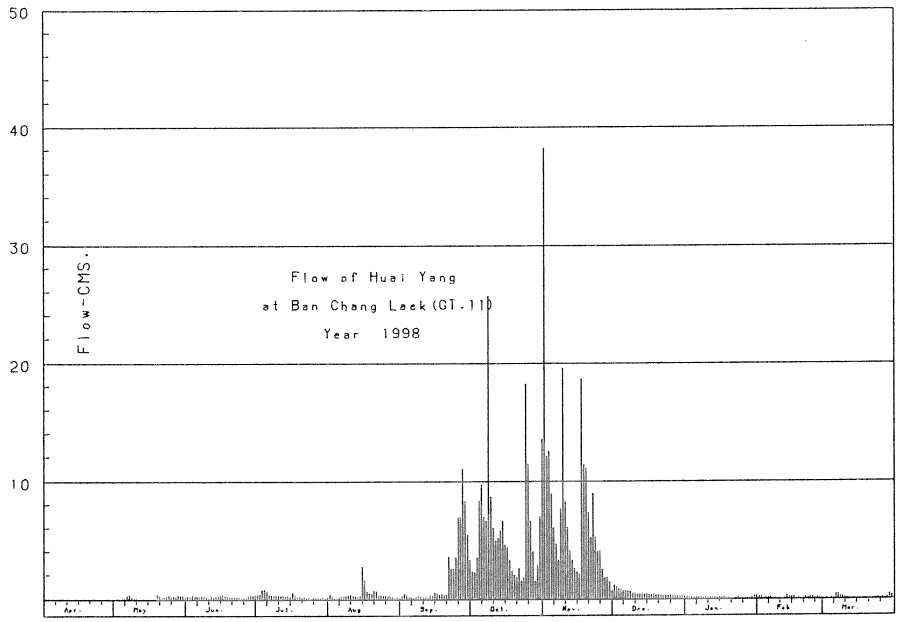
Huai Yang at Ban Chang Laek, Prachuap Khiri Khan (Gt.11)

Location	Lat. 11°-03'-44" N., Long. 99°-22'-31" E., on right bank at the bridge of Phet Kasem Highway near the guidepost 423, Ban Chang Laek, Amphoe Bang Saphan Noi, Prachuap Khiri Khan.
Drainage Area	58 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-Highways Dept.
Location	On left bank at the abutment of the bridge.
Elevation	+9.318 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1980 to date.
Rated by Float	-
Rated by Current Meter	1980 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 77 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.06	1.07	1.14	1.18	1.18	1.15	1.33	2.21	1.26	1.13	1.14	1.10	
2	1.06	1.07	1.14	1.18	1.14	1.20	1.33	1.65	1.25	1.13	1.14	1.10	
3	1.06	1.07	1.16	1.23	1.12	1.18	1.38	1.66	1.24	1.12	1.12	1.11	
4	1.06	1.07	1.15	1.23	1.12	1.14	1.54	1.56	1.23	1.12	1.11	1.11	
5	1.06	1.07	1.14	1.22	1.12	1.12	1.58	1.47	1.22	1.12	1.11	1.10	
6	1.06	1.15	1.13	1.19	1.14	1.12	1.50	1.42	1.22	1.12	1.11	1.19	
7	1.06	1.17	1.15	1.16	1.15	1.12	1.49	1.37	1.22	1.12	1.11	1.18	
8	1.06	1.12	1.14	1.16	1.15	1.15	1.98	1.52	1.21	1.12	1.09	1.14	
9	1.06	1.12	1.12	1.16	1.17	1.13	1.55	1.84	1.20	1.12	1.10	1.13	
10	1.06	1.10	1.12	1.16	1.17	1.13	1.47	1.54	1.20	1.12	1.10	1.11	
11	1.06	1.09	1.14	1.16	1.16	1.12	1.43	1.47	1.19	1.12	1.09	1.11	
12	1.05	1.09	1.13	1.15	1.15	1.13	1.44	1.40	1.19	1.12	1.08	1.10	
13	1.05	1.08	1.14	1.15	1.14	1.16	1.46	1.37	1.18	1.12	1.15	1.10	
14	1.05	1.08	1.15	1.15	1.15	1.17	1.49	1.34	1.18	1.12	1.13	1.10	
15	1.06	1.08	1.16	1.14	1.35	1.21	1.42	1.33	1.18	1.12	1.13	1.09	
16	1.07	1.08	1.16	1.21	1.30	1.20	1.41	1.32	1.17	1.12	1.12	1.09	
17	1.07	1.09	1.15	1.17	1.22	1.18	1.37	1.82	1.17	1.12	1.11	1.09	
18	1.07	1.09	1.14	1.14	1.20	1.18	1.33	1.63	1.17	1.11	1.10	1.08	
19	1.07	1.20	1.13	1.14	1.20	1.17	1.32	1.62	1.16	1.11	1.10	1.08	
20	1.07	1.15	1.13	1.12	1.22	1.17	1.31	1.51	1.16	1.11	1.12	1.08	
21	1.07	1.13	1.13	1.12	1.22	1.38	1.34	1.44	1.16	1.11	1.13	1.08	
22	1.06	1.13	1.13	1.12	1.16	1.34	1.30	1.56	1.15	1.11	1.12	1.10	
23	1.06	1.14	1.12	1.11	1.16	1.34	1.31	1.44	1.15	1.11	1.13	1.11	
24	1.06	1.17	1.12	1.11	1.16	1.38	1.81	1.40	1.15	1.10	1.12	1.11	
25	1.06	1.12	1.12	1.11	1.15	1.50	1.63	1.40	1.15	1.10	1.11	1.11	
26	1.06	1.14	1.12	1.12	1.15	1.50	1.49	1.34	1.15	1.10	1.11	1.11	
27	1.06	1.14	1.16	1.12	1.15	1.62	1.40	1.31	1.14	1.10	1.11	1.09	
28	1.06	1.16	1.16	1.12	1.12	1.54	1.30	1.31	1.14	1.10	1.10	1.11	
29	1.06	1.16	1.16	1.12	1.12	1.45	1.35	1.29	1.14	1.12		1.19	
30	1.06	1.15	1.16	1.12	1.12	1.37	1.50	1.22	1.14	1.15		1.15	
31		1.14		1.12	1.12		1.69		1.14	1.15		1.12	
Mean	1.06	1.12	1.14	1.15	1.17	1.25	1.46	1.49	1.18	1.12	1.11	1.11	
Max	1.07	1.20	1.16	1.23	1.35	1.62	1.98	2.21	1.26	1.15	1.15	1.19	2.21
Min	1.05	1.07	1.12	1.11	1.12	1.12	1.30	1.22	1.14	1.10	1.08	1.08	1.05

Annual Max Momentary Gage Height 2.30 M (A.D), at 9.00 Hours, on Nov 1, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed 0.42 M (A.D)
Left Bank Elevation 9.42 M (A.D)
Right Bank Elevation 9.44 M (A.D), Drainage Area 58 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.06	0.07	0.26	0.42	0.42	0.30	2.35	38.24	1.16	0.22	0.26	0.10	
2	0.06	0.07	0.26	0.42	0.26	0.50	2.35	12.20	1.05	0.22	0.26	0.10	
3	0.06	0.07	0.34	0.83	0.18	0.42	3.60	12.56	0.94	0.18	0.18	0.14	
4	0.06	0.07	0.30	0.83	0.18	0.26	8.36	9.04	0.83	0.18	0.14	0.14	
5	0.06	0.07	0.26	0.72	0.18	0.18	9.72	6.13	0.72	0.18	0.14	0.10	
6	0.06	0.30	0.22	0.46	0.26	0.18	7.00	4.68	0.72	0.18	0.14	0.46	
7	0.06	0.38	0.30	0.34	0.30	0.18	6.71	3.35	0.72	0.18	0.14	0.42	
8	0.06	0.18	0.26	0.34	0.30	0.30	25.78	7.68	0.61	0.18	0.09	0.26	
9	0.06	0.18	0.18	0.34	0.38	0.22	8.70	19.58	0.50	0.18	0.10	0.22	
10	0.06	0.10	0.18	0.34	0.38	0.22	6.13	8.36	0.50	0.18	0.10	0.14	
11	0.06	0.09	0.26	0.34	0.34	0.18	4.97	6.13	0.46	0.18	0.09	0.14	
12	0.05	0.09	0.22	0.30	0.30	0.22	5.26	4.10	0.46	0.18	0.08	0.10	
13	0.05	0.08	0.26	0.30	0.26	0.34	5.84	3.35	0.42	0.18	0.30	0.10	
14	0.05	0.08	0.30	0.30	0.30	0.38	6.71	2.60	0.42	0.18	0.22	0.10	
15	0.06	0.08	0.34	0.26	2.85	0.61	4.68	2.35	0.42	0.18	0.22	0.09	
16	0.07	0.08	0.34	0.61	1.60	0.50	4.39	2.10	0.38	0.18	0.18	0.09	
17	0.07	0.09	0.30	0.38	0.72	0.42	3.35	18.74	0.38	0.18	0.14	0.09	
18	0.07	0.09	0.26	0.26	0.50	0.42	2.35	11.48	0.38	0.14	0.10	0.08	
19	0.07	0.50	0.22	0.26	0.50	0.38	2.10	11.12	0.34	0.14	0.10	0.08	
20	0.07	0.30	0.22	0.18	0.72	0.38	1.85	7.34	0.34	0.14	0.18	0.08	
21	0.07	0.22	0.22	0.18	0.72	3.60	2.60	5.26	0.34	0.14	0.22	0.08	
22	0.06	0.22	0.22	0.18	0.34	2.60	1.60	9.04	0.30	0.14	0.18	0.10	
23	0.06	0.26	0.18	0.14	0.34	2.60	1.85	5.26	0.30	0.14	0.22	0.14	
24	0.06	0.38	0.18	0.14	0.34	3.60	18.32	4.10	0.30	0.10	0.18	0.14	
25	0.06	0.18	0.18	0.14	0.30	7.00	11.48	4.10	0.30	0.10	0.14	0.14	
26	0.06	0.26	0.18	0.18	0.30	7.00	6.71	2.60	0.30	0.10	0.14	0.14	
27	0.06	0.26	0.34	0.18	0.30	11.12	4.10	1.85	0.26	0.10	0.14	0.09	
28	0.06	0.34	0.34	0.18	0.18	8.36	1.60	1.85	0.26	0.10	0.10	0.14	
29	0.06	0.34	0.34	0.18	0.18	5.55	2.85	1.49	0.26	0.18		0.46	
30	0.06	0.30	0.34	0.18	0.18	3.35	7.00	0.72	0.26	0.30		0.30	
31		0.26		0.18	0.18		13.64		0.26	0.30		0.18	
Total	1.83	5.99	7.80	10.09	14.29	61.37	193.95	227.40	14.89	5.26	4.48	4.94	552.29 CMSDAY
Mean	0.06	0.19	0.26	0.33	0.46	2.05	6.26	7.58	0.48	0.17	0.16	0.16	1.51 CMS
Max	0.07	0.50	0.34	0.83	2.85	11.12	25.78	38.24	1.16	0.30	0.30	0.46	38.24 CMS
Min	0.05	0.07	0.18	0.14	0.18	0.18	1.60	0.72	0.26	0.10	0.08	0.08	0.05 CMS
Runoff	0.158	0.518	0.674	0.872	1.235	5.302	16.757	19.647	1.286	0.454	0.387	0.427	47.718 MCM

Momentary Peak 44.00 CMS, at 2.30 M (A.D), at 9.00 Hours, on Nov 1, 1998

Runoff Yield 26.09 Liters/Second/Square KM, Momentary Peak Yield 758.621 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

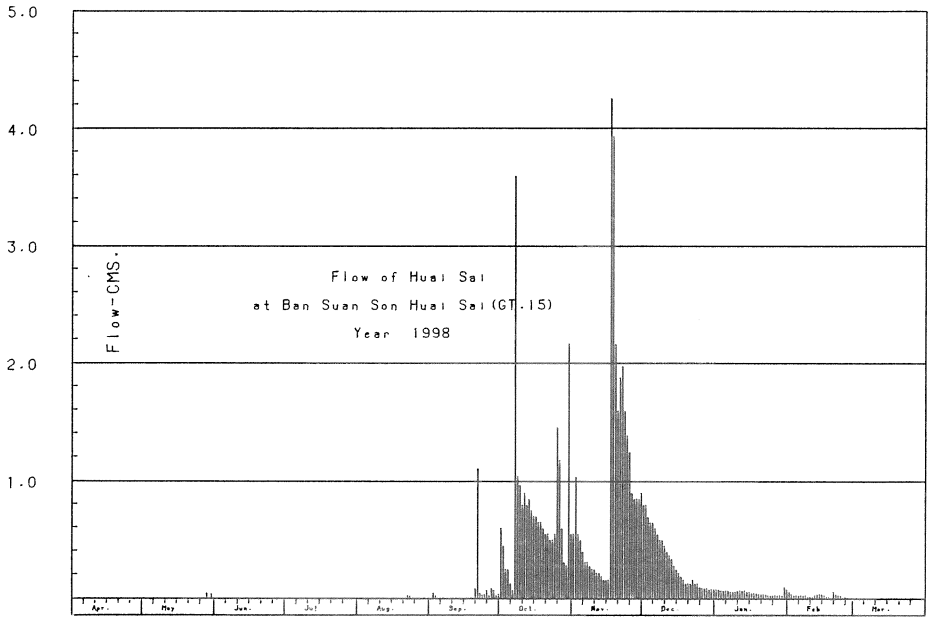
Khlong Hin Chuang at Ban Suan Son, Prachuap Khiri Khan (Gt.15)

Location	Lat. 11°-40'-33" N., Long. 99°-41'-44" E., on right bank at the bridge of Phet Kasem Highway near the guidepost 342, Huai Sai, Amphoe Muang, Prachuap Khiri Khan.
Drainage Area	26 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the footpath of the bridge.
Elevation	+7.419 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 33 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.34	0.34	0.34	0.34	0.34	0.40	0.64	0.63	0.68	0.48	0.46	0.41	
2	0.34	0.34	0.34	0.34	0.34	0.45	0.61	0.72	0.68	0.48	0.44	0.41	
3	0.34	0.34	0.34	0.34	0.34	0.43	0.55	0.63	0.66	0.47	0.43	0.40	
4	0.34	0.34	0.34	0.34	0.34	0.40	0.55	0.62	0.65	0.47	0.43	0.40	
5	0.34	0.34	0.34	0.34	0.34	0.40	0.51	0.60	0.65	0.47	0.43	0.40	
6	0.34	0.34	0.34	0.34	0.34	0.40	0.47	0.57	0.64	0.47	0.43	0.40	
7	0.34	0.34	0.34	0.34	0.34	0.40	1.00	0.57	0.63	0.46	0.43	0.40	
8	0.34	0.34	0.34	0.34	0.34	0.40	0.72	0.56	0.62	0.46	0.43	0.40	
9	0.34	0.34	0.34	0.34	0.34	0.40	0.71	0.55	0.62	0.46	0.42	0.39	
10	0.34	0.34	0.34	0.34	0.34	0.40	0.68	0.55	0.61	0.47	0.42	0.39	
11	0.34	0.34	0.34	0.34	0.34	0.40	0.70	0.54	0.60	0.47	0.42	0.39	
12	0.34	0.34	0.34	0.34	0.34	0.40	0.68	0.54	0.59	0.47	0.43	0.39	
13	0.34	0.34	0.34	0.34	0.34	0.40	0.69	0.53	0.58	0.47	0.44	0.39	
14	0.34	0.34	0.34	0.34	0.34	0.40	0.67	0.52	0.56	0.46	0.44	0.39	
15	0.34	0.34	0.34	0.34	0.34	0.40	0.66	0.52	0.55	0.46	0.44	0.38	
16	0.34	0.34	0.34	0.34	0.34	0.40	0.66	0.52	0.54	0.45	0.43	0.38	
17	0.34	0.34	0.34	0.34	0.34	0.40	0.65	1.06	0.53	0.45	0.42	0.38	
18	0.34	0.34	0.34	0.34	0.34	0.40	0.65	1.03	0.52	0.45	0.42	0.38	
19	0.34	0.34	0.34	0.34	0.34	0.40	0.64	0.86	0.51	0.44	0.41	0.38	
20	0.34	0.34	0.34	0.34	0.34	0.49	0.63	0.80	0.51	0.44	0.46	0.38	
21	0.34	0.34	0.34	0.34	0.34	0.73	0.63	0.83	0.51	0.44	0.44	0.38	
22	0.34	0.34	0.34	0.34	0.43	0.45	0.62	0.84	0.52	0.44	0.43	0.38	
23	0.34	0.34	0.34	0.34	0.42	0.43	0.62	0.80	0.51	0.43	0.43	0.41	
24	0.34	0.34	0.34	0.34	0.40	0.44	0.63	0.77	0.51	0.43	0.42	0.40	
25	0.34	0.34	0.34	0.34	0.40	0.47	0.78	0.75	0.50	0.43	0.42	0.39	
26	0.34	0.34	0.34	0.34	0.40	0.43	0.74	0.70	0.49	0.43	0.41	0.39	
27	0.34	0.34	0.34	0.34	0.40	0.49	0.64	0.69	0.49	0.43	0.41	0.39	
28	0.34	0.45	0.34	0.34	0.40	0.47	0.57	0.69	0.49	0.43	0.41	0.39	
29	0.34	0.35	0.34	0.34	0.40	0.43	0.56	0.69	0.48	0.43		0.39	
30	0.34	0.44	0.34	0.34	0.40	0.44	0.86	0.70	0.48	0.50		0.39	
31		0.41		0.34	0.40		0.63		0.48	0.48		0.39	
Mean	0.34	0.35	0.34	0.34	0.36	0.43	0.66	0.68	0.56	0.46	0.43	0.39	
Max	0.34	0.45	0.34	0.34	0.43	0.73	1.00	1.06	0.68	0.50	0.46	0.41	1.06
Min	0.34	0.34	0.34	0.34	0.34	0.40	0.47	0.52	0.48	0.43	0.41	0.38	0.34

Annual Max Momentary Gage Height 1.47 M (AD), at 6.00 Hours, on Oct 7, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.14 M (AD)
Left Bank Elevation 5.20 M (AD)
Right Bank Elevation 5.19 M (AD), Drainage Area 26 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.00	0.00	0.60	0.55	0.80	0.08	0.06	0.01	
2	0.00	0.00	0.00	0.00	0.00	0.05	0.45	1.04	0.80	0.08	0.04	0.01	
3	0.00	0.00	0.00	0.00	0.00	0.03	0.25	0.55	0.70	0.07	0.03	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	0.25	0.50	0.65	0.07	0.03	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.40	0.65	0.07	0.03	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.31	0.60	0.07	0.03	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	3.60	0.31	0.55	0.06	0.03	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	1.04	0.28	0.50	0.06	0.03	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.25	0.50	0.06	0.02	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.25	0.45	0.07	0.02	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.22	0.40	0.07	0.02	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.22	0.37	0.07	0.03	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	0.85	0.19	0.34	0.07	0.04	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.75	0.16	0.28	0.06	0.04	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.16	0.25	0.06	0.04	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.70	0.16	0.22	0.05	0.03	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.65	4.26	0.19	0.05	0.02	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.65	3.93	0.16	0.05	0.02	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.60	2.17	0.13	0.04	0.01	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.09	0.55	1.60	0.13	0.04	0.06	0.00	
21	0.00	0.00	0.00	0.00	0.00	1.11	0.55	1.88	0.13	0.04	0.04	0.00	
22	0.00	0.00	0.00	0.00	0.03	0.05	0.50	1.98	0.16	0.04	0.03	0.00	
23	0.00	0.00	0.00	0.00	0.02	0.03	0.50	1.60	0.13	0.03	0.03	0.01	
24	0.00	0.00	0.00	0.00	0.00	0.04	0.55	1.39	0.13	0.03	0.02	0.00	
25	0.00	0.00	0.00	0.00	0.00	0.07	1.46	1.25	0.10	0.03	0.02	0.00	
26	0.00	0.00	0.00	0.00	0.00	0.03	1.18	0.90	0.09	0.03	0.01	0.00	
27	0.00	0.00	0.00	0.00	0.00	0.09	0.60	0.85	0.09	0.03	0.01	0.00	
28	0.00	0.05	0.00	0.00	0.00	0.07	0.31	0.85	0.09	0.03	0.01	0.00	
29	0.00	0.00	0.00	0.00	0.00	0.03	0.28	0.85	0.08	0.03		0.00	
30	0.00	0.04	0.00	0.00	0.00	0.04	2.17	0.90	0.08	0.10		0.00	
31		0.01		0.00	0.00		0.55		0.08	0.08		0.00	
Total	0.00	0.10	0.00	0.00	0.05	1.73	23.96	29.96	9.83	1.72	0.80	0.03	68.18 CMSDAY
Mean	0.00	0.00	0.00	0.00	0.00	0.06	0.77	1.00	0.32	0.06	0.03	0.00	0.19 CMS
Max	0.00	0.05	0.00	0.00	0.03	1.11	3.60	4.26	0.80	0.10	0.06	0.01	4.26 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.16	0.08	0.03	0.01	0.00	0.00 CMS
Runoff	0.000	0.009	0.000	0.000	0.004	0.149	2.070	2.589	0.849	0.149	0.069	0.003	5.891 MCM

Momentary Peak 10.18 CMS, at 1.47 M (AD), at 6.00 Hours, on Oct 7, 1998
Runoff Yield 7.18 Liters/Second/Square KM, Momentary Peak Yield 391.538 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

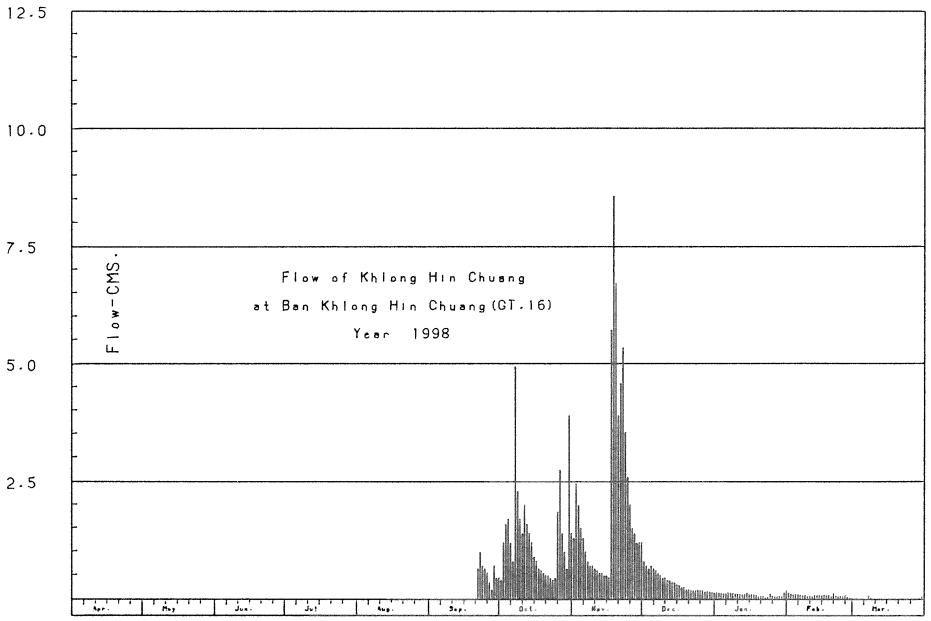
Khlong Hin Chuang at Ban Hin Chuang, Prachuap Khiri Khan (Gt.16)

Location	Lat. 11°-39'-57" N., Long. 99°-41'-48" E., on right bank at the bridge of Phet Kasem Highway near the guidepost 343, Huai Sai, Amphoe Muang, Prachuap Khiri Khan.
Drainage Area	47 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+7.879 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable because of backwater effect.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 33 discharge measurements made in 1998.

Gage Height in Meter (OAD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.66	0.66	0.70	0.70	0.67	0.67	0.84	0.96	0.91	0.77	0.77	0.71	
2	0.66	0.66	0.70	0.70	0.67	0.67	0.95	1.05	0.90	0.77	0.75	0.71	
3	0.66	0.66	0.70	0.70	0.67	0.67	0.99	1.02	0.89	0.76	0.75	0.71	
4	0.66	0.66	0.70	0.70	0.67	0.67	1.00	0.98	0.90	0.76	0.75	0.71	
5	0.66	0.66	0.70	0.70	0.67	0.67	0.95	0.96	0.89	0.76	0.75	0.70	
6	0.66	0.66	0.70	0.70	0.67	0.67	0.91	0.93	0.88	0.77	0.74	0.70	
7	0.66	0.66	0.70	0.70	0.67	0.67	1.20	0.91	0.87	0.77	0.74	0.74	
8	0.66	0.66	0.70	0.70	0.67	0.67	1.04	0.90	0.86	0.76	0.74	0.71	
9	0.66	0.66	0.70	0.70	0.67	0.67	1.00	0.90	0.85	0.76	0.73	0.69	
10	0.66	0.66	0.70	0.70	0.67	0.67	0.97	0.89	0.85	0.75	0.73	0.69	
11	0.66	0.66	0.70	0.70	0.67	0.67	1.02	0.88	0.84	0.75	0.73	0.68	
12	0.66	0.66	0.70	0.70	0.67	0.67	0.99	0.87	0.84	0.75	0.74	0.68	
13	0.66	0.66	0.70	0.70	0.67	0.67	0.97	0.87	0.83	0.75	0.74	0.68	
14	0.66	0.66	0.70	0.70	0.67	0.67	0.95	0.86	0.83	0.77	0.74	0.68	
15	0.66	0.66	0.70	0.70	0.67	0.67	0.92	0.86	0.82	0.75	0.74	0.68	
16	0.66	0.66	0.70	0.70	0.67	0.67	0.91	0.85	0.82	0.75	0.74	0.68	
17	0.66	0.66	0.70	0.70	0.67	0.67	0.89	1.24	0.81	0.75	0.74	0.67	
18	0.66	0.66	0.70	0.70	0.67	0.67	0.88	1.38	0.81	0.74	0.74	0.67	
19	0.66	0.66	0.70	0.70	0.67	0.67	0.87	1.29	0.80	0.73	0.73	0.65	
20	0.66	0.66	0.70	0.70	0.67	0.67	0.86	1.14	0.80	0.73	0.76	0.63	
21	0.66	0.66	0.70	0.70	0.67	0.89	0.86	1.18	0.79	0.73	0.74	0.62	
22	0.66	0.66	0.70	0.70	0.67	0.93	0.85	1.22	0.79	0.72	0.73	0.62	
23	0.66	0.66	0.70	0.70	0.67	0.90	0.84	1.12	0.79	0.72	0.73	0.69	
24	0.66	0.66	0.70	0.70	0.67	0.89	0.85	1.06	0.80	0.76	0.73	0.70	
25	0.66	0.66	0.70	0.70	0.67	0.87	1.01	1.02	0.79	0.73	0.74	0.69	
26	0.66	0.66	0.70	0.70	0.67	0.83	1.07	0.98	0.79	0.73	0.72	0.68	
27	0.66	0.66	0.70	0.70	0.67	0.80	0.97	0.97	0.78	0.73	0.72	0.68	
28	0.66	0.75	0.70	0.70	0.67	0.90	0.93	0.95	0.78	0.73	0.71	0.67	
29	0.66	0.70	0.70	0.70	0.67	0.85	0.89	0.95	0.78	0.73		0.67	
30	0.66	0.66	0.70	0.70	0.67	0.85	1.14	0.95	0.77	0.77		0.73	
31		0.66		0.70	0.67		0.97		0.77	0.79		0.70	
Mean	0.66	0.66	0.70	0.70	0.67	0.74	0.95	1.00	0.83	0.75	0.74	0.68	
Max	0.66	0.75	0.70	0.70	0.67	0.93	1.20	1.38	0.91	0.79	0.77	0.74	1.38
Min	0.66	0.66	0.70	0.70	0.67	0.67	0.84	0.85	0.77	0.72	0.71	0.62	0.62

Annual Max Momentary Gage Height 1.65 M (OAD), at 18.00 Hours, on Nov 18, 1998
Zero Gage at Bottom Elevation 0.00 M (OAD), River Bed 0.14 M (OAD)
Left Bank Elevation 5.20 M (OAD)
Right Bank Elevation 5.19 M (OAD), Drainage Area 47 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.00	0.00	0.40	1.30	0.80	0.14	0.14	0.02	
2	0.00	0.00	0.00	0.00	0.00	0.00	1.20	2.45	0.70	0.14	0.10	0.02	
3	0.00	0.00	0.00	0.00	0.00	0.00	1.60	2.00	0.65	0.12	0.10	0.02	
4	0.00	0.00	0.00	0.00	0.00	0.00	1.70	1.50	0.70	0.12	0.10	0.02	
5	0.00	0.00	0.00	0.00	0.00	0.00	1.20	1.30	0.65	0.12	0.10	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.80	1.00	0.60	0.14	0.08	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	4.95	0.80	0.55	0.14	0.08	0.08	
8	0.00	0.00	0.00	0.00	0.00	0.00	2.30	0.70	0.50	0.12	0.08	0.02	
9	0.00	0.00	0.00	0.00	0.00	0.00	1.70	0.70	0.45	0.12	0.06	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	1.40	0.65	0.45	0.10	0.06	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	2.00	0.60	0.40	0.10	0.06	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	1.60	0.55	0.40	0.10	0.08	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	1.40	0.55	0.35	0.10	0.08	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	1.20	0.50	0.35	0.14	0.08	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.90	0.50	0.30	0.10	0.08	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.80	0.45	0.30	0.10	0.08	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.65	5.73	0.25	0.10	0.08	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.60	8.58	0.25	0.08	0.08	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.55	6.71	0.20	0.06	0.06	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.50	3.90	0.20	0.06	0.12	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.65	0.50	4.60	0.18	0.06	0.08	0.00	
22	0.00	0.00	0.00	0.00	0.00	1.00	0.45	5.34	0.18	0.04	0.06	0.00	
23	0.00	0.00	0.00	0.00	0.00	0.70	0.40	3.55	0.18	0.04	0.06	0.00	
24	0.00	0.00	0.00	0.00	0.00	0.65	0.45	2.60	0.20	0.12	0.06	0.00	
25	0.00	0.00	0.00	0.00	0.00	0.55	1.85	2.00	0.18	0.06	0.08	0.00	
26	0.00	0.00	0.00	0.00	0.00	0.35	2.75	1.50	0.18	0.06	0.04	0.00	
27	0.00	0.00	0.00	0.00	0.00	0.20	1.40	1.40	0.16	0.06	0.04	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.70	1.00	1.20	0.16	0.06	0.02	0.00	
29	0.00	0.00	0.00	0.00	0.00	0.45	0.65	1.20	0.16	0.06		0.00	
30	0.00	0.00	0.00	0.00	0.00	0.45	3.90	1.20	0.14	0.14		0.06	
31		0.00		0.00	0.00		1.40		0.14	0.18		0.00	
Total	0.00	0.00	0.00	0.00	0.00	5.70	42.20	65.06	10.91	3.08	2.14	0.24	129.33 CMSDAY
Mean	0.00	0.00	0.00	0.00	0.00	0.19	1.36	2.17	0.35	0.10	0.08	0.01	0.35 CMS
Max	0.00	0.00	0.00	0.00	0.00	1.00	4.95	8.58	0.80	0.18	0.14	0.08	8.58 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.40	0.45	0.14	0.04	0.02	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	0.000	0.000	0.492	3.646	5.621	0.943	0.266	0.185	0.021	11.174 MCM

Momentary Peak 15.60 CMS, at 1.65 M (0AD), at 18.00 Hours, on Nov 18, 1998
Runoff Yield 7.54 Liters/Second/Square KM, Momentary Peak Yield 331.915 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

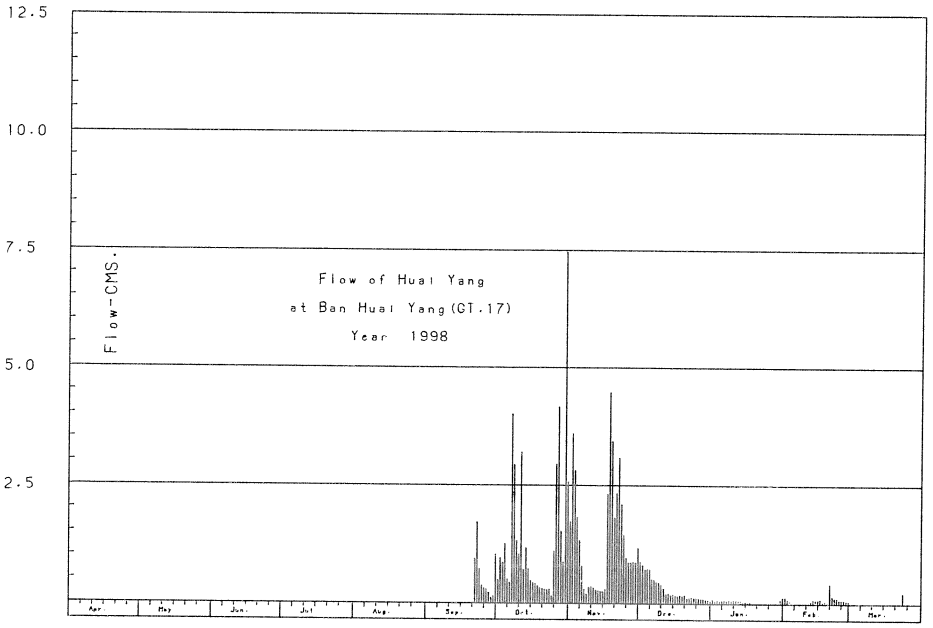
Huai Yang at Ban Huai Yang, Prachuap Khiri Khan (Gt.17)

Location	Lat.11°-36'-49" N., Long. 99°-40'-10" E., on right bank at the bridge of Phet Kasem Highway near the guidepost 349, Amphoe Thap Sakae, Prachuap Khiri Khan.
Drainage Area	50 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+5.965 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 33 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.32	0.24	0.31	0.10	0.10	0.23	0.60	0.75	0.65	0.44	0.47	0.41	
2	0.32	0.24	0.30	0.10	0.10	0.23	0.66	0.91	0.64	0.43	0.44	0.40	
3	0.32	0.24	0.29	0.10	0.10	0.22	0.65	0.85	0.63	0.43	0.43	0.40	
4	0.30	0.24	0.29	0.10	0.10	0.22	0.70	0.76	0.63	0.43	0.41	0.39	
5	0.30	0.24	0.28	0.10	0.10	0.22	0.60	0.71	0.63	0.43	0.40	0.39	
6	0.30	0.24	0.25	0.10	0.10	0.22	0.58	0.64	0.60	0.43	0.40	0.39	
7	0.30	0.24	0.26	0.10	0.10	0.22	0.94	0.53	0.60	0.43	0.40	0.39	
8	0.29	0.24	0.25	0.10	0.10	0.22	0.86	0.50	0.58	0.43	0.39	0.39	
9	0.29	0.24	0.25	0.10	0.10	0.22	0.71	0.55	0.58	0.43	0.39	0.40	
10	0.29	0.24	0.25	0.10	0.10	0.22	0.67	0.55	0.56	0.43	0.39	0.39	
11	0.28	0.24	0.24	0.10	0.10	0.21	0.88	0.54	0.54	0.43	0.41	0.39	
12	0.28	0.24	0.23	0.10	0.10	0.21	0.63	0.53	0.50	0.43	0.42	0.39	
13	0.28	0.24	0.22	0.10	0.10	0.21	0.69	0.52	0.50	0.43	0.44	0.38	
14	0.28	0.24	0.20	0.10	0.10	0.20	0.63	0.52	0.49	0.42	0.44	0.38	
15	0.28	0.24	0.20	0.10	0.10	0.20	0.59	0.52	0.49	0.42	0.44	0.38	
16	0.28	0.24	0.18	0.10	0.10	0.20	0.58	0.53	0.48	0.41	0.44	0.37	
17	0.28	0.24	0.18	0.10	0.10	0.20	0.57	0.81	0.48	0.41	0.42	0.37	
18	0.28	0.24	0.15	0.10	0.10	0.20	0.56	0.97	0.48	0.40	0.42	0.37	
19	0.28	0.24	0.13	0.10	0.10	0.20	0.54	0.90	0.48	0.39	0.41	0.37	
20	0.28	0.24	0.10	0.10	0.10	0.30	0.54	0.76	0.48	0.39	0.57	0.37	
21	0.26	0.24	0.10	0.10	0.30	0.66	0.53	0.81	0.46	0.39	0.48	0.38	
22	0.26	0.24	0.10	0.10	0.34	0.75	0.53	0.87	0.46	0.39	0.46	0.38	
23	0.25	0.24	0.10	0.10	0.33	0.63	0.53	0.79	0.46	0.38	0.45	0.51	
24	0.25	0.24	0.10	0.10	0.32	0.56	0.48	0.72	0.46	0.38	0.44	0.40	
25	0.25	0.24	0.10	0.10	0.31	0.54	0.68	0.66	0.45	0.38	0.43	0.39	
26	0.24	0.24	0.10	0.10	0.31	0.53	0.86	0.65	0.45	0.38	0.43	0.39	
27	0.24	0.33	0.10	0.10	0.30	0.51	0.95	0.65	0.45	0.38	0.43	0.39	
28	0.24	0.36	0.10	0.10	0.30	0.46	0.73	0.65	0.44	0.38	0.42	0.39	
29	0.24	0.36	0.10	0.10	0.27	0.47	0.65	0.65	0.44	0.38		0.39	
30	0.24	0.34	0.10	0.10	0.24	0.67	1.15	0.69	0.43	0.44		0.38	
31		0.33		0.10	0.23		0.83		0.43	0.46		0.38	
Mean	0.28	0.26	0.19	0.10	0.17	0.34	0.68	0.68	0.51	0.41	0.43	0.39	
Max	0.32	0.36	0.31	0.10	0.34	0.75	1.15	0.97	0.65	0.46	0.57	0.51	1.15
Min	0.24	0.24	0.10	0.10	0.10	0.20	0.48	0.50	0.43	0.38	0.39	0.37	0.10

Annual Max Momentary Gage Height 1.22 M (AD), at 12.00 Hours, on Oct 30, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.14 M (AD)
Left Bank Elevation 5.20 M (AD)
Right Bank Elevation 5.19 M (AD), Drainage Area 50 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.00	0.00	0.50	1.73	0.87	0.08	0.14	0.02	
2	0.00	0.00	0.00	0.00	0.00	0.00	0.95	3.60	0.80	0.06	0.08	0.00	
3	0.00	0.00	0.00	0.00	0.00	0.00	0.87	2.83	0.72	0.06	0.06	0.00	
4	0.00	0.00	0.00	0.00	0.00	0.00	1.25	1.82	0.72	0.06	0.02	0.00	
5	0.00	0.00	0.00	0.00	0.00	0.00	0.50	1.34	0.72	0.06	0.00	0.00	
6	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.80	0.50	0.06	0.00	0.00	
7	0.00	0.00	0.00	0.00	0.00	0.00	4.03	0.29	0.50	0.06	0.00	0.00	
8	0.00	0.00	0.00	0.00	0.00	0.00	2.95	0.20	0.44	0.06	0.00	0.00	
9	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.35	0.44	0.06	0.00	0.00	
10	0.00	0.00	0.00	0.00	0.00	0.00	1.03	0.35	0.38	0.06	0.00	0.00	
11	0.00	0.00	0.00	0.00	0.00	0.00	3.20	0.32	0.32	0.06	0.02	0.00	
12	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.29	0.20	0.06	0.04	0.00	
13	0.00	0.00	0.00	0.00	0.00	0.00	1.18	0.26	0.20	0.06	0.08	0.00	
14	0.00	0.00	0.00	0.00	0.00	0.00	0.72	0.26	0.18	0.04	0.08	0.00	
15	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.26	0.18	0.04	0.08	0.00	
16	0.00	0.00	0.00	0.00	0.00	0.00	0.44	0.29	0.16	0.02	0.08	0.00	
17	0.00	0.00	0.00	0.00	0.00	0.00	0.41	2.33	0.16	0.02	0.04	0.00	
18	0.00	0.00	0.00	0.00	0.00	0.00	0.38	4.47	0.16	0.00	0.04	0.00	
19	0.00	0.00	0.00	0.00	0.00	0.00	0.32	3.45	0.16	0.00	0.02	0.00	
20	0.00	0.00	0.00	0.00	0.00	0.00	0.32	1.82	0.16	0.00	0.41	0.00	
21	0.00	0.00	0.00	0.00	0.00	0.95	0.29	2.33	0.12	0.00	0.16	0.00	
22	0.00	0.00	0.00	0.00	0.00	1.73	0.29	3.08	0.12	0.00	0.12	0.00	
23	0.00	0.00	0.00	0.00	0.00	0.72	0.29	2.11	0.12	0.00	0.10	0.23	
24	0.00	0.00	0.00	0.00	0.00	0.38	0.16	1.44	0.12	0.00	0.08	0.00	
25	0.00	0.00	0.00	0.00	0.00	0.32	1.10	0.95	0.10	0.00	0.06	0.00	
26	0.00	0.00	0.00	0.00	0.00	0.29	2.95	0.87	0.10	0.00	0.06	0.00	
27	0.00	0.00	0.00	0.00	0.00	0.23	4.18	0.87	0.10	0.00	0.06	0.00	
28	0.00	0.00	0.00	0.00	0.00	0.12	1.54	0.87	0.08	0.00	0.04	0.00	
29	0.00	0.00	0.00	0.00	0.00	0.14	0.87	0.87	0.08	0.00		0.00	
30	0.00	0.00	0.00	0.00	0.00	1.03	7.47	1.18	0.06	0.08		0.00	
31		0.00		0.00	0.00		2.57		0.06	0.12		0.00	
Total	0.00	0.00	0.00	0.00	0.00	5.91	43.73	41.63	9.03	1.12	1.87	0.25	103.54 CMSDAY
Mean	0.00	0.00	0.00	0.00	0.00	0.20	1.41	1.39	0.29	0.04	0.07	0.01	0.28 CMS
Max	0.00	0.00	0.00	0.00	0.00	1.73	7.47	4.47	0.87	0.12	0.41	0.23	7.47 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.20	0.06	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	0.000	0.000	0.511	3.778	3.597	0.780	0.097	0.162	0.022	8.946 MCM

Momentary Peak 8.90 CMS, at 1.22 M (AD), at 12.00 Hours, on Oct 30, 1998
Runoff Yield 5.67 Liters/Second/Square KM, Momentary Peak Yield 178.000 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

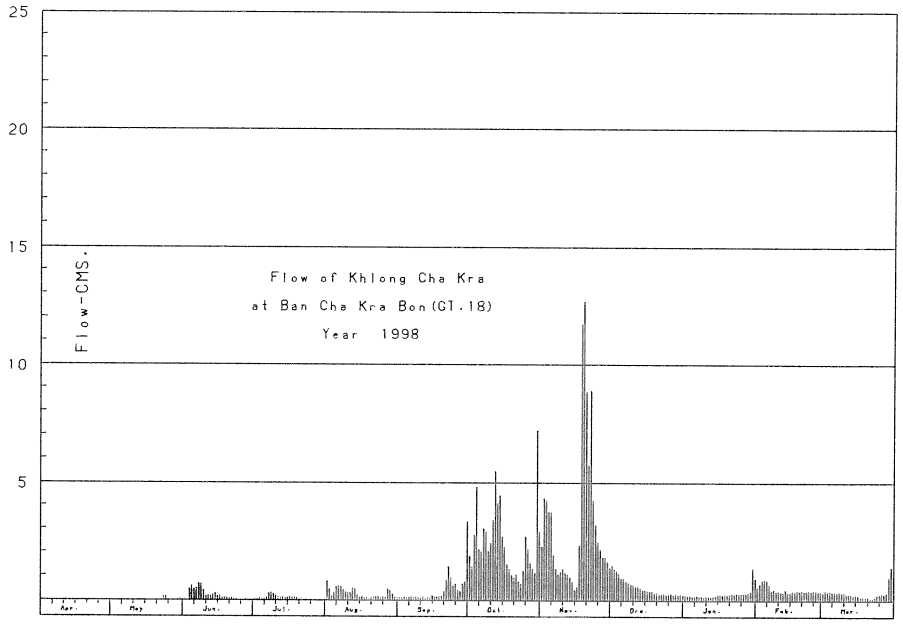
Khlong Cha Kra at Ban Cha Kra Bon, Prachuap Khiri Khan (Gt.18)

Location	Lat.11°-26'-46" N., Long. 99°-34'-10" E., on left bank at the bridge of Phet Kasem Highway near the guidepost 371, Amphoe Thap Sakae, Prachuap Khiri Khan.
Drainage Area	93 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+5.421 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 74 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.05	1.05	1.14	1.16	1.38	1.17	1.61	1.69	1.52	1.22	1.32	1.26	
2	1.05	1.05	1.14	1.16	1.30	1.18	1.51	2.06	1.49	1.22	1.35	1.28	
3	1.05	1.05	1.31	1.15	1.21	1.18	1.78	2.04	1.48	1.21	1.39	1.27	
4	1.05	1.05	1.33	1.15	1.25	1.18	2.13	1.96	1.45	1.21	1.39	1.27	
5	1.05	1.05	1.31	1.14	1.33	1.19	1.67	1.95	1.41	1.21	1.39	1.27	
6	1.05	1.05	1.31	1.18	1.33	1.19	1.64	1.61	1.40	1.21	1.34	1.26	
7	1.05	1.05	1.36	1.25	1.33	1.19	1.83	1.50	1.38	1.21	1.29	1.26	
8	1.05	1.05	1.35	1.25	1.29	1.18	1.80	1.45	1.36	1.20	1.29	1.26	
9	1.05	1.05	1.29	1.24	1.27	1.17	1.65	1.46	1.35	1.20	1.28	1.26	
10	1.05	1.05	1.21	1.21	1.25	1.17	1.71	1.49	1.34	1.20	1.27	1.25	
11	1.05	1.05	1.21	1.18	1.26	1.18	1.89	1.46	1.33	1.20	1.27	1.24	
12	1.05	1.05	1.21	1.18	1.31	1.17	2.24	1.44	1.33	1.20	1.25	1.24	
13	1.05	1.05	1.22	1.18	1.31	1.17	2.02	1.42	1.31	1.20	1.30	1.23	
14	1.05	1.05	1.25	1.18	1.22	1.18	2.08	1.37	1.30	1.22	1.25	1.22	
15	1.05	1.05	1.21	1.18	1.19	1.22	1.77	1.30	1.29	1.23	1.26	1.22	
16	1.05	1.05	1.21	1.18	1.18	1.20	1.68	1.32	1.28	1.23	1.27	1.21	
17	1.05	1.05	1.18	1.18	1.18	1.20	1.54	1.70	1.28	1.23	1.27	1.20	
18	1.05	1.05	1.17	1.17	1.17	1.20	1.49	3.06	1.27	1.23	1.28	1.19	
19	1.05	1.05	1.16	1.16	1.16	1.21	1.44	3.17	1.26	1.23	1.28	1.19	
20	1.05	1.05	1.16	1.15	1.16	1.28	1.41	2.70	1.25	1.23	1.28	1.18	
21	1.05	1.05	1.15	1.15	1.20	1.39	1.44	2.28	1.24	1.24	1.28	1.17	
22	1.05	1.05	1.14	1.13	1.20	1.52	1.38	2.71	1.24	1.24	1.28	1.17	
23	1.05	1.20	1.13	1.12	1.19	1.41	1.35	2.04	1.24	1.24	1.28	1.20	
24	1.05	1.20	1.13	1.12	1.18	1.34	1.48	1.86	1.23	1.24	1.28	1.22	
25	1.05	1.05	1.11	1.12	1.18	1.35	1.77	1.72	1.23	1.24	1.28	1.24	
26	1.05	1.05	1.10	1.10	1.17	1.29	1.66	1.66	1.24	1.25	1.28	1.24	
27	1.05	1.05	1.14	1.08	1.31	1.28	1.55	1.60	1.23	1.25	1.27	1.24	
28	1.05	1.05	1.13	1.05	1.28	1.36	1.49	1.59	1.23	1.25	1.26	1.25	
29	1.05	1.15	1.12	1.05	1.24	1.37	1.46	1.56	1.23	1.28		1.42	
30	1.05	1.14	1.11	1.05	1.18	1.88	2.49	1.51	1.23	1.50		1.51	
31		1.14		1.05	1.18		1.80		1.23	1.41		1.30	
Mean	1.05	1.07	1.20	1.15	1.24	1.27	1.70	1.82	1.31	1.24	1.29	1.25	
Max	1.05	1.20	1.36	1.25	1.38	1.88	2.49	3.17	1.52	1.50	1.39	1.51	3.17
Min	1.05	1.05	1.10	1.05	1.16	1.17	1.35	1.30	1.23	1.20	1.25	1.17	1.05

Annual Max Momentary Gage Height 3.68 M (AD), at 8.43 Hours, on Nov 19, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.49 M (AD)
Left Bank Elevation 5.53 M (AD)
Right Bank Elevation 5.55 M (AD), Drainage Area 93 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.06	0.09	0.81	0.10	1.90	2.30	1.45	0.21	0.54	0.33	
2	0.00	0.00	0.06	0.09	0.45	0.12	1.40	4.36	1.31	0.21	0.68	0.39	
3	0.00	0.00	0.49	0.07	0.18	0.12	2.79	4.24	1.26	0.18	0.86	0.36	
4	0.00	0.00	0.59	0.07	0.30	0.12	4.80	3.78	1.13	0.18	0.86	0.36	
5	0.00	0.00	0.49	0.06	0.59	0.14	2.20	3.73	0.94	0.18	0.86	0.36	
6	0.00	0.00	0.49	0.12	0.59	0.14	2.05	1.90	0.90	0.18	0.63	0.33	
7	0.00	0.00	0.72	0.30	0.59	0.14	3.07	1.35	0.81	0.18	0.42	0.33	
8	0.00	0.00	0.68	0.30	0.42	0.12	2.90	1.13	0.72	0.15	0.42	0.33	
9	0.00	0.00	0.42	0.27	0.36	0.10	2.10	1.17	0.68	0.15	0.39	0.33	
10	0.00	0.00	0.18	0.18	0.30	0.10	2.41	1.31	0.63	0.15	0.36	0.30	
11	0.00	0.00	0.18	0.12	0.33	0.12	3.40	1.17	0.59	0.15	0.36	0.27	
12	0.00	0.00	0.18	0.12	0.49	0.10	5.51	1.08	0.59	0.15	0.30	0.27	
13	0.00	0.00	0.21	0.12	0.49	0.10	4.12	0.99	0.49	0.15	0.45	0.24	
14	0.00	0.00	0.30	0.12	0.21	0.12	4.48	0.77	0.45	0.21	0.30	0.21	
15	0.00	0.00	0.18	0.12	0.14	0.21	2.73	0.45	0.42	0.24	0.33	0.21	
16	0.00	0.00	0.18	0.12	0.12	0.15	2.25	0.54	0.39	0.24	0.36	0.18	
17	0.00	0.00	0.12	0.12	0.12	0.15	1.55	2.35	0.39	0.24	0.36	0.15	
18	0.00	0.00	0.10	0.10	0.10	0.15	1.31	11.76	0.36	0.24	0.39	0.14	
19	0.00	0.00	0.09	0.09	0.09	0.18	1.08	12.70	0.33	0.24	0.39	0.14	
20	0.00	0.00	0.09	0.07	0.09	0.39	0.94	8.85	0.30	0.24	0.39	0.12	
21	0.00	0.00	0.07	0.07	0.15	0.86	1.08	5.77	0.27	0.27	0.39	0.10	
22	0.00	0.00	0.06	0.04	0.15	1.45	0.81	8.93	0.27	0.27	0.39	0.10	
23	0.00	0.15	0.04	0.03	0.14	0.94	0.68	4.24	0.27	0.27	0.39	0.15	
24	0.00	0.15	0.04	0.03	0.12	0.63	1.26	3.23	0.24	0.27	0.39	0.21	
25	0.00	0.00	0.01	0.03	0.12	0.68	2.73	2.46	0.24	0.27	0.39	0.27	
26	0.00	0.00	0.00	0.00	0.10	0.42	2.15	2.15	0.27	0.30	0.39	0.27	
27	0.00	0.00	0.06	0.00	0.49	0.39	1.60	1.85	0.24	0.30	0.36	0.27	
28	0.00	0.00	0.04	0.00	0.39	0.72	1.31	1.80	0.24	0.30	0.33	0.30	
29	0.00	0.07	0.03	0.00	0.27	0.77	1.17	1.65	0.24	0.39		0.99	
30	0.00	0.06	0.01	0.00	0.12	3.34	7.23	1.40	0.24	1.35		1.40	
31		0.06		0.00	0.12		2.90		0.24	0.94		0.45	
Total	0.00	0.49	6.17	2.85	8.94	13.07	75.91	99.41	16.90	8.80	12.68	9.86	255.08 CMSDAY
Mean	0.00	0.02	0.21	0.09	0.29	0.44	2.45	3.31	0.55	0.28	0.45	0.32	0.70 CMS
Max	0.00	0.15	0.72	0.30	0.81	3.34	7.23	12.70	1.45	1.35	0.86	1.40	12.70 CMS
Min	0.00	0.00	0.00	0.00	0.09	0.10	0.68	0.45	0.24	0.15	0.30	0.10	0.00 CMS
Runoff	0.000	0.042	0.533	0.246	0.772	1.129	6.559	8.589	1.460	0.760	1.096	0.852	22.039 MCM

Momentary Peak 17.21 CMS, at 3.68 M (AD), at 8.43 Hours, on Nov 19, 1998
Runoff Yield 7.51 Liters/Second/Square KM, Momentary Peak Yield 185.054 Liters/Second/Square KM

WATER YEAR 1998

WEST COAST-GULF BASIN

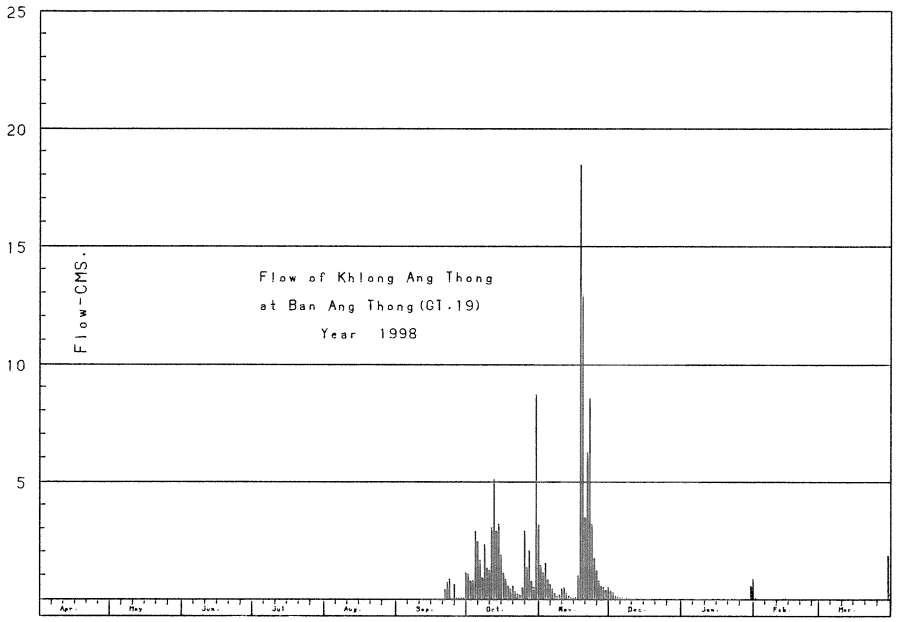
Khlong Ang Thong at Ban Ang Thong, Prachuap Khiri Khan (Gt.19)

Location	Lat. 11°-26'-08" N., Long. 99°-33'-52" E., on left bank at the bridge of Phet Kasem Highway near the guidepost 373, Amphoe Thap Sakae, Prachuap Khiri Khan.
Drainage Area	56 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D)
Bench Mark	B.M.-H.D.
Location	On left bank at the abutment of the bridge.
Elevation	+4.973 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 - 1988, 1993 to date.
Rated by Float	-
Rated by Current Meter	1987 - 1988, 1993 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 58 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.04	1.04	1.20	1.18	1.07	1.07	1.49	1.53	1.38	1.14	1.30	1.10	
2	1.04	1.04	1.20	1.19	1.07	1.07	1.45	1.50	1.36	1.13	1.25	1.09	
3	1.04	1.04	1.20	1.20	1.10	1.07	1.45	1.54	1.32	1.11	1.21	1.09	
4	1.04	1.04	1.19	1.19	1.17	1.07	1.65	1.46	1.31	1.10	1.23	1.09	
5	1.04	1.04	1.18	1.22	1.22	1.07	1.62	1.43	1.30	1.10	1.21	1.08	
6	1.04	1.04	1.18	1.20	1.21	1.07	1.55	1.40	1.29	1.10	1.17	1.08	
7	1.04	1.04	1.17	1.20	1.18	1.07	1.47	1.35	1.28	1.10	1.16	1.08	
8	1.04	1.04	1.17	1.19	1.18	1.07	1.61	1.31	1.28	1.10	1.15	1.08	
9	1.04	1.04	1.17	1.19	1.18	1.07	1.52	1.33	1.28	1.10	1.14	1.08	
10	1.04	1.04	1.16	1.18	1.18	1.07	1.51	1.40	1.26	1.10	1.13	1.08	
11	1.04	1.04	1.16	1.18	1.18	1.07	1.66	1.41	1.26	1.09	1.12	1.08	
12	1.04	1.04	1.18	1.18	1.17	1.07	1.78	1.35	1.25	1.09	1.15	1.08	
13	1.04	1.04	1.18	1.17	1.16	1.07	1.65	1.32	1.25	1.08	1.27	1.08	
14	1.04	1.04	1.21	1.17	1.16	1.07	1.67	1.30	1.25	1.08	1.26	1.08	
15	1.04	1.04	1.21	1.18	1.15	1.07	1.57	1.28	1.24	1.08	1.21	1.08	
16	1.04	1.07	1.21	1.17	1.15	1.07	1.50	1.29	1.23	1.08	1.17	1.07	
17	1.04	1.19	1.20	1.17	1.14	1.07	1.46	1.48	1.22	1.08	1.17	1.07	
18	1.04	1.20	1.20	1.16	1.14	1.07	1.42	2.67	1.22	1.07	1.15	1.07	
19	1.04	1.22	1.19	1.16	1.14	1.07	1.40	2.33	1.22	1.07	1.13	1.07	
20	1.04	1.18	1.18	1.12	1.14	1.15	1.42	1.69	1.21	1.07	1.13	1.07	
21	1.04	1.15	1.18	1.10	1.14	1.40	1.37	1.86	1.20	1.11	1.13	1.06	
22	1.04	1.11	1.17	1.09	1.17	1.44	1.34	2.03	1.18	1.11	1.13	1.06	
23	1.04	1.20	1.17	1.09	1.16	1.46	1.33	1.67	1.18	1.10	1.14	1.08	
24	1.04	1.21	1.16	1.09	1.16	1.26	1.41	1.56	1.17	1.09	1.13	1.07	
25	1.04	1.17	1.16	1.09	1.15	1.43	1.65	1.51	1.17	1.09	1.13	1.07	
26	1.04	1.18	1.16	1.09	1.14	1.30	1.52	1.45	1.17	1.09	1.11	1.08	
27	1.04	1.23	1.19	1.09	1.13	1.26	1.59	1.42	1.15	1.09	1.10	1.07	
28	1.04	1.23	1.18	1.09	1.12	1.30	1.45	1.41	1.15	1.09	1.10	1.07	
29	1.04	1.24	1.18	1.09	1.09	1.25	1.41	1.39	1.15	1.12		1.19	
30	1.04	1.26	1.18	1.09	1.08	1.50	2.04	1.41	1.15	1.42		1.57	
31		1.20		1.09	1.08		1.67		1.15	1.46		1.33	
Mean	1.04	1.12	1.18	1.15	1.15	1.17	1.54	1.54	1.23	1.12	1.17	1.10	
Max	1.04	1.26	1.21	1.22	1.22	1.50	2.04	2.67	1.38	1.46	1.30	1.57	2.67
Min	1.04	1.04	1.16	1.09	1.07	1.07	1.33	1.28	1.15	1.07	1.10	1.06	1.04

Annual Max Momentary Gage Height 2.86 M (AD), at 9.00 Hours, on Nov 18, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -0.07 M (AD)
Left Bank Elevation 5.06 M (AD)
Right Bank Elevation 5.09 M (AD), Drainage Area 56 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.01	0.01	0.00	0.00	1.08	1.46	0.38	0.00	0.10	0.00	
2	0.00	0.00	0.01	0.01	0.00	0.00	0.80	1.15	0.31	0.00	0.06	0.00	
3	0.00	0.00	0.01	0.01	0.00	0.00	0.80	1.57	0.17	0.00	0.02	0.00	
4	0.00	0.00	0.01	0.01	0.01	0.00	2.92	0.87	0.13	0.00	0.04	0.00	
5	0.00	0.00	0.01	0.03	0.03	0.00	2.49	0.66	0.10	0.00	0.02	0.00	
6	0.00	0.00	0.01	0.01	0.02	0.00	1.67	0.45	0.09	0.00	0.01	0.00	
7	0.00	0.00	0.01	0.01	0.01	0.00	0.94	0.28	0.08	0.00	0.01	0.00	
8	0.00	0.00	0.01	0.01	0.01	0.00	2.34	0.13	0.08	0.00	0.00	0.00	
9	0.00	0.00	0.01	0.01	0.01	0.00	1.36	0.21	0.08	0.00	0.00	0.00	
10	0.00	0.00	0.01	0.01	0.01	0.00	1.25	0.45	0.06	0.00	0.00	0.00	
11	0.00	0.00	0.01	0.01	0.01	0.00	3.07	0.52	0.06	0.00	0.00	0.00	
12	0.00	0.00	0.01	0.01	0.01	0.00	5.13	0.28	0.06	0.00	0.00	0.00	
13	0.00	0.00	0.01	0.01	0.01	0.00	2.92	0.17	0.06	0.00	0.07	0.00	
14	0.00	0.00	0.02	0.01	0.01	0.00	3.21	0.10	0.06	0.00	0.06	0.00	
15	0.00	0.00	0.02	0.01	0.00	0.00	1.89	0.08	0.05	0.00	0.02	0.00	
16	0.00	0.00	0.02	0.01	0.00	0.00	1.15	0.09	0.04	0.00	0.01	0.00	
17	0.00	0.01	0.01	0.01	0.00	0.00	0.87	1.01	0.03	0.00	0.01	0.00	
18	0.00	0.01	0.01	0.01	0.00	0.00	0.59	18.49	0.03	0.00	0.00	0.00	
19	0.00	0.03	0.01	0.01	0.00	0.00	0.45	12.96	0.03	0.00	0.00	0.00	
20	0.00	0.01	0.01	0.00	0.00	0.00	0.59	3.51	0.02	0.00	0.00	0.00	
21	0.00	0.00	0.01	0.00	0.00	0.45	0.35	6.25	0.01	0.00	0.00	0.00	
22	0.00	0.00	0.01	0.00	0.01	0.73	0.24	8.57	0.01	0.00	0.00	0.00	
23	0.00	0.01	0.01	0.00	0.01	0.87	0.21	3.21	0.01	0.00	0.00	0.00	
24	0.00	0.02	0.01	0.00	0.01	0.06	0.52	1.78	0.01	0.00	0.00	0.00	
25	0.00	0.01	0.01	0.00	0.00	0.66	2.92	1.25	0.01	0.00	0.00	0.00	
26	0.00	0.01	0.01	0.00	0.00	0.10	1.36	0.80	0.01	0.00	0.00	0.00	
27	0.00	0.04	0.01	0.00	0.00	0.06	2.10	0.59	0.00	0.00	0.00	0.00	
28	0.00	0.04	0.01	0.00	0.00	0.10	0.80	0.52	0.00	0.00	0.00	0.00	
29	0.00	0.05	0.01	0.00	0.00	0.06	0.52	0.42	0.00	0.00		0.01	
30	0.00	0.06	0.01	0.00	0.00	1.15	8.71	0.52	0.00	0.59		1.89	
31		0.01		0.00	0.00		3.21		0.00	0.87		0.21	
Total	0.00	0.31	0.33	0.21	0.17	4.24	56.46	68.35	1.98	1.46	0.43	2.11	136.05 CMSDAY
Mean	0.00	0.01	0.01	0.01	0.01	0.14	1.82	2.28	0.06	0.05	0.02	0.07	0.37 CMS
Max	0.00	0.06	0.02	0.03	0.03	1.15	8.71	18.49	0.38	0.87	0.10	1.89	18.49 CMS
Min	0.00	0.00	0.01	0.00	0.00	0.00	0.21	0.08	0.00	0.00	0.00	0.00	0.00 CMS
Runoff	0.000	0.027	0.029	0.018	0.015	0.366	4.878	5.905	0.171	0.126	0.037	0.182	11.755 MCM

Momentary Peak 21.72 CMS, at 2.86 M (AD), at 9.00 Hours, on Nov 18, 1998
Runoff Yield 6.66 Liters/Second/Square KM, Momentary Peak Yield 387.857 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

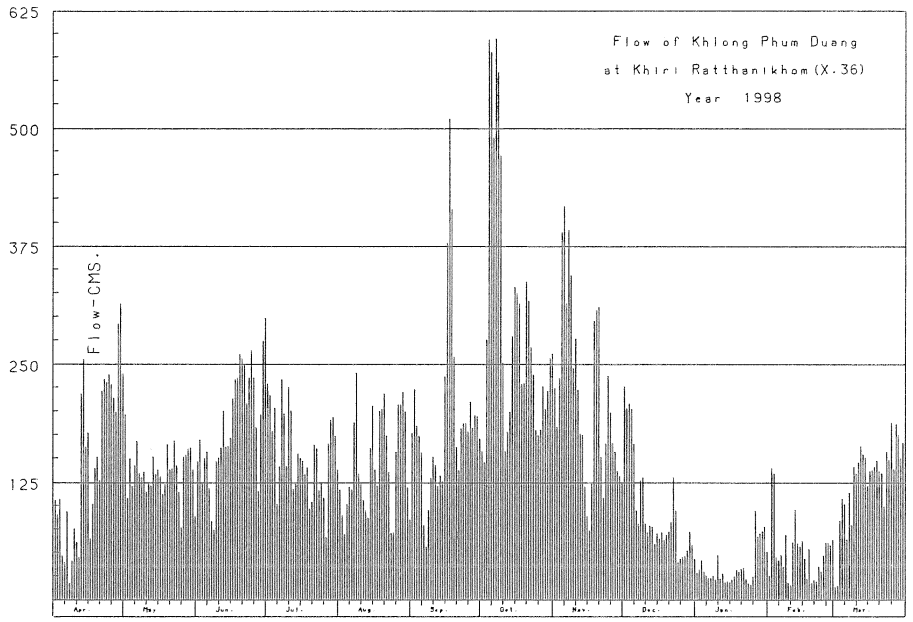
Khlong Phum Duang at Khiri Ratthanikhom, Surat Thani (X.36)

Location	Lat. 09°-01'-46" N., Long. 98°-58'-00" E., on left bank at Ban Tha Khanon, Amphoe Khiri Ratthanikhom, Surat Thani.
Drainage Area	3,012 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.45 m.(M.S.L)
Bench Mark	B.M.-H.D.
Location	On left bank near the sixth staff gage.
Elevation	+10.502 m.(M.S.L)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1963 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow regulated by Ratcha Prapha Dam. Stage-discharge relation defined by 40 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.57	3.62	3.07	3.96	2.71	3.41	3.19	3.91	3.93	1.35	1.28	0.93	
2	2.37	2.60	3.33	3.84	2.36	3.90	3.06	3.48	3.69	1.42	2.98	1.00	
3	2.58	3.10	2.80	3.43	2.09	3.49	4.41	4.02	3.75	1.62	2.92	2.29	
4	1.72	2.75	3.10	3.70	2.52	3.38	6.85	5.33	3.69	1.38	1.68	2.58	
5	1.58	3.02	3.19	2.51	2.74	3.18	6.76	5.54	3.28	1.29	1.63	2.52	
6	2.42	3.32	2.72	3.00	2.71	2.23	6.09	4.72	2.43	1.21	1.73	2.00	
7	1.08	2.92	2.29	4.01	3.54	1.88	6.86	5.34	2.25	1.22	1.48	2.67	
8	1.62	2.86	2.16	3.63	4.08	2.43	6.60	4.97	2.82	1.27	2.09	2.24	
9	2.18	2.93	3.07	3.01	2.91	2.86	5.95	4.12	2.87	1.18	1.07	3.00	
10	1.97	2.68	3.11	3.92	2.80	3.12	4.18	4.42	2.26	1.72	1.01	2.92	
11	1.68	2.80	3.23	3.67	2.57	3.02	3.19	3.90	2.12	1.20	1.95	3.06	
12	3.85	2.76	3.67	2.71	2.43	2.75	3.43	3.41	2.23	1.33	2.44	3.25	
13	4.22	3.12	3.25	2.78	2.34	2.89	3.65	3.39	2.21	1.10	1.93	3.16	
14	3.25	2.91	3.25	3.16	3.23	2.81	4.44	2.75	1.93	1.11	1.89	3.11	
15	3.42	2.96	3.36	3.11	3.72	4.04	4.87	2.35	2.10	1.10	1.99	2.75	
16	2.02	2.88	3.80	3.07	2.97	5.24	4.81	2.16	2.02	1.17	1.66	2.94	
17	2.52	2.65	4.01	2.91	2.76	6.25	4.72	2.78	2.13	1.27	1.20	2.96	
18	2.98	2.77	4.02	2.99	3.67	5.51	3.96	4.57	2.00	1.41	1.83	3.00	
19	3.12	3.28	4.27	2.46	3.68	4.24	3.96	4.67	2.08	1.37	1.08	3.08	
20	2.83	2.97	4.22	2.54	3.86	3.24	4.91	4.69	2.14	1.44	1.15	2.94	
21	3.88	2.97	4.16	3.27	3.38	2.96	4.75	3.12	2.27	1.46	1.11	2.92	
22	4.01	3.32	3.75	3.23	2.93	3.47	4.33	2.60	2.86	1.20	1.50	2.48	
23	3.97	3.02	4.02	2.70	2.12	3.52	4.06	3.29	2.43	1.05	1.37	3.19	
24	4.06	2.67	4.30	2.78	2.12	3.53	3.45	4.04	1.59	1.03	1.72	3.08	
25	3.95	2.21	4.02	2.60	3.19	3.43	3.39	3.65	1.65	1.25	1.96	3.53	
26	3.81	3.12	3.48	2.05	3.73	3.77	3.45	3.29	1.68	2.43	1.94	2.97	
27	3.65	3.15	2.69	3.29	3.74	3.47	3.93	3.19	1.71	2.06	1.90	3.52	
28	4.55	3.22	3.62	3.56	3.87	3.62	3.69	2.95	1.81	2.10	2.01	3.39	
29	4.72	3.24	4.40	3.60	3.66	3.60	3.88	2.88	2.14	2.15		3.10	
30	4.07	2.96	4.60	3.38	2.74	3.35	4.23	2.79	1.90	2.21		3.30	
31		2.35		2.96	2.31		4.27		1.65	1.78		2.44	
Mean	3.02	2.94	3.50	3.16	3.02	3.49	4.49	3.74	2.37	1.45	1.73	2.78	
Max	4.72	3.62	4.60	4.01	4.08	6.25	6.86	5.54	3.93	2.43	2.98	3.53	6.86
Min	1.08	2.21	2.16	2.05	2.09	1.88	3.06	2.16	1.59	1.03	1.01	0.93	0.93

Annual Max Momentary Gage Height 7.09 M (MSL), at 18.00 Hours, on Oct 7, 1998
Zero Gage at Bottom Elevation 0.45 M (MSL), River Bed -0.45 M (MSL)
Left Bank Elevation 12.12 M (MSL)
Right Bank Elevation 12.15 M (MSL), Drainage Area 3012 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	106.60	196.90	147.82	230.00	117.91	177.33	158.14	225.00	227.00	29.05	26.04	13.37	
2	90.60	109.00	170.31	218.00	89.80	224.00	146.96	183.84	203.55	32.16	140.14	15.40	
3	107.40	150.40	125.20	179.19	69.85	184.77	277.20	236.00	209.25	41.92	135.16	84.20	
4	47.52	121.15	150.40	204.50	102.60	174.66	594.25	390.90	203.55	30.34	45.28	107.40	
5	39.84	143.52	158.14	101.80	120.34	157.28	581.40	418.20	165.96	26.47	42.48	102.60	
6	94.60	169.44	118.72	141.80	117.91	79.40	489.70	314.52	95.40	23.03	48.08	64.00	
7	18.28	135.16	84.20	235.00	189.42	56.80	595.70	392.20	81.00	23.46	35.04	114.67	
8	41.92	130.18	74.40	197.85	242.00	95.40	559.00	345.11	126.86	25.61	69.85	80.20	
9	75.70	135.99	147.82	142.66	134.33	130.18	471.50	246.00	131.01	21.88	17.92	141.80	
10	62.20	115.48	151.26	226.00	125.20	152.12	252.00	278.40	81.80	47.52	15.76	135.16	
11	45.28	125.20	161.61	201.65	106.60	143.52	158.14	224.00	71.80	22.60	61.00	146.96	
12	219.00	121.96	201.65	117.91	95.40	121.15	179.19	177.33	79.40	28.19	96.20	163.35	
13	256.20	152.12	163.35	123.58	88.20	132.67	199.75	175.53	77.80	19.00	59.80	155.56	
14	163.35	134.33	163.35	155.56	161.61	126.03	280.80	121.15	59.80	19.36	57.40	151.26	
15	178.26	138.48	172.92	151.26	206.40	238.00	332.81	89.00	70.50	19.00	63.40	121.15	
16	65.30	131.84	214.00	147.82	139.31	379.20	325.43	74.40	65.30	21.52	44.16	136.82	
17	102.60	113.05	235.00	134.33	121.96	510.75	314.52	123.58	72.45	25.61	22.60	138.48	
18	140.14	122.77	236.00	140.97	201.65	414.30	230.00	296.40	64.00	31.68	53.80	141.80	
19	152.12	165.96	261.70	97.80	202.60	258.40	230.00	308.47	69.20	29.91	18.28	148.68	
20	127.69	139.31	256.20	104.20	220.00	162.48	337.73	310.89	73.10	33.12	20.80	136.82	
21	222.00	139.31	250.00	165.09	174.66	138.48	318.15	152.12	82.60	34.08	19.36	135.16	
22	235.00	169.44	209.25	161.61	135.99	182.91	268.30	109.00	130.18	22.60	36.00	99.40	
23	231.00	143.52	236.00	117.10	71.80	187.56	240.00	166.83	95.40	17.20	29.91	158.14	
24	240.00	114.67	265.00	123.58	71.80	188.49	181.05	238.00	40.32	16.48	47.52	148.68	
25	229.00	77.80	236.00	109.00	158.14	179.19	175.53	199.75	43.60	24.75	61.60	188.49	
26	215.00	152.12	183.84	67.25	207.35	211.15	181.05	166.83	45.28	95.40	60.40	139.31	
27	199.75	154.70	116.29	166.83	208.30	182.91	227.00	158.14	46.96	67.90	58.00	187.56	
28	294.00	160.74	196.90	191.28	221.00	196.90	203.55	137.65	52.60	70.50	64.65	175.53	
29	314.52	162.48	276.00	195.00	200.70	195.00	222.00	131.84	73.10	73.75		150.40	
30	241.00	138.48	300.00	174.66	120.34	172.05	257.30	124.39	58.00	77.80		167.70	
31		89.00		138.48	85.80		261.70		43.60	50.88		96.20	
Total	4555.87	4254.50	5663.33	4861.76	4508.97	5753.08	9249.85	6515.47	2940.37	1102.77	1450.63	3946.25	54802.86 CMSDAY
Mean	151.86	137.24	188.78	156.83	145.45	191.77	298.38	217.18	94.85	35.57	51.81	127.30	150.14 CMS
Max	314.52	196.90	300.00	235.00	242.00	510.75	595.70	418.20	227.00	95.40	140.14	188.49	595.70 CMS
Min	18.28	77.80	74.40	67.25	69.85	56.80	146.96	74.40	40.32	16.48	15.76	13.37	13.37 CMS
Runoff	393.627	367.589	489.312	420.056	389.575	497.066	799.187	562.937	254.048	95.279	125.334	340.956	4734.967 MCM

Momentary Peak 629.05 CMS, at 7.09 M (MSL), at 18.00 Hours, on Oct 7, 1998

Runoff Yield 49.85 Liters/Second/Square KM, Momentary Peak Yield 208.848 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

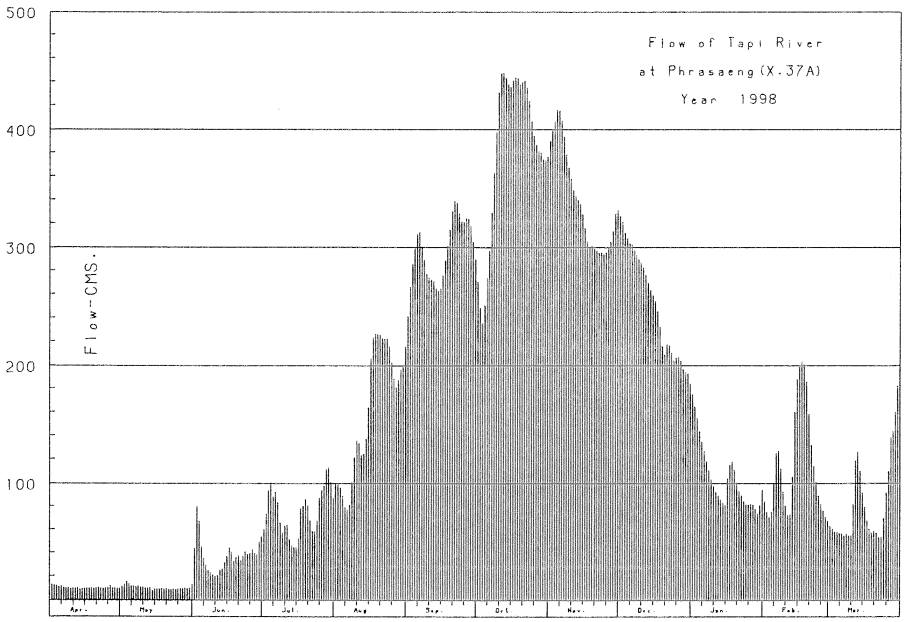
Tapi River at Phrasaeng, Surat Thani (X.37A)

Location	Lat. 08°-34'-03" N., Long. 99°-15'-15" E., on left bank at Amphoe Phrasaeng, Surat Thani.
Drainage Area	5,200 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+4.80 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Near the automatic gage building.
Elevation	+10.240 m.(M.S.L.)
Gage Reading Frequency	Recording.
Basis of Mean Daily Gage Height	Arithmetic mean of 24 readings.
Period of Available Gage Records	1969 to date.
Rating Operation	
Period of Rating	1969 to date.
Rated by Float	-
Rated by Current Meter	1969 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	5.13	5.10	5.91	6.32	7.12	9.39	9.72	10.62	10.21	8.42	6.83	6.38	
2	5.13	5.14	6.75	6.61	7.12	9.67	9.47	10.67	10.17	8.27	6.64	6.31	
3	5.11	5.21	6.47	7.02	7.08	9.87	9.31	10.71	10.10	8.11	6.55	6.26	
4	5.10	5.15	5.96	7.16	6.93	10.00	9.50	10.76	10.06	7.94	6.65	6.25	
5	5.10	5.11	5.71	6.92	6.74	10.09	9.75	10.76	10.03	7.79	7.15	6.24	
6	5.08	5.10	5.55	7.00	6.68	10.10	9.97	10.71	10.02	7.64	7.61	6.22	
7	5.07	5.10	5.45	6.82	6.78	10.01	10.23	10.64	9.98	7.49	7.65	6.19	
8	5.06	5.10	5.39	6.45	7.16	9.90	10.46	10.55	9.94	7.34	7.37	6.21	
9	5.06	5.09	5.36	6.24	7.55	9.79	10.66	10.49	9.91	7.21	7.00	6.19	
10	5.06	5.08	5.31	6.39	7.80	9.75	10.84	10.43	9.88	7.09	6.75	6.18	
11	5.06	5.07	5.34	6.40	7.76	9.74	10.92	10.37	9.84	7.00	6.59	6.79	
12	5.06	5.07	5.44	6.11	7.58	9.72	10.92	10.33	9.78	6.93	6.60	7.50	
13	5.04	5.07	5.48	5.97	7.61	9.66	10.90	10.31	9.71	6.87	7.25	7.63	
14	5.04	5.02	5.60	5.94	7.83	9.63	10.87	10.28	9.64	6.80	8.20	7.34	
15	5.06	5.04	5.75	5.93	8.26	9.66	10.86	10.22	9.60	6.77	8.62	6.98	
16	5.06	5.04	5.93	6.13	8.87	9.77	10.89	10.13	9.54	7.22	8.77	6.73	
17	5.06	5.05	5.83	6.70	9.14	9.90	10.90	10.04	9.44	7.43	8.83	6.49	
18	5.06	5.05	5.64	6.76	9.18	10.01	10.90	10.00	9.26	7.48	8.81	6.31	
19	5.06	5.05	5.71	6.88	9.18	10.12	10.87	10.01	9.03	7.36	8.58	6.25	
20	5.06	5.05	5.75	6.76	9.17	10.24	10.88	9.99	8.93	7.15	8.16	6.27	
21	5.08	5.04	5.66	6.48	9.13	10.30	10.89	9.98	9.05	7.01	7.74	6.23	
22	5.06	5.04	5.75	6.28	9.12	10.29	10.86	9.96	9.04	6.94	7.42	6.15	
23	5.06	5.04	5.84	6.26	9.12	10.22	10.80	9.96	8.94	6.84	7.16	6.15	
24	5.07	5.04	5.79	6.49	9.03	10.17	10.71	9.95	8.85	6.77	6.94	6.53	
25	5.08	5.04	5.80	6.89	8.83	10.17	10.64	9.96	8.88	6.78	6.78	6.99	
26	5.11	5.05	5.88	7.02	8.62	10.19	10.60	10.00	8.89	6.78	6.66	7.34	
27	5.07	5.06	5.82	7.11	8.52	10.19	10.57	10.04	8.85	6.78	6.56	7.85	
28	5.06	5.06	5.77	7.37	8.60	10.14	10.56	10.11	8.74	6.69	6.47	7.93	
29	5.06	5.06	6.06	7.39	8.74	10.04	10.53	10.22	8.70	6.62		8.20	
30	5.05	5.06	6.16	7.17	8.79	9.91	10.52	10.24	8.69	6.76		8.53	
31		5.15		6.90	9.02		10.54		8.55	7.04		8.81	
Mean	5.07	5.08	5.76	6.64	8.16	9.95	10.52	10.28	9.43	7.20	7.37	6.82	
Max	5.13	5.21	6.75	7.39	9.18	10.30	10.92	10.76	10.21	8.42	8.83	8.81	10.92
Min	5.04	5.02	5.31	5.93	6.68	9.39	9.31	9.95	8.55	6.62	6.47	6.15	5.02

Annual Max Momentary Gage Height 10.93 M (MSL), at 1.00 Hours, on Oct 12, 1998
Zero Gage at Bottom Elevation 4.80 M (MSL), River Bed 3.04 M (MSL)
Left Bank Elevation 12.34 M (MSL)
Right Bank Elevation 12.49 M (MSL), Drainage Area 5200 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	13.2	12.0	44.4	61.2	98.9	242.3	271.4	390.7	327.4	175.3	84.5	63.7	
2	13.2	13.6	80.6	73.9	98.9	266.6	249.0	399.9	322.1	165.6	75.3	60.7	
3	12.4	16.4	67.7	93.8	96.9	286.3	236.4	407.3	313.0	155.2	71.2	58.6	
4	12.0	14.0	46.4	101.0	89.4	300.0	251.5	416.6	307.8	144.7	75.8	58.2	
5	12.0	12.4	36.4	88.9	80.1	311.7	274.2	416.6	303.9	135.8	100.5	57.7	
6	11.2	12.0	30.0	92.8	77.2	313.0	296.9	407.3	302.6	127.3	125.6	56.9	
7	10.8	12.0	26.0	84.0	82.0	301.3	330.0	394.4	297.9	119.0	127.9	55.6	
8	10.4	12.0	23.6	66.8	101.0	289.5	363.2	378.5	293.7	110.7	112.4	56.4	
9	10.4	11.6	22.4	57.7	122.3	278.0	398.1	368.3	290.5	103.6	92.8	55.6	
10	10.4	11.2	20.4	64.2	136.4	274.2	432.0	358.1	287.4	97.4	80.6	55.2	
11	10.4	10.8	21.6	64.6	134.1	273.3	448.0	349.0	283.2	92.8	73.0	82.5	
12	10.4	10.8	25.6	52.4	123.9	271.4	448.0	343.6	277.1	89.4	73.4	119.5	
13	9.6	10.8	27.2	46.8	125.6	265.7	444.0	340.9	270.4	86.4	105.8	126.7	
14	9.6	8.8	32.0	45.6	138.2	262.8	438.0	336.8	263.8	83.0	161.0	110.7	
15	10.4	9.6	38.0	45.2	164.9	265.7	436.0	328.7	260.0	81.6	188.8	91.8	
16	10.4	9.6	45.2	53.2	205.8	276.2	442.0	316.9	254.9	104.1	199.0	79.6	
17	10.4	10.0	41.2	78.2	224.3	289.5	444.0	305.2	246.4	115.7	203.0	68.6	
18	10.4	10.0	33.6	81.1	227.0	301.3	444.0	300.0	232.8	118.4	201.7	60.7	
19	10.4	10.0	36.4	86.9	227.0	315.6	438.0	301.3	216.7	111.8	186.1	58.2	
20	10.4	10.0	38.0	81.1	226.3	331.4	440.0	298.9	209.8	100.5	158.4	59.0	
21	11.2	9.6	34.4	68.1	223.6	339.5	442.0	297.9	218.1	93.3	133.0	57.3	
22	10.4	9.6	38.0	59.4	222.9	338.2	436.0	295.8	217.4	89.9	115.1	54.0	
23	10.4	9.6	41.6	58.6	222.9	328.7	424.0	295.8	210.5	85.0	101.0	54.0	
24	10.8	9.6	39.6	68.6	216.7	322.1	407.3	294.7	204.4	81.6	89.9	70.3	
25	11.2	9.6	40.0	87.4	203.0	322.1	394.4	295.8	206.4	82.0	82.0	92.3	
26	12.4	10.0	43.2	93.8	188.8	324.7	387.0	300.0	207.1	82.0	76.3	110.7	
27	10.8	10.4	40.8	98.4	182.0	324.7	381.9	305.2	204.4	82.0	71.6	139.3	
28	10.4	10.4	38.8	112.4	187.4	318.2	380.2	314.3	196.9	77.7	67.7	144.1	
29	10.4	10.4	50.4	113.5	196.9	305.2	375.1	328.7	194.2	74.4		161.0	
30	10.0	10.4	54.4	101.5	200.3	290.5	373.4	331.4	193.5	81.1		182.7	
31		14.0		87.9	216.0		376.8		184.1	94.8		201.7	
Total	326.4	341.2	1157.9	2369.0	5040.7	8929.7	11902.8	10218.6	7798.4	3242.1	3233.4	2703.3	57263.5 CMSDAY
Mean	10.9	11.0	38.6	76.4	162.6	297.7	384.0	340.6	251.6	104.6	115.5	87.2	156.9 CMS
Max	13.2	16.4	80.6	113.5	227.0	339.5	448.0	416.6	327.4	175.3	203.0	201.7	448.0 CMS
Min	9.6	8.8	20.4	45.2	77.2	242.3	236.4	294.7	184.1	74.4	67.7	54.0	8.8 CMS
Runoff	28.20	29.48	100.04	204.68	435.52	771.53	1028.40	882.89	673.78	280.12	279.37	233.57	4947.57 MCM

Momentary Peak 450.00 CMS, at 10.93 M (MSL), at 1.00 Hours, on Oct 12, 1998

Runoff Yield 30.17 Liters/Second/Square KM, Momentary Peak Yield 86.538 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

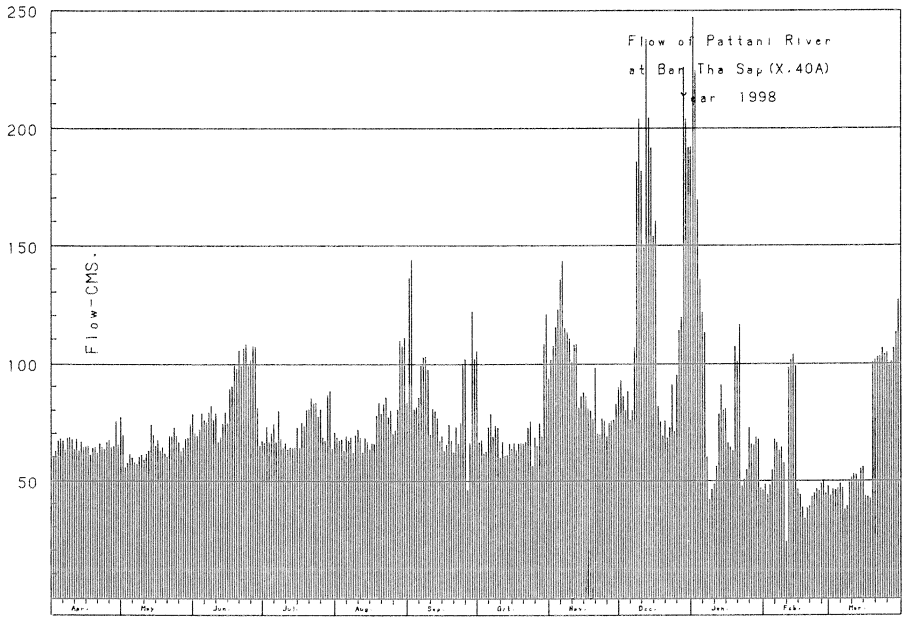
Pattani River at Ban Tha Sap, Yala (X.40A)

Location	Lat. 06°-33'-03" N., Long. 101°-16'-08" E., on left bank at the bridge of Yala - Ban Niang road, Amphoe Muang, Yala.
Drainage Area	3,288 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank between the fourth and the fifth staff gage.
Elevation	+8.006 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1988 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Flow regulated by Bang Lang Dam upstream. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.43	2.58	2.59	2.52	2.56	3.53	2.53	3.06	2.94	4.82	2.21	2.13	
2	2.46	2.34	2.57	2.63	2.54	3.63	2.54	3.14	2.83	4.58	2.13	2.17	
3	2.54	2.38	2.62	2.53	2.55	2.75	2.45	3.25	2.74	3.95	2.21	2.17	
4	2.55	2.44	2.72	2.59	2.47	2.76	2.46	3.35	2.87	3.52	2.32	2.18	
5	2.54	2.42	2.68	2.65	2.57	2.83	2.63	3.52	2.68	3.33	2.55	2.22	
6	2.47	2.38	2.66	2.53	2.54	3.03	2.72	3.62	2.74	3.22	2.52	2.18	
7	2.56	2.37	2.73	2.74	2.56	3.08	2.57	3.24	3.13	2.42	2.47	2.02	
8	2.56	2.42	2.77	2.55	2.45	3.08	2.64	3.22	4.14	2.10	2.49	2.04	
9	2.55	2.44	2.68	2.49	2.58	3.01	2.63	3.18	4.35	2.17	2.38	2.23	
10	2.48	2.40	2.72	2.52	2.62	2.58	2.42	3.05	4.09	2.22	1.72	2.27	
11	2.55	2.44	2.53	2.48	2.56	2.75	2.53	3.15	3.70	2.35	3.02	2.29	
12	2.47	2.47	2.56	2.49	2.46	2.74	2.43	3.15	4.72	2.72	3.06	2.29	
13	2.53	2.65	2.65	2.49	2.56	2.69	2.44	2.76	4.36	2.91	3.09	2.23	
14	2.49	2.58	2.73	2.49	2.53	2.54	2.52	2.83	4.21	2.74	3.03	2.33	
15	2.50	2.50	2.66	2.63	2.48	2.57	2.48	2.86	3.76	2.75	2.17	2.35	
16	2.50	2.54	2.88	2.49	2.52	2.47	2.52	2.83	3.84	2.52	2.13	2.12	
17	2.44	2.47	2.90	2.66	2.52	2.51	2.47	2.75	2.77	2.49	2.03	2.12	
18	2.49	2.49	3.04	2.64	2.71	2.65	2.52	2.74	2.67	2.47	1.94	2.10	
19	2.49	2.45	3.01	2.74	2.79	2.54	2.52	2.68	2.57	3.14	2.03	3.05	
20	2.45	2.42	3.12	2.75	2.72	2.46	2.52	3.02	2.67	3.05	2.04	3.06	
21	2.52	2.57	3.03	2.82	2.78	2.63	2.53	2.59	2.56	3.26	2.12	3.08	
22	2.49	2.57	3.13	2.79	2.83	2.52	2.63	2.58	2.63	2.20	2.14	3.08	
23	2.48	2.63	3.15	2.79	2.70	2.66	2.67	2.69	2.91	2.25	2.18	3.13	
24	2.53	2.57	3.03	2.70	2.74	3.04	2.36	2.67	2.60	2.33	2.16	3.09	
25	2.54	2.53	3.06	2.75	2.59	3.07	2.56	2.57	2.97	2.63	2.22	3.10	
26	2.49	2.46	3.14	2.56	2.61	2.17	2.50	2.66	3.23	2.51	2.24	3.03	
27	2.50	2.49	3.14	2.54	2.75	2.52	2.66	2.67	3.30	2.51	2.14	3.05	
28	2.67	2.55	2.76	2.84	3.17	3.34	2.57	2.68	4.60	2.56	2.20	3.13	
29	2.51	2.56	2.50	2.87	3.14	3.07	3.15	2.78	4.35	2.55		3.22	
30	2.70	2.65	2.54	2.48	3.19	3.11	3.32	2.89	4.21	2.18		3.40	
31		2.72		2.60	2.79		2.95		4.21	2.17		2.94	
Mean	2.52	2.50	2.81	2.62	2.66	2.81	2.59	2.94	3.40	2.79	2.32	2.57	
Max	2.70	2.72	3.15	2.87	3.19	3.63	3.32	3.62	4.72	4.82	3.09	3.40	4.82
Min	2.43	2.34	2.50	2.48	2.45	2.17	2.36	2.57	2.56	2.10	1.72	2.02	1.72

Annual Max Momentary Gage Height 4.83 M (AD), at 18.00 Hours, on Jan 1, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.15 M (AD)
Left Bank Elevation 10.80 M (AD)
Right Bank Elevation 10.68 M (AD), Drainage Area 3288 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	60.80	69.80	70.40	66.20	68.60	136.75	66.80	101.50	93.10	247.10	48.55	44.15	
2	62.60	55.70	69.20	72.95	67.40	144.25	67.40	107.50	85.95	224.20	44.15	46.35	
3	67.40	57.90	72.30	66.80	68.00	80.75	62.00	115.75	80.10	169.75	48.55	46.35	
4	68.00	61.40	78.80	70.40	63.20	81.40	62.60	123.25	88.55	136.00	54.60	46.90	
5	67.40	60.20	76.20	74.25	69.20	85.95	72.95	136.00	76.20	121.75	68.00	49.10	
6	63.20	57.90	74.90	66.80	67.40	99.25	78.80	143.50	80.10	113.50	66.20	46.90	
7	68.60	57.35	79.45	80.10	68.60	103.00	69.20	115.00	106.75	60.20	63.20	38.10	
8	68.60	60.20	82.05	68.00	62.00	103.00	73.60	113.50	185.90	42.50	64.40	39.20	
9	68.00	61.40	76.20	64.40	69.80	97.75	72.95	110.50	203.75	46.35	57.90	49.65	
10	63.80	59.00	78.80	66.20	72.30	69.80	60.20	100.75	181.65	49.10	24.40	51.85	
11	68.00	61.40	66.80	63.80	68.60	80.75	66.80	108.25	149.50	56.25	98.50	52.95	
12	63.20	63.20	68.60	64.40	62.60	80.10	60.80	108.25	237.40	78.80	101.50	52.95	
13	66.80	74.25	74.25	64.40	68.60	76.85	61.40	81.40	204.60	91.15	103.75	49.65	
14	64.40	69.80	79.45	64.40	66.80	67.40	66.20	85.95	191.85	80.10	99.25	55.15	
15	65.00	65.00	74.90	72.95	63.80	69.20	63.80	87.90	154.00	80.75	46.35	56.25	
16	65.00	67.40	89.20	64.40	66.20	63.20	66.20	85.95	160.40	66.20	44.15	43.60	
17	61.40	63.20	90.50	74.90	66.20	65.60	63.20	80.75	82.05	64.40	38.65	43.60	
18	64.40	64.40	100.00	73.60	78.15	74.25	66.20	80.10	75.55	63.20	34.30	42.50	
19	64.40	62.00	97.75	80.10	83.35	67.40	66.20	76.20	69.20	107.50	38.65	100.75	
20	62.00	60.20	106.00	80.75	78.80	62.60	66.20	98.50	75.55	100.75	39.20	101.50	
21	66.20	69.20	99.25	85.30	82.70	72.95	66.80	70.40	68.60	116.50	43.60	103.00	
22	64.40	69.20	106.75	83.35	85.95	66.20	72.95	69.80	72.95	48.00	44.70	103.00	
23	63.80	72.95	108.25	83.35	77.50	74.90	75.55	76.85	91.15	50.75	46.90	106.75	
24	66.80	69.20	99.25	77.50	80.10	100.00	56.80	75.55	71.00	55.15	45.80	103.75	
25	67.40	66.80	101.50	80.75	70.40	102.25	68.60	69.20	95.05	72.95	49.10	104.50	
26	64.40	62.60	107.50	68.60	71.65	46.35	65.00	74.90	114.25	65.60	50.20	99.25	
27	65.00	64.40	107.50	67.40	80.75	66.20	74.90	75.55	119.50	65.60	44.70	100.75	
28	75.55	68.00	81.40	86.60	109.75	122.50	69.20	76.20	226.00	68.60	48.00	106.75	
29	65.60	68.60	65.00	88.55	107.50	102.25	108.25	82.70	203.75	68.00		113.50	
30	77.50	74.25	67.40	63.80	111.25	105.25	121.00	89.85	191.85	46.90		127.00	
31		78.80		71.00	83.35		93.75		191.85	46.35		93.10	
Total	1979.65	2015.70	2549.55	2256.00	2340.50	2568.10	2206.30	2821.50	4028.10	2703.95	1557.25	2218.80	29245.40 CMSDAY
Mean	65.99	65.02	84.98	72.77	75.50	85.60	71.17	94.05	129.94	87.22	55.62	71.57	80.12 CMS
Max	77.50	78.80	108.25	88.55	111.25	144.25	121.00	143.50	237.40	247.10	103.75	127.00	247.10 CMS
Min	60.80	55.70	65.00	63.80	62.00	46.35	56.80	69.20	68.60	42.50	24.40	38.10	24.40 CMS
Runoff	171.042	174.156	220.281	194.918	202.219	221.884	190.624	243.778	348.028	233.621	134.546	191.704	2526.803 MCM

Momentary Peak 248.15 CMS, at 4.83 M (AD), at 18.00 Hours, on Jan 1, 1998
Runoff Yield 24.37 Liters/Second/Square KM, Momentary Peak Yield 75.471 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

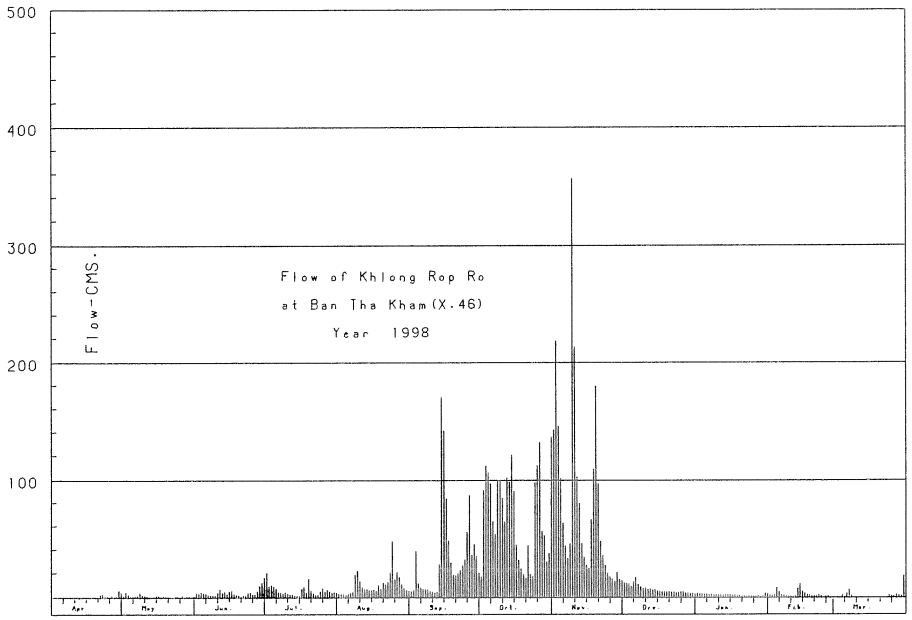
Khlong Rap Ro at Ban Tha Kham, Chumphon (X.46)

Location	Lat. 10°-36'-47" N., Long. 99°-07'-07" E., on left bank about 10 kilometers downstream from X.46A station at Ban Hat Taeng, Amphoe Tha Sae, Chumphon.
Drainage Area	751 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank near the autometic gage building.
Elevation	+18.921 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1971 to date.
Rating Operation	
Period of Rating	1976, 1985 to date.
Rated by Float	-
Rated by Current Meter	1976, 1985 to date.
Stability of Channel Regimes	Fairly stable by some silting.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 61 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.72	6.90	7.09	7.79	7.04	7.18	7.68	10.18	7.52	7.08	6.98	6.83	
2	6.73	7.13	7.07	7.40	7.06	7.23	9.27	11.24	7.52	7.07	6.90	6.83	
3	6.70	7.02	7.13	7.46	7.02	8.20	9.67	10.24	7.49	7.06	7.02	6.80	
4	6.72	6.93	7.12	7.40	6.99	7.51	9.55	9.46	7.43	7.05	7.36	7.00	
5	6.73	6.85	7.05	7.33	7.04	7.37	9.38	8.72	7.55	7.04	7.20	6.88	
6	6.70	6.80	6.95	7.17	7.08	7.28	8.74	8.29	7.68	7.03	7.00	7.07	
7	6.69	6.92	6.94	7.09	7.17	7.30	8.51	8.06	7.49	7.02	6.98	7.29	
8	6.67	7.13	6.90	7.09	7.73	7.27	9.41	8.33	7.40	7.01	6.91	6.93	
9	6.67	6.93	6.91	7.12	7.83	7.21	9.42	12.80	7.35	7.00	6.89	6.87	
10	6.67	6.88	7.14	7.08	7.57	7.15	9.15	11.17	7.34	7.00	6.88	6.81	
11	6.66	6.87	7.28	7.01	7.38	7.10	8.73	9.48	7.31	6.99	6.86	6.80	
12	6.66	6.83	7.13	6.99	7.28	7.18	9.47	9.05	7.30	6.98	6.88	6.78	
13	6.66	6.80	7.17	6.94	7.31	7.94	9.41	8.35	7.28	6.98	7.34	6.76	
14	6.65	6.80	7.06	6.90	7.24	10.60	9.83	8.07	7.27	7.03	7.50	6.76	
15	6.65	6.91	7.21	6.88	7.26	10.18	9.25	7.93	7.24	7.00	7.21	6.76	
16	6.64	6.86	7.21	7.32	7.26	9.14	8.32	7.86	7.21	6.98	7.10	6.76	
17	6.63	6.86	7.05	7.38	7.23	8.40	8.03	8.78	7.20	6.98	7.03	6.73	
18	6.62	6.87	6.94	7.14	7.44	7.97	7.86	9.61	7.19	6.97	6.97	6.73	
19	6.66	6.88	6.90	7.65	7.29	7.74	7.75	10.74	7.18	6.94	6.91	6.72	
20	6.70	6.82	6.89	7.23	7.54	7.71	7.65	9.38	7.18	6.91	6.89	6.71	
21	7.00	6.79	6.92	7.06	7.46	7.77	8.30	8.39	7.18	6.91	6.93	6.70	
22	7.01	6.76	6.92	7.00	7.56	7.83	7.75	8.11	7.16	6.90	6.99	6.70	
23	6.87	6.85	7.11	6.97	7.78	7.93	7.69	7.93	7.14	6.90	6.93	6.69	
24	6.81	6.80	7.14	7.20	8.38	8.03	9.40	7.77	7.13	6.90	6.90	6.98	
25	6.82	6.78	7.01	7.32	7.63	8.55	9.66	7.70	7.20	6.89	6.88	6.92	
26	6.88	6.87	6.97	7.21	7.79	9.18	10.01	7.63	7.15	6.90	6.87	6.84	
27	6.83	6.83	7.21	7.28	7.69	8.13	8.57	7.58	7.12	6.90	6.83	7.03	
28	6.82	6.80	7.43	7.17	7.48	8.33	8.48	7.79	7.10	6.89	6.82	6.94	
29	7.24	6.86	7.52	7.12	7.32	8.09	8.00	7.62	7.08	6.90		6.92	
30	7.10	6.73	7.66	7.14	7.25	7.79	8.15	7.61	7.08	7.11		7.72	
31		6.90		7.13	7.20		10.08		7.07	7.06		7.21	
Mean	6.76	6.87	7.10	7.19	7.40	7.98	8.81	8.86	7.28	6.98	7.00	6.89	
Max	7.24	7.13	7.66	7.79	8.38	10.60	10.08	12.80	7.68	7.11	7.50	7.72	12.80
Min	6.62	6.73	6.89	6.88	6.99	7.10	7.65	7.58	7.07	6.89	6.82	6.69	6.62

Annual Max Momentary Gage Height 13.56 M (MSL), at 15.00 Hours, on Nov 9, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 4.41 M (MSL)
Left Bank Elevation 18.83 M (MSL)
Right Bank Elevation 18.72 M (MSL), Drainage Area 751 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.60	1.90	4.06	21.64	3.36	5.32	17.68	142.80	12.68	3.92	2.62	1.27	
2	0.65	4.62	3.78	9.50	3.64	6.19	91.64	219.20	12.68	3.78	1.90	1.27	
3	0.50	3.08	4.62	11.09	3.08	40.00	112.85	146.60	11.88	3.64	3.08	1.00	
4	0.60	2.17	4.48	9.50	2.71	12.42	106.35	101.58	10.29	3.50	8.72	2.80	
5	0.65	1.45	3.50	8.13	3.36	8.91	97.36	64.16	13.48	3.36	5.60	1.72	
6	0.50	1.00	2.35	5.18	3.92	7.16	65.12	44.05	17.68	3.22	2.80	3.78	
7	0.45	2.08	2.26	4.06	5.18	7.55	54.17	33.70	11.88	3.08	2.62	7.36	
8	0.35	4.62	1.90	4.06	19.48	6.97	98.93	45.85	9.50	2.94	1.99	2.17	
9	0.35	2.17	1.99	4.48	23.35	5.80	99.46	357.00	8.52	2.80	1.81	1.63	
10	0.35	1.72	4.76	3.92	14.01	4.90	85.45	213.60	8.33	2.80	1.72	1.09	
11	0.30	1.63	7.16	2.94	9.11	4.20	64.64	102.64	7.75	2.71	1.54	1.00	
12	0.30	1.27	4.62	2.71	7.16	5.32	102.11	80.35	7.55	2.62	1.72	0.90	
13	0.30	1.00	5.18	2.26	7.75	28.30	98.93	46.75	7.16	2.62	8.33	0.80	
14	0.25	1.00	3.64	1.90	6.38	170.60	121.80	34.15	6.97	3.22	12.15	0.80	
15	0.25	1.99	5.80	1.72	6.77	142.80	90.60	27.85	6.38	2.80	5.80	0.80	
16	0.20	1.54	5.80	7.94	6.77	84.94	45.40	24.70	5.80	2.62	4.20	0.80	
17	0.15	1.54	3.50	9.11	6.19	49.00	32.35	67.04	5.60	2.62	3.22	0.65	
18	0.10	1.63	2.26	4.76	10.56	29.65	24.70	109.55	5.46	2.53	2.53	0.65	
19	0.30	1.72	1.90	16.60	7.36	19.84	20.20	180.68	5.32	2.26	1.99	0.60	
20	0.50	1.18	1.81	6.19	13.21	18.76	16.60	97.36	5.32	1.99	1.81	0.55	
21	2.80	0.95	2.08	3.64	11.09	20.92	44.50	48.55	5.32	1.99	2.17	0.50	
22	2.94	0.80	2.08	2.80	13.74	23.35	20.20	35.95	5.04	1.90	2.71	0.50	
23	1.63	1.45	4.34	2.53	21.28	27.85	18.04	27.85	4.76	1.90	2.17	0.45	
24	1.09	1.00	4.76	5.60	48.10	32.35	98.40	20.92	4.62	1.90	1.90	2.62	
25	1.18	0.90	2.94	7.94	15.88	56.05	112.30	18.40	5.60	1.81	1.72	2.08	
26	1.72	1.63	2.53	5.80	21.64	86.98	132.60	15.88	4.90	1.90	1.63	1.36	
27	1.27	1.27	5.80	7.16	18.04	36.85	56.99	14.27	4.48	1.90	1.27	3.22	
28	1.18	1.00	10.29	5.18	11.62	45.85	52.76	21.64	4.20	1.81	1.18	2.26	
29	6.38	1.54	12.68	4.48	7.94	35.05	31.00	15.52	3.92	1.90		2.08	
30	4.20	0.65	16.96	4.76	6.58	21.64	37.75	15.16	3.92	4.34		19.12	
31		1.90		4.62	5.60		136.80		3.78	3.64		5.80	
Total	32.04	52.40	139.83	192.20	344.86	1045.52	2187.68	2373.75	230.77	84.02	90.90	71.63	6845.60 CMSDAY
Mean	1.07	1.69	4.66	6.20	11.12	34.85	70.57	79.12	7.44	2.71	3.25	2.31	18.76 CMS
Max	6.38	4.62	16.96	21.64	48.10	170.60	136.80	357.00	17.68	4.34	12.15	19.12	357.00 CMS
Min	0.10	0.65	1.81	1.72	2.71	4.20	16.60	14.27	3.78	1.81	1.18	0.45	0.10 CMS
Runoff	2.768	4.527	12.081	16.606	29.796	90.333	189.016	205.092	19.939	7.259	7.854	6.189	591.460 MCM

Momentary Peak 432.00 CMS, at 13.56 M (MSL), at 15.00 Hours, on Nov 9, 1998

Runoff Yield 24.97 Liters/Second/Square KM, Momentary Peak Yield 575.233 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

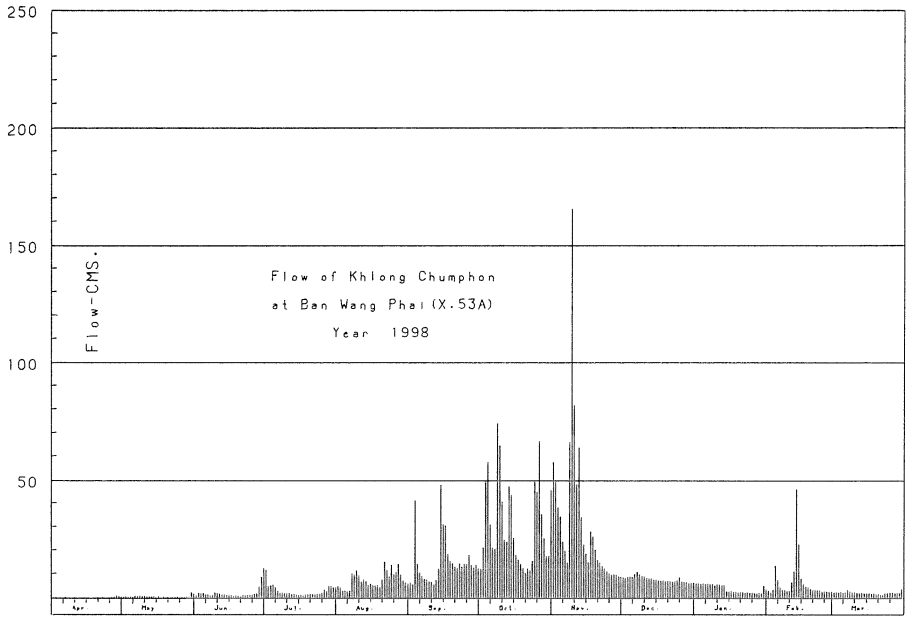
Khlong Chumphon at Ban Wang Phai, Chumphon (X.53A)

Location	Lat. 10°-30'-20" N., Long. 99°-07'-12" E., on left bank about 9.50 kilometers downstream from X.53 station, Amphoe Muang, Chumphon.
Drainage Area	305 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 3.30 meters from the top staff gage.
Elevation	+10.538 m.(M.S.L.)
Gage Reading Frequency	5-time daily recordings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1991 to date.
Rating Operation	
Period of Rating	1991 to date.
Rated by Float	-
Rated by Current Meter	1991 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 40 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.20	2.28	2.42	3.55	2.96	3.09	3.60	6.26	3.30	3.07	2.66	2.58	
2	2.19	2.26	2.56	2.94	2.85	3.05	4.24	5.87	3.25	3.06	2.58	2.59	
3	2.19	2.24	2.49	3.00	2.68	5.43	5.83	5.25	3.32	3.06	2.71	2.59	
4	2.18	2.22	2.55	3.01	2.66	3.76	6.25	5.04	3.31	3.05	3.70	2.58	
5	2.18	2.22	2.45	2.87	2.65	3.48	4.84	4.40	3.32	3.05	3.20	2.57	
6	2.18	2.31	2.42	2.69	2.67	3.33	4.22	4.14	3.40	3.04	2.86	2.57	
7	2.17	2.31	2.40	2.56	3.45	3.24	4.19	3.80	3.50	3.04	2.75	2.75	
8	2.17	2.31	2.36	2.55	3.39	3.20	7.08	6.68	3.39	3.03	2.70	2.63	
9	2.17	2.30	2.58	2.54	3.55	3.14	6.62	9.25	3.35	3.00	2.67	2.59	
10	2.17	2.30	2.51	2.52	3.36	3.11	5.39	7.43	3.31	3.02	2.64	2.58	
11	2.16	2.28	2.46	2.50	3.13	3.04	4.43	5.77	3.27	3.01	3.09	2.57	
12	2.16	2.28	2.44	2.46	3.20	3.18	4.39	6.57	3.26	3.00	3.52	2.55	
13	2.16	2.28	2.42	2.45	3.15	3.61	5.74	5.01	3.24	2.98	5.68	2.53	
14	2.16	2.27	2.41	2.43	2.99	5.76	5.54	4.32	3.21	2.66	4.33	2.52	
15	2.16	2.27	2.39	2.41	3.07	4.85	4.48	4.05	3.19	2.65	3.25	2.51	
16	2.15	2.25	2.36	2.40	2.98	4.80	4.03	3.81	3.18	2.63	3.03	2.50	
17	2.15	2.24	2.34	2.40	3.00	4.06	3.87	4.67	3.17	2.62	2.94	2.50	
18	2.15	2.24	2.32	2.43	2.99	3.83	3.75	4.52	3.16	2.59	2.86	2.50	
19	2.15	2.23	2.32	2.47	2.90	3.78	3.61	4.19	3.15	2.58	2.80	2.48	
20	2.15	2.23	2.31	2.47	3.20	3.65	3.46	3.88	3.14	2.57	2.69	2.46	
21	2.20	2.22	2.37	2.47	3.83	3.61	3.60	3.78	3.13	2.57	2.70	2.44	
22	2.20	2.22	2.39	2.46	3.57	3.77	3.55	3.69	3.13	2.56	2.73	2.43	
23	2.19	2.22	2.40	2.47	3.31	3.65	3.83	3.60	3.12	2.55	2.68	2.50	
24	2.19	2.22	2.42	2.50	3.71	3.76	5.84	3.52	3.18	2.55	2.64	2.55	
25	2.20	2.21	2.41	2.55	3.42	3.73	5.60	3.43	3.28	2.54	2.62	2.55	
26	2.22	2.21	2.45	2.73	3.48	4.02	6.69	3.39	3.14	2.53	2.62	2.55	
27	2.27	2.21	2.53	2.66	3.76	3.72	5.10	3.42	3.12	2.52	2.61	2.54	
28	2.32	2.22	2.93	2.97	3.39	3.62	4.49	3.38	3.10	2.54	2.60	2.55	
29	2.32	2.27	3.32	2.94	3.18	3.73	3.98	3.34	3.08	2.53		2.55	
30	2.30	2.60	3.62	2.89	3.09	3.60	3.99	3.31	3.07	2.97		2.77	
31		2.47		2.85	3.05		5.66		3.07	2.76		2.58	
Mean	2.19	2.27	2.51	2.65	3.18	3.75	4.77	4.66	3.22	2.78	3.00	2.55	
Max	2.32	2.60	3.62	3.55	3.83	5.76	7.08	9.25	3.50	3.07	5.68	2.77	9.25
Min	2.15	2.21	2.31	2.40	2.65	3.04	3.46	3.31	3.07	2.52	2.58	2.43	2.15

Annual Max Momentary Gage Height 9.42 M (MSL), at 12.00 Hours, on Nov 9, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 1.28 M (MSL)
Left Bank Elevation 10.55 M (MSL)
Right Bank Elevation 10.55 M (MSL), Drainage Area 305 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.50	0.82	1.43	11.88	5.20	6.53	12.50	58.00	8.90	6.30	3.02	2.47	
2	0.48	0.74	2.34	5.05	4.37	6.07	21.64	50.20	8.35	6.19	2.47	2.54	
3	0.48	0.66	1.89	5.50	3.16	41.77	49.40	38.50	9.12	6.19	3.37	2.54	
4	0.45	0.58	2.28	5.61	3.02	14.66	57.80	34.88	9.01	6.07	13.85	2.47	
5	0.45	0.58	1.63	4.52	2.95	11.00	31.48	24.20	9.12	6.07	7.80	2.41	
6	0.45	0.94	1.43	3.23	3.09	9.23	21.32	20.10	10.00	5.96	4.45	2.41	
7	0.43	0.94	1.30	2.34	10.63	8.24	20.85	15.20	11.25	5.96	3.65	3.65	
8	0.43	0.94	1.14	2.28	9.89	7.80	74.48	66.40	9.89	5.84	3.30	2.81	
9	0.43	0.90	2.47	2.21	11.88	7.11	65.20	165.75	9.45	5.50	3.09	2.54	
10	0.43	0.90	2.01	2.08	9.56	6.76	41.02	81.92	9.01	5.73	2.88	2.47	
11	0.40	0.82	1.69	1.95	7.00	5.96	24.68	48.23	8.57	5.61	6.53	2.41	
12	0.40	0.82	1.56	1.69	7.80	7.57	24.04	64.20	8.46	5.50	11.50	2.28	
13	0.40	0.82	1.43	1.63	7.23	12.64	47.66	34.37	8.24	5.35	46.52	2.15	
14	0.40	0.78	1.37	1.50	5.43	48.04	43.86	22.92	7.91	3.02	23.08	2.08	
15	0.40	0.78	1.26	1.37	6.30	31.65	25.48	18.75	7.69	2.95	8.35	2.01	
16	0.38	0.70	1.14	1.30	5.35	30.80	18.45	15.34	7.57	2.81	5.84	1.95	
17	0.38	0.66	1.06	1.30	5.50	18.90	16.18	28.59	7.46	2.74	5.05	1.95	
18	0.38	0.66	0.98	1.50	5.43	15.62	14.53	26.12	7.34	2.54	4.45	1.95	
19	0.38	0.62	0.98	1.76	4.75	14.93	12.64	20.85	7.23	2.47	4.00	1.82	
20	0.38	0.62	0.94	1.76	7.80	13.18	10.75	16.32	7.11	2.41	3.23	1.69	
21	0.50	0.58	1.18	1.76	15.62	12.64	12.50	14.93	7.00	2.41	3.30	1.56	
22	0.50	0.58	1.26	1.69	12.13	14.80	11.88	13.72	7.00	2.34	3.51	1.50	
23	0.48	0.58	1.30	1.76	9.01	13.18	15.62	12.50	6.88	2.28	3.16	1.95	
24	0.48	0.58	1.43	1.95	13.99	14.66	49.60	11.50	7.57	2.28	2.88	2.28	
25	0.50	0.54	1.37	2.28	10.25	14.26	45.00	10.38	8.68	2.21	2.74	2.28	
26	0.58	0.54	1.63	3.51	11.00	18.30	66.60	9.89	7.11	2.15	2.74	2.28	
27	0.78	0.54	2.15	3.02	14.66	14.12	35.90	10.25	6.88	2.08	2.67	2.21	
28	0.98	0.58	4.98	5.28	9.89	12.77	25.64	9.78	6.65	2.21	2.60	2.28	
29	0.98	0.78	9.12	5.05	7.57	14.26	17.72	9.34	6.42	2.15		2.28	
30	0.90	2.60	12.77	4.68	6.53	12.50	17.86	9.01	6.30	5.28		3.79	
31		1.76		4.37	6.07		46.14		6.30	3.72		2.47	
Total	15.11	24.94	67.52	95.81	243.06	459.95	978.42	962.14	248.47	124.32	190.03	71.48	3481.25 CMSDAY
Mean	0.50	0.80	2.25	3.09	7.84	15.33	31.56	32.07	8.02	4.01	6.79	2.31	9.54 CMS
Max	0.98	2.60	12.77	11.88	15.62	48.04	74.48	165.75	11.25	6.30	46.52	3.79	165.75 CMS
Min	0.38	0.54	0.94	1.30	2.95	5.96	10.75	9.01	6.30	2.08	2.47	1.50	0.38 CMS
Runoff	1.306	2.155	5.834	8.278	21.000	39.740	84.535	83.129	21.468	10.741	16.419	6.176	300.780 MCM

Momentary Peak 178.95 CMS, at 9.42 M (MSL), at 12.00 Hours, on Nov 9, 1998
Runoff Yield 31.27 Liters/Second/Square KM, Momentary Peak Yield 586.721 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

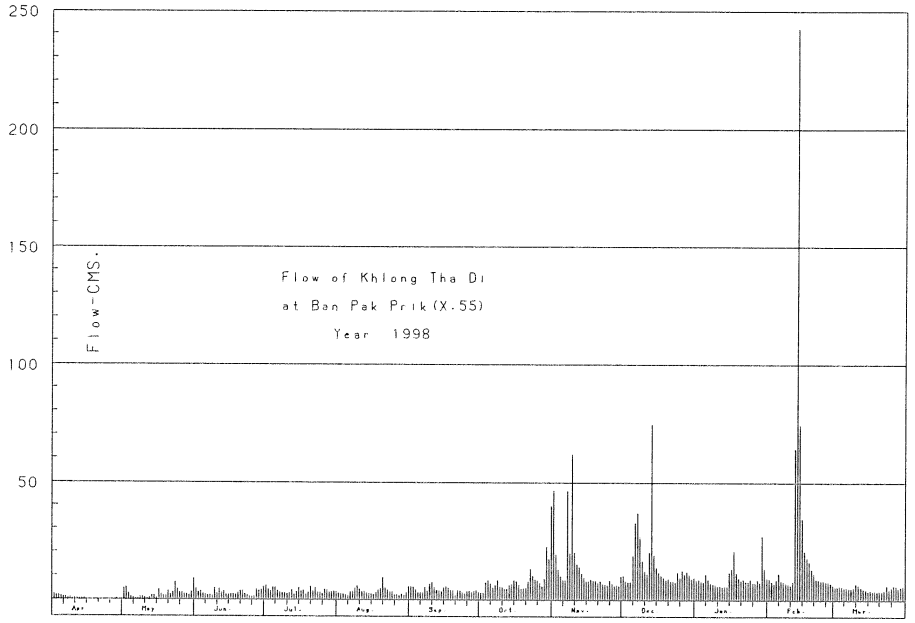
Khlong Tha Di at Ban Pak Prik, Nakhon Si Thammarat (X.55)

Location	Lat. 08°-23'-53" N., Long. 99°-50'-15" E., on left bank at the bridge, Ban Pak Prik, Amphoe Lan Saka, Nakhon Si Thammarat.
Drainage Area	105 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 63.60 meters from the fourth staff gage.
Elevation	+6.833 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967 - 1971, 1989 to date.
Rated by Float	-
Rated by Current Meter	1967 - 1971, 1989 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.02	1.20	1.19	1.26	1.07	1.23	1.06	2.59	1.45	1.37	1.40	1.24	
2	1.00	1.23	1.10	1.18	1.05	1.24	1.08	1.80	1.35	1.38	1.34	1.23	
3	0.98	1.06	1.11	1.11	1.04	1.16	1.32	1.56	1.34	1.35	1.31	1.26	
4	0.95	0.89	1.05	1.23	1.01	1.09	1.38	1.45	1.33	1.33	1.38	1.24	
5	0.90	0.80	1.02	1.22	0.99	1.08	1.30	1.38	1.78	1.49	1.50	1.22	
6	0.85	0.72	1.00	1.14	1.09	1.08	1.22	1.37	2.22	1.40	1.37	1.22	
7	0.82	0.78	0.99	1.08	1.12	1.22	1.26	2.59	2.35	1.31	1.34	1.21	
8	0.82	0.87	0.98	1.07	1.20	1.13	1.38	1.81	2.05	1.30	1.32	1.20	
9	0.77	0.90	1.20	1.06	1.26	1.29	1.23	2.92	1.69	1.28	1.29	1.23	
10	0.78	0.80	1.06	1.05	1.18	1.34	1.23	1.82	1.54	1.26	1.28	1.31	
11	0.80	0.73	1.18	1.06	1.11	1.22	1.19	1.65	1.48	1.25	1.34	1.27	
12	0.79	0.82	1.08	1.16	1.11	1.16	1.18	1.60	1.83	1.24	2.97	1.23	
13	0.78	0.99	1.11	1.01	1.08	1.13	1.28	1.50	3.15	1.24	4.70	1.18	
14	0.75	0.95	1.02	1.09	1.05	1.12	1.29	1.42	1.78	1.25	3.14	1.17	
15	0.70	0.77	1.00	1.22	1.05	1.21	1.37	1.36	1.60	1.51	2.28	1.11	
16	0.68	1.17	1.04	1.11	1.01	1.25	1.36	1.35	1.51	1.57	1.84	1.14	
17	0.67	1.03	1.03	1.13	1.09	1.21	1.27	1.40	1.46	1.84	1.75	1.13	
18	0.66	0.93	1.02	1.03	1.15	1.16	1.20	1.36	1.42	1.51	1.68	1.13	
19	0.65	0.96	1.06	1.07	1.19	1.14	1.19	1.37	1.39	1.42	1.57	1.12	
20	0.63	1.11	1.13	1.25	1.43	1.00	1.22	1.31	1.40	1.36	1.49	1.12	
21	0.63	1.01	1.13	1.13	1.22	1.14	1.34	1.36	1.36	1.40	1.40	1.12	
22	0.59	1.10	1.04	1.21	1.15	1.14	1.58	1.30	1.35	1.34	1.38	1.13	
23	0.57	1.34	0.99	1.10	1.11	1.08	1.45	1.28	1.34	1.35	1.37	1.27	
24	0.60	1.17	0.93	1.08	1.09	1.06	1.40	1.28	1.51	1.39	1.36	1.16	
25	0.69	1.09	0.91	1.05	1.03	1.13	1.37	1.37	1.43	1.33	1.35	1.23	
26	0.70	1.07	0.90	1.18	1.01	1.12	1.31	1.30	1.55	1.31	1.33	1.26	
27	0.73	1.04	1.18	1.15	1.00	1.10	1.25	1.26	1.48	1.39	1.32	1.26	
28	0.73	1.02	1.12	1.10	1.03	1.11	1.41	1.27	1.53	1.32	1.27	1.20	
29	0.75	1.01	1.17	1.09	1.00	1.16	1.90	1.26	1.47	2.06		1.24	
30	0.69	1.09	1.23	1.13	1.07	1.08	1.72	1.45	1.41	1.57		1.25	
31		1.41		1.10	1.25		2.43		1.42	1.42		1.21	
Mean	0.76	1.00	1.07	1.12	1.10	1.15	1.36	1.56	1.61	1.40	1.68	1.20	
Max	1.02	1.41	1.23	1.26	1.43	1.34	2.43	2.92	3.15	2.06	4.70	1.31	4.70
Min	0.57	0.72	0.90	1.01	0.99	1.00	1.06	1.26	1.33	1.24	1.27	1.11	0.57

Annual Max Momentary Gage Height 5.00 M (AD), at 16.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.33 M (AD)
Left Bank Elevation 6.49 M (AD)
Right Bank Elevation 6.47 M (AD), Drainage Area 105 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.39	5.00	4.86	6.20	3.12	5.60	2.97	46.60	10.25	8.40	9.00	5.80	
2	2.10	5.60	3.55	4.71	2.82	5.80	3.26	19.60	8.00	8.60	7.80	5.60	
3	1.98	2.97	3.70	3.70	2.68	4.42	7.40	13.00	7.80	8.00	7.20	6.20	
4	1.80	1.44	2.82	5.60	2.24	3.41	8.60	10.25	7.60	7.60	8.60	5.80	
5	1.50	0.90	2.39	5.40	2.04	3.26	7.00	8.60	19.04	11.25	11.50	5.40	
6	1.20	0.54	2.10	4.13	3.41	3.26	5.40	8.40	32.70	9.00	8.40	5.40	
7	1.02	0.81	2.04	3.26	3.84	5.40	6.20	46.60	37.25	7.20	7.80	5.20	
8	1.02	1.32	1.98	3.12	5.00	3.98	8.60	19.89	27.12	7.00	7.40	5.00	
9	0.76	1.50	5.00	2.97	6.20	6.80	5.60	62.00	16.52	6.60	6.80	5.60	
10	0.81	0.90	2.97	2.82	4.71	7.80	5.60	20.19	12.50	6.20	6.60	7.20	
11	0.90	0.58	4.71	2.97	3.70	5.40	4.86	15.40	11.00	6.00	7.80	6.40	
12	0.86	1.02	3.26	4.42	3.70	4.42	4.71	14.00	20.49	5.80	64.50	5.60	
13	0.81	2.04	3.70	2.24	3.26	3.98	6.60	11.50	75.00	5.80	242.50	4.71	
14	0.67	1.80	2.39	3.41	2.82	3.84	6.80	9.50	19.04	6.00	74.40	4.56	
15	0.45	0.76	2.10	5.40	2.82	5.20	8.40	8.20	14.00	11.75	34.80	3.70	
16	0.36	4.56	2.68	3.70	2.24	6.00	8.20	8.00	11.75	13.25	20.78	4.13	
17	0.31	2.53	2.53	3.98	3.41	5.20	6.40	9.00	10.50	20.78	18.20	3.98	
18	0.27	1.68	2.39	2.53	4.27	4.42	5.00	8.20	9.50	11.75	16.24	3.98	
19	0.22	1.86	2.97	3.12	4.86	4.13	4.86	8.40	8.80	9.50	13.25	3.84	
20	0.13	3.70	3.98	6.00	9.75	2.10	5.40	7.20	9.00	8.20	11.25	3.84	
21	0.13	2.24	3.98	3.98	5.40	4.13	7.80	8.20	8.20	9.00	9.00	3.84	
22	0.00	3.55	2.68	5.20	4.27	4.13	13.50	7.00	8.00	7.80	8.60	3.98	
23	0.00	7.80	2.04	3.55	3.70	3.26	10.25	6.60	7.80	8.00	8.40	6.40	
24	0.00	4.56	1.68	3.26	3.41	2.97	9.00	6.60	11.75	8.80	8.20	4.42	
25	0.40	3.41	1.56	2.82	2.53	3.98	8.40	8.40	9.75	7.60	8.00	5.60	
26	0.45	3.12	1.50	4.71	2.24	3.84	7.20	7.00	12.75	7.20	7.60	6.20	
27	0.58	2.68	4.71	4.27	2.10	3.55	6.00	6.20	11.00	8.80	7.40	6.20	
28	0.58	2.39	3.84	3.55	2.53	3.70	9.25	6.40	12.25	7.40	6.40	5.00	
29	0.67	2.24	4.56	3.41	2.10	4.42	22.55	6.20	10.75	27.45		5.80	
30	0.40	3.41	5.60	3.98	3.12	3.26	17.36	10.25	9.25	13.25		6.00	
31		9.25		3.55	6.00		40.20		9.50	9.50		5.20	
Total	22.77	86.16	94.27	121.96	114.29	131.66	273.37	427.38	478.86	293.48	648.42	160.58	2853.20 CMSDAY
Mean	0.76	2.78	3.14	3.93	3.69	4.39	8.82	14.25	15.45	9.47	23.16	5.18	7.82 CMS
Max	2.39	9.25	5.60	6.20	9.75	7.80	40.20	62.00	75.00	27.45	242.50	7.20	242.50 CMS
Min	0.00	0.54	1.50	2.24	2.04	2.10	2.97	6.20	7.60	5.80	6.40	3.70	0.00 CMS
Runoff	1.967	7.444	8.145	10.537	9.875	11.375	23.619	36.926	41.374	25.357	56.023	13.874	246.517 MCM

Momentary Peak 295.00 CMS, at 5.00 M (AD), at 16.00 Hours, on Feb 13, 1998
Runoff Yield 74.45 Liters/Second/Square KM, Momentary Peak Yield 2809.524 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

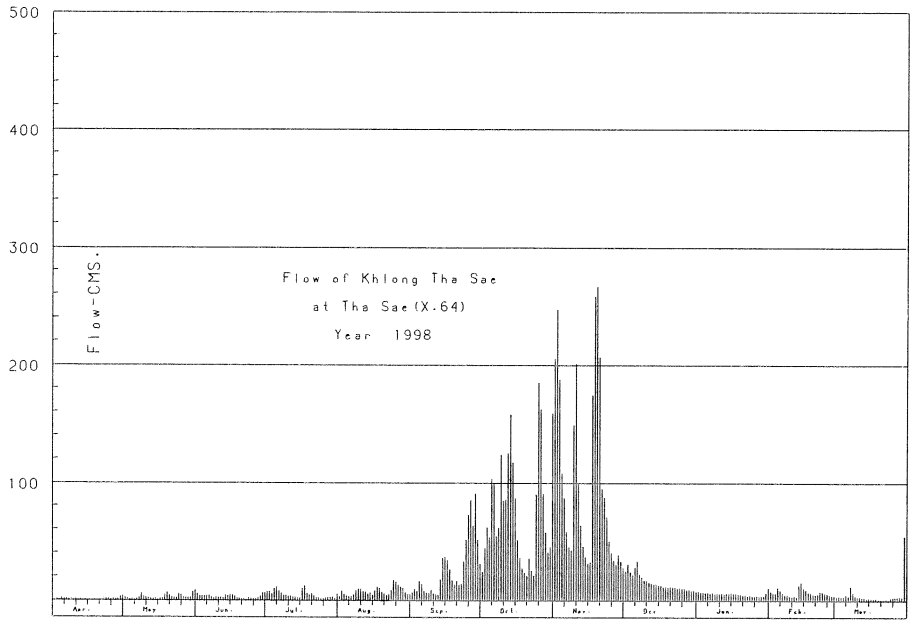
Khlong Tha Sae at Tha Sae, Chumphon (X.64)

Location	Lat. 10°-39'-49" N., Long. 99°-10'-17" E., on left bank near the Land Cooperation Office, Amphoe Tha Sae, Chumphon.
Drainage Area	957 sq.km.
Type of Gage	Water-stage recorder.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 6 meters from the top staff gage.
Elevation	+19.207 m.(M.S.L.)
Gage Reading Frequency	13-time daily readings at 06.00 - 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1973 to date.
Rating Operation	
Period of Rating	1974-1975, 1982 to date.
Rated by Float	-
Rated by Current Meter	1974-1975, 1982 to date.
Stability of Channel Regimes	Fairly stable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 54 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	8.14	8.24	8.39	8.48	8.30	8.44	9.28	13.95	9.30	8.50	8.51	8.29	
2	8.15	8.19	8.34	8.48	8.52	8.58	9.98	14.80	9.50	8.48	8.41	8.28	
3	8.15	8.18	8.31	8.42	8.40	8.53	10.56	13.60	9.27	8.47	8.44	8.29	
4	8.22	8.16	8.31	8.64	8.31	8.95	10.26	11.82	9.15	8.46	8.66	8.27	
5	8.20	8.14	8.30	8.69	8.30	8.80	11.68	11.28	9.42	8.45	8.56	8.34	
6	8.17	8.15	8.35	8.54	8.28	8.53	11.59	10.42	9.60	8.44	8.43	8.31	
7	8.16	8.25	8.25	8.42	8.38	8.43	10.31	10.00	9.20	8.44	8.37	8.73	
8	8.15	8.41	8.23	8.35	8.53	8.44	10.53	9.90	9.08	8.42	8.34	8.44	
9	8.15	8.30	8.25	8.32	8.62	8.56	12.19	12.74	8.99	8.41	8.31	8.33	
10	8.14	8.25	8.25	8.31	8.60	8.42	11.22	13.88	8.95	8.42	8.30	8.28	
11	8.14	8.21	8.23	8.29	8.52	8.36	11.23	11.60	8.90	8.41	8.29	8.26	
12	8.13	8.18	8.24	8.28	8.48	8.36	12.21	10.60	8.85	8.40	8.28	8.25	
13	8.12	8.19	8.33	8.25	8.42	9.00	12.95	10.02	8.83	8.41	8.78	8.23	
14	8.12	8.18	8.32	8.23	8.44	9.70	12.05	9.70	8.81	8.43	8.88	8.21	
15	8.12	8.17	8.35	8.20	8.37	9.71	11.26	9.54	8.78	8.44	8.66	8.21	
16	8.11	8.16	8.36	8.62	8.52	9.62	10.20	9.56	8.75	8.43	8.56	8.20	
17	8.11	8.22	8.29	8.75	8.71	9.37	9.68	13.32	8.71	8.41	8.48	8.19	
18	8.10	8.34	8.23	8.43	8.64	8.98	9.40	15.00	8.70	8.40	8.44	8.19	
19	8.10	8.46	8.20	8.34	8.49	8.78	9.23	15.14	8.69	8.37	8.39	8.18	
20	8.10	8.33	8.19	8.42	8.40	8.93	9.14	13.99	8.70	8.36	8.35	8.17	
21	8.10	8.28	8.17	8.31	8.35	8.77	9.68	11.50	8.71	8.35	8.40	8.16	
22	8.21	8.23	8.16	8.25	8.36	8.84	9.30	11.28	8.68	8.33	8.48	8.15	
23	8.20	8.24	8.22	8.22	8.57	9.59	9.13	10.82	8.66	8.33	8.49	8.16	
24	8.17	8.39	8.21	8.21	8.97	10.21	11.37	10.15	8.65	8.32	8.42	8.22	
25	8.15	8.37	8.19	8.20	8.93	10.87	13.55	9.84	8.65	8.31	8.39	8.26	
26	8.18	8.24	8.19	8.24	8.77	11.21	13.04	9.63	8.62	8.31	8.35	8.24	
27	8.17	8.25	8.23	8.24	8.71	10.59	11.37	9.48	8.59	8.30	8.33	8.27	
28	8.15	8.22	8.31	8.26	8.65	11.39	10.42	9.76	8.57	8.30	8.31	8.26	
29	8.29	8.25	8.43	8.25	8.48	10.20	9.85	9.59	8.55	8.31		8.27	
30	8.30	8.47	8.45	8.21	8.38	9.51	9.98	9.40	8.53	8.43		10.31	
31		8.57		8.38	8.39		12.96		8.51	8.65		8.92	
Mean	8.16	8.27	8.28	8.36	8.51	9.26	10.83	11.41	8.87	8.40	8.45	8.35	
Max	8.30	8.57	8.45	8.75	8.97	11.39	13.55	15.14	9.60	8.65	8.88	10.31	15.14
Min	8.10	8.14	8.16	8.20	8.28	8.36	9.13	9.40	8.51	8.30	8.28	8.15	8.10

Annual Max Momentary Gage Height 15.30 M (MSL), at 1.00 Hours, on Nov 18, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 7.64 M (MSL)
Left Bank Elevation 19.27 M (MSL)
Right Bank Elevation 18.88 M (MSL), Drainage Area 957 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.40	2.80	5.80	7.60	4.00	6.80	25.00	205.50	25.50	8.00	8.20	3.80	
2	1.50	1.90	4.80	7.60	8.40	9.60	45.40	248.00	31.00	7.60	6.20	3.60	
3	1.50	1.80	4.20	6.40	6.00	8.60	62.80	188.00	24.75	7.40	6.80	3.80	
4	2.40	1.60	4.20	10.80	4.20	17.00	53.80	108.80	21.75	7.20	11.20	3.40	
5	2.00	1.40	4.00	11.80	4.00	14.00	103.20	87.80	28.60	7.00	9.20	4.80	
6	1.70	1.50	5.00	8.80	3.60	8.60	99.60	58.60	34.00	6.80	6.60	4.20	
7	1.60	3.00	3.00	6.40	5.60	6.60	55.30	46.00	23.00	6.80	5.40	12.60	
8	1.50	6.20	2.60	5.00	8.60	6.80	61.90	43.00	20.00	6.40	4.80	6.80	
9	1.50	4.00	3.00	4.40	10.40	9.20	124.55	149.30	17.80	6.20	4.20	4.60	
10	1.40	3.00	3.00	4.20	10.00	6.40	85.70	202.00	17.00	6.40	4.00	3.60	
11	1.40	2.20	2.60	3.80	8.40	5.20	86.05	100.00	16.00	6.20	3.80	3.20	
12	1.30	1.80	2.80	3.60	7.60	5.20	125.45	64.00	15.00	6.00	3.60	3.00	
13	1.20	1.90	4.60	3.00	6.40	18.00	158.75	46.60	14.60	6.20	13.60	2.60	
14	1.20	1.80	4.40	2.60	6.80	37.00	118.25	37.00	14.20	6.60	15.60	2.20	
15	1.20	1.70	5.00	2.00	5.40	37.30	87.10	32.20	13.60	6.80	11.20	2.20	
16	1.10	1.60	5.20	10.40	8.40	34.60	52.00	32.80	13.00	6.60	9.20	2.00	
17	1.10	2.40	3.80	13.00	12.20	27.25	36.40	175.40	12.20	6.20	7.60	1.90	
18	1.00	4.80	2.60	6.60	10.80	17.60	28.00	259.00	12.00	6.00	6.80	1.90	
19	1.00	7.20	2.00	4.80	7.80	13.60	23.75	266.70	11.80	5.40	5.80	1.80	
20	1.00	4.60	1.90	6.40	6.00	16.60	21.50	207.50	12.00	5.20	5.00	1.70	
21	1.00	3.60	1.70	4.20	5.00	13.40	36.40	96.00	12.20	5.00	6.00	1.60	
22	2.20	2.60	1.60	3.00	5.20	14.80	25.50	87.80	11.60	4.60	7.60	1.50	
23	2.00	2.80	2.40	2.40	9.40	33.70	21.25	71.70	11.20	4.60	7.80	1.60	
24	1.70	5.80	2.20	2.20	17.40	52.30	90.95	50.50	11.00	4.40	6.40	2.40	
25	1.50	5.40	1.90	2.00	16.60	73.45	185.75	41.20	11.00	4.20	5.80	3.20	
26	1.80	2.80	1.90	2.80	13.40	85.35	162.80	34.90	10.40	4.20	5.00	2.80	
27	1.70	3.00	2.60	2.80	12.20	63.70	90.95	30.40	9.80	4.00	4.60	3.40	
28	1.50	2.40	4.20	3.20	11.00	91.65	58.60	38.80	9.40	4.00	4.20	3.20	
29	3.80	3.00	6.60	3.00	7.60	52.00	41.50	33.70	9.00	4.20		3.40	
30	4.00	7.40	7.00	2.20	5.60	31.30	45.40	28.00	8.60	6.60		55.30	
31		9.40		5.60	5.80		159.20		8.20	11.00		16.40	
Total	49.20	105.40	106.60	162.60	253.80	817.60	2372.80	3071.20	490.20	187.80	196.20	168.50	7981.90 CMSDAY
Mean	1.64	3.40	3.55	5.25	8.19	27.25	76.54	102.37	15.81	6.06	7.01	5.44	21.87 CMS
Max	4.00	9.40	7.00	13.00	17.40	91.65	185.75	266.70	34.00	11.00	15.60	55.30	266.70 CMS
Min	1.00	1.40	1.60	2.00	3.60	5.20	21.25	28.00	8.20	4.00	3.60	1.50	1.00 CMS
Runoff	4.251	9.107	9.210	14.049	21.928	70.641	205.010	265.352	42.353	16.226	16.952	14.558	689.636 MCM

Momentary Peak 275.50 CMS, at 15.30 M (MSL), at 1.00 Hours, on Nov 18, 1998

Runoff Yield 22.85 Liters/Second/Square KM, Momentary Peak Yield 287.879 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

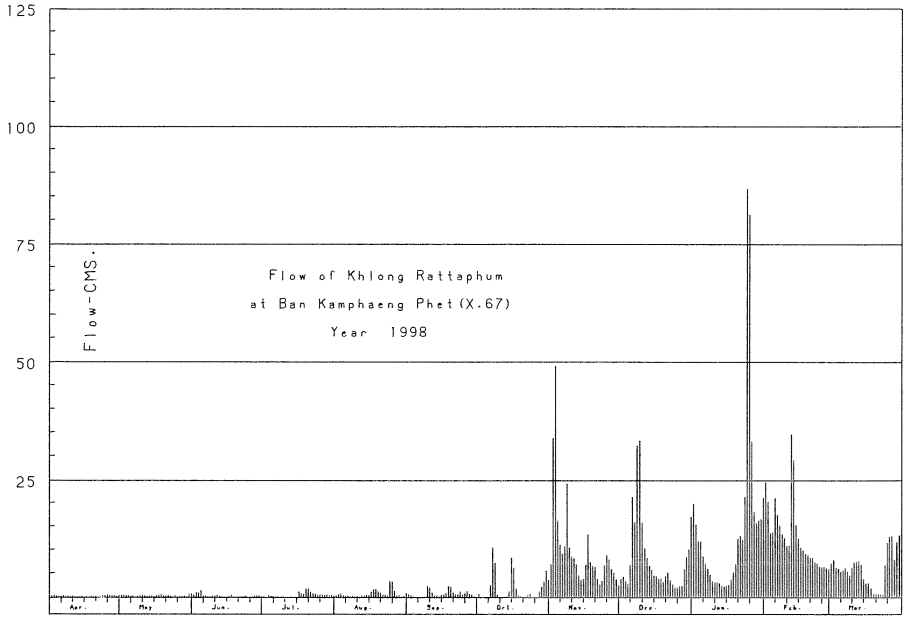
Khlong Rattaphum at Ban Kamphaeng Phet, Songkhla (X.67)

Location	Lat.07°-08'-35" N., Long. 100°-17'-20" E., on right bank about 3 meters upstream from the bridge of Phatthalung-Songkhla Highway, Amphoe Rattaphum, Songkhla.
Drainage Area	272 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+16.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank under the santol tree.
Elevation	+20.413 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967-1970, 1972, 1983 to date.
Rated by Float	-
Rated by Current Meter	1967-1970, 1972, 1983 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Rattaphum Weir. Stage-discharge relation defined by 39 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	17.45	17.55	17.56	17.36	17.42	17.60	17.64	18.44	18.12	19.13	19.31	18.44	
2	17.45	17.54	17.73	17.20	17.62	17.56	17.19	19.64	18.19	18.94	19.14	18.50	
3	17.45	17.53	17.69	17.49	17.64	17.45	17.16	20.08	18.09	18.76	18.85	18.37	
4	17.44	17.49	17.83	17.44	17.55	17.21	17.16	18.97	18.01	18.75	18.85	18.36	
5	17.43	17.44	17.48	17.40	17.45	17.10	17.17	18.71	18.41	18.56	19.18	18.28	
6	17.42	17.40	17.40	17.34	17.40	17.10	17.99	18.60	19.19	18.44	19.03	18.33	
7	17.41	17.38	17.30	17.28	17.39	17.14	18.67	18.69	18.96	18.36	18.92	18.36	
8	17.40	17.38	17.35	17.25	17.41	17.22	18.46	19.30	19.59	18.22	18.84	18.29	
9	17.40	17.46	17.42	17.20	17.43	17.97	17.53	18.68	19.63	18.09	18.79	18.22	
10	17.40	17.54	17.48	17.20	17.38	17.90	17.20	18.55	18.95	18.06	18.70	18.38	
11	17.39	17.46	17.52	17.20	17.36	17.72	17.20	18.53	18.67	18.05	18.70	18.47	
12	17.38	17.42	17.47	17.20	17.42	17.48	17.20	18.43	18.53	18.04	19.67	18.48	
13	17.37	17.47	17.35	17.20	17.50	17.45	17.31	18.22	18.41	17.95	19.48	18.48	
14	17.36	17.41	17.29	17.20	17.53	17.37	17.75	18.10	18.32	17.94	18.93	18.43	
15	17.35	17.38	17.26	17.20	17.54	17.51	18.54	18.14	18.22	17.95	18.79	18.13	
16	17.35	17.45	17.40	17.78	17.73	17.62	18.36	18.42	18.19	17.98	18.68	18.04	
17	17.35	17.57	17.56	17.65	17.85	17.66	17.88	18.83	18.15	18.13	18.64	18.03	
18	17.35	17.58	17.21	17.63	17.85	17.96	17.52	18.47	18.14	18.27	18.60	17.89	
19	17.35	17.44	17.25	17.87	17.79	17.93	17.35	18.40	18.07	18.44	18.57	17.65	
20	17.35	17.40	17.29	17.86	17.68	17.73	17.27	18.38	18.19	18.78	18.54	17.63	
21	17.31	17.57	17.32	17.74	17.61	17.60	17.23	18.14	18.28	18.82	18.53	17.63	
22	17.31	17.43	17.36	17.66	17.54	17.61	17.46	18.01	18.10	18.77	18.47	17.60	
23	17.51	17.36	17.38	17.63	17.49	17.75	17.65	18.08	18.01	19.19	18.44	17.61	
24	17.45	17.47	17.20	17.59	18.08	17.61	17.19	18.42	17.90	20.97	18.40	18.41	
25	17.60	17.35	17.22	17.57	18.08	17.67	17.18	18.58	17.91	20.85	18.39	18.74	
26	17.49	17.31	17.33	17.58	17.79	17.76	17.28	18.50	17.95	19.62	18.38	18.81	
27	17.48	17.38	17.45	17.55	17.49	17.64	17.78	18.35	17.97	19.05	18.37	18.82	
28	17.44	17.38	17.49	17.54	17.47	17.54	17.92	18.26	18.35	18.95	18.34	18.51	
29	17.41	17.39	17.42	17.50	17.37	17.31	18.07	18.13	18.54	18.97		18.74	
30	17.45	17.64	17.40	17.48	17.40	17.19	18.30	17.96	18.65	18.99		18.83	
31		17.66		17.40	17.68		18.10		19.01	19.18		18.86	
Mean	17.41	17.46	17.41	17.46	17.58	17.55	17.64	18.53	18.41	18.72	18.77	18.30	
Max	17.60	17.66	17.83	17.87	18.08	17.97	18.67	20.08	19.63	20.97	19.67	18.86	20.97
Min	17.31	17.31	17.20	17.20	17.36	17.10	17.16	17.96	17.90	17.94	18.34	17.60	17.10

Annual Max Momentary Gage Height 20.99 M (MSL), at 18.00 Hours, on Jan 24, 1998
Zero Gage at Bottom Elevation 16.00 M (MSL), River Bed 16.94 M (MSL)
Left Bank Elevation 22.72 M (MSL)
Right Bank Elevation 22.70 M (MSL), Drainage Area 272 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.48	0.62	0.64	0.34	0.43	0.70	0.86	7.24	3.88	20.12	24.66	7.24	
2	0.48	0.61	1.22	0.10	0.78	0.64	0.09	33.88	4.51	15.74	20.36	8.05	
3	0.48	0.60	1.06	0.53	0.86	0.48	0.08	49.32	3.61	12.12	13.85	6.39	
4	0.46	0.53	1.70	0.46	0.62	0.11	0.08	16.37	2.89	11.95	13.85	6.28	
5	0.44	0.46	0.52	0.40	0.48	0.05	0.08	11.27	6.84	8.86	21.32	5.44	
6	0.43	0.40	0.40	0.31	0.40	0.05	2.73	9.40	21.56	7.24	17.72	5.96	
7	0.41	0.37	0.25	0.22	0.38	0.07	10.59	10.93	16.16	6.28	15.32	6.28	
8	0.40	0.37	0.32	0.17	0.41	0.13	7.51	24.40	32.32	4.81	13.64	5.55	
9	0.40	0.49	0.43	0.10	0.44	2.60	0.60	10.76	33.56	3.61	12.63	4.81	
10	0.40	0.61	0.52	0.10	0.37	2.15	0.10	8.72	15.95	3.34	11.10	6.49	
11	0.38	0.49	0.58	0.10	0.34	1.18	0.10	8.46	10.59	3.25	11.10	7.64	
12	0.37	0.43	0.50	0.10	0.43	0.52	0.10	7.11	8.46	3.16	34.84	7.78	
13	0.36	0.50	0.32	0.10	0.55	0.48	0.26	4.81	6.84	2.48	29.24	7.78	
14	0.34	0.41	0.24	0.10	0.60	0.36	1.30	3.70	5.86	2.41	15.53	7.11	
15	0.32	0.37	0.19	0.10	0.61	0.56	8.59	4.06	4.81	2.48	12.63	3.97	
16	0.32	0.48	0.40	1.42	1.22	0.78	6.28	6.97	4.51	2.67	10.76	3.16	
17	0.32	0.65	0.64	0.90	1.83	0.94	2.02	13.43	4:15	3.97	10.08	3.07	
18	0.32	0.67	0.11	0.82	1.83	2.54	0.58	7.64	4.06	5.34	9.40	2.08	
19	0.32	0.46	0.17	1.96	1.46	2.35	0.32	6.70	3.43	7.24	8.99	0.90	
20	0.32	0.40	0.24	1.89	1.02	1.22	0.20	6.49	4.51	12.46	8.59	0.82	
21	0.26	0.65	0.28	1.26	0.74	0.70	0.14	4.06	5.44	13.22	8.46	0.82	
22	0.26	0.44	0.34	0.94	0.61	0.74	0.49	2.89	3.70	12.29	7.64	0.70	
23	0.56	0.34	0.37	0.82	0.53	1.30	0.90	3.52	2.89	21.56	7.24	0.74	
24	0.48	0.50	0.10	0.68	3.52	0.74	0.09	6.97	2.15	86.85	6.70	6.84	
25	0.70	0.32	0.13	0.65	3.52	0.98	0.09	9.13	2.22	81.45	6.59	11.78	
26	0.53	0.26	0.29	0.67	1.46	1.34	0.22	8.05	2.48	33.24	6.49	13.01	
27	0.52	0.37	0.48	0.62	0.53	0.86	1.42	6.18	2.60	18.20	6.39	13.22	
28	0.46	0.37	0.53	0.61	0.50	0.61	2.28	5.23	6.18	15.95	6.07	8.19	
29	0.41	0.38	0.43	0.55	0.36	0.26	3.43	3.97	8.59	16.37		11.78	
30	0.48	0.86	0.40	0.52	0.40	0.09	5.65	2.54	10.25	16.79		13.43	
31		0.94		0.40	1.02		3.70		17.24	21.32		14.06	
Total	12.41	15.35	13.80	17.94	28.25	25.53	60.88	304.20	262.24	476.77	371.19	201.37	1789.93 CMSDAY
Mean	0.41	0.50	0.46	0.58	0.91	0.85	1.96	10.14	8.46	15.38	13.26	6.50	4.90 CMS
Max	0.70	0.94	1.70	1.96	3.52	2.60	10.59	49.32	33.56	86.85	34.84	14.06	86.85 CMS
Min	0.26	0.26	0.10	0.10	0.34	0.05	0.08	2.54	2.15	2.41	6.07	0.70	0.05 CMS
Runoff	1.072	1.326	1.192	1.550	2.441	2.206	5.260	26.283	22.658	41.193	32.071	17.398	154.650 MCM

Momentary Peak 87.75 CMS, at 20.99 M (MSL), at 18.00 Hours, on Jan 24, 1998

Runoff Yield 18.03 Liters/Second/Square KM, Momentary Peak Yield 322.610 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

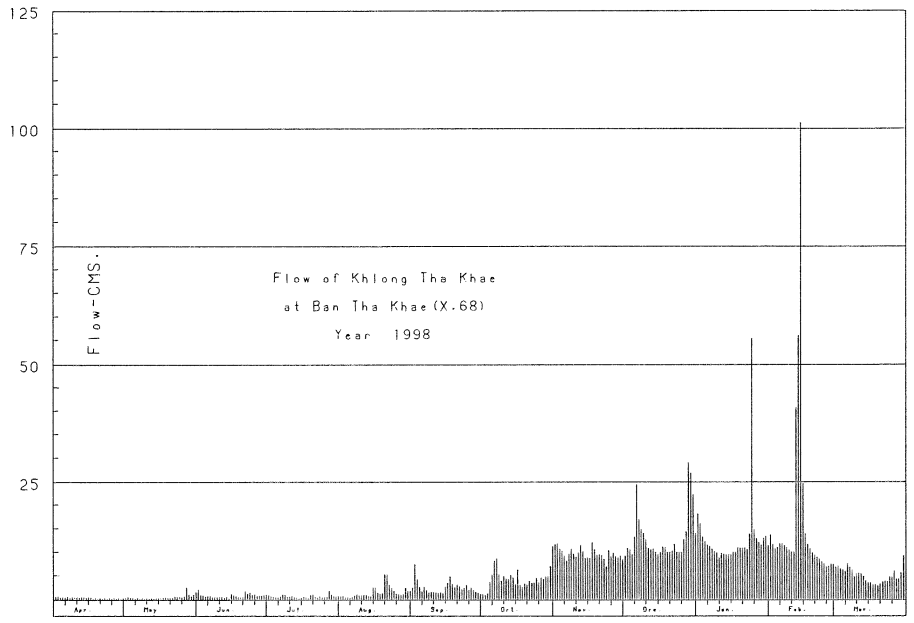
Khlong Tha Khae at Ban Tha Khae, Phatthalung (X.68)

Location	Lat.07°-34'-01" N., Long. 100°-03'-05" E., on left bank downstream side of the bridge of Phatthalung-Hat Yai Highway, Amphoe Muang, Phatthalung.
Drainage Area	298 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+11.80 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank near the gage observer's house.
Elevation	+14.916 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967-1972, 1983 to date.
Rated by Float	-
Rated by Current Meter	1967-1972, 1983 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Tha Khae weir. Stage-discharge relation defined by 40 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	12.48	12.42	12.76	12.54	12.50	12.82	12.58	13.71	13.53	14.12	13.85	13.34	
2	12.47	12.44	12.57	12.49	12.49	13.40	12.56	13.71	13.65	13.99	13.70	13.35	
3	12.43	12.42	12.52	12.45	12.44	13.06	12.61	13.64	13.62	13.82	13.64	13.31	
4	12.43	12.36	12.49	12.45	12.42	12.86	13.00	13.60	13.54	13.74	13.65	13.28	
5	12.43	12.35	12.52	12.44	12.42	12.71	13.19	13.52	13.82	13.70	13.72	13.26	
6	12.46	12.35	12.49	12.47	12.44	12.85	13.44	13.45	14.45	13.67	13.71	13.40	
7	12.42	12.35	12.45	12.60	12.55	12.75	13.49	13.56	14.05	13.64	13.69	13.34	
8	12.43	12.35	12.43	12.54	12.59	12.65	13.19	13.63	13.91	13.59	13.65	13.27	
9	12.43	12.35	12.46	12.48	12.55	12.69	13.04	13.56	13.87	13.58	13.62	13.14	
10	12.43	12.33	12.44	12.47	12.53	12.66	13.16	13.50	13.77	13.50	13.58	13.20	
11	12.43	12.33	12.44	12.49	12.54	12.65	13.08	13.58	13.64	13.56	13.59	13.21	
12	12.45	12.34	12.42	12.45	12.58	12.65	13.08	13.69	13.63	13.55	15.07	13.21	
13	12.43	12.36	12.44	12.40	12.53	12.66	13.17	13.59	13.63	13.55	15.47	13.15	
14	12.43	12.35	12.39	12.38	12.47	12.64	13.12	13.49	13.59	13.54	16.21	13.02	
15	12.43	12.37	12.62	12.41	12.84	12.87	12.92	13.50	13.54	13.55	14.46	12.99	
16	12.41	12.39	12.53	12.48	12.82	12.97	13.28	13.48	13.59	13.58	13.85	12.97	
17	12.35	12.42	12.52	12.42	12.67	13.15	12.92	13.74	13.67	13.59	13.71	12.92	
18	12.36	12.41	12.43	12.42	12.61	12.94	12.84	13.62	13.65	13.65	13.63	12.91	
19	12.35	12.41	12.44	12.59	12.65	12.85	12.96	13.54	13.59	13.65	13.58	12.89	
20	12.35	12.40	12.43	12.57	13.20	12.92	12.91	13.54	13.58	13.64	13.53	12.93	
21	12.35	12.42	12.70	12.48	13.18	12.86	13.02	13.53	13.60	13.65	13.50	13.01	
22	12.35	12.49	12.63	12.43	12.93	12.79	12.98	13.48	13.71	13.63	13.48	13.03	
23	12.35	12.44	12.65	12.48	12.81	12.81	12.99	13.35	13.59	13.86	13.44	13.00	
24	12.35	12.46	12.58	12.45	12.73	12.92	13.11	13.62	13.58	15.46	13.39	13.13	
25	12.35	12.42	12.58	12.43	12.61	12.76	12.97	13.52	13.59	13.91	13.35	13.11	
26	12.35	12.47	12.52	12.48	12.59	12.82	13.10	13.57	13.77	13.80	13.35	13.25	
27	12.35	12.84	12.54	12.73	12.58	12.76	13.08	13.51	13.89	13.74	13.40	13.08	
28	12.35	12.57	12.51	12.56	12.59	12.67	13.14	13.50	14.65	13.69	13.38	13.07	
29	12.35	12.50	12.57	12.52	12.83	12.67	13.13	13.52	14.56	13.80		13.23	
30	12.35	12.56	12.57	12.47	12.70	12.60	13.36	13.46	14.34	13.82		13.53	
31		12.69		12.49	12.73		13.67		13.86	13.68		13.28	
Mean	12.40	12.43	12.52	12.49	12.65	12.81	13.07	13.56	13.79	13.75	13.83	13.16	
Max	12.48	12.84	12.76	12.73	13.20	13.40	13.67	13.74	14.65	15.46	16.21	13.53	16.21
Min	12.35	12.33	12.39	12.38	12.42	12.60	12.56	13.35	13.53	13.50	13.35	12.89	12.33

Annual Max Momentary Gage Height 16.40 M (MSL), at 6.00 Hours, on Feb 14, 1998
Zero Gage at Bottom Elevation 11.80 M (MSL), River Bed 11.47 M (MSL)
Left Bank Elevation 18.29 M (MSL)
Right Bank Elevation 18.55 M (MSL), Drainage Area 298 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.72	0.48	2.16	0.96	0.80	2.54	1.12	11.94	9.45	18.44	14.00	7.04	
2	0.68	0.56	1.08	0.76	0.76	7.70	1.04	11.94	11.10	16.24	11.80	7.15	
3	0.52	0.48	0.88	0.60	0.56	4.31	1.26	10.96	10.68	13.52	10.96	6.71	
4	0.52	0.34	0.76	0.60	0.48	2.82	3.80	10.40	9.59	12.36	11.10	6.38	
5	0.52	0.33	0.88	0.56	0.48	1.86	5.41	9.32	13.52	11.80	12.08	6.16	
6	0.64	0.33	0.76	0.68	0.56	2.75	8.24	8.38	24.70	11.38	11.94	7.70	
7	0.48	0.33	0.60	1.20	1.00	2.10	8.91	9.86	17.25	10.96	11.66	7.04	
8	0.52	0.33	0.52	0.96	1.16	1.50	5.41	10.82	14.96	10.26	11.10	6.27	
9	0.52	0.33	0.64	0.72	1.00	1.74	4.14	9.86	14.32	10.13	10.68	4.99	
10	0.52	0.30	0.56	0.68	0.92	1.56	5.16	9.05	12.78	9.05	10.13	5.50	
11	0.52	0.30	0.56	0.76	0.96	1.50	4.48	10.13	10.96	9.86	10.26	5.61	
12	0.60	0.31	0.48	0.60	1.12	1.50	4.48	11.66	10.82	9.72	40.84	5.61	
13	0.52	0.34	0.56	0.40	0.92	1.56	5.25	10.26	10.82	9.72	56.15	5.07	
14	0.52	0.33	0.39	0.37	0.68	1.44	4.82	8.91	10.26	9.59	101.28	3.97	
15	0.52	0.36	1.32	0.44	2.68	2.89	3.24	9.05	9.59	9.72	24.92	3.73	
16	0.44	0.39	0.92	0.72	2.54	3.59	6.38	8.78	10.26	10.13	14.00	3.59	
17	0.33	0.48	0.88	0.48	1.62	5.07	3.24	12.36	11.38	10.26	11.94	3.24	
18	0.34	0.44	0.52	0.48	1.26	3.38	2.68	10.68	11.10	11.10	10.82	3.17	
19	0.33	0.44	0.56	1.16	1.50	2.75	3.52	9.59	10.26	11.10	10.13	3.03	
20	0.33	0.40	0.52	1.08	5.50	3.24	3.17	9.59	10.13	10.96	9.45	3.31	
21	0.33	0.48	1.80	0.72	5.33	2.82	3.97	9.45	10.40	11.10	9.05	3.89	
22	0.33	0.76	1.38	0.52	3.31	2.34	3.66	8.78	11.94	10.82	8.78	4.05	
23	0.33	0.56	1.50	0.72	2.47	2.47	3.73	7.15	10.26	14.16	8.24	3.80	
24	0.33	0.64	1.12	0.60	1.98	3.24	4.73	10.68	10.13	55.70	7.59	4.91	
25	0.33	0.48	1.12	0.52	1.26	2.16	3.59	9.32	10.26	14.96	7.15	4.73	
26	0.33	0.68	0.88	0.72	1.16	2.54	4.65	9.99	12.78	13.20	7.15	6.05	
27	0.33	2.68	0.96	1.98	1.12	2.16	4.48	9.19	14.64	12.36	7.70	4.48	
28	0.33	1.08	0.84	1.04	1.16	1.62	4.99	9.05	29.20	11.66	7.48	4.39	
29	0.33	0.80	1.08	0.88	2.61	1.62	4.91	9.32	27.12	13.20		5.83	
30	0.33	1.04	1.08	0.68	1.80	1.20	7.26	8.51	22.46	13.52		9.45	
31		1.74		0.76	1.98		11.38		14.16	11.52		6.38	
Total	13.39	18.54	27.31	23.35	50.68	77.97	143.10	294.98	417.28	408.50	468.38	163.23	2106.71 CMSDAY
Mean	0.45	0.60	0.91	0.75	1.63	2.60	4.62	9.83	13.46	13.18	16.73	5.27	5.77 CMS
Max	0.72	2.68	2.16	1.98	5.50	7.70	11.38	12.36	29.20	55.70	101.28	9.45	101.28 CMS
Min	0.33	0.30	0.39	0.37	0.48	1.20	1.04	7.15	9.45	9.05	7.15	3.03	0.30 CMS
Runoff	1.157	1.602	2.360	2.017	4.379	6.737	12.364	25.486	36.053	35.294	40.468	14.103	182.020 MCM

Momentary Peak 118.00 CMS, at 16.40 M (MSL), at 6.00 Hours, on Feb 14, 1998

Runoff Yield 19.37 Liters/Second/Square KM, Momentary Peak Yield 395.973 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

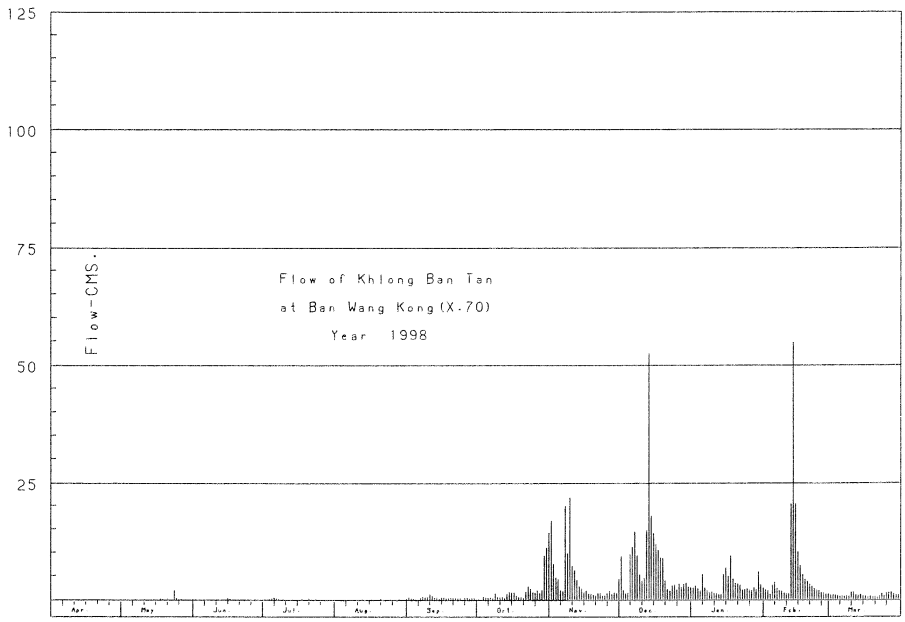
Khlong Ban Tan at Ban Wang Kong, Nakhon Si Thammarat (X.70)

Location	Lat.08°-25'-35" N., Long. 99°-51'-53" E.,On left bank upstream side of the bridge, Ban Wang Kong, Amphoe Muang, Nakhon Si Thammarat.
Drainage Area	39 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 10 meters from the top staff gage.
Elevation	+7.274 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967 - 1971, 1980, 1989 to date.
Rated by Float	-
Rated by Current Meter	1967 - 1971, 1980, 1989 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.40	0.37	0.48	0.43	0.37	0.63	0.46	3.23	2.30	1.17	1.10	0.86	
2	0.39	0.41	0.45	0.45	0.37	0.56	0.46	2.06	1.07	1.25	1.05	0.85	
3	0.39	0.44	0.42	0.43	0.36	0.50	0.68	1.60	0.95	1.17	0.91	0.85	
4	0.38	0.35	0.41	0.56	0.36	0.47	0.65	1.50	0.94	1.05	1.30	0.81	
5	0.38	0.35	0.40	0.64	0.36	0.45	0.63	1.07	2.36	1.71	1.40	0.78	
6	0.38	0.35	0.38	0.50	0.35	0.60	0.57	1.05	2.55	1.20	1.15	0.79	
7	0.38	0.34	0.38	0.45	0.35	0.70	0.57	3.55	2.97	1.05	1.09	0.77	
8	0.37	0.40	0.38	0.43	0.35	0.65	0.94	2.39	2.31	1.00	1.03	0.78	
9	0.37	0.38	0.45	0.43	0.40	0.61	0.62	3.72	1.70	1.00	0.95	0.76	
10	0.37	0.38	0.48	0.41	0.38	0.90	0.69	2.00	1.44	0.95	0.94	1.00	
11	0.37	0.37	0.47	0.41	0.37	0.79	0.65	1.87	1.57	0.90	0.90	1.00	
12	0.36	0.36	0.43	0.40	0.45	0.63	0.61	1.48	2.99	0.88	3.60	0.87	
13	0.36	0.42	0.43	0.40	0.39	0.65	0.89	1.26	5.02	0.86	5.09	0.81	
14	0.35	0.39	0.42	0.39	0.38	0.54	1.01	1.14	3.33	1.71	3.60	0.88	
15	0.35	0.41	0.57	0.39	0.37	0.65	0.95	1.00	2.94	1.93	2.43	0.76	
16	0.35	0.50	0.46	0.41	0.40	0.60	0.98	1.05	2.63	1.63	2.01	0.75	
17	0.35	0.53	0.40	0.44	0.41	0.57	0.80	0.94	2.48	2.32	1.70	0.69	
18	0.31	0.43	0.39	0.41	0.39	0.53	0.68	0.90	2.25	1.54	1.50	0.75	
19	0.30	0.40	0.38	0.40	0.40	0.62	0.66	0.86	2.25	1.35	1.45	0.72	
20	0.30	0.50	0.37	0.54	0.65	0.53	0.62	0.80	1.45	1.35	1.31	0.70	
21	0.30	0.43	0.37	0.44	0.41	0.54	1.00	0.95	1.10	1.28	1.25	0.66	
22	0.31	0.40	0.36	0.43	0.40	0.55	1.25	0.94	1.05	1.10	1.14	0.74	
23	0.31	1.09	0.36	0.42	0.42	0.52	1.13	0.83	1.28	1.10	1.09	0.93	
24	0.34	0.53	0.35	0.41	0.42	0.44	1.00	0.80	1.29	1.15	1.05	0.79	
25	0.34	0.48	0.35	0.39	0.40	0.57	0.98	0.95	1.11	1.10	0.99	0.98	
26	0.40	0.45	0.35	0.38	0.40	0.65	1.06	1.03	1.33	1.05	0.94	0.95	
27	0.36	0.44	0.44	0.38	0.40	0.55	0.95	0.90	1.22	1.20	0.90	1.00	
28	0.35	0.43	0.40	0.37	0.44	0.58	1.07	0.96	1.30	1.09	0.88	0.88	
29	0.35	0.42	0.39	0.37	0.41	0.52	2.32	0.95	1.38	1.82		0.85	
30	0.38	0.45	0.41	0.38	0.43	0.49	2.53	1.51	1.20	1.29		0.83	
31		0.53		0.37	0.54		2.93		1.20	1.18		0.78	
Mean	0.36	0.44	0.41	0.43	0.40	0.59	0.98	1.44	1.90	1.27	1.53	0.82	
Max	0.40	1.09	0.57	0.64	0.65	0.90	2.93	3.72	5.02	2.32	5.09	1.00	5.09
Min	0.30	0.34	0.35	0.37	0.35	0.44	0.46	0.80	0.94	0.86	0.88	0.66	0.30

Annual Max Momentary Gage Height 6.10 M (AD), at 6.00 Hours, on Dec 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.03 M (AD)
Left Bank Elevation 7.38 M (AD)
Right Bank Elevation 7.37 M (AD), Drainage Area 39 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.20	0.17	0.36	0.26	0.17	0.66	0.32	17.07	9.45	2.65	2.30	1.24	
2	0.19	0.22	0.30	0.30	0.17	0.52	0.32	7.72	2.15	3.07	2.05	1.20	
3	0.19	0.28	0.24	0.26	0.16	0.40	0.76	5.00	1.60	2.65	1.44	1.20	
4	0.18	0.15	0.22	0.52	0.16	0.34	0.70	4.45	1.56	2.05	3.35	1.04	
5	0.18	0.15	0.20	0.68	0.16	0.30	0.66	2.15	9.90	5.61	3.90	0.96	
6	0.18	0.15	0.18	0.40	0.15	0.60	0.54	2.05	11.32	2.80	2.55	0.98	
7	0.18	0.14	0.18	0.30	0.15	0.80	0.54	20.10	14.73	2.05	2.25	0.94	
8	0.17	0.20	0.18	0.26	0.15	0.70	1.56	10.13	9.52	1.80	1.95	0.96	
9	0.17	0.18	0.30	0.26	0.20	0.62	0.64	22.04	5.55	1.80	1.60	0.92	
10	0.17	0.18	0.36	0.22	0.18	1.40	0.78	7.30	4.12	1.60	1.56	1.80	
11	0.17	0.17	0.34	0.22	0.17	0.98	0.70	6.52	4.84	1.40	1.40	1.80	
12	0.16	0.16	0.26	0.20	0.30	0.66	0.62	4.34	14.91	1.32	20.60	1.28	
13	0.16	0.24	0.26	0.20	0.19	0.70	1.36	3.13	52.71	1.24	54.85	1.04	
14	0.15	0.19	0.24	0.19	0.18	0.48	1.85	2.50	17.97	5.61	20.60	1.32	
15	0.15	0.22	0.54	0.19	0.17	0.70	1.60	1.80	14.46	6.88	10.43	0.92	
16	0.15	0.40	0.32	0.22	0.20	0.60	1.72	2.05	11.93	5.17	7.37	0.90	
17	0.15	0.46	0.20	0.28	0.22	0.54	1.00	1.56	10.80	9.60	5.55	0.78	
18	0.11	0.26	0.19	0.22	0.19	0.46	0.76	1.40	9.07	4.67	4.45	0.90	
19	0.10	0.20	0.18	0.20	0.20	0.64	0.72	1.24	9.07	3.63	4.18	0.84	
20	0.10	0.40	0.17	0.48	0.70	0.46	0.64	1.00	4.18	3.63	3.40	0.80	
21	0.10	0.26	0.17	0.28	0.22	0.48	1.80	1.60	2.30	3.24	3.07	0.72	
22	0.11	0.20	0.16	0.26	0.20	0.50	3.07	1.56	2.05	2.30	2.50	0.88	
23	0.11	2.25	0.16	0.24	0.24	0.44	2.45	1.12	3.24	2.30	2.25	1.52	
24	0.14	0.46	0.15	0.22	0.24	0.28	1.80	1.00	3.29	2.55	2.05	0.98	
25	0.14	0.36	0.15	0.19	0.20	0.54	1.72	1.60	2.35	2.30	1.76	1.72	
26	0.20	0.30	0.15	0.18	0.20	0.70	2.10	1.95	3.52	2.05	1.56	1.60	
27	0.16	0.28	0.28	0.18	0.20	0.50	1.60	1.40	2.91	2.80	1.40	1.80	
28	0.15	0.26	0.20	0.17	0.28	0.56	2.15	1.64	3.35	2.25	1.32	1.32	
29	0.15	0.24	0.19	0.17	0.22	0.44	9.60	1.60	3.79	6.22		1.20	
30	0.18	0.30	0.22	0.18	0.26	0.38	11.18	4.51	2.80	3.29		1.12	
31		0.46		0.17	0.48		14.37		2.80	2.70		0.96	
Total	4.65	9.89	7.05	8.10	6.91	17.38	69.63	141.53	252.24	101.23	171.69	35.64	825.94 CMSDAY
Mean	0.16	0.32	0.23	0.26	0.22	0.58	2.25	4.72	8.14	3.27	6.13	1.15	2.26 CMS
Max	0.20	2.25	0.54	0.68	0.70	1.40	14.37	22.04	52.71	9.60	54.85	1.80	54.85 CMS
Min	0.10	0.14	0.15	0.17	0.15	0.28	0.32	1.00	1.56	1.24	1.32	0.72	0.10 CMS
Runoff	0.402	0.854	0.609	0.700	0.597	1.502	6.016	12.228	21.794	8.746	14.834	3.079	71.361 MCM

Momentary Peak 90.10 CMS, at 6.10 M (AD), at 6.00 Hours, on Dec 13, 1998

Runoff Yield 58.02 Liters/Second/Square KM, Momentary Peak Yield 2310.256 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

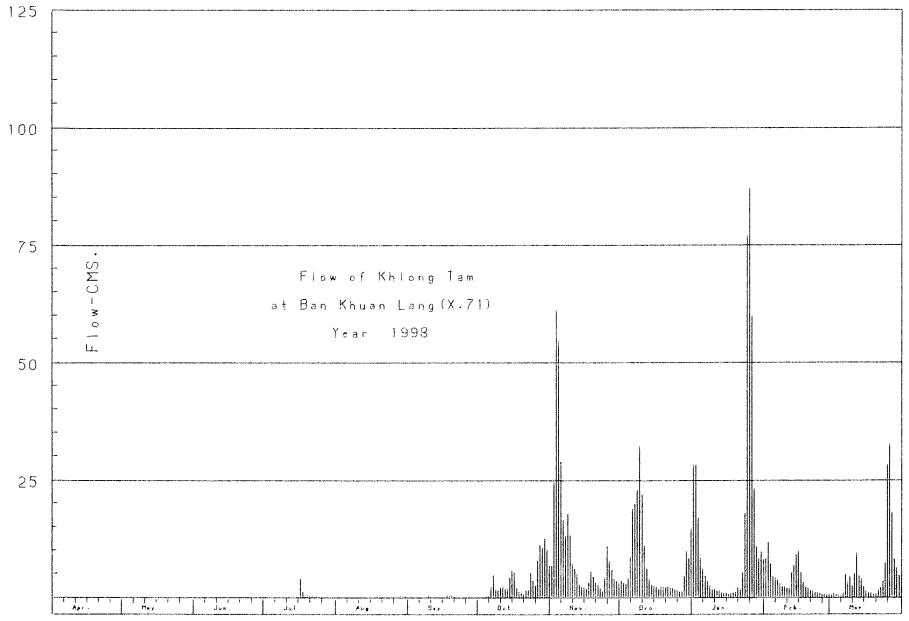
Khlong Tam at Ban Khuan Lang(3), Songkhla (X.71)

Location	Lat.06°-59'-55" N., Long. 100°-25'-58" E., on left bank downstream side of the bridge of Phet Kasem Highway at Khuan Lang(3), Amphoe Hat Yai, Songkhla.
Drainage Area	127 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.65 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 4.00 meters from the fourth staff gage.
Elevation	+7.064 m. (M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1967-1972, 1983 to date.
Rated by Float	-
Rated by Current Meter	1967-1972, 1983 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 43 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.87	2.89	2.83	2.92	2.90	3.06	3.02	4.47	4.00	6.47	4.65	3.37	
2	2.87	2.88	2.83	2.90	2.91	3.01	2.99	6.27	3.92	6.48	5.08	3.45	
3	2.87	2.86	2.83	2.87	2.98	3.02	2.99	7.64	3.91	5.64	4.52	3.42	
4	2.88	2.86	2.83	2.86	2.94	2.98	3.07	7.44	4.10	4.67	4.16	3.33	
5	2.88	2.85	2.87	2.85	2.93	2.97	3.24	6.51	4.71	4.37	4.10	3.23	
6	2.87	2.85	2.84	2.86	2.92	3.11	3.76	5.58	5.81	4.17	4.04	3.48	
7	2.86	2.84	2.83	2.92	2.91	3.08	4.19	5.21	5.93	4.00	3.89	4.21	
8	2.85	2.85	2.91	2.90	2.90	3.06	3.66	5.72	6.16	3.83	3.80	3.95	
9	2.85	2.84	2.89	2.91	2.90	3.26	3.62	5.25	6.65	3.68	3.77	4.14	
10	2.84	2.84	2.89	2.90	2.88	3.15	3.76	4.53	6.09	3.67	3.73	3.82	
11	2.84	2.83	2.88	2.88	2.88	3.03	3.79	4.38	4.99	3.63	3.69	4.21	
12	2.83	2.83	2.87	2.89	2.88	3.01	3.70	4.22	4.39	3.61	4.26	4.80	
13	2.82	2.85	2.88	2.88	2.97	3.00	3.68	3.86	4.05	3.53	4.47	4.17	
14	2.82	2.86	2.87	2.87	2.94	3.03	4.12	3.76	3.87	3.47	4.78	4.06	
15	2.82	2.87	2.87	2.92	2.95	3.03	4.31	3.73	3.78	3.50	4.84	3.80	
16	2.81	2.87	2.85	4.09	2.99	3.11	4.25	3.70	3.78	3.42	4.27	3.57	
17	2.81	2.86	2.84	3.57	3.01	3.25	3.74	3.96	3.69	3.46	3.94	3.51	
18	2.82	2.84	2.84	3.15	3.09	3.31	3.57	4.29	3.80	3.52	3.78	3.46	
19	2.81	2.83	2.85	3.33	3.09	3.22	3.50	4.15	3.76	3.52	3.71	3.41	
20	2.80	2.83	2.86	3.25	3.01	3.17	3.38	3.94	3.77	3.73	3.63	3.42	
21	2.82	2.84	2.86	3.22	2.97	3.18	3.64	3.88	3.78	3.66	3.59	3.62	
22	2.81	2.84	2.85	3.14	3.02	3.08	3.64	3.72	3.75	4.26	3.53	3.74	
23	2.83	2.86	2.83	3.10	3.01	3.02	4.25	3.60	3.70	5.73	3.50	4.00	
24	2.82	2.87	2.85	3.10	3.01	3.04	4.02	4.10	3.67	8.07	3.48	4.54	
25	2.82	2.87	2.90	3.03	2.97	3.02	3.84	4.99	3.61	8.33	3.42	6.48	
26	2.83	2.83	2.88	3.00	3.02	3.01	4.62	4.60	3.54	7.60	3.35	6.67	
27	2.84	2.83	2.87	2.95	3.12	3.06	5.02	4.35	3.59	6.18	3.35	5.74	
28	2.83	2.84	2.86	2.93	3.17	3.08	4.93	4.06	4.17	4.98	3.33	4.66	
29	2.82	2.87	2.95	2.90	3.19	3.05	5.17	4.01	4.84	4.66		4.39	
30	2.83	2.86	2.88	2.90	3.10	3.08	4.89	3.89	4.68	4.83		4.17	
31		2.85		2.88	3.09		4.46		5.40	4.65		4.11	
Mean	2.84	2.85	2.86	3.03	2.99	3.08	3.90	4.66	4.38	4.69	3.95	4.09	
Max	2.88	2.89	2.95	4.09	3.19	3.31	5.17	7.64	6.65	8.33	5.08	6.67	8.33
Min	2.80	2.83	2.83	2.85	2.88	2.97	2.99	3.60	3.54	3.42	3.33	3.23	2.80

Annual Max Momentary Gage Height 8.47 M (MSL), at 18.00 Hours, on Jan 24, 1998
Zero Gage at Bottom Elevation 0.65 M (MSL), River Bed 2.31 M (MSL)
Left Bank Elevation 9.34 M (MSL)
Right Bank Elevation 9.12 M (MSL), Drainage Area 127 Square kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.19	0.19	0.19	0.19	0.19	0.29	0.23	6.89	3.60	28.20	8.23	0.75	
2	0.19	0.19	0.19	0.19	0.19	0.21	0.20	24.62	3.16	28.42	11.92	0.98	
3	0.19	0.19	0.19	0.19	0.20	0.23	0.20	61.40	3.11	17.20	7.24	0.87	
4	0.19	0.19	0.19	0.19	0.20	0.20	0.30	54.64	4.30	8.40	4.72	0.69	
5	0.19	0.19	0.19	0.19	0.20	0.20	0.56	29.07	8.74	6.19	4.30	0.54	
6	0.19	0.19	0.19	0.19	0.19	0.36	2.30	16.60	18.90	4.79	3.88	1.08	
7	0.19	0.19	0.19	0.19	0.19	0.32	4.93	13.09	20.10	3.60	3.00	5.07	
8	0.19	0.19	0.19	0.19	0.19	0.29	1.80	18.00	22.96	2.66	2.50	3.33	
9	0.19	0.19	0.19	0.19	0.19	0.59	1.60	13.45	32.20	1.90	2.35	4.58	
10	0.19	0.19	0.19	0.19	0.19	0.43	2.30	7.31	22.02	1.85	2.15	2.61	
11	0.19	0.19	0.19	0.19	0.19	0.24	2.45	6.26	11.11	1.65	1.95	5.07	
12	0.19	0.19	0.19	0.19	0.19	0.21	2.00	5.14	6.33	1.55	5.42	9.50	
13	0.19	0.19	0.19	0.19	0.20	0.20	1.90	2.83	3.95	1.26	6.89	4.79	
14	0.19	0.19	0.19	0.19	0.20	0.24	4.44	2.30	2.88	1.05	9.33	4.02	
15	0.19	0.19	0.19	0.19	0.20	0.24	5.77	2.15	2.40	1.15	9.84	2.50	
16	0.19	0.19	0.19	4.23	0.20	0.36	5.35	2.00	2.40	0.87	5.49	1.40	
17	0.19	0.19	0.19	1.40	0.21	0.57	2.20	3.38	1.95	1.01	3.27	1.19	
18	0.19	0.19	0.19	0.43	0.33	0.66	1.40	5.63	2.50	1.22	2.40	1.01	
19	0.19	0.19	0.19	0.69	0.33	0.53	1.15	4.65	2.30	1.22	2.05	0.84	
20	0.19	0.19	0.19	0.57	0.21	0.46	0.77	3.27	2.35	2.15	1.65	0.87	
21	0.19	0.19	0.19	0.53	0.20	0.47	1.70	2.94	2.40	1.80	1.47	1.60	
22	0.19	0.19	0.19	0.41	0.23	0.32	1.70	2.10	2.25	5.42	1.26	2.20	
23	0.19	0.19	0.19	0.35	0.21	0.23	5.35	1.50	2.00	18.10	1.15	3.60	
24	0.19	0.19	0.19	0.35	0.21	0.26	3.74	4.30	1.85	77.06	1.08	7.38	
25	0.19	0.19	0.19	0.24	0.20	0.23	2.72	11.11	1.55	87.20	0.87	28.42	
26	0.19	0.19	0.19	0.20	0.23	0.21	7.97	7.80	1.29	60.00	0.72	32.68	
27	0.19	0.19	0.19	0.20	0.38	0.29	11.38	6.05	1.47	23.23	0.72	18.20	
28	0.19	0.19	0.19	0.20	0.46	0.32	10.60	4.02	4.79	11.03	0.69	8.31	
29	0.19	0.19	0.20	0.19	0.49	0.27	12.73	3.67	9.84	8.31		6.33	
30	0.19	0.19	0.19	0.19	0.35	0.32	10.26	3.00	8.48	9.76		4.79	
31		0.19		0.19	0.33		6.82		14.80	8.23		4.37	
Total	5.70	5.89	5.71	13.22	7.48	9.75	116.82	329.17	227.98	426.48	106.54	169.57	1424.31 CMSDAY
Mean	0.19	0.19	0.19	0.43	0.24	0.32	3.77	10.97	7.35	13.76	3.81	5.47	3.90 CMS
Max	0.19	0.19	0.20	4.23	0.49	0.66	12.73	61.40	32.20	87.20	11.92	32.68	87.20 CMS
Min	0.19	0.19	0.19	0.19	0.19	0.20	0.20	1.50	1.29	0.87	0.69	0.54	0.19 CMS
Runoff	0.492	0.509	0.493	1.142	0.646	0.842	10.093	28.440	19.697	36.848	9.205	14.651	123.060 MCM

Momentary Peak 92.80 CMS, at 8.47 M (MSL), at 18.00 Hours, on Jan 24, 1998

Runoff Yield 30.73 Liters/Second/Square KM, Momentary Peak Yield 730.709 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

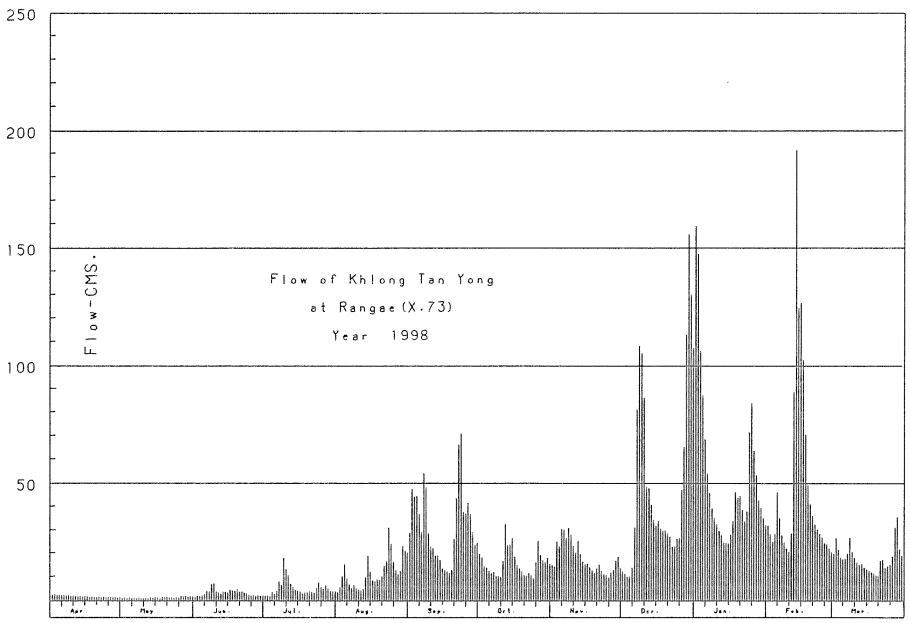
Khlong Tan Yong Mat at Rangae, Narathiwat (X.73)

Location	Lat.06°-17'-44" N., Long. 101°-44'-04" E., on right bank about 20 meters upstream from the bridge on highway, Amphoe Rangae, Narathiwat.
Drainage Area	336 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank near the top staff gage.
Elevation	+4.249 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00,12.00,15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1967 to date.
Rating Operation	
Period of Rating	1985 to date.
Rated by Float	-
Rated by Current Meter	1985 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 46 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.64	0.46	0.51	0.58	0.73	2.23	1.77	1.51	1.33	5.91	2.39	1.77	
2	0.63	0.45	0.55	0.56	0.90	3.10	1.70	1.46	1.27	5.80	2.20	2.13	
3	0.62	0.45	0.56	0.57	1.19	2.95	1.47	2.04	1.20	5.23	2.05	1.86	
4	0.61	0.45	0.58	0.72	1.53	2.97	1.45	1.95	1.19	4.65	2.20	1.70	
5	0.62	0.45	0.66	0.67	1.14	2.63	1.35	2.32	1.45	3.96	3.03	1.64	
6	0.60	0.44	0.76	0.77	0.98	2.24	1.30	2.29	2.35	3.38	2.55	1.67	
7	0.59	0.44	0.77	1.05	0.86	3.38	1.32	2.11	4.44	3.02	2.19	1.78	
8	0.58	0.44	0.97	0.97	0.96	3.12	1.22	2.34	5.27	2.74	2.02	2.14	
9	0.58	0.44	1.01	1.68	0.86	2.22	1.21	2.20	5.21	2.54	1.90	1.83	
10	0.57	0.44	0.79	1.41	0.83	1.93	1.18	1.94	4.61	2.41	1.82	1.69	
11	0.56	0.44	0.70	1.22	0.79	1.91	1.59	1.80	3.14	2.28	2.21	1.56	
12	0.55	0.44	0.67	1.00	0.85	1.73	2.42	2.07	3.12	2.17	4.70	1.52	
13	0.55	0.46	0.74	0.89	1.17	1.73	1.96	1.78	2.81	2.03	6.20	1.53	
14	0.54	0.46	0.75	0.83	1.74	1.64	1.98	1.58	2.50	2.01	5.55	1.45	
15	0.53	0.46	0.70	0.78	1.32	1.43	2.11	1.53	2.39	2.01	5.59	1.39	
16	0.53	0.45	0.83	0.75	1.09	1.37	1.72	1.53	2.47	2.20	5.14	1.35	
17	0.52	0.44	0.79	0.69	1.05	1.35	1.50	1.46	2.33	2.47	4.04	1.33	
18	0.51	0.48	0.80	0.70	1.12	1.28	1.43	1.37	2.27	3.05	3.17	1.28	
19	0.51	0.51	0.84	0.73	1.09	1.39	1.34	1.31	2.29	2.94	2.82	1.24	
20	0.50	0.49	0.77	0.76	1.21	2.11	1.25	1.41	2.21	2.96	2.59	1.26	
21	0.50	0.48	0.75	0.73	1.48	2.93	1.21	1.53	2.14	2.70	2.42	1.61	
22	0.50	0.47	0.72	0.71	1.59	3.86	1.30	1.35	1.94	2.48	2.30	1.64	
23	0.49	0.47	0.68	0.88	2.35	4.06	1.22	1.27	1.93	2.67	2.22	1.45	
24	0.49	0.46	0.64	1.02	1.99	2.66	1.15	1.23	2.11	4.08	2.13	1.47	
25	0.48	0.49	0.61	0.91	1.59	2.64	1.58	1.18	2.11	4.53	2.02	1.53	
26	0.48	0.55	0.59	0.84	1.38	2.83	2.05	1.30	3.09	3.75	1.98	1.71	
27	0.48	0.56	0.58	0.95	1.25	2.63	1.76	1.39	3.82	3.35	1.90	2.35	
28	0.47	0.55	0.57	0.85	1.36	2.24	1.62	1.60	5.37	2.89	1.81	2.56	
29	0.47	0.53	0.58	0.79	1.94	1.97	1.58	1.70	5.88	2.74		1.89	
30	0.46	0.52	0.57	0.75	1.85	2.01	1.67	1.44	5.63	2.55		1.72	
31		0.53		0.75	1.80		1.52		5.25	2.39		1.53	
Mean	0.54	0.47	0.70	0.86	1.29	2.35	1.55	1.67	3.00	3.16	2.90	1.66	
Max	0.64	0.56	1.01	1.68	2.35	4.06	2.42	2.34	5.88	5.91	6.20	2.56	6.20
Min	0.46	0.44	0.51	0.56	0.73	1.28	1.15	1.18	1.19	2.01	1.81	1.24	0.44

Annual Max Momentary Gage Height 6.24 M (AD), at 6.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -0.19 M (AD)
Left Bank Elevation 8.81 M (AD)
Right Bank Elevation 8.71 M (AD), Drainage Area 336 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.90	1.45	1.82	2.35	3.80	29.10	19.97	15.43	12.45	159.32	32.30	19.97	
2	2.80	1.37	2.13	2.20	6.00	47.75	18.75	14.55	11.55	147.50	28.50	27.10	
3	2.70	1.37	2.20	2.27	10.35	44.38	14.73	25.30	10.50	106.50	25.50	21.70	
4	2.60	1.37	2.35	3.70	15.78	44.83	14.38	23.50	10.35	87.37	28.50	18.75	
5	2.70	1.37	3.10	3.20	9.60	37.18	12.75	30.90	14.38	69.00	46.18	17.70	
6	2.50	1.30	4.10	4.20	7.20	29.30	12.00	30.30	31.50	54.50	35.50	18.22	
7	2.42	1.30	4.20	8.25	5.40	54.50	12.30	26.70	81.60	45.95	28.30	20.15	
8	2.35	1.30	7.05	7.05	6.90	48.20	10.80	31.30	108.50	39.65	24.90	27.30	
9	2.35	1.30	7.65	18.40	5.40	28.90	10.65	28.50	105.50	35.30	22.50	21.10	
10	2.27	1.30	4.40	13.68	4.95	23.10	10.20	23.30	86.27	32.70	20.90	18.58	
11	2.20	1.30	3.50	10.80	4.40	22.70	16.82	20.50	48.65	30.10	28.70	16.30	
12	2.13	1.30	3.20	7.50	5.25	19.28	32.90	25.90	48.20	27.90	88.75	15.60	
13	2.13	1.45	3.90	5.85	10.05	19.28	23.70	20.15	41.22	25.10	192.00	15.78	
14	2.05	1.45	4.00	4.95	19.45	17.70	24.10	16.65	34.50	24.70	124.38	14.38	
15	1.97	1.45	3.50	4.30	12.30	14.02	26.70	15.78	32.30	24.70	126.88	13.35	
16	1.97	1.37	4.95	4.00	8.85	13.05	19.10	15.78	33.90	28.50	102.75	12.75	
17	1.90	1.30	4.40	3.40	8.25	12.75	15.25	14.55	31.10	33.90	71.00	12.45	
18	1.82	1.60	4.50	3.50	9.30	11.70	14.02	13.05	29.90	46.63	49.33	11.70	
19	1.82	1.82	5.10	3.80	8.85	13.35	12.60	12.15	30.30	44.15	41.45	11.10	
20	1.75	1.68	4.20	4.10	10.65	26.70	11.25	13.68	28.70	44.60	36.30	11.40	
21	1.75	1.60	4.00	3.80	14.90	43.93	10.65	15.78	27.30	38.75	32.90	17.18	
22	1.75	1.52	3.70	3.60	16.82	66.50	12.00	12.75	23.30	34.10	30.50	17.70	
23	1.68	1.52	3.30	5.70	31.50	71.50	10.80	11.55	23.10	38.08	28.90	14.38	
24	1.68	1.45	2.90	7.80	24.30	37.85	9.75	10.95	26.70	72.00	27.10	14.73	
25	1.60	1.68	2.60	6.15	16.82	37.40	16.65	10.20	26.70	84.08	24.90	15.78	
26	1.60	2.13	2.42	5.10	13.20	41.68	25.50	12.00	47.52	63.75	24.10	18.93	
27	1.60	2.20	2.35	6.75	11.25	37.18	19.80	13.35	65.50	53.75	22.50	31.50	
28	1.52	2.13	2.27	5.25	12.90	29.30	17.35	17.00	113.50	43.03	20.70	35.70	
29	1.52	1.97	2.35	4.40	23.30	23.90	16.65	18.75	156.10	39.65		22.30	
30	1.45	1.90	2.27	4.00	21.50	24.70	18.22	14.20	130.50	35.50		19.10	
31		1.97		4.00	20.50		15.60		107.50	32.30		15.78	
Total	61.48	48.22	108.41	174.05	379.72	971.71	505.94	554.50	1579.09	1643.06	1366.22	568.46	7960.86 CMSDAY
Mean	2.05	1.56	3.61	5.61	12.25	32.39	16.32	18.48	50.94	53.00	48.79	18.34	21.81 CMS
Max	2.90	2.20	7.65	18.40	31.50	71.50	32.90	31.30	156.10	159.32	192.00	35.70	192.00 CMS
Min	1.45	1.30	1.82	2.20	3.80	11.70	9.75	10.20	10.35	24.70	20.70	11.10	1.30 CMS
Runoff	5.312	4.166	9.367	15.038	32.808	83.956	43.713	47.909	136.433	141.960	118.041	49.115	687.818 MCM

Momentary Peak 197.00 CMS, at 6.24 M (AD), at 6.00 Hours, on Feb 13, 1998
Runoff Yield 64.91 Liters/Second/Square KM, Momentary Peak Yield 586.310 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

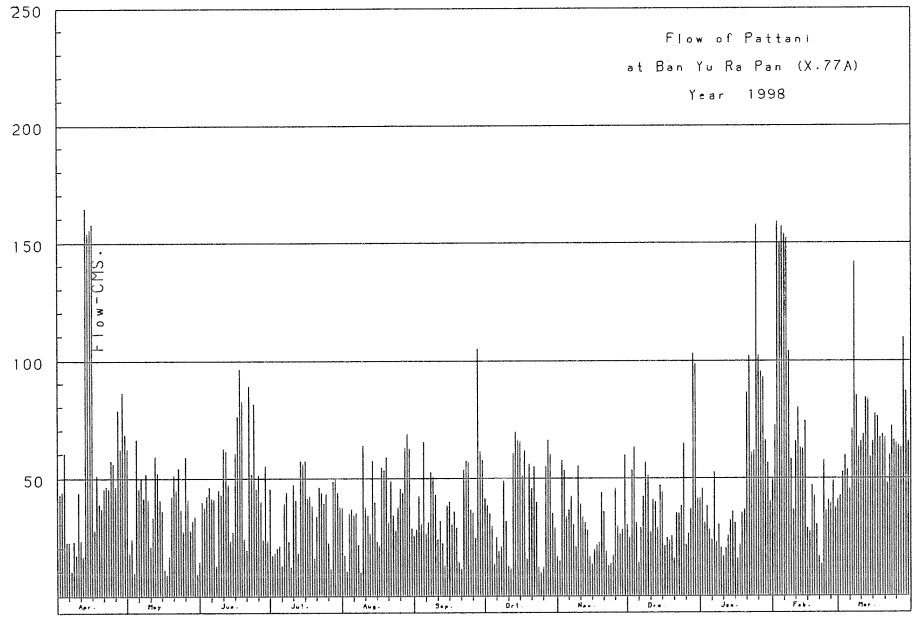
Pattani River at Ban Yu Ra Pan, Yala (X.77A)

Location	Lat. 06°-16'-35" N., Long. 101°-17'-33" E., on right bank at the bridge of Yala - Be Thong Highway, Amphoe Ban Nang Sata, Yala.
Drainage Area	2,237 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 7.00 meters from the top staff gage.
Elevation	+6.500 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.83	0.51	0.79	0.50	0.50	0.64	0.77	0.47	0.60	0.86	1.20	0.82	
2	0.84	0.59	0.76	0.51	0.41	0.82	0.73	1.01	0.96	0.68	2.10	0.95	
3	1.05	0.40	0.82	0.54	0.73	0.67	0.66	0.96	1.08	0.77	2.01	1.04	
4	0.57	1.12	0.87	0.55	0.75	1.11	0.45	0.71	0.68	0.64	2.08	0.96	
5	0.57	0.86	0.81	0.44	0.72	0.62	0.60	0.75	0.46	0.59	2.05	0.86	
6	0.41	0.91	0.80	0.78	0.73	0.68	0.52	0.82	0.65	0.95	2.03	1.18	
7	0.58	0.81	0.44	0.84	0.56	0.95	0.55	0.67	0.82	0.57	1.54	1.93	
8	0.50	0.94	0.85	0.58	0.40	0.92	0.90	0.55	1.00	0.67	1.02	1.34	
9	0.84	0.80	0.83	0.43	1.09	0.83	0.69	0.98	0.93	0.54	0.75	1.08	
10	0.58	0.55	1.07	0.88	0.76	0.59	0.44	0.78	0.63	0.49	1.11	1.11	
11	0.49	0.71	1.06	0.80	0.72	0.69	0.42	0.71	0.80	0.54	1.28	1.15	
12	2.16	1.03	0.88	0.51	0.62	0.57	1.05	0.68	0.79	0.61	1.08	1.33	
13	2.05	0.94	0.58	1.01	1.01	0.44	1.16	0.64	0.65	0.69	1.07	1.32	
14	2.07	0.80	0.63	0.99	0.79	0.77	1.12	0.49	0.88	0.74	1.22	1.03	
15	2.09	0.74	1.05	1.01	0.58	0.79	1.11	0.45	0.84	0.68	0.65	1.11	
16	0.64	0.42	1.24	0.81	0.55	0.67	0.93	0.53	0.55	0.48	0.63	1.25	
17	0.93	0.38	1.46	0.82	0.97	0.74	1.06	0.56	0.60	0.56	0.88	1.24	
18	0.78	0.49	1.31	0.77	0.96	0.65	0.48	0.57	0.58	0.73	0.82	1.13	
19	0.75	0.82	0.59	0.48	1.03	0.46	0.99	0.84	0.61	0.75	0.67	1.15	
20	0.86	0.93	0.53	0.71	0.68	0.42	0.86	0.74	0.48	1.35	0.49	1.13	
21	0.87	0.85	1.38	0.87	0.90	0.96	0.98	0.52	0.73	1.52	0.45	0.89	
22	0.86	0.97	0.94	0.84	0.72	1.01	0.79	0.44	0.73	1.05	1.01	1.04	
23	1.01	0.75	1.30	0.78	0.64	1.00	0.43	0.45	0.77	1.06	0.74	1.19	
24	0.99	0.63	0.86	0.83	0.76	0.75	0.40	0.50	1.10	2.09	0.80	1.12	
25	0.87	1.03	0.93	0.57	0.86	0.73	0.43	0.86	0.56	1.52	0.78	1.10	
26	1.27	0.80	0.79	0.42	0.84	0.60	0.98	0.66	0.62	1.45	0.90	1.09	
27	1.07	0.64	0.59	0.90	1.08	1.55	1.12	0.62	0.75	1.42	0.76	1.08	
28	1.35	0.69	0.98	0.91	1.15	1.06	1.04	0.64	1.53	1.12	0.80	1.60	
29	1.15	0.71	0.58	0.84	1.07	1.01	0.73	1.04	1.48	1.00		1.36	
30	1.07	0.39	0.86	0.76	0.65	0.81	0.65	0.67	0.81	0.79		1.11	
31		0.46		0.76	0.61		0.49		0.81	0.91		0.81	
Mean	1.00	0.73	0.89	0.72	0.77	0.78	0.76	0.68	0.79	0.90	1.10	1.15	
Max	2.16	1.12	1.46	1.01	1.15	1.55	1.16	1.04	1.53	2.09	2.10	1.93	2.16
Min	0.41	0.38	0.44	0.42	0.40	0.42	0.40	0.44	0.46	0.48	0.45	0.81	0.38

Annual Max Momentary Gage Height 2.45 M (A.D), at 18.00 Hours, on Sep 28, 1998
Zero Gage at Bottom Elevation 0.00 M (A.D), River Bed -1.05 M (A.D)
Left Bank Elevation 10.24 M (A.D)
Right Bank Elevation 10.40 M (A.D), Drainage Area 2237 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	43.40	18.25	40.20	17.50	17.50	28.20	38.60	15.25	25.00	45.80	73.00	42.60	
2	44.20	24.25	37.80	18.25	10.75	42.60	35.40	57.80	53.80	31.40	159.00	53.00	
3	61.00	10.00	42.60	20.50	35.40	30.60	29.80	53.80	63.40	38.60	150.00	60.20	
4	22.75	66.60	46.60	21.25	37.00	65.80	13.75	33.80	31.40	28.20	157.00	53.80	
5	22.75	45.80	41.80	13.00	34.60	26.60	25.00	37.00	14.50	24.25	154.00	45.80	
6	10.75	49.80	41.00	39.40	35.40	31.40	19.00	42.60	29.00	53.00	152.00	71.40	
7	23.50	41.80	13.00	44.20	22.00	53.00	21.25	30.60	42.60	22.75	104.30	142.00	
8	17.50	52.20	45.00	23.50	10.00	50.60	49.00	21.25	57.00	30.60	58.60	85.60	
9	44.20	41.00	43.40	12.25	64.20	43.40	32.20	55.40	51.40	20.50	37.00	63.40	
10	23.50	21.25	62.60	47.40	37.80	24.25	13.00	39.40	27.40	16.75	65.80	65.80	
11	16.75	33.80	61.80	41.00	34.60	32.20	11.50	33.80	41.00	20.50	80.20	69.00	
12	165.00	59.40	47.40	18.25	26.60	22.75	61.00	31.40	40.20	25.80	63.40	84.70	
13	154.00	52.20	23.50	57.80	57.80	13.00	69.80	28.20	29.00	32.20	62.60	83.80	
14	156.00	41.00	27.40	56.20	40.20	38.60	66.60	16.75	47.40	36.20	74.80	59.40	
15	158.00	36.20	61.00	57.80	23.50	40.20	65.80	13.75	44.20	31.40	29.00	65.80	
16	28.20	11.50	76.60	41.80	21.25	30.60	51.40	19.75	21.25	16.00	27.40	77.50	
17	51.40	9.00	96.70	42.60	54.60	36.20	61.80	22.00	25.00	22.00	47.40	76.60	
18	39.40	16.75	82.90	38.60	53.80	29.00	16.00	22.75	23.50	35.40	42.60	67.40	
19	37.00	42.60	24.25	16.00	59.40	14.50	56.20	44.20	25.80	37.00	30.60	69.00	
20	45.80	51.40	19.75	33.80	31.40	11.50	45.80	36.20	16.00	86.50	16.75	67.40	
21	46.60	45.00	89.20	46.60	49.00	53.80	55.40	19.00	35.40	102.40	13.75	48.20	
22	45.80	54.60	52.20	44.20	34.60	57.80	40.20	13.00	35.40	61.00	57.80	60.20	
23	57.80	37.00	82.00	39.40	28.20	57.00	12.25	13.75	38.60	61.80	36.20	72.20	
24	56.20	27.40	45.80	43.40	37.80	37.00	10.00	17.50	65.00	158.00	41.00	66.60	
25	46.60	59.40	51.40	22.75	45.80	35.40	12.25	45.80	22.00	102.40	39.40	65.00	
26	79.30	41.00	40.20	11.50	44.20	25.00	55.40	29.80	26.60	95.75	49.00	64.20	
27	62.60	28.20	24.25	49.00	63.40	105.25	66.60	26.60	37.00	92.90	37.80	63.40	
28	86.50	32.20	55.40	49.80	69.00	61.80	60.20	28.20	103.35	66.60	41.00	110.00	
29	69.00	33.80	23.50	44.20	62.60	57.80	35.40	60.20	98.60	57.00		87.40	
30	62.60	9.50	45.80	37.80	29.00	41.80	29.00	30.60	41.80	40.20		65.80	
31		14.50		37.80	25.80		16.75		41.80	49.80		41.80	
Total	1778.10	1107.40	1445.05	1087.55	1197.20	1197.65	1176.35	940.15	1254.40	1542.70	1901.40	2149.00	16776.95 CMSDAY
Mean	59.27	35.72	48.17	35.08	38.62	39.92	37.95	31.34	40.46	49.76	67.91	69.32	45.96 CMS
Max	165.00	66.60	96.70	57.80	69.00	105.25	69.80	60.20	103.35	158.00	159.00	142.00	165.00 CMS
Min	10.75	9.00	13.00	11.50	10.00	11.50	10.00	13.00	14.50	16.00	13.75	41.80	9.00 CMS
Runoff	153.628	95.679	124.852	93.964	103.438	103.477	101.637	81.229	108.380	133.289	164.281	185.674	1449.529 MCM

Momentary Peak 195.50 CMS, at 2.45 M (A.D), at 18.00 Hours, on Sep 28, 1998

Runoff Yield 20.55 Liters/Second/Square KM, Momentary Peak Yield 87.394 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

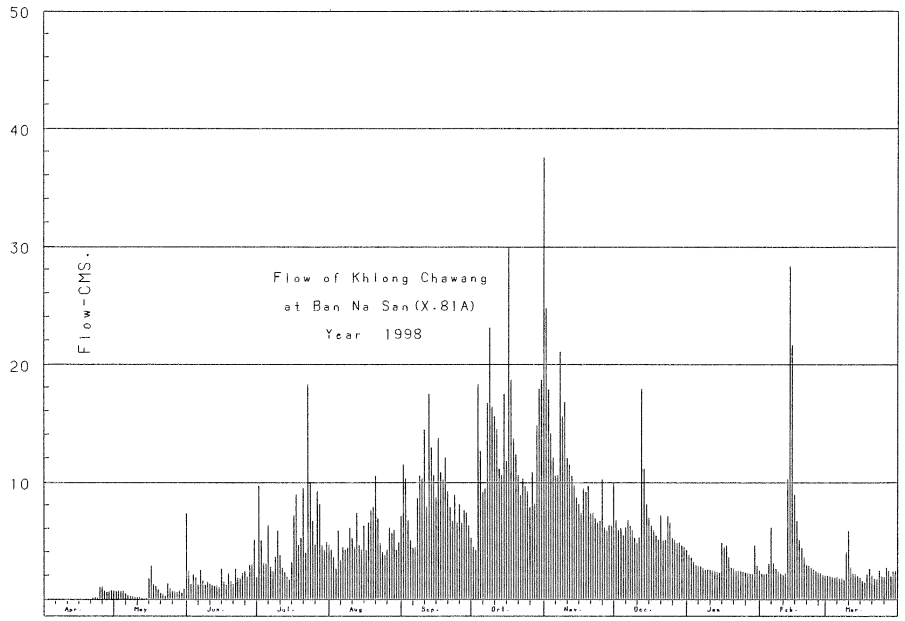
Khlong Chawang at Ban Na San, Surat Thani (X.81A)

Location	Lat. 08°-48'-23" N., Long. 99°-22'-18" E., on right bank at Wat Ban Na San, Amphoe Ban Na San, Surat Thani.
Drainage Area	220 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at Wat Ban Na San's wall.
Elevation	+5.539 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1990 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.43	0.55	0.73	1.09	0.85	1.15	0.86	1.48	0.97	0.83	0.71	0.69	
2	0.43	0.55	0.62	0.89	0.82	1.11	0.85	1.33	0.93	0.82	0.70	0.69	
3	0.43	0.55	0.70	0.79	0.75	0.97	1.34	1.23	0.94	0.80	0.71	0.68	
4	0.42	0.55	0.68	0.79	0.93	0.89	1.19	1.17	0.91	0.78	0.79	0.68	
5	0.42	0.52	0.62	0.95	0.81	0.86	1.07	1.12	0.94	0.77	0.94	0.68	
6	0.40	0.49	0.74	0.76	0.86	0.86	1.08	1.12	0.97	0.77	0.79	0.67	
7	0.39	0.48	0.65	0.73	0.85	1.05	1.30	1.41	0.95	0.75	0.75	0.67	
8	0.39	0.47	0.62	0.82	0.86	1.12	1.45	1.27	0.93	0.74	0.72	0.66	
9	0.41	0.46	0.64	0.93	0.94	1.11	1.29	1.30	0.90	0.74	0.71	0.84	
10	0.41	0.46	0.63	0.83	0.90	1.24	1.27	1.17	0.88	0.74	0.70	0.93	
11	0.38	0.45	0.61	0.75	0.86	1.02	1.24	1.15	0.90	0.73	0.71	0.76	
12	0.35	0.43	0.61	0.72	1.00	1.32	1.14	1.12	1.33	0.73	1.11	0.71	
13	0.33	0.43	0.61	0.68	0.87	1.20	1.12	1.09	1.14	0.72	1.55	0.70	
14	0.38	0.43	0.60	0.66	0.85	1.12	1.32	1.05	1.03	0.72	1.42	0.69	
15	0.38	0.67	0.75	0.80	0.95	1.05	1.16	1.03	0.98	0.88	1.06	0.67	
16	0.40	0.77	0.64	0.99	0.85	1.22	1.58	1.00	0.95	0.86	0.97	0.65	
17	0.40	0.62	0.62	1.06	0.96	1.13	1.35	1.08	0.93	0.87	0.89	0.64	
18	0.38	0.61	0.71	0.87	1.01	1.11	1.22	1.07	0.91	0.82	0.86	0.70	
19	0.42	0.56	0.65	0.90	1.02	1.17	1.18	1.09	0.89	0.76	0.82	0.75	
20	0.41	0.53	0.62	1.08	1.12	1.07	1.12	1.00	0.99	0.75	0.78	0.69	
21	0.45	0.51	0.75	0.84	0.98	1.02	1.06	1.00	0.89	0.73	0.77	0.67	
22	0.45	0.48	0.67	1.34	0.88	0.97	1.11	0.98	0.89	0.73	0.76	0.66	
23	0.45	0.63	0.67	1.10	0.84	1.06	1.09	0.96	0.99	0.73	0.74	0.73	
24	0.60	0.58	0.71	0.97	0.83	0.96	1.07	0.97	0.96	0.72	0.73	0.69	
25	0.60	0.55	0.73	0.87	0.85	1.03	1.02	1.11	0.90	0.72	0.72	0.68	
26	0.55	0.54	0.68	1.07	0.94	0.96	1.13	0.94	0.89	0.71	0.71	0.76	
27	0.54	0.54	0.78	1.03	0.92	1.01	1.03	0.93	0.88	0.71	0.70	0.73	
28	0.54	0.55	0.78	0.87	0.93	1.00	1.25	0.95	0.88	0.70	0.69	0.69	
29	0.56	0.53	0.89	0.85	0.85	0.95	1.33	0.95	0.87	0.87		0.73	
30	0.55	0.57	0.68	0.88	0.88	0.90	1.35	1.10	0.86	0.77		0.73	
31		1.00		0.87	0.99		1.71		0.85	0.73		0.70	
Mean	0.44	0.55	0.68	0.90	0.90	1.05	1.20	1.11	0.94	0.76	0.84	0.71	
Max	0.60	1.00	0.89	1.34	1.12	1.32	1.71	1.48	1.33	0.88	1.55	0.93	1.71
Min	0.33	0.43	0.60	0.66	0.75	0.86	0.85	0.93	0.85	0.70	0.69	0.64	0.33

Annual Max Momentary Gage Height 1.97 M (AD), at 6.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.16 M (AD)
Left Bank Elevation 7.81 M (AD)
Right Bank Elevation 7.84 M (AD), Drainage Area 220 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.13	0.76	2.47	9.74	4.25	11.50	4.46	24.76	6.77	3.83	2.25	2.04	
2	0.13	0.76	1.31	5.09	3.62	10.30	4.25	17.94	5.93	3.62	2.15	2.04	
3	0.13	0.76	2.15	3.10	2.68	6.77	18.32	14.14	6.14	3.20	2.25	1.94	
4	0.08	0.76	1.94	3.10	5.93	5.09	12.70	12.10	5.51	2.99	3.10	1.94	
5	0.08	0.56	1.31	6.35	3.41	4.46	9.22	10.60	6.14	2.88	6.14	1.94	
6	0.00	0.38	2.57	2.78	4.46	4.46	9.48	10.60	6.77	2.88	3.10	1.84	
7	0.00	0.34	1.62	2.47	4.25	8.70	16.80	21.12	6.35	2.68	2.68	1.84	
8	0.00	0.29	1.31	3.62	4.46	10.60	23.20	15.66	5.93	2.57	2.36	1.73	
9	0.04	0.25	1.52	5.93	6.14	10.30	16.42	16.80	5.30	2.57	2.25	4.04	
10	0.04	0.25	1.41	3.83	5.30	14.52	15.66	12.10	4.88	2.57	2.15	5.93	
11	0.00	0.21	1.20	2.68	4.46	7.92	14.52	11.50	5.30	2.47	2.25	2.78	
12	0.00	0.13	1.20	2.36	7.40	17.56	11.20	10.60	17.94	2.47	10.30	2.25	
13	0.00	0.13	1.20	1.94	4.67	13.00	10.60	9.74	11.20	2.36	28.40	2.15	
14	0.00	0.13	1.10	1.73	4.25	10.60	17.56	8.70	8.18	2.36	21.64	2.04	
15	0.00	1.84	2.68	3.20	6.35	8.70	11.80	8.18	6.98	4.88	8.96	1.84	
16	0.00	2.88	1.52	7.19	4.25	13.76	29.96	7.40	6.35	4.46	6.77	1.62	
17	0.00	1.31	1.31	8.96	6.56	10.90	18.70	9.48	5.93	4.67	5.09	1.52	
18	0.00	1.20	2.25	4.67	7.66	10.30	13.76	9.22	5.51	3.62	4.46	2.15	
19	0.08	0.83	1.62	5.30	7.92	12.10	12.40	9.74	5.09	2.78	3.62	2.68	
20	0.04	0.62	1.31	9.48	10.60	9.22	10.60	7.40	7.19	2.68	2.99	2.04	
21	0.21	0.49	2.68	4.04	6.98	7.92	8.96	7.40	5.09	2.47	2.88	1.84	
22	0.21	0.34	1.84	18.32	4.88	6.77	10.30	6.98	5.09	2.47	2.78	1.73	
23	0.21	1.41	1.84	10.00	4.04	8.96	9.74	6.56	7.19	2.47	2.57	2.47	
24	1.10	0.96	2.25	6.77	3.83	6.56	9.22	6.77	6.56	2.36	2.47	2.04	
25	1.10	0.76	2.47	4.67	4.25	8.18	7.92	10.30	5.30	2.36	2.36	1.94	
26	0.76	0.69	1.94	9.22	6.14	6.56	10.90	6.14	5.09	2.25	2.25	2.78	
27	0.69	0.69	2.99	8.18	5.72	7.66	8.18	5.93	4.88	2.25	2.15	2.47	
28	0.69	0.76	2.99	4.67	5.93	7.40	14.90	6.35	4.88	2.15	2.04	2.04	
29	0.83	0.62	5.09	4.25	4.25	6.35	17.94	6.35	4.67	4.67		2.47	
30	0.76	0.90	1.94	4.88	4.88	5.30	18.70	10.00	4.46	2.88		2.47	
31		7.40		4.67	7.19		37.60		4.25	2.47		2.15	
Total	7.31	29.41	59.03	173.19	166.71	272.42	435.97	320.56	196.85	91.34	142.41	70.75	1965.95 CMSDAY
Mean	0.24	0.95	1.97	5.59	5.38	9.08	14.06	10.69	6.35	2.95	5.09	2.28	5.39 CMS
Max	1.10	7.40	5.09	18.32	10.60	17.56	37.60	24.76	17.94	4.88	28.40	5.93	37.60 CMS
Min	0.00	0.13	1.10	1.73	2.68	4.46	4.25	5.93	4.25	2.15	2.04	1.52	0.00 CMS
Runoff	0.632	2.541	5.100	14.964	14.404	23.537	37.668	27.696	17.008	7.892	12.304	6.113	169.858 MCM

Momentary Peak 53.20 CMS, at 1.97 M (AD), at 6.00 Hours, on Feb 13, 1998
Runoff Yield 24.48 Liters/Second/Square KM, Momentary Peak Yield 241.818 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

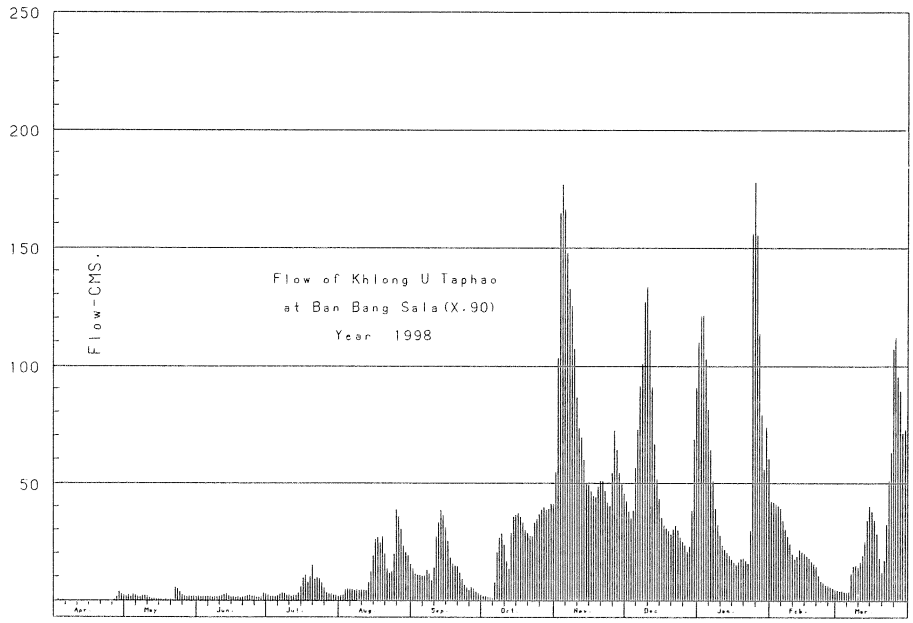
Khlong U Taphao at Ban Bang Sala, Songkhla (X.90)

Location	Lat.06°-55'-39" N., Long. 100°-26'-37" E., on left bank at the bridge, Wat Bang Sala, Tombon Thung Lan, Amphoe Hat Yai, Songkhla.
Drainage Area	1,562 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.68 m. (M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 20 meters from the top staff gage.
Elevation	+8.335 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1971 to date.
Rating Operation	
Period of Rating	1971-1972, 1979 to date.
Rated by Float	-
Rated by Current Meter	1971-1972, 1979 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 58 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.08	1.41	1.38	1.44	1.41	2.25	1.41	4.38	3.88	6.17	3.87	1.66	
2	1.07	1.45	1.38	1.41	1.48	2.10	1.38	5.98	3.66	6.47	3.86	1.64	
3	1.06	1.38	1.37	1.39	1.67	2.09	1.35	7.50	3.51	6.47	3.81	1.63	
4	1.05	1.48	1.37	1.40	1.72	2.07	1.29	7.76	3.69	5.97	3.79	1.61	
5	1.02	1.44	1.36	1.44	1.69	2.06	1.26	7.53	4.45	5.29	3.72	1.59	
6	1.00	1.36	1.35	1.49	1.68	2.05	1.88	7.11	5.03	4.73	3.45	1.60	
7	0.97	1.36	1.34	1.56	1.67	2.21	2.65	6.76	5.60	4.25	3.22	2.12	
8	0.95	1.42	1.34	1.52	1.67	2.10	3.01	6.57	5.91	3.73	3.05	2.31	
9	0.93	1.42	1.36	1.47	1.67	1.95	3.13	6.10	6.62	3.33	2.85	2.31	
10	0.92	1.39	1.37	1.44	1.66	2.25	2.85	5.47	6.77	3.08	2.61	2.28	
11	0.90	1.31	1.42	1.41	1.66	3.04	2.41	5.05	6.32	2.81	2.48	2.39	
12	0.88	1.23	1.50	1.43	1.66	3.39	2.24	4.93	5.59	2.72	2.54	2.58	
13	0.86	1.19	1.51	1.46	1.89	3.70	3.13	4.58	4.83	2.63	2.72	2.91	
14	0.85	1.16	1.44	1.54	2.17	3.57	3.55	4.22	4.28	2.57	2.64	3.46	
15	0.84	1.15	1.35	1.79	2.57	3.28	3.58	4.22	3.93	2.46	2.61	3.76	
16	0.83	1.13	1.33	2.01	2.97	2.94	3.62	4.08	3.53	2.38	2.56	3.67	
17	0.82	1.13	1.33	2.07	3.03	2.52	3.55	3.99	3.32	2.33	2.49	3.44	
18	0.82	1.12	1.33	1.90	2.90	2.36	3.39	3.98	3.26	2.39	2.42	3.12	
19	0.82	1.12	1.29	2.03	3.04	2.32	3.20	4.15	3.18	2.49	2.35	2.49	
20	0.82	1.11	1.31	2.32	2.61	2.29	3.14	4.24	3.11	2.49	2.28	2.15	
21	0.82	1.11	1.35	1.98	2.23	2.14	3.05	4.25	3.22	2.43	2.07	2.45	
22	0.82	1.76	1.44	2.02	2.13	1.97	3.06	4.09	3.31	2.37	1.93	3.34	
23	0.83	1.70	1.43	1.98	2.16	1.84	3.40	3.85	3.21	3.20	1.87	4.24	
24	0.93	1.61	1.41	1.89	2.61	1.74	3.48	3.79	3.03	7.30	1.83	4.70	
25	1.01	1.45	1.38	1.73	3.71	1.68	3.61	4.38	2.92	7.78	1.80	6.10	
26	1.03	1.40	1.34	1.58	3.54	1.77	3.70	5.02	2.82	7.29	1.76	6.23	
27	1.39	1.38	1.33	1.52	3.24	1.70	3.76	4.74	2.67	6.27	1.74	5.74	
28	1.62	1.37	1.32	1.50	2.81	1.62	3.69	4.37	2.79	5.23	1.67	5.55	
29	1.49	1.38	1.56	1.47	2.65	1.52	3.73	4.21	3.67	4.42		4.98	
30	1.43	1.39	1.49	1.44	2.56	1.47	3.83	4.03	4.90	5.06		5.04	
31		1.38		1.42	2.34		3.82		5.59	4.60		5.31	
Mean	1.00	1.34	1.38	1.65	2.28	2.27	2.94	5.04	4.15	4.22	2.64	3.30	
Max	1.62	1.76	1.56	2.32	3.71	3.70	3.83	7.76	6.77	7.78	3.87	6.23	7.78
Min	0.82	1.11	1.29	1.39	1.41	1.47	1.26	3.79	2.67	2.33	1.67	1.59	0.82

Annual Max Momentary Gage Height 7.82 M (MSL), at 6.00 Hours, on Jan 25, 1998
Zero Gage at Bottom Elevation 0.68 M (MSL), River Bed 0.58 M (MSL)
Left Bank Elevation 11.36 M (MSL)
Right Bank Elevation 11.36 M (MSL), Drainage Area 1562 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.70	2.19	1.99	2.46	2.19	14.05	2.19	54.86	42.60	109.95	42.40	4.65	
2	0.68	2.55	1.99	2.19	2.82	11.50	1.99	103.36	38.20	121.40	42.20	4.40	
3	0.65	1.99	1.94	2.05	4.77	11.33	1.83	165.10	35.47	121.40	41.20	4.28	
4	0.62	2.82	1.94	2.10	5.40	10.99	1.49	177.12	38.80	103.04	40.80	4.03	
5	0.55	2.46	1.88	2.46	5.03	10.82	1.33	166.45	56.75	81.28	39.40	3.81	
6	0.50	1.88	1.83	2.91	4.90	10.65	7.76	147.84	72.96	64.31	34.45	3.90	
7	0.46	1.88	1.77	3.54	4.77	13.37	20.85	133.00	91.20	51.35	30.54	11.84	
8	0.42	2.28	1.77	3.18	4.77	11.50	26.97	125.40	101.12	39.60	27.65	15.07	
9	0.40	2.28	1.88	2.73	4.77	8.95	29.01	107.50	127.40	32.41	24.25	15.07	
10	0.38	2.05	1.94	2.46	4.65	14.05	24.25	87.04	133.40	28.16	20.17	14.56	
11	0.35	1.60	2.28	2.19	4.65	27.48	16.77	73.60	115.56	23.57	17.96	16.43	
12	0.32	1.16	3.00	2.37	4.65	33.43	13.88	69.97	90.88	22.04	18.98	19.66	
13	0.29	0.98	3.09	2.64	7.93	39.00	29.01	60.26	67.07	20.51	22.04	25.27	
14	0.28	0.90	2.46	3.36	12.69	36.49	36.15	50.54	52.16	19.49	20.68	34.62	
15	0.26	0.87	1.83	6.28	19.49	31.56	36.66	50.54	43.60	17.62	20.17	40.20	
16	0.24	0.82	1.72	9.97	26.29	25.78	37.40	47.00	35.81	16.26	19.32	38.40	
17	0.23	0.82	1.72	10.99	27.31	18.64	36.15	44.80	32.24	15.41	18.13	34.28	
18	0.23	0.80	1.72	8.10	25.10	15.92	33.43	44.60	31.22	16.43	16.94	28.84	
19	0.23	0.80	1.49	10.31	27.48	15.24	30.20	48.75	29.86	18.13	15.75	18.13	
20	0.23	0.78	1.60	15.24	20.17	14.73	29.18	51.08	28.67	18.13	14.56	12.35	
21	0.23	0.78	1.83	9.46	13.71	12.18	27.65	51.35	30.54	17.11	10.99	17.45	
22	0.23	5.90	2.46	10.14	12.01	9.29	27.82	47.25	32.07	16.09	8.61	32.58	
23	0.24	5.15	2.37	9.46	12.52	7.08	33.60	42.00	30.37	30.20	7.59	51.08	
24	0.40	4.03	2.19	7.93	20.17	5.65	34.96	40.80	27.31	156.20	6.91	63.50	
25	0.52	2.55	1.99	5.53	39.20	4.90	37.20	54.86	25.44	178.06	6.40	107.50	
26	0.57	2.10	1.77	3.72	35.98	6.03	39.00	72.64	23.74	155.76	5.90	112.14	
27	2.05	1.99	1.72	3.18	30.88	5.15	40.20	64.58	21.19	113.66	5.65	95.68	
28	4.15	1.94	1.66	3.00	23.57	4.15	38.80	54.59	23.23	79.36	4.77	89.60	
29	2.91	1.99	3.54	2.73	20.85	3.18	39.60	50.27	38.40	55.94		71.42	
30	2.37	2.05	2.91	2.46	19.32	2.73	41.60	45.75	69.10	73.92		73.28	
31		1.99		2.28	15.58		41.40		90.88	60.80		81.92	
Total	21.69	62.38	62.28	157.42	463.62	435.82	818.33	2332 90	1677.24	1877.59	584.41	1145.94	9639.62 CMSDAY
Mean	0.72	2.01	2.08	5.08	14.96	14.53	26.40	77.76	54.10	60.57	20.87	36.97	26.41 CMS
Max	4.15	5.90	3.54	15.24	39.20	39.00	41.60	177.12	133.40	178.06	42.40	112.14	178.06 CMS
Min	0.23	0.78	1.49	2.05	2.19	2.73	1.33	40.80	21.19	15.41	4.77	3.81	0.23 CMS
Runoff	1.874	5.390	5.381	13.601	40.057	37.655	70.704	201.563	144.914	162.224	50.493	99.009	832.863 MCM

Momentary Peak 180.00 CMS, at 7.82 M (MSL), at 6.00 Hours, on Jan 25, 1998
Runoff Yield 16.91 Liters/Second/Square KM, Momentary Peak Yield 115.237 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

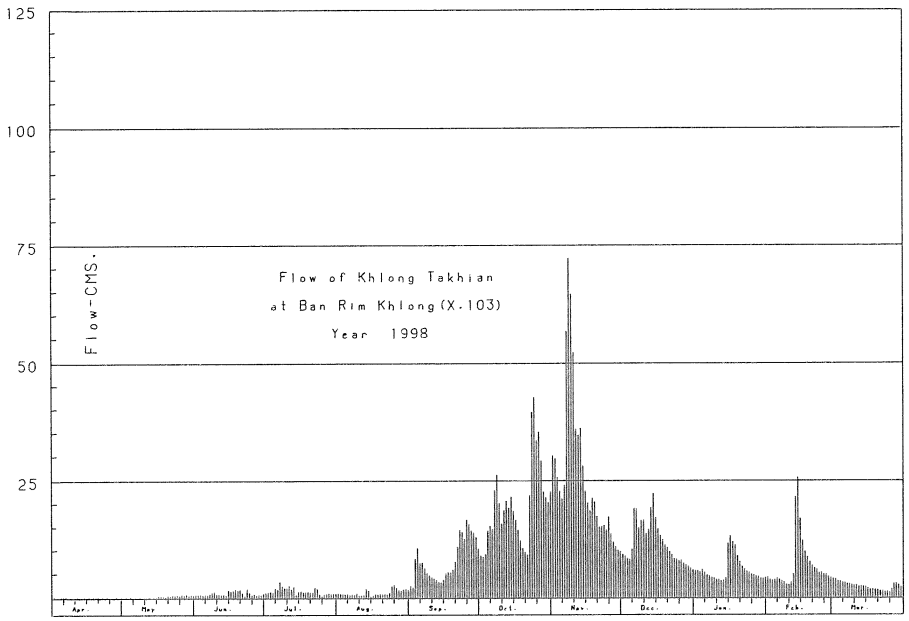
Khlong Takhian at Ban Rim Khlong, Surat Thani (X.103)

Location	Lat.09°-25'-31" N., Long. 99°-09'-44" E., on left bank at Ban Rim Khlong, Amphoe Chaiya, Surat Thani.
Drainage Area	180 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+7.20 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 35 meters from the top staff gage.
Elevation	+14.745 m.(M.S.L.)
Gage Reading Frequency	13-time daily readings at 06.00-18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1978 to date.
Rated by Float	-
Rated by Current Meter	1978 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 56 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.78	7.73	7.91	8.05	8.01	8.28	9.04	10.76	9.07	8.70	8.54	8.51	
2	7.73	7.73	7.95	8.04	8.01	8.25	9.00	10.73	9.02	8.71	8.49	8.49	
3	7.71	7.72	7.94	8.09	7.99	8.96	9.07	10.46	8.98	8.67	8.45	8.45	
4	7.73	7.72	7.93	8.04	7.99	9.20	9.55	10.26	8.95	8.74	8.48	8.43	
5	7.80	7.72	7.93	8.20	7.97	8.87	9.66	10.15	9.18	8.66	8.51	8.41	
6	7.73	7.72	7.94	8.18	7.96	8.89	9.58	10.35	9.98	8.61	8.49	8.39	
7	7.73	7.71	7.98	8.43	7.96	8.77	10.28	12.12	9.97	8.57	8.44	8.37	
8	7.72	7.71	8.06	8.27	7.97	8.64	10.51	12.76	9.62	8.55	8.41	8.35	
9	7.72	7.71	8.07	8.23	8.02	8.60	10.06	12.46	9.77	8.51	8.35	8.34	
10	7.72	7.71	8.00	8.23	7.90	8.53	9.71	11.91	9.77	8.49	8.34	8.32	
11	7.75	7.71	7.96	8.29	7.88	8.51	9.94	11.09	9.49	8.47	8.40	8.31	
12	7.75	7.71	7.96	8.19	7.94	8.46	10.10	11.03	9.59	8.46	8.63	8.28	
13	7.75	7.71	7.93	8.25	8.18	8.42	10.00	11.11	9.99	8.45	10.17	8.27	
14	7.75	7.71	7.93	7.94	8.15	8.39	10.18	10.63	10.23	8.53	10.47	8.27	
15	7.75	7.74	8.16	8.08	7.80	8.48	9.93	10.27	9.83	9.29	9.81	8.25	
16	7.75	7.84	8.09	8.10	7.90	8.63	9.77	10.07	9.59	9.45	9.35	8.21	
17	7.75	7.85	8.14	8.08	7.96	8.67	9.58	9.95	9.47	9.34	9.13	8.18	
18	7.75	7.81	8.17	8.06	7.98	8.65	9.35	10.15	9.37	9.26	9.00	8.17	
19	7.75	7.80	8.16	8.09	7.99	8.73	9.20	10.10	9.27	9.04	8.91	8.17	
20	7.74	7.86	8.16	8.05	8.00	8.89	9.11	9.84	9.20	8.90	8.82	8.15	
21	7.74	7.86	8.05	8.07	7.97	9.23	9.06	9.64	9.13	8.81	8.78	8.13	
22	7.74	7.88	7.88	8.23	7.99	9.57	10.19	9.64	9.05	8.74	8.73	8.11	
23	7.74	7.90	8.18	8.21	8.02	9.54	11.29	9.66	8.98	8.70	8.66	8.09	
24	7.74	7.89	8.06	7.99	8.29	9.38	11.44	9.58	8.95	8.66	8.66	8.09	
25	7.74	7.89	7.95	7.85	8.31	9.79	10.96	9.84	8.93	8.63	8.63	8.07	
26	7.74	7.93	7.98	7.96	8.23	9.68	11.06	9.49	8.93	8.60	8.61	8.19	
27	7.74	7.91	7.93	8.01	8.16	9.57	10.70	9.33	8.88	8.58	8.57	8.35	
28	7.73	7.93	7.93	8.01	8.11	9.51	10.26	9.22	8.83	8.55	8.53	8.36	
29	7.73	7.89	7.93	8.01	8.18	9.43	10.16	9.16	8.81	8.52		8.33	
30	7.73	7.91	8.00	8.00	8.18	9.18	10.09	9.12	8.75	8.50		8.24	
31		7.91		8.02	8.16		10.25		8.73	8.54		8.19	
Mean	7.74	7.80	8.01	8.10	8.04	8.92	9.97	10.36	9.30	8.72	8.80	8.27	
Max	7.80	7.93	8.18	8.43	8.31	9.79	11.44	12.76	10.23	9.45	10.47	8.51	12.76
Min	7.71	7.71	7.88	7.85	7.80	8.25	9.00	9.12	8.73	8.45	8.34	8.07	7.71

Annual Max Momentary Gage Height 12.88 M (MSL), at 6.00 Hours, on Nov 8, 1998
Zero Gage at Bottom Elevation 7.20 M (MSL), River Bed 6.74 M (MSL)
Left Bank Elevation 16.37 M (MSL)
Right Bank Elevation 16.32 M (MSL), Drainage Area 180 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.36	0.26	0.73	1.28	1.06	2.62	9.20	30.35	9.50	5.90	4.52	4.28	
2	0.26	0.26	0.85	1.22	1.06	2.43	8.80	29.88	9.00	5.99	4.12	4.12	
3	0.22	0.24	0.82	1.50	0.97	8.40	9.50	25.70	8.60	5.63	3.80	3.80	
4	0.26	0.24	0.79	1.22	0.97	10.80	14.38	22.84	8.30	6.26	4.04	3.64	
5	0.40	0.24	0.79	2.10	0.91	7.50	15.53	21.35	10.60	5.54	4.28	3.48	
6	0.26	0.24	0.82	1.99	0.88	7.70	14.69	24.10	19.16	5.09	4.12	3.34	
7	0.26	0.22	0.94	3.64	0.88	6.53	23.12	56.96	19.04	4.76	3.72	3.21	
8	0.24	0.22	1.33	2.56	0.91	5.36	26.45	72.36	15.11	4.60	3.48	3.08	
9	0.24	0.22	1.38	2.29	1.11	5.00	20.18	64.84	16.69	4.28	3.08	3.01	
10	0.24	0.22	1.00	2.29	0.70	4.44	16.05	52.31	16.69	4.12	3.01	2.88	
11	0.30	0.22	0.88	2.69	0.64	4.28	18.68	36.02	13.75	3.96	3.40	2.82	
12	0.30	0.22	0.88	2.04	0.82	3.88	20.70	34.94	14.80	3.88	5.27	2.62	
13	0.30	0.22	0.79	2.43	1.99	3.56	19.40	36.38	19.28	3.80	21.61	2.56	
14	0.30	0.22	0.79	0.82	1.82	3.34	21.74	28.28	22.42	4.44	25.85	2.56	
15	0.30	0.28	1.88	1.44	0.40	4.04	18.56	22.98	17.36	11.70	17.12	2.43	
16	0.30	0.52	1.50	1.55	0.70	5.27	16.69	20.31	14.80	13.33	12.30	2.17	
17	0.30	0.55	1.77	1.44	0.88	5.63	14.69	18.80	13.54	12.20	10.10	1.99	
18	0.30	0.43	1.94	1.33	0.94	5.45	12.30	21.35	12.50	11.40	8.80	1.94	
19	0.30	0.40	1.88	1.50	0.97	6.17	10.80	20.70	11.50	9.20	7.90	1.94	
20	0.28	0.58	1.88	1.28	1.00	7.70	9.90	17.48	10.80	7.80	7.00	1.82	
21	0.28	0.58	1.28	1.38	0.91	11.10	9.40	15.32	10.10	6.90	6.62	1.72	
22	0.28	0.64	0.64	2.29	0.97	14.58	21.87	15.32	9.30	6.26	6.17	1.60	
23	0.28	0.70	1.99	2.17	1.11	14.27	39.80	15.53	8.60	5.90	5.54	1.50	
24	0.28	0.67	1.33	0.97	2.69	12.60	42.80	14.69	8.30	5.54	5.54	1.50	
25	0.28	0.67	0.85	0.55	2.82	16.89	33.72	17.48	8.10	5.27	5.27	1.38	
26	0.28	0.79	0.94	0.88	2.29	15.74	35.48	13.75	8.10	5.00	5.09	2.04	
27	0.28	0.73	0.79	1.06	1.88	14.58	29.40	12.10	7.60	4.84	4.76	3.08	
28	0.26	0.79	0.79	1.06	1.60	13.96	22.84	11.00	7.10	4.60	4.44	3.14	
29	0.26	0.67	0.79	1.06	1.99	13.12	21.48	10.40	6.90	4.36		2.95	
30	0.26	0.73	1.00	1.00	1.99	10.60	20.57	10.00	6.35	4.20		2.36	
31		0.73		1.11	1.88		22.70		6.17	4.52		2.04	
Total	8.46	13.70	34.04	50.14	39.74	247.54	621.42	793.53	370.06	191.27	200.95	81.00	2651.85 CMSDAY
Mean	0.28	0.44	1.13	1.62	1.28	8.25	20.05	26.45	11.94	6.17	7.18	2.61	7.27 CMS
Max	0.40	0.79	1.99	3.64	2.82	16.89	42.80	72.36	22.42	13.33	25.85	4.28	72.36 CMS
Min	0.22	0.22	0.64	0.55	0.40	2.43	8.80	10.00	6.17	3.80	3.01	1.38	0.22 CMS
Runoff	0.731	1.184	2.941	4.332	3.434	21.387	53.691	68.561	31.973	16.526	17.362	6.998	229.120 MCM

Momentary Peak 75.56 CMS, at 12.88 M (MSL), at 6.00 Hours, on Nov 8, 1998

Runoff Yield 40.36 Liters/Second/Square KM, Momentary Peak Yield 419.778 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

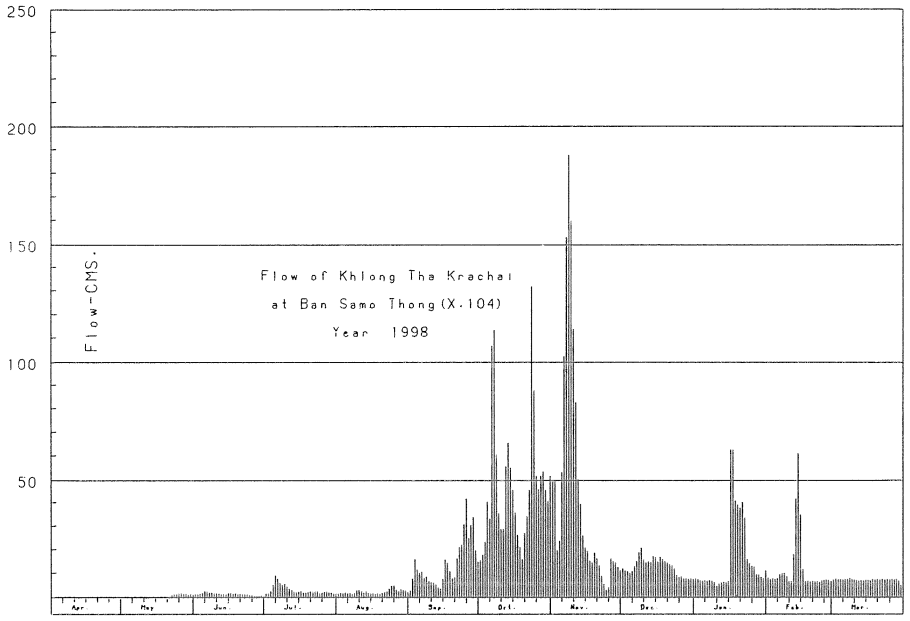
Khlong Tha Krachai at Ban Samo Thong, Surat Thani (X.104)

Location	Lat.09°-34'-47" N., Long. 99°-08'-14" E., on left bank at Ban Samo Thong, Amphoe Tha Chana, Surat Thani.
Drainage Area	354 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+6.70 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 10 meters downstream from the top staff gage.
Elevation	+15.446 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1978 to date.
Rated by Float	-
Rated by Current Meter	1978 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.63	6.63	6.74	6.76	6.78	6.86	7.55	8.64	7.40	7.20	7.21	7.18	
2	6.63	6.63	6.75	6.79	6.79	7.20	7.65	8.65	7.35	7.20	7.20	7.19	
3	6.63	6.63	6.76	6.84	6.80	7.58	7.85	7.72	7.35	7.15	7.20	7.19	
4	6.63	6.63	6.81	7.04	6.80	7.38	8.38	7.86	7.30	7.15	7.20	7.18	
5	6.63	6.63	6.85	7.27	6.79	7.32	8.17	8.74	7.35	7.15	7.20	7.18	
6	6.63	6.63	6.83	7.19	6.78	7.33	9.94	9.85	7.43	7.15	7.29	7.18	
7	6.64	6.63	6.82	7.09	6.76	7.22	10.08	10.79	7.54	7.15	7.30	7.20	
8	6.64	6.62	6.80	7.02	6.79	7.24	8.92	11.37	7.68	7.15	7.30	7.21	
9	6.64	6.62	6.79	7.07	6.88	7.14	8.23	10.90	7.76	7.10	7.25	7.19	
10	6.64	6.62	6.79	6.97	6.87	7.10	8.04	10.08	7.56	7.00	7.14	7.18	
11	6.64	6.61	6.77	6.91	6.86	7.08	8.03	9.45	7.51	7.05	7.12	7.15	
12	6.63	6.61	6.76	6.89	6.80	7.03	8.80	8.66	7.52	7.10	7.66	7.15	
13	6.63	6.61	6.75	6.83	6.85	6.96	9.05	8.36	7.52	7.10	8.42	7.15	
14	6.63	6.60	6.75	6.82	6.79	6.91	8.78	7.94	7.62	7.10	8.94	7.16	
15	6.63	6.60	6.79	6.85	6.79	7.20	8.54	7.76	7.60	7.12	8.21	7.16	
16	6.63	6.60	6.79	6.84	6.78	7.57	8.24	7.70	7.53	8.98	7.38	7.16	
17	6.63	6.60	6.78	6.82	6.77	7.50	7.96	7.55	7.62	8.97	7.14	7.16	
18	6.64	6.61	6.77	6.80	6.78	7.35	7.76	7.50	7.57	8.40	7.13	7.18	
19	6.64	6.61	6.76	6.83	6.77	7.21	7.58	7.68	7.54	8.34	7.13	7.18	
20	6.64	6.61	6.75	6.84	6.79	7.22	7.98	7.58	7.50	8.30	7.13	7.18	
21	6.64	6.60	6.74	6.84	6.81	7.58	8.20	7.46	7.48	8.38	7.13	7.18	
22	6.64	6.72	6.74	6.84	6.85	7.77	8.53	7.26	7.45	8.18	7.12	7.18	
23	6.64	6.73	6.73	6.84	6.93	7.80	10.44	7.04	7.40	7.58	7.12	7.18	
24	6.63	6.75	6.72	6.80	7.00	8.10	9.56	6.89	7.27	7.49	7.14	7.18	
25	6.63	6.77	6.69	6.80	7.00	8.43	8.70	6.95	7.24	7.45	7.17	7.18	
26	6.63	6.77	6.68	6.84	6.90	7.90	8.54	7.58	7.24	7.42	7.18	7.18	
27	6.63	6.77	6.67	6.83	6.85	8.08	8.70	7.54	7.21	7.29	7.15	7.18	
28	6.63	6.76	6.68	6.82	6.90	8.19	8.74	7.50	7.20	7.27	7.12	7.18	
29	6.63	6.73	6.68	6.80	6.89	7.71	8.54	7.43	7.20	7.24		7.15	
30	6.63	6.74	6.66	6.78	6.86	7.53	8.39	7.35	7.20	7.20		7.00	
31		6.74		6.76	6.83		8.69		7.20	7.36		6.95	
Mean	6.63	6.66	6.75	6.88	6.83	7.45	8.53	8.26	7.43	7.51	7.35	7.16	
Max	6.64	6.77	6.85	7.27	7.00	8.43	10.44	11.37	7.76	8.98	8.94	7.21	11.37
Min	6.63	6.60	6.66	6.76	6.76	6.86	7.55	6.89	7.20	7.00	7.12	6.95	6.60

Annual Max Momentary Gage Height 11.70 M (MSL), at 18.00 Hours, on Nov 8, 1998
Zero Gage at Bottom Elevation 6.70 M (MSL), River Bed 5.76 M (MSL)
Left Bank Elevation 17.51 M (MSL)
Right Bank Elevation 17.39 M (MSL), Drainage Area 354 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.30	0.30	1.40	1.60	1.80	2.90	15.88	49.60	12.50	8.00	8.23	7.70	
2	0.30	0.30	1.50	1.90	1.90	8.00	18.38	50.00	11.38	8.00	8.00	7.85	
3	0.30	0.30	1.60	2.60	2.00	16.55	23.87	20.30	11.38	7.25	8.00	7.85	
4	0.30	0.30	2.15	5.60	2.00	12.05	40.74	24.15	10.25	7.25	8.00	7.70	
5	0.30	0.30	2.75	9.58	1.90	10.70	33.78	53.60	11.38	7.25	8.00	7.70	
6	0.30	0.30	2.45	7.85	1.80	10.93	107.00	102.50	13.17	7.25	10.03	7.70	
7	0.40	0.30	2.30	6.35	1.60	8.45	114.00	153.40	15.65	7.25	10.25	8.00	
8	0.40	0.20	2.00	5.30	1.90	8.90	60.80	188.20	19.20	7.25	10.25	8.23	
9	0.40	0.20	1.90	6.05	3.20	7.10	35.79	160.00	21.40	6.50	9.13	7.85	
10	0.40	0.20	1.90	4.55	3.05	6.50	29.36	114.00	16.10	5.00	7.10	7.70	
11	0.40	0.10	1.70	3.65	2.90	6.20	29.02	83.25	14.98	5.75	6.80	7.25	
12	0.30	0.10	1.60	3.35	2.00	5.45	56.00	50.40	15.20	6.50	18.65	7.25	
13	0.30	0.10	1.50	2.45	2.75	4.40	66.00	40.08	15.20	6.50	42.06	7.25	
14	0.30	0.00	1.50	2.30	1.90	3.65	55.20	26.35	17.55	6.50	61.60	7.40	
15	0.30	0.00	1.90	2.75	1.90	8.00	46.02	21.40	17.00	6.80	35.13	7.40	
16	0.30	0.00	1.90	2.60	1.80	16.33	36.12	19.75	15.43	63.20	12.05	7.40	
17	0.30	0.00	1.80	2.30	1.70	14.75	26.90	15.88	17.55	62.80	7.10	7.40	
18	0.40	0.10	1.70	2.00	1.80	11.38	21.40	14.75	16.33	41.40	6.95	7.70	
19	0.40	0.10	1.60	2.45	1.70	8.23	16.55	19.20	15.65	39.42	6.95	7.70	
20	0.40	0.10	1.50	2.60	1.90	8.45	27.45	16.55	14.75	38.10	6.95	7.70	
21	0.40	0.00	1.40	2.60	2.15	16.55	34.80	13.85	14.30	40.74	6.95	7.70	
22	0.40	1.20	1.40	2.60	2.75	21.68	45.69	9.35	13.62	34.12	6.80	7.70	
23	0.40	1.30	1.30	2.60	3.95	22.50	132.40	5.60	12.50	16.55	6.80	7.70	
24	0.30	1.50	1.20	2.00	5.00	31.40	88.20	3.35	9.58	14.52	7.10	7.70	
25	0.30	1.70	0.90	2.00	5.00	42.39	52.00	4.25	8.90	13.62	7.55	7.70	
26	0.30	1.70	0.80	2.60	3.50	25.25	46.02	16.55	8.90	12.95	7.70	7.70	
27	0.30	1.70	0.70	2.45	2.75	30.72	52.00	15.65	8.23	10.03	7.25	7.70	
28	0.30	1.60	0.80	2.30	3.50	34.46	53.60	14.75	8.00	9.58	6.80	7.70	
29	0.30	1.30	0.80	2.00	3.35	20.03	46.02	13.17	8.00	8.90		7.25	
30	0.30	1.40	0.60	1.80	2.90	15.43	41.07	11.38	8.00	8.00		5.00	
31		1.40		1.60	2.45		51.60		8.00	11.60		4.25	
Total	10.10	18.10	46.55	102.38	78.80	439.33	1503.66	1331.26	410.08	528.58	348.18	230.83	5047.85 CMSDAY
Mean	0.34	0.58	1.55	3.30	2.54	14.64	48.51	44.38	13.23	17.05	12.44	7.45	13.83 CMS
Max	0.40	1.70	2.75	9.58	5.00	42.39	132.40	188.20	21.40	63.20	61.60	8.23	188.20 CMS
Min	0.30	0.00	0.60	1.60	1.60	2.90	15.88	3.35	8.00	5.00	6.80	4.25	0.00 CMS
Runoff	0.873	1.564	4.022	8.846	6.808	37.958	129.916	115.021	35.431	45.669	30.083	19.944	436.134 MCM

Momentary Peak 208.50 CMS, at 11.70 M (MSL), at 18.00 Hours, on Nov 8, 1998
Runoff Yield 39.07 Liters/Second/Square KM, Momentary Peak Yield 588.983 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

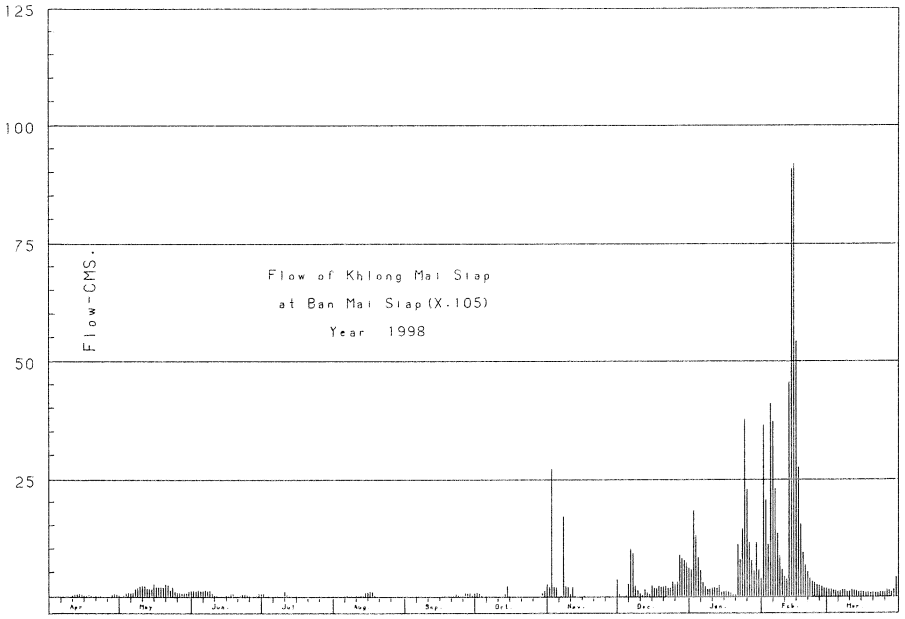
Khlong Mai Siap at Ban Mai Siap, Nakhon Si Thammarat (X.105)

Location	Lat.07°-51'-01" N., Long. 99°-55'-53" E., on left bank at the bridge of Nakhon Si Thammarat-Phatthalung Highway, at Ban Mai Siap, Amphoe Cha-uat, Nakhon Si Thammarat.
Drainage Area	155 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+10.49 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	Infront of the station office.
Elevation	+20.279 m.(M.S.L.)
Gage Reading Frequency	13-time daily readings at 06.00-18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 41 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	11.31	11.36	11.56	11.46	11.29	11.27	11.49	11.71	11.46	12.18	13.55	11.63	
2	11.28	11.37	11.56	11.21	11.29	11.31	11.48	13.24	11.32	12.90	12.99	11.60	
3	11.23	11.48	11.58	11.31	11.28	11.28	11.29	11.72	11.27	12.65	12.55	11.59	
4	11.21	11.49	11.57	11.25	11.28	11.32	11.25	11.68	11.39	12.40	13.68	11.57	
5	11.22	11.50	11.57	11.27	11.32	11.32	11.35	11.29	11.82	12.17	13.58	11.55	
6	11.23	11.48	11.58	11.33	11.38	11.29	11.15	11.31	12.50	11.87	13.08	11.55	
7	11.23	11.64	11.57	11.33	11.35	11.27	11.13	12.85	12.45	11.71	12.68	11.61	
8	11.24	11.66	11.56	11.34	11.36	11.14	11.12	11.77	11.73	11.63	12.41	11.59	
9	11.24	11.73	11.48	11.34	11.36	11.24	11.12	11.71	11.59	11.62	12.19	11.55	
10	11.39	11.74	11.34	11.55	11.33	11.14	11.12	11.45	11.46	11.68	12.04	11.54	
11	11.45	11.75	11.34	11.41	11.36	11.12	11.12	11.69	11.40	11.67	11.95	11.61	
12	11.45	11.66	11.34	11.40	11.34	11.12	11.15	11.44	11.62	11.67	13.79	11.59	
13	11.46	11.62	11.34	11.38	11.41	11.12	11.46	11.29	11.49	11.75	14.80	11.56	
14	11.44	11.64	11.34	11.39	11.49	11.12	11.75	11.24	11.46	11.53	14.82	11.54	
15	11.38	11.80	11.34	11.39	11.52	11.12	11.19	11.19	11.76	11.55	14.01	11.53	
16	11.35	11.69	11.39	11.30	11.54	11.13	11.16	11.31	11.66	11.54	13.25	11.52	
17	11.44	11.69	11.46	11.14	11.54	11.39	11.14	11.30	11.66	11.54	12.78	11.52	
18	11.34	11.69	11.47	11.12	11.34	11.36	11.14	11.28	11.73	11.48	12.46	11.51	
19	11.34	11.70	11.16	11.12	11.19	11.34	11.14	11.26	11.71	11.42	12.26	11.50	
20	11.34	11.79	11.36	11.11	11.15	11.35	11.14	11.17	11.70	11.44	12.14	11.50	
21	11.33	11.78	11.40	11.11	11.14	11.40	11.14	11.16	11.73	12.56	11.98	11.51	
22	11.34	11.60	11.44	11.10	11.14	11.45	11.14	11.14	11.67	12.36	11.90	11.51	
23	11.24	11.69	11.44	11.13	11.14	11.39	11.14	11.14	11.66	12.72	11.84	11.52	
24	11.18	11.55	11.43	11.15	11.13	11.35	11.26	11.17	11.89	13.59	11.79	11.53	
25	11.12	11.49	11.37	11.26	11.13	11.36	11.15	11.16	11.78	13.08	11.74	11.50	
26	11.11	11.48	11.37	11.27	11.20	11.50	11.14	11.22	11.89	12.58	11.71	11.60	
27	11.43	11.48	11.38	11.26	11.21	11.48	11.14	11.17	12.43	12.33	11.67	11.59	
28	11.45	11.48	11.40	11.27	11.28	11.48	11.19	11.14	12.37	12.16	11.64	11.52	
29	11.45	11.49	11.46	11.27	11.31	11.39	11.49	11.14	12.35	12.57		11.62	
30	11.39	11.54	11.47	11.28	11.26	11.48	11.56	11.97	12.30	12.17		12.02	
31		11.57		11.27	11.33		11.78		12.21	12.00		11.84	
Mean	11.32	11.60	11.44	11.27	11.30	11.30	11.26	11.48	11.79	12.08	12.69	11.58	
Max	11.46	11.80	11.58	11.55	11.54	11.50	11.78	13.24	12.50	13.59	14.82	12.02	14.82
Min	11.11	11.36	11.16	11.10	11.13	11.12	11.12	11.14	11.27	11.42	11.64	11.50	11.10

Annual Max Momentary Gage Height 15.24 M (MSL), at 6.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 10.49 M (MSL), River Bed 10.51 M (MSL)
Left Bank Elevation 22.06 M (MSL)
Right Bank Elevation 22.19 M (MSL), Drainage Area 155 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.21	0.26	1.26	0.66	0.19	0.17	0.84	2.16	0.66	5.80	36.50	1.68	
2	0.18	0.27	1.26	0.11	0.19	0.21	0.78	27.20	0.22	18.50	20.75	1.50	
3	0.13	0.78	1.38	0.21	0.18	0.18	0.19	2.22	0.17	13.00	11.13	1.44	
4	0.11	0.84	1.32	0.15	0.18	0.22	0.15	1.98	0.29	8.50	41.20	1.32	
5	0.12	0.90	1.32	0.17	0.22	0.22	0.25	0.19	2.83	5.70	37.40	1.20	
6	0.13	0.78	1.38	0.23	0.28	0.19	0.07	0.21	10.25	3.15	23.00	1.20	
7	0.13	1.74	1.32	0.23	0.25	0.17	0.07	17.25	9.38	2.16	13.60	1.56	
8	0.14	1.86	1.26	0.24	0.26	0.07	0.06	2.52	2.28	1.68	8.68	1.44	
9	0.14	2.28	0.78	0.24	0.26	0.14	0.06	2.16	1.44	1.62	5.90	1.20	
10	0.29	2.34	0.24	1.20	0.23	0.07	0.06	0.60	0.66	1.98	4.40	1.14	
11	0.60	2.40	0.24	0.36	0.26	0.06	0.06	2.04	0.30	1.92	3.67	1.56	
12	0.60	1.86	0.24	0.30	0.24	0.06	0.07	0.54	1.62	1.92	45.60	1.44	
13	0.66	1.62	0.24	0.28	0.36	0.06	0.66	0.19	0.84	2.40	91.00	1.26	
14	0.54	1.74	0.24	0.29	0.84	0.06	2.40	0.14	0.66	1.08	92.00	1.14	
15	0.28	2.70	0.24	0.29	1.02	0.06	0.09	0.09	2.46	1.20	54.40	1.08	
16	0.25	2.04	0.29	0.20	1.14	0.07	0.08	0.21	1.86	1.14	27.50	1.02	
17	0.54	2.04	0.66	0.07	1.14	0.29	0.07	0.20	1.86	1.14	15.60	1.02	
18	0.24	2.04	0.72	0.06	0.24	0.26	0.07	0.18	2.28	0.78	9.55	0.96	
19	0.24	2.10	0.08	0.06	0.09	0.24	0.07	0.16	2.16	0.42	6.75	0.90	
20	0.24	2.64	0.26	0.05	0.07	0.25	0.07	0.09	2.10	0.54	5.40	0.90	
21	0.23	2.58	0.30	0.05	0.07	0.30	0.07	0.08	2.28	11.30	3.87	0.96	
22	0.24	1.50	0.54	0.05	0.07	0.60	0.07	0.07	1.92	8.00	3.35	0.96	
23	0.14	2.04	0.54	0.07	0.07	0.29	0.07	0.07	1.86	14.40	2.96	1.02	
24	0.09	1.20	0.48	0.07	0.07	0.25	0.16	0.09	3.29	37.70	2.64	1.08	
25	0.06	0.84	0.27	0.16	0.07	0.26	0.07	0.08	2.58	23.00	2.34	0.90	
26	0.05	0.78	0.27	0.17	0.10	0.90	0.07	0.12	3.29	11.65	2.16	1.50	
27	0.48	0.78	0.28	0.16	0.11	0.78	0.07	0.09	9.03	7.63	1.92	1.44	
28	0.60	0.78	0.30	0.17	0.18	0.78	0.09	0.07	8.13	5.60	1.74	1.02	
29	0.60	0.84	0.66	0.17	0.21	0.29	0.84	0.07	7.88	11.47		1.62	
30	0.29	1.14	0.72	0.18	0.16	0.78	1.26	3.81	7.25	5.70		4.20	
31		1.32		0.17	0.23		2.58		6.13	4.00		2.96	
Total	8.55	47.03	19.09	6.82	8.98	8.28	11.52	64.88	97.96	215.08	575.01	42.62	1105.82 CMSDAY
Mean	0.28	1.52	0.64	0.22	0.29	0.28	0.37	2.16	3.16	6.94	20.54	1.37	3.03 CMS
Max	0.66	2.70	1.38	1.20	1.14	0.90	2.58	27.20	10.25	37.70	92.00	4.20	92.00 CMS
Min	0.05	0.26	0.08	0.05	0.07	0.06	0.06	0.07	0.17	0.42	1.74	0.90	0.05 CMS
Runoff	0.739	4.063	1.649	0.589	0.776	0.715	0.995	5.606	8.464	18.583	49.681	3.682	95.543 MCM

Momentary Peak 113.60 CMS, at 15.24 M (MSL), at 6.00 Hours, on Feb 13, 1998
Runoff Yield 19.55 Liters/Second/Square KM, Momentary Peak Yield 732.903 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

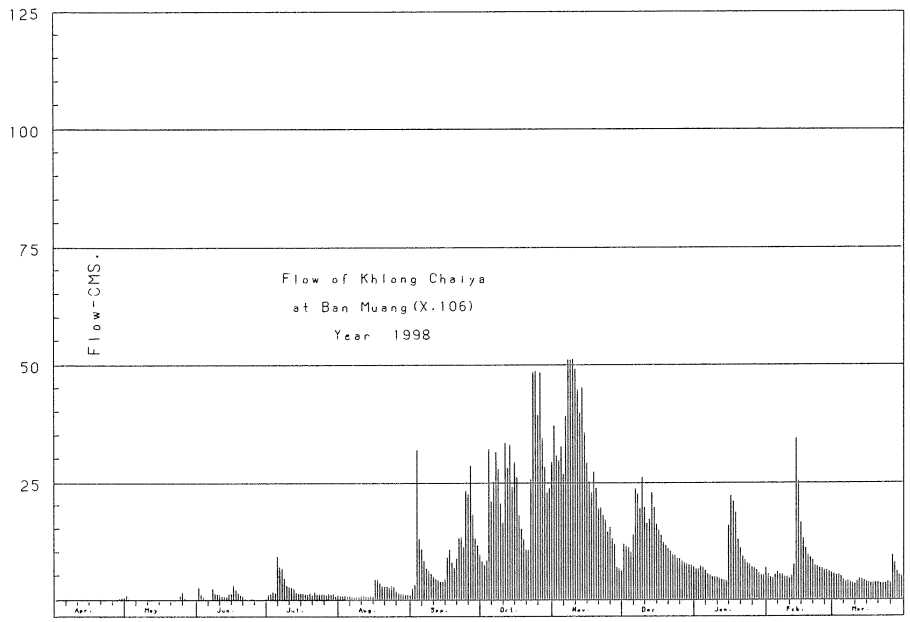
Khlong Chaiya at Ban Muang, Surat Thani (X.106)

Location	Lat.09°-23'-46" N., Long. 99°-10'-31" E., on left bank at Ban Muang, Amphoe Chaiya, Surat Thani.
Drainage Area	309 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+7.06 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank infront of the gage observer's house.
Elevation	+10.247 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1978 to date.
Rated by Float	-
Rated by Current Meter	1978 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Chaiya weir about 4 kilometers above gage site. Stage-discharge relation defined by 34 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.60	6.90	7.20	6.91	6.87	7.14	7.87	9.83	8.19	7.71	7.56	7.57	
2	6.60	6.81	6.94	6.97	6.89	7.28	7.80	9.47	8.15	7.70	7.50	7.55	
3	6.60	6.75	6.84	7.02	6.88	9.55	7.90	9.42	8.14	7.78	7.45	7.54	
4	6.60	6.70	6.77	7.00	6.87	8.28	9.55	9.59	8.05	7.73	7.55	7.52	
5	6.59	6.65	6.73	7.98	6.86	8.11	8.87	9.25	8.36	7.67	7.62	7.41	
6	6.59	6.62	6.71	7.74	6.84	7.88	9.15	9.93	9.05	7.58	7.58	7.37	
7	6.59	6.59	7.15	7.72	6.83	7.72	9.52	10.57	8.97	7.54	7.55	7.38	
8	6.59	6.58	6.96	7.45	6.82	7.66	9.31	10.56	8.78	7.50	7.51	7.36	
9	6.58	6.58	6.95	7.26	6.84	7.59	8.85	10.58	9.20	7.49	7.49	7.31	
10	6.58	6.60	6.91	7.20	6.86	7.50	8.57	10.46	8.79	7.49	7.47	7.30	
11	6.57	6.61	6.86	7.18	6.89	7.45	9.63	10.23	8.54	7.45	7.54	7.38	
12	6.56	6.59	6.84	7.15	6.84	7.40	9.33	9.97	8.62	7.43	7.79	7.44	
13	6.55	6.58	6.85	7.00	6.84	7.37	9.60	10.26	9.00	7.41	9.68	7.44	
14	6.55	6.59	6.93	6.98	6.86	7.35	9.07	9.75	8.80	7.39	9.15	7.38	
15	6.55	6.60	6.96	6.97	6.85	7.44	9.39	9.39	8.54	8.51	8.57	7.36	
16	6.54	6.62	7.25	6.96	7.43	7.95	9.21	9.15	8.43	8.95	8.29	7.33	
17	6.54	6.62	7.11	6.95	7.42	8.09	8.67	8.99	8.35	8.88	8.14	7.33	
18	6.54	6.65	6.98	6.92	7.33	7.86	8.46	9.27	8.22	8.72	8.00	7.32	
19	6.53	6.67	6.91	7.00	7.21	7.74	8.27	9.06	8.18	8.28	7.96	7.35	
20	6.52	6.67	6.86	6.89	7.21	7.93	8.10	8.77	8.11	8.12	7.89	7.33	
21	6.51	6.66	6.77	7.02	7.23	8.31	8.08	8.78	8.07	7.98	7.80	7.31	
22	6.50	6.67	6.74	6.94	7.19	8.31	9.18	8.68	8.01	7.90	7.76	7.29	
23	6.49	6.68	6.71	6.94	7.23	8.15	10.42	8.60	7.99	7.84	7.73	7.32	
24	6.48	6.88	6.78	6.96	7.22	9.02	10.44	8.41	7.94	7.81	7.71	7.35	
25	6.51	7.01	6.69	6.93	7.04	8.97	9.95	8.48	7.92	7.75	7.68	7.33	
26	6.56	6.80	6.66	6.92	6.98	9.36	10.43	8.29	7.89	7.71	7.66	8.00	
27	6.66	6.71	6.65	6.95	6.96	8.69	9.68	8.20	7.85	7.68	7.64	7.83	
28	6.77	6.70	6.63	6.93	6.94	8.29	9.33	7.75	7.82	7.59	7.59	7.64	
29	6.81	6.69	6.63	6.95	6.93	8.18	9.00	7.70	7.81	7.55		7.53	
30	6.80	6.69	6.78	6.86	6.91	8.01	9.05	7.66	7.78	7.53		7.51	
31		6.70		6.89	6.92		9.39		7.75	7.74		7.51	
Mean	6.58	6.68	6.86	7.08	7.00	8.02	9.10	9.24	8.30	7.82	7.85	7.44	
Max	6.81	7.01	7.25	7.98	7.43	9.55	10.44	10.58	9.20	8.95	9.68	8.00	10.58
Min	6.48	6.58	6.63	6.86	6.82	7.14	7.80	7.66	7.75	7.39	7.45	7.29	6.48

Annual Max Momentary Gage Height 10.59 M (MSL), at 15.00 Hours, on Nov 7, 1998
Zero Gage at Bottom Elevation 7.06 M (MSL), River Bed 6.37 M (MSL)
Left Bank Elevation 12.16 M (MSL)
Right Bank Elevation 12.12 M (MSL), Drainage Area 309 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	1.05	2.80	1.10	0.88	2.44	8.23	37.25	11.88	6.73	5.48	5.56	
2	0.00	0.55	1.27	1.43	0.99	3.36	7.50	30.73	11.40	6.65	5.00	5.40	
3	0.00	0.25	0.72	1.72	0.94	32.13	8.55	29.85	11.28	7.33	4.60	5.32	
4	0.00	0.00	0.35	1.60	0.88	13.00	32.13	32.82	10.20	6.90	5.40	5.16	
5	0.00	0.00	0.15	9.39	0.83	10.92	20.98	26.95	14.00	6.40	5.97	4.28	
6	0.00	0.00	0.05	6.99	0.72	8.34	25.32	39.11	23.78	5.64	5.64	3.99	
7	0.00	0.00	2.50	6.82	0.66	6.82	31.60	51.23	22.54	5.32	5.40	4.06	
8	0.00	0.00	1.38	4.60	0.61	6.31	27.97	51.04	19.61	5.00	5.08	3.92	
9	0.00	0.00	1.32	3.22	0.72	5.72	20.68	51.42	26.10	4.92	4.92	3.57	
10	0.00	0.00	1.10	2.80	0.83	5.00	16.62	49.14	19.75	4.92	4.76	3.50	
11	0.00	0.00	0.83	2.68	0.99	4.60	33.55	44.77	16.25	4.60	5.32	4.06	
12	0.00	0.00	0.72	2.50	0.72	4.20	28.31	39.85	17.29	4.44	7.41	4.52	
13	0.00	0.00	0.77	1.60	0.72	3.99	33.00	45.34	23.00	4.28	34.48	4.52	
14	0.00	0.00	1.21	1.49	0.83	3.85	24.08	35.77	19.90	4.13	25.32	4.06	
15	0.00	0.00	1.38	1.43	0.77	4.52	29.33	29.33	16.25	15.88	16.62	3.92	
16	0.00	0.00	3.15	1.38	4.44	9.07	26.27	25.32	14.88	22.22	13.13	3.71	
17	0.00	0.00	2.26	1.32	4.36	10.68	18.01	22.84	13.88	21.14	11.28	3.71	
18	0.00	0.00	1.49	1.16	3.71	8.13	15.25	27.29	12.25	18.74	9.60	3.64	
19	0.00	0.00	1.10	1.60	2.87	6.99	12.88	23.93	11.76	13.00	9.18	3.85	
20	0.00	0.00	0.83	0.99	2.87	8.86	10.80	19.47	10.92	11.04	8.44	3.71	
21	0.00	0.00	0.35	1.72	3.01	13.38	10.56	19.61	10.44	9.39	7.50	3.57	
22	0.00	0.00	0.20	1.27	2.74	13.38	25.79	18.16	9.72	8.55	7.16	3.43	
23	0.00	0.00	0.05	1.27	3.01	11.40	48.38	17.00	9.49	7.92	6.90	3.64	
24	0.00	0.94	0.40	1.38	2.94	23.31	48.76	14.62	8.97	7.60	6.73	3.85	
25	0.00	1.66	0.00	1.21	1.84	22.54	39.47	15.50	8.76	7.07	6.48	3.71	
26	0.00	0.50	0.00	1.16	1.49	28.82	48.57	13.13	8.44	6.73	6.31	9.60	
27	0.00	0.05	0.00	1.32	1.38	18.30	34.48	12.00	8.02	6.48	6.14	7.81	
28	0.35	0.00	0.00	1.21	1.27	13.13	28.31	7.07	7.71	5.72	5.72	6.14	
29	0.55	0.00	0.00	1.32	1.21	11.76	23.00	6.65	7.60	5.40		5.24	
30	0.50	0.00	0.40	0.83	1.10	9.72	23.78	6.31	7.33	5.24		5.08	
31		0.00		0.99	1.16		29.33		7.07	6.99		5.08	
Total	1.40	5.00	26.78	69.50	51.49	324.67	791.49	843.50	420.47	256.37	245.97	141.61	3178.25 CMSDAY
Mean	0.05	0.16	0.89	2.24	1.66	10.82	25.53	28.12	13.56	8.27	8.78	4.57	8.71 CMS
Max	0.55	1.66	3.15	9.39	4.44	32.13	48.76	51.42	26.10	22.22	34.48	9.60	51.42 CMS
Min	0.00	0.00	0.00	0.83	0.61	2.44	7.50	6.31	7.07	4.13	4.60	3.43	0.00 CMS
Runoff	0.121	0.432	2.314	6.005	4.449	28.051	68.385	72.878	36.329	22.150	21.252	12.235	274.601 MCM

Momentary Peak 51.61 CMS, at 10.59 M (MSL), at 15.00 Hours, on Nov 7, 1998

Runoff Yield 28.18 Liters/Second/Square KM, Momentary Peak Yield 167.023 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

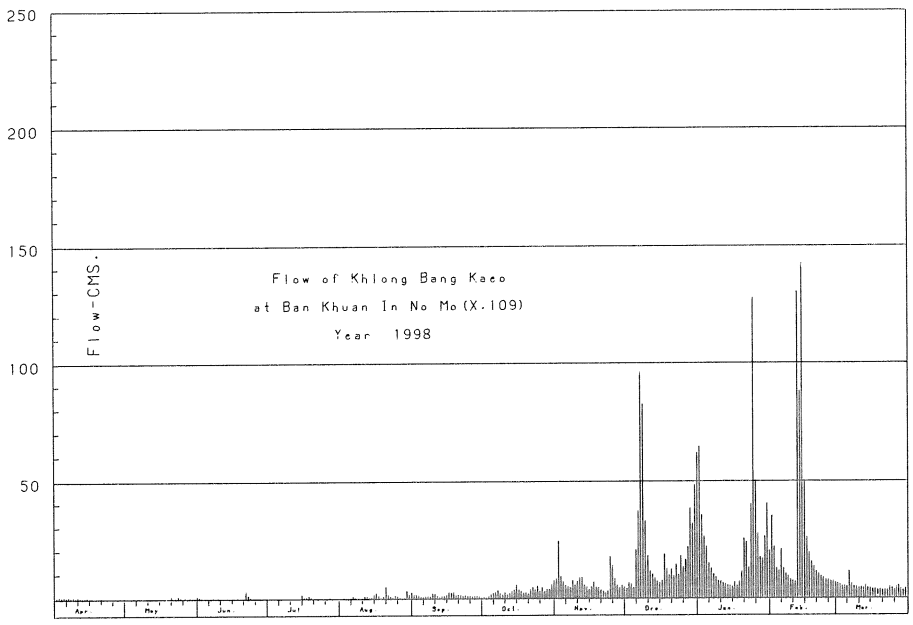
Khlong Bang Kaeo at Ban Khuan In No Mo, Phatthalung (X.109)

Location	Lat.07°-20'-36" N., Long. 100°-03'-33" E., on left bank at Ban Khuan In Nomo, Amphoe Ta Mot.Phatthalung.
Drainage Area	133 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m. (A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank near the Meteorological Station.
Elevation	+9.575 m.(A.D.)
Gage Reading Frequency	13-time daily readings at 06.00-18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 41 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.30	0.26	0.29	0.23	0.23	0.38	0.29	1.03	0.68	3.50	2.41	0.86	
2	0.31	0.24	0.28	0.23	0.24	0.41	0.29	1.94	0.89	2.43	1.80	0.82	
3	0.30	0.23	0.27	0.26	0.23	0.36	0.31	1.12	0.84	2.04	1.34	0.78	
4	0.30	0.25	0.25	0.23	0.23	0.32	0.43	0.93	0.71	1.81	1.26	0.76	
5	0.30	0.23	0.24	0.22	0.23	0.30	0.49	0.81	1.75	1.46	1.75	0.74	
6	0.30	0.23	0.27	0.22	0.34	0.32	0.49	0.73	2.50	1.32	1.34	1.26	
7	0.29	0.24	0.25	0.22	0.25	0.31	0.60	0.72	4.50	1.19	1.20	0.85	
8	0.29	0.23	0.26	0.22	0.24	0.33	0.44	1.00	4.10	1.08	1.11	0.76	
9	0.29	0.23	0.25	0.23	0.23	0.47	0.41	0.80	2.32	0.99	1.03	0.72	
10	0.29	0.23	0.23	0.22	0.22	0.42	0.48	0.95	1.61	0.93	0.95	0.70	
11	0.29	0.23	0.23	0.21	0.35	0.34	0.41	1.06	1.26	0.90	0.92	0.69	
12	0.28	0.23	0.23	0.21	0.32	0.31	0.47	1.09	1.19	0.84	5.37	0.70	
13	0.28	0.23	0.22	0.21	0.28	0.32	0.54	0.82	1.07	0.81	4.27	0.78	
14	0.27	0.23	0.22	0.21	0.27	0.35	0.62	0.72	0.95	0.77	5.65	0.70	
15	0.27	0.23	0.23	0.42	0.41	0.40	0.81	0.63	0.88	0.75	3.00	0.66	
16	0.26	0.28	0.23	0.26	0.45	0.49	0.63	0.76	1.00	0.90	2.02	0.64	
17	0.26	0.25	0.23	0.28	0.36	0.50	0.54	0.91	1.66	0.79	1.68	0.63	
18	0.25	0.23	0.22	0.35	0.24	0.49	0.49	0.74	1.32	0.94	1.49	0.61	
19	0.25	0.23	0.22	0.27	0.33	0.38	0.47	0.69	1.16	1.24	1.37	0.61	
20	0.25	0.34	0.22	0.26	0.76	0.38	0.45	0.59	1.30	1.99	1.26	0.60	
21	0.25	0.26	0.57	0.24	0.41	0.38	0.62	0.56	1.12	1.90	1.18	0.59	
22	0.24	0.24	0.38	0.23	0.33	0.35	0.73	0.48	1.44	1.36	1.12	0.59	
23	0.24	0.33	0.26	0.23	0.27	0.35	0.60	0.55	1.18	2.62	1.07	0.71	
24	0.24	0.26	0.25	0.23	0.38	0.35	0.79	1.61	1.61	5.30	1.02	0.69	
25	0.23	0.25	0.24	0.22	0.32	0.33	0.55	1.40	1.36	3.00	1.00	0.61	
26	0.23	0.26	0.26	0.27	0.25	0.33	0.69	1.04	1.54	2.08	0.97	0.71	
27	0.23	0.26	0.25	0.26	0.26	0.34	0.55	0.81	1.81	1.59	0.95	0.79	
28	0.24	0.25	0.24	0.23	0.24	0.32	0.63	0.68	2.54	1.54	0.91	0.63	
29	0.23	0.24	0.26	0.22	0.58	0.30	0.66	0.81	2.28	2.03		0.59	
30	0.26	0.26	0.24	0.24	0.38	0.29	0.82	0.71	2.93	2.62		0.65	
31		0.34		0.22	0.52		0.98		3.40	1.73		0.60	
Mean	0.27	0.25	0.26	0.24	0.33	0.36	0.56	0.89	1.71	1.69	1.77	0.71	
Max	0.31	0.34	0.57	0.42	0.76	0.50	0.98	1.94	4.50	5.30	5.65	1.26	5.65
Min	0.23	0.23	0.22	0.21	0.22	0.29	0.29	0.48	0.68	0.75	0.91	0.59	0.21

Annual Max Momentary Gage Height 6.30 M (AD), at 5.00 Hours, on Feb 14, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -0.25 M (AD)
Left Bank Elevation 9.46 M (AD)
Right Bank Elevation 10.13 M (AD), Drainage Area 133 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.95	0.57	0.85	0.29	0.29	1.71	0.85	8.42	4.60	65.00	35.25	6.46	
2	1.04	0.38	0.76	0.29	0.38	1.99	0.85	24.80	6.79	35.75	22.00	6.02	
3	0.95	0.29	0.67	0.57	0.29	1.52	1.04	9.68	6.24	26.80	13.11	5.60	
4	0.95	0.47	0.47	0.29	0.29	1.14	2.18	7.23	4.90	22.20	11.79	5.40	
5	0.95	0.29	0.38	0.19	0.29	0.95	2.76	5.91	21.00	15.27	21.00	5.20	
6	0.95	0.29	0.67	0.19	1.33	1.14	2.76	5.10	37.50	12.78	13.11	11.79	
7	0.85	0.38	0.47	0.19	0.47	1.04	3.80	5.00	96.50	10.66	10.80	6.35	
8	0.85	0.29	0.57	0.19	0.38	1.24	2.28	8.00	83.00	9.12	9.54	5.40	
9	0.85	0.29	0.47	0.29	0.29	2.56	1.99	5.80	33.00	7.89	8.42	5.00	
10	0.85	0.29	0.29	0.19	0.19	2.09	2.66	7.45	18.20	7.23	7.45	4.80	
11	0.85	0.29	0.29	0.09	1.42	1.33	1.99	8.84	11.79	6.90	7.12	4.70	
12	0.76	0.29	0.29	0.09	1.14	1.04	2.56	9.26	10.66	6.24	130.80	4.80	
13	0.76	0.29	0.19	0.09	0.76	1.14	3.23	6.02	8.98	5.91	88.45	5.60	
14	0.67	0.29	0.19	0.09	0.67	1.42	4.00	5.00	7.45	5.50	142.50	4.80	
15	0.67	0.29	0.29	2.09	1.99	1.90	5.91	4.10	6.68	5.30	50.50	4.40	
16	0.57	0.76	0.29	0.57	2.37	2.76	4.10	5.40	8.00	6.90	26.40	4.20	
17	0.57	0.47	0.29	0.76	1.52	2.85	3.23	7.01	19.20	5.70	19.60	4.10	
18	0.47	0.29	0.19	1.42	0.38	2.76	2.76	5.20	12.78	7.34	15.86	3.90	
19	0.47	0.29	0.19	0.67	1.24	1.71	2.56	4.70	10.24	11.46	13.61	3.90	
20	0.47	1.33	0.19	0.57	5.40	1.71	2.37	3.70	12.45	25.80	11.79	3.80	
21	0.47	0.57	3.51	0.38	1.99	1.71	4.00	3.42	9.68	24.00	10.52	3.70	
22	0.38	0.38	1.71	0.29	1.24	1.42	5.10	2.66	14.88	13.44	9.68	3.70	
23	0.38	1.24	0.57	0.29	0.67	1.42	3.80	3.32	10.52	40.50	8.98	4.90	
24	0.38	0.57	0.47	0.29	1.71	1.42	5.70	18.20	18.20	128.00	8.28	4.70	
25	0.29	0.47	0.38	0.19	1.14	1.24	3.32	14.10	13.44	50.50	8.00	3.90	
26	0.29	0.57	0.57	0.67	0.47	1.24	4.70	8.56	16.83	27.60	7.67	4.90	
27	0.29	0.57	0.47	0.57	0.57	1.33	3.32	5.91	22.20	17.80	7.45	5.70	
28	0.38	0.47	0.38	0.29	0.38	1.14	4.10	4.60	38.50	16.83	7.01	4.10	
29	0.29	0.38	0.57	0.19	3.61	0.95	4.40	5.91	32.00	26.60		3.70	
30	0.57	0.57	0.38	0.38	1.71	0.85	6.02	4.90	48.58	40.50		4.30	
31		1.33		0.19	3.04		7.78		62.00	20.60		3.80	
Total	19.17	15.25	17.01	12.85	37.62	46.72	106.12	218.20	706.79	706.12	726.69	153.62	2766.16 CMSDAY
Mean	0.64	0.49	0.57	0.41	1.21	1.56	3.42	7.27	22.80	22.78	25.95	4.96	7.58 CMS
Max	1.04	1.33	3.51	2.09	5.40	2.85	7.78	24.80	96.50	128.00	142.50	11.79	142.50 CMS
Min	0.29	0.29	0.19	0.09	0.19	0.85	0.85	2.66	4.60	5.30	7.01	3.70	0.09 CMS
Runoff	1.656	1.318	1.470	1.110	3.250	4.037	9.169	18.852	61.067	61.009	62.786	13.273	238.996 MCM

Momentary Peak 169.80 CMS, at 6.30 M (AD), at 5.00 Hours, on Feb 14, 1998
Runoff Yield 56.98 Liters/Second/Square KM, Momentary Peak Yield 1276.692 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

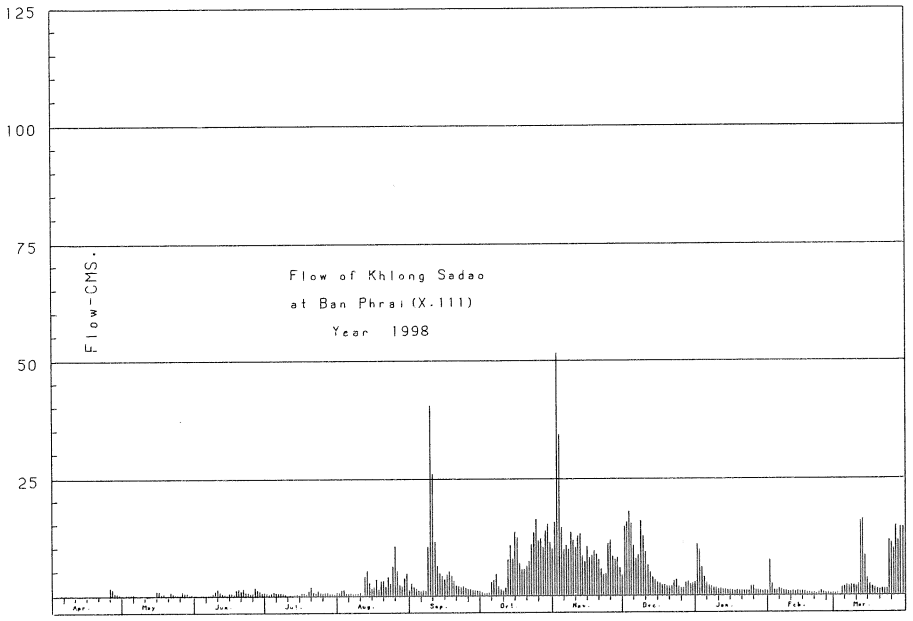
Khlong Sadao at Ban Phrai, Songkhla (X.111)

Location	Lat.06-39-37 N., Long. 100-26-09 E., on left bank at Ban Phrai, Amphoe Sadao, Songkhla.
Drainage Area	256 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	Near the top staff gage.
Elevation	+6.092 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 59 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.17	-0.16	-0.15	0.03	0.12	0.90	0.12	3.28	3.21	2.76	2.22	0.02	
2	-0.18	-0.11	-0.16	-0.02	0.33	0.66	0.05	4.10	3.27	2.57	0.85	0.06	
3	-0.18	-0.06	-0.17	0.01	0.43	0.48	0.01	3.84	3.43	1.92	0.36	0.05	
4	-0.17	-0.10	-0.12	0.24	0.07	0.36	0.11	3.18	3.25	1.36	0.30	0.55	
5	-0.19	-0.13	-0.16	0.12	0.02	0.29	0.98	2.58	2.70	0.94	0.49	0.66	
6	-0.20	-0.18	-0.13	0.02	0.02	0.31	1.14	2.73	2.28	0.77	0.40	0.77	
7	-0.22	-0.20	-0.17	0.11	0.00	0.33	1.54	2.59	2.40	0.67	0.30	0.72	
8	-0.25	-0.21	0.05	-0.01	-0.02	2.68	0.72	3.08	3.30	0.58	0.25	0.76	
9	-0.27	-0.22	0.23	-0.06	0.03	3.94	0.41	2.86	3.00	0.54	0.21	0.77	
10	-0.25	-0.24	0.49	-0.20	0.06	3.68	0.33	2.67	2.50	0.45	0.20	0.69	
11	-0.25	-0.26	0.17	-0.11	-0.09	2.84	0.58	2.99	2.01	0.45	0.20	0.83	
12	-0.17	-0.25	0.04	-0.14	1.38	1.96	2.23	3.05	1.62	0.43	0.19	3.30	
13	-0.24	-0.25	-0.06	-0.12	1.72	1.60	2.73	2.37	1.33	0.37	0.24	3.32	
14	-0.20	-0.22	-0.11	-0.02	0.99	1.40	2.28	2.17	1.15	0.34	0.23	2.39	
15	-0.19	0.29	0.03	-0.08	0.54	1.22	3.08	2.70	1.01	0.31	0.20	1.23	
16	-0.23	0.21	0.02	0.10	0.61	1.51	2.94	2.30	0.90	0.28	0.19	0.82	
17	-0.26	-0.05	-0.03	0.02	1.22	1.68	2.09	2.41	0.81	0.28	0.09	0.66	
18	-0.30	-0.04	0.42	-0.03	0.41	1.44	1.77	2.54	0.77	0.31	0.08	0.54	
19	-0.37	-0.21	0.44	0.29	1.05	1.10	1.79	2.45	0.71	0.31	0.06	0.46	
20	-0.39	-0.22	0.33	0.64	1.10	0.80	1.97	2.23	0.65	0.27	0.05	0.35	
21	-0.38	0.20	0.48	0.14	0.69	0.68	2.18	1.84	0.73	0.30	-0.03	0.48	
22	-0.37	-0.03	0.16	0.07	1.37	0.64	2.74	1.46	1.06	0.23	0.06	0.44	
23	-0.38	-0.13	0.06	0.29	0.89	0.68	3.08	1.56	1.19	0.30	0.29	0.48	
24	-0.30	-0.10	0.02	0.10	1.97	0.58	3.33	2.76	0.65	0.68	0.09	2.86	
25	0.61	-0.11	0.00	0.01	2.71	0.50	2.87	2.86	0.55	0.67	0.08	2.80	
26	0.50	0.22	0.63	0.09	1.70	0.42	2.91	2.37	0.53	0.38	0.08	2.62	
27	0.08	0.07	0.43	0.09	0.84	0.39	2.67	2.25	0.99	0.35	0.01	3.21	
28	-0.04	0.02	0.21	0.01	0.68	0.33	3.10	2.31	1.02	0.26	0.01	2.86	
29	-0.08	-0.09	0.09	-0.05	1.30	0.31	3.24	1.89	0.87	0.23		3.18	
30	-0.15	-0.09	0.08	-0.03	1.55	0.26	2.82	1.42	0.90	0.25		3.19	
31		-0.12		0.13	0.40		2.61		0.97	0.25		2.77	
Mean	-0.17	-0.09	0.10	0.05	0.78	1.13	1.88	2.56	1.61	0.64	0.28	1.41	
Max	0.61	0.29	0.63	0.64	2.71	3.94	3.33	4.10	3.43	2.76	2.22	3.32	4.10
Min	-0.39	-0.26	-0.17	-0.20	-0.09	0.26	0.01	1.42	0.53	0.23	-0.03	0.02	-0.39

Annual Max Momentary Gage Height 4.20 M (AD), at 18.00 Hours, on Nov 2, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -0.54 M (AD)
Left Bank Elevation 7.21 M (AD)
Right Bank Elevation 7.20 M (AD), Drainage Area 256 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.26	0.28	0.30	0.66	0.84	2.70	0.84	15.84	14.93	11.12	7.71	0.64	
2	0.24	0.38	0.28	0.56	1.26	2.05	0.70	51.70	15.71	9.81	2.55	0.72	
3	0.24	0.48	0.26	0.62	1.48	1.60	0.62	34.48	18.09	6.24	1.32	0.70	
4	0.26	0.40	0.36	1.08	0.74	1.32	0.82	14.61	15.45	4.16	1.20	1.78	
5	0.22	0.34	0.28	0.84	0.64	1.18	2.94	9.87	10.70	2.82	1.63	2.05	
6	0.20	0.24	0.34	0.64	0.64	1.22	3.42	10.91	8.04	2.33	1.40	2.33	
7	0.18	0.20	0.26	0.82	0.60	1.26	4.79	9.94	8.70	2.08	1.20	2.20	
8	0.15	0.19	0.70	0.58	0.56	10.56	2.20	13.66	16.10	1.85	1.10	2.30	
9	0.13	0.18	1.06	0.48	0.66	40.68	1.42	11.85	12.90	1.75	1.02	2.33	
10	0.15	0.16	1.63	0.20	0.72	26.00	1.26	10.49	9.35	1.52	1.00	2.13	
11	0.15	0.14	0.94	0.38	0.42	11.70	1.85	12.82	6.65	1.52	1.00	2.49	
12	0.26	0.15	0.68	0.32	4.23	6.42	7.77	13.37	5.07	1.48	0.98	16.10	
13	0.16	0.15	0.48	0.36	5.42	5.00	10.91	8.53	4.05	1.34	1.08	16.36	
14	0.20	0.18	0.38	0.56	2.97	4.30	8.04	7.45	3.45	1.28	1.06	8.64	
15	0.22	1.18	0.66	0.44	1.75	3.67	13.66	10.70	3.03	1.22	1.00	3.71	
16	0.17	1.02	0.64	0.80	1.93	4.69	12.45	8.15	2.70	1.16	0.98	2.46	
17	0.14	0.50	0.54	0.64	3.67	5.28	7.05	8.76	2.43	1.16	0.78	2.05	
18	0.10	0.52	1.45	0.54	1.42	4.44	5.59	9.61	2.33	1.22	0.76	1.75	
19	0.03	0.19	1.50	1.18	3.15	3.30	5.67	9.02	2.18	1.22	0.72	1.55	
20	0.01	0.18	1.26	2.00	3.30	2.40	6.47	7.77	2.03	1.14	0.70	1.30	
21	0.02	1.00	1.60	0.88	2.13	2.10	7.50	5.86	2.23	1.20	0.54	1.60	
22	0.03	0.54	0.92	0.74	4.19	2.00	10.98	4.51	3.18	1.06	0.72	1.50	
23	0.02	0.34	0.72	1.18	2.67	2.10	13.66	4.86	3.57	1.20	1.18	1.60	
24	0.10	0.40	0.64	0.80	6.47	1.85	16.49	11.12	2.03	2.10	0.78	11.85	
25	1.93	0.38	0.60	0.62	10.77	1.65	11.92	11.85	1.78	2.08	0.76	11.40	
26	1.65	1.04	1.98	0.78	5.35	1.45	12.23	8.53	1.72	1.36	0.76	10.14	
27	0.76	0.74	1.48	0.78	2.52	1.38	10.49	7.87	2.97	1.30	0.62	14.93	
28	0.52	0.64	1.02	0.62	2.10	1.26	13.85	8.20	3.06	1.12	0.62	11.85	
29	0.44	0.42	0.78	0.50	3.95	1.22	15.32	6.11	2.61	1.06		14.61	
30	0.30	0.42	0.76	0.54	4.82	1.12	11.55	4.37	2.70	1.10		14.71	
31		0.36		0.86	1.40		10.07		2.91	1.10		11.19	
Total	9.24	13.34	24.50	22.00	82.77	155.90	232.53	352.83	192.65	71.10	35.17	178.97	1371.00 CMSDAY
Mean	0.31	0.43	0.82	0.71	2.67	5.20	7.50	11.76	6.21	2.29	1.26	5.77	3.76 CMS
Max	1.93	1.18	1.98	2.00	10.77	40.68	16.49	51.70	18.09	11.12	7.71	16.36	51.70 CMS
Min	0.01	0.14	0.26	0.20	0.42	1.12	0.62	4.37	1.72	1.06	0.54	0.64	0.01 CMS
Runoff	0.798	1.153	2.117	1.901	7.151	13.470	20.091	30.485	16.645	6.143	3.039	15.463	118.454 MCM

Momentary Peak 59.00 CMS, at 4.20 M (AD), at 18.00 Hours, on Nov 2, 1998
Runoff Yield 14.67 Liters/Second/Square KM, Momentary Peak Yield 230.469 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

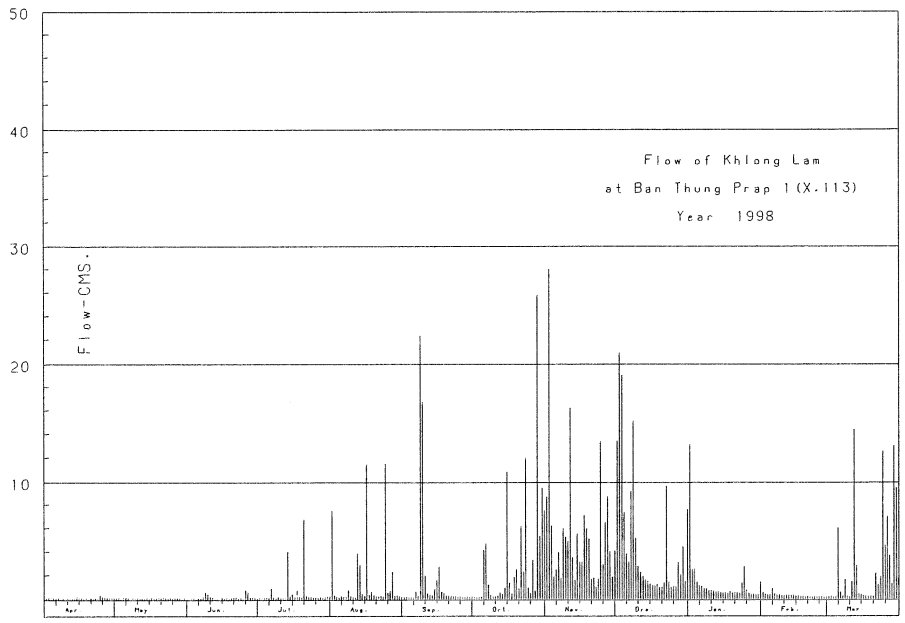
Khlong Lam at Ban Thung Prap (1), Songkhla (X.113)

Location	Lat.06°-37'-59" N., Long. 100°-23'-46" E., on right bank at Ban Thung Prap (i), Amphoe Sadao, Songkhla.
Drainage Area	129 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	About 15 meters from the gage observer's house.
Elevation	+7.140 m.(A.D.)
Gage Reading Frequency	13-time daily readings at 06.00 - 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1979 to date.
Rating Operation	
Period of Rating	1979 to date.
Rated by Float	-
Rated by Current Meter	1979 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 63 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.33	1.35	1.26	1.31	3.54	1.47	1.47	3.70	4.25	4.22	1.88	1.57	
2	1.34	1.32	1.31	1.30	1.72	1.45	1.46	5.41	4.88	2.58	1.76	1.56	
3	1.33	1.30	1.27	1.29	1.55	1.43	1.44	3.34	4.73	2.58	1.73	1.55	
4	1.31	1.42	1.26	1.39	1.45	1.41	1.59	2.38	3.51	2.25	1.73	1.53	
5	1.29	1.36	1.28	1.37	1.62	1.44	2.97	2.57	2.89	2.14	2.04	3.31	
6	1.28	1.31	1.26	2.04	1.46	1.91	3.07	2.93	2.74	2.10	1.78	1.89	
7	1.28	1.29	1.46	1.42	1.55	1.58	2.16	2.34	3.77	2.04	1.73	1.59	
8	1.26	1.30	1.88	1.34	1.98	5.00	1.71	3.29	4.40	2.00	1.70	2.32	
9	1.25	1.29	1.74	1.44	1.58	4.54	1.61	3.18	3.16	1.96	1.68	1.58	
10	1.25	1.30	1.58	1.33	1.48	2.42	1.55	3.10	2.64	1.94	1.66	1.56	
11	1.24	1.30	1.37	1.30	1.44	1.84	1.68	4.50	2.50	1.93	1.74	2.24	
12	1.27	1.29	1.32	1.30	2.90	1.73	1.87	2.82	2.41	1.90	1.67	4.34	
13	1.27	1.29	1.28	2.94	2.68	1.70	1.77	2.30	2.31	1.89	1.71	2.65	
14	1.55	1.30	1.28	1.56	1.78	1.99	2.06	3.22	2.26	1.88	1.68	1.82	
15	1.36	1.34	1.34	1.79	1.65	2.30	3.99	2.74	2.18	1.86	1.66	1.74	
16	1.30	1.33	1.30	1.50	4.05	2.63	2.21	2.72	2.15	1.85	1.62	1.69	
17	1.29	1.29	1.29	1.96	1.75	1.91	1.80	3.48	2.12	1.84	1.59	1.65	
18	1.28	1.29	1.28	1.48	1.89	1.82	2.39	3.29	2.16	1.90	1.57	1.62	
19	1.28	1.29	1.29	1.41	1.71	1.68	2.57	3.15	2.07	1.86	1.56	1.60	
20	1.28	1.29	1.46	3.42	1.55	1.62	2.04	2.32	2.06	1.85	1.54	1.62	
21	1.27	1.38	1.37	1.63	1.59	1.63	3.33	2.37	2.22	1.86	1.55	2.47	
22	1.28	1.33	1.31	1.49	1.66	1.61	2.52	2.09	3.83	1.85	1.53	2.17	
23	1.31	1.29	1.29	1.47	1.55	1.56	4.11	2.33	2.24	2.22	1.53	2.39	
24	1.72	1.29	1.29	1.41	4.06	1.53	2.06	4.24	2.09	2.64	1.52	4.16	
25	1.44	1.29	1.97	1.37	1.86	1.51	1.83	2.69	2.10	1.95	1.51	3.05	
26	1.39	1.29	1.86	1.38	1.92	1.50	2.77	3.38	2.10	1.85	1.51	3.46	
27	1.32	1.29	1.44	1.46	2.52	1.50	1.95	3.71	2.72	1.80	1.50	2.87	
28	1.30	1.29	1.36	1.38	1.61	1.49	5.25	2.94	2.45	1.77	1.50	2.20	
29	1.35	1.29	1.32	1.46	1.68	1.47	3.19	2.39	3.03	1.76		4.21	
30	1.30	1.29	1.31	1.58	1.54	1.52	3.81	2.96	2.26	1.74		3.81	
31		1.28		1.56	1.50		3.54		3.55	2.23		2.85	
Mean	1.32	1.31	1.40	1.58	1.96	1.91	2.44	3.06	2.83	2.07	1.65	2.36	
Max	1.72	1.42	1.97	3.42	4.06	5.00	5.25	5.41	4.88	4.22	2.04	4.34	5.41
Min	1.24	1.28	1.26	1.29	1.44	1.41	1.44	2.09	2.06	1.74	1.50	1.53	1.24

Annual Max Momentary Gage Height 5.80 M (AD), at 6.00 Hours, on Nov 2, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.75 M (AD)
Left Bank Elevation 8.44 M (AD)
Right Bank Elevation 8.18 M (AD), Drainage Area 129 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.17	0.18	0.13	0.15	7.61	0.24	0.24	8.75	13.55	13.22	0.66	0.29	
2	0.17	0.16	0.15	0.15	0.42	0.23	0.23	28.15	21.00	2.63	0.46	0.28	
3	0.17	0.15	0.13	0.14	0.27	0.21	0.22	6.34	19.13	2.63	0.43	0.27	
4	0.15	0.21	0.13	0.19	0.23	0.20	0.30	1.94	7.42	1.55	0.43	0.26	
5	0.14	0.18	0.14	0.19	0.32	0.22	4.27	2.60	3.91	1.25	1.00	6.16	
6	0.14	0.15	0.13	1.00	0.23	0.72	4.79	4.09	3.26	1.15	0.48	0.68	
7	0.14	0.14	0.23	0.21	0.27	0.29	1.30	1.82	9.28	1.00	0.43	0.30	
8	0.13	0.15	0.66	0.17	0.86	22.50	0.41	6.04	15.20	0.90	0.40	1.76	
9	0.13	0.14	0.44	0.22	0.29	16.81	0.31	5.39	5.28	0.82	0.38	0.29	
10	0.13	0.15	0.29	0.17	0.24	2.07	0.27	4.95	2.86	0.78	0.36	0.28	
11	0.12	0.15	0.19	0.15	0.22	0.58	0.38	16.35	2.35	0.76	0.44	1.52	
12	0.13	0.14	0.16	0.15	3.95	0.43	0.64	3.59	2.04	0.70	0.37	14.54	
13	0.13	0.14	0.14	4.13	3.02	0.40	0.47	1.70	1.73	0.68	0.41	2.90	
14	0.27	0.15	0.14	0.28	0.48	0.88	1.05	5.62	1.58	0.66	0.38	0.54	
15	0.18	0.17	0.17	0.49	0.35	1.70	10.93	3.26	1.35	0.62	0.36	0.44	
16	0.15	0.17	0.15	0.25	11.50	2.82	1.43	3.18	1.28	0.60	0.32	0.39	
17	0.14	0.14	0.14	0.82	0.45	0.72	0.50	7.22	1.20	0.58	0.30	0.35	
18	0.14	0.14	0.14	0.24	0.68	0.54	1.97	6.04	1.30	0.70	0.29	0.32	
19	0.14	0.14	0.14	0.20	0.41	0.38	2.60	5.23	1.07	0.62	0.28	0.30	
20	0.14	0.14	0.23	6.83	0.27	0.32	1.00	1.76	1.05	0.60	0.27	0.32	
21	0.13	0.19	0.19	0.33	0.30	0.33	6.28	1.91	1.46	0.62	0.27	2.25	
22	0.14	0.17	0.15	0.25	0.36	0.31	2.42	1.12	9.72	0.60	0.26	1.33	
23	0.15	0.14	0.14	0.24	0.27	0.28	12.10	1.79	1.52	1.46	0.26	1.97	
24	0.42	0.14	0.14	0.20	11.60	0.26	1.05	13.44	1.12	2.86	0.26	12.60	
25	0.22	0.14	0.84	0.19	0.62	0.26	0.56	3.06	1.15	0.80	0.26	4.67	
26	0.19	0.14	0.62	0.19	0.74	0.25	3.38	6.58	1.15	0.60	0.26	7.09	
27	0.16	0.14	0.22	0.23	2.42	0.25	0.80	8.83	3.18	0.50	0.25	3.81	
28	0.15	0.14	0.18	0.19	0.31	0.25	25.90	4.13	2.18	0.47	0.25	1.40	
29	0.18	0.14	0.16	0.23	0.38	0.24	5.45	1.97	4.57	0.46		13.11	
30	0.15	0.14	0.15	0.29	0.27	0.26	9.57	4.22	1.58	0.44		9.57	
31		0.14		0.28	0.25		7.61		7.68	1.49		3.72	
Total	4.90	4.71	6.82	18.75	49.59	54.95	108.43	171.07	151.15	42.75	10.52	93.71	717.35 CMSDAY
Mean	0.16	0.15	0.23	0.60	1.60	1.83	3.50	5.70	4.88	1.38	0.38	3.02	1.97 CMS
Max	0.42	0.21	0.84	6.83	11.60	22.50	25.90	28.15	21.00	13.22	1.00	14.54	28.15 CMS
Min	0.12	0.14	0.13	0.14	0.22	0.20	0.22	1.12	1.05	0.44	0.25	0.26	0.12 CMS
Runoff	0.423	0.407	0.589	1.620	4.285	4.748	9.368	14.780	13.059	3.694	0.909	8.097	61.979 MCM

Momentary Peak 34.00 CMS, at 5.80 M (AD), at 6.00 Hours, on Nov 2, 1998
Runoff Yield 15.24 Liters/Second/Square KM, Momentary Peak Yield 263.566 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

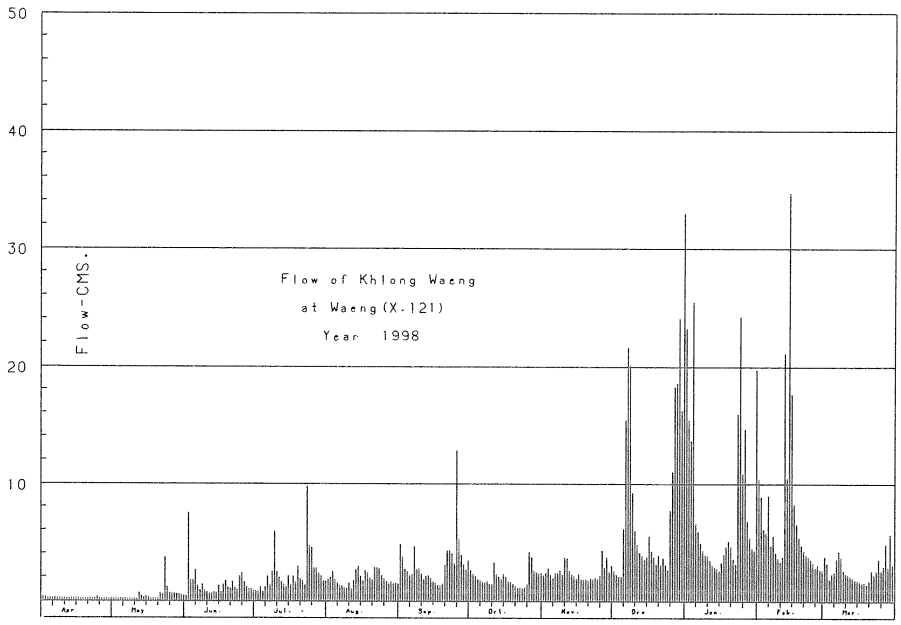
Khlong Waeng at Waeng, Narathiwat (X.121)

Location	Lat.05°-55'-26" N., Long. 101°-53'-14" E., on right bank at the bridge of Sungai Kolok -Malasia Highway, Amphoe Waeng, Narathiwat.
Drainage Area	43 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+15.85 m.(M.S.L.)
Bench Mark	B.M-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+20.347 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1978 to date.
Rating Operation	
Period of Rating	1981 to date.
Rated by Float	-
Rated by Current Meter	1981 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	17.64	17.58	17.67	17.81	17.99	18.46	18.12	18.05	18.11	19.68	18.95	18.32	
2	17.63	17.58	18.73	17.78	18.01	18.31	18.07	18.08	18.06	19.26	18.84	18.22	
3	17.61	17.58	17.97	17.86	18.11	18.15	18.03	18.16	18.02	19.16	18.60	17.99	
4	17.61	17.58	17.98	17.79	17.98	18.10	17.99	18.05	18.03	19.79	18.56	18.06	
5	17.61	17.58	18.13	17.87	17.93	18.05	17.97	18.01	18.60	18.64	18.85	18.09	
6	17.61	17.58	17.88	18.04	17.89	18.06	17.95	18.08	19.26	18.58	18.44	18.29	
7	17.61	17.57	17.82	17.90	17.89	18.44	17.93	18.09	19.60	18.47	18.54	18.39	
8	17.61	17.57	17.91	18.10	17.85	18.15	17.96	18.12	19.52	18.39	18.37	18.30	
9	17.60	17.57	17.81	18.58	17.84	18.15	17.91	18.06	18.87	18.34	18.29	18.13	
10	17.60	17.57	17.77	18.11	17.93	18.07	17.91	18.30	18.59	18.32	18.25	18.08	
11	17.60	17.57	17.74	18.01	17.84	17.99	18.24	18.30	18.45	18.27	18.31	18.05	
12	17.60	17.76	17.73	17.95	17.96	18.03	18.06	18.12	18.37	18.20	19.57	18.03	
13	17.60	17.65	17.79	17.90	18.14	18.05	18.03	18.07	18:32	18.18	18.96	18.00	
14	17.60	17.63	17.75	17.87	18.18	18.00	17.99	18.03	18.28	18.15	20.18	17.98	
15	17.60	17.65	17.88	18.03	18.03	17.95	18.06	18.00	18.31	18.12	19.39	17.96	
16	17.60	17.63	17.79	17.89	17.97	17.92	18.02	18.06	18.55	18.23	18.79	17.94	
17	17.60	17.59	17.90	18.04	18.13	17.90	17.96	17.99	18.39	18.35	18.64	17.93	
18	17.59	17.59	17.97	17.93	18.08	17.88	17.94	17.97	18.30	18.43	18.52	17.93	
19	17.59	17.59	17.85	18.18	18.01	17.92	17.92	17.99	18.22	18.49	18.45	17.91	
20	17.59	17.58	17.85	18.00	17.97	18.21	17.88	17.96	18.33	18.43	18.39	17.95	
21	17.59	17.74	17.94	17.96	18.17	18.39	17.86	18.00	18.20	18.28	18.34	18.12	
22	17.59	17.73	17.86	17.90	18.17	18.40	17.85	17.98	18.30	18.22	18.31	18.05	
23	17.59	18.31	17.82	18.91	18.15	18.35	17.85	18.01	18.21	19.29	18.28	18.12	
24	17.65	17.86	18.04	18.44	18.05	18.23	17.85	17.98	18.13	19.73	18.23	18.28	
25	17.59	17.76	18.08	18.43	17.99	19.11	17.91	18.05	18.74	18.99	18.17	18.12	
26	17.59	17.73	17.94	18.17	17.96	18.50	18.37	18.40	19.00	19.22	18.20	18.18	
27	17.59	17.75	17.87	18.16	17.92	18.34	18.31	18.16	19.42	18.66	18.14	18.46	
28	17.58	17.71	17.83	18.09	17.94	18.21	18.11	18.30	19.44	18.52	18.12	18.17	
29	17.58	17.73	17.84	18.03	17.92	18.14	18.10	18.10	19.72	18.42		18.55	
30	17.58	17.69	17.80	17.97	17.92	18.26	18.07	18.20	19.31	18.39		18.21	
31		17.67		17.95	17.91		18.08		20.11	19.50		18.10	
Mean	17.60	17.67	17.90	18.05	17.99	18.19	18.01	18.09	18.67	18.67	18.60	18.13	
Max	17.65	18.31	18.73	18.91	18.18	19.11	18.37	18.40	20.11	19.79	20.18	18.55	20.18
Min	17.58	17.57	17.67	17.78	17.84	17.88	17.85	17.96	18.02	18.12	18.12	17.91	17.57

Annual Max Momentary Gage Height 20.38 M (MSL), at 15.00 Hours, on Feb 14, 1998
Zero Gage at Bottom Elevation 15.85 M (MSL), River Bed 17.24 M (MSL)
Left Bank Elevation 21.79 M (MSL)
Right Bank Elevation 21.85 M (MSL), Drainage Area 43 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.42	0.27	0.51	0.96	1.94	4.94	2.66	2.27	2.61	23.30	10.43	3.88	
2	0.39	0.27	7.63	0.84	2.06	3.81	2.38	2.44	2.33	15.45	8.94	3.23	
3	0.33	0.27	1.83	1.23	2.61	2.82	2.17	2.88	2.11	13.74	6.20	1.94	
4	0.33	0.27	1.89	0.87	1.89	2.55	1.94	2.27	2.17	25.50	5.84	2.33	
5	0.33	0.27	2.71	1.29	1.62	2.27	1.83	2.06	6.20	6.64	9.08	2.49	
6	0.33	0.27	1.34	2.22	1.39	2.33	1.73	2.44	15.45	6.02	4.76	3.69	
7	0.33	0.25	1.01	1.45	1.39	4.76	1.62	2.49	21.70	5.03	5.66	4.33	
8	0.33	0.25	1.51	2.55	1.18	2.82	1.78	2.66	20.18	4.33	4.21	3.75	
9	0.30	0.25	0.96	6.02	1.12	2.82	1.51	2.33	9.35	4.01	3.69	2.71	
10	0.30	0.25	0.81	2.61	1.62	2.38	1.51	3.75	6.11	3.88	3.42	2.44	
11	0.30	0.25	0.72	2.06	1.12	1.94	3.36	3.75	4.85	3.56	3.81	2.27	
12	0.30	0.78	0.69	1.73	1.78	2.17	2.33	2.66	4.21	3.10	21.13	2.17	
13	0.30	0.45	0.87	1.45	2.77	2.27	2.17	2.38	3.88	2.99	10.56	2.00	
14	0.30	0.39	0.75	1.29	2.99	2.00	1.94	2.17	3.62	2.82	34.72	1.89	
15	0.30	0.45	1.34	2.17	2.17	1.73	2.33	2.00	3.81	2.66	17.72	1.78	
16	0.30	0.39	0.87	1.39	1.83	1.56	2.11	2.33	5.75	3.29	8.29	1.67	
17	0.30	0.28	1.45	2.22	2.71	1.45	1.78	1.94	4.33	4.08	6.64	1.62	
18	0.28	0.28	1.83	1.62	2.44	1.34	1.67	1.83	3.75	4.67	5.48	1.62	
19	0.28	0.28	1.18	2.99	2.06	1.56	1.56	1.94	3.23	5.21	4.85	1.51	
20	0.28	0.27	1.18	2.00	1.83	3.16	1.34	1.78	3.94	4.67	4.33	1.73	
21	0.28	0.72	1.67	1.78	2.93	4.33	1.23	2.00	3.10	3.62	4.01	2.66	
22	0.28	0.69	1.23	1.45	2.93	4.40	1.18	1.89	3.75	3.23	3.81	2.27	
23	0.28	3.81	1.01	9.89	2.82	4.08	1.18	2.06	3.16	15.98	3.62	2.66	
24	0.45	1.23	2.22	4.76	2.27	3.29	1.18	1.89	2.71	24.30	3.29	3.62	
25	0.28	0.78	2.44	4.67	1.94	12.92	1.51	2.27	7.74	10.96	2.93	2.66	
26	0.28	0.69	1.67	2.93	1.78	5.30	4.21	4.40	11.10	14.75	3.10	2.99	
27	0.28	0.75	1.29	2.88	1.56	4.01	3.81	2.88	18.28	6.86	2.77	4.94	
28	0.27	0.63	1.07	2.49	1.67	3.16	2.61	3.75	18.66	5.48	2.66	2.93	
29	0.27	0.69	1.12	2.17	1.56	2.77	2.55	2.55	24.10	4.58		5.75	
30	0.27	0.57	0.90	1.83	1.56	3.49	2.38	3.10	16.32	4.33		3.16	
31		0.51		1.73	1.51		2.44		33.04	19.80		2.55	
Total	9.27	17.51	45.70	75.54	61.05	98.43	64.00	75.16	271.54	258.84	205.95	85.24	1268.23 CMSDAY
Mean	0.31	0.56	1.52	2.44	1.97	3.28	2.06	2.51	8.76	8.35	7.36	2.75	3.47 CMS
Max	0.45	3.81	7.63	9.89	2.99	12.92	4.21	4.40	33.04	25.50	34.72	5.75	34.72 CMS
Min	0.27	0.25	0.51	0.84	1.12	1.34	1.18	1.78	2.11	2.66	2.66	1.51	0.25 CMS
Runoff	0.801	1.513	3.948	6.527	5.275	8.504	5.530	6.494	23.461	22.364	17.794	7.365	109.575 MCM

Momentary Peak 39.88 CMS, at 20.38 M (MSL), at 15.00 Hours, on Feb 14, 1998
Runoff Yield 80.80 Liters/Second/Square KM, Momentary Peak Yield 927.442 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

Khlong Nang Noi at Ban Wang Yi, Trang (X.128A)

Location — Lat.07°35'28" N., Long. 99°44'13" E., on right bank about 2.00 meters upstream from the bridge at Ban Wang Yi, Amphoe Na Yong, Trang.

Drainage Area — 75 sq.km.

Type of Gage — Staff gage.

Zero Gage at Bottom — +0.00 m.(A.D.)

Bench Mark — B.M.-H.D.

- Location — On right bank about 5 meters from the top staff gage.
- Elevation — +5.730 m.(A.D.)

Gage Reading Frequency — 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height — Arithmetic mean of 5 readings.

Period of Available Gage Records — 1983 to date

Rating Operation

- Period of Rating — 1984, 1987 to date.
- Rated by Float — -
- Rated by Current Meter — 1984, 1987 to date

Stability of Channel Regimes — Stable.

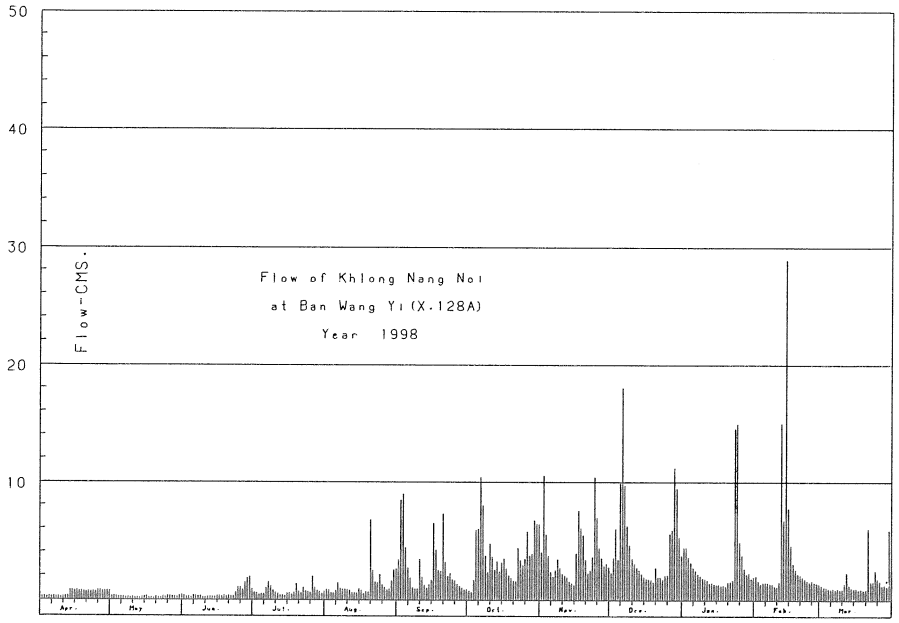
Overbank Flow Conditions — No overbank flow.

General Description — Records fair. Flow regulated by Khlong Nang Noi weir. Stage-discharge relation defined by 35 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	-0.04	-0.02	-0.03	0.09	0.18	0.76	0.12	0.90	0.52	0.98	0.44	0.25	
2	-0.05	-0.02	-0.05	0.06	0.14	1.63	0.10	1.95	0.79	0.97	0.36	0.23	
3	-0.05	-0.03	-0.06	0.03	0.08	1.72	0.38	1.17	1.24	0.80	0.28	0.21	
4	-0.04	-0.07	-0.08	0.03	0.05	0.97	1.22	0.83	0.77	0.71	0.32	0.20	
5	-0.04	-0.07	-0.01	0.05	0.14	0.62	1.25	0.54	1.86	0.62	0.33	0.18	
6	-0.05	-0.07	-0.02	0.21	0.31	0.41	1.93	0.45	2.81	0.55	0.31	0.18	
7	-0.05	-0.07	-0.03	0.33	0.20	0.22	1.56	0.56	1.82	0.50	0.30	0.17	
8	-0.06	-0.08	-0.05	0.24	0.16	0.17	0.84	0.78	1.29	0.45	0.28	0.18	
9	-0.06	-0.08	-0.08	0.15	0.18	0.19	0.53	0.60	1.01	0.42	0.25	0.17	
10	-0.06	-0.08	-0.10	0.07	0.15	0.78	1.03	0.49	0.79	0.39	0.22	0.16	
11	-0.05	-0.09	-0.08	0.04	0.13	0.43	0.81	0.47	0.68	0.36	0.32	0.29	
12	-0.01	-0.10	-0.04	0.01	0.08	0.26	0.58	0.43	0.62	0.32	2.50	0.52	
13	0.16	-0.10	-0.08	-0.01	0.06	0.21	0.74	0.35	0.56	0.31	1.36	0.27	
14	0.14	-0.08	-0.06	-0.02	0.07	0.27	0.53	0.30	0.50	0.30	3.78	0.20	
15	0.14	-0.04	-0.03	0.07	0.19	0.38	0.70	0.28	0.43	0.28	1.53	0.19	
16	0.14	-0.05	-0.03	0.06	0.13	1.32	0.79	0.87	0.40	0.27	1.00	0.18	
17	0.13	-0.09	-0.04	0.03	0.06	0.94	0.59	1.50	0.40	0.26	0.69	0.16	
18	0.12	-0.10	-0.01	0.07	0.10	0.57	0.47	1.25	0.37	0.26	0.57	0.16	
19	0.12	-0.10	-0.03	0.30	0.10	0.54	0.41	1.16	0.34	0.25	0.50	0.15	
20	0.11	-0.07	-0.02	0.10	1.38	1.46	0.35	0.77	0.62	0.32	0.46	0.15	
21	0.11	-0.09	-0.04	0.08	0.56	0.71	0.35	0.50	0.43	0.33	0.43	1.24	
22	0.11	-0.09	-0.02	0.21	0.34	0.46	0.97	0.57	0.44	0.38	0.40	0.34	
23	0.11	-0.05	0.09	0.13	0.31	0.50	0.76	0.81	0.38	2.45	0.35	0.33	
24	0.11	-0.06	0.22	0.09	0.49	0.39	0.65	1.93	0.47	2.49	0.33	0.56	
25	0.14	-0.02	0.22	0.08	0.28	0.35	0.77	1.40	0.47	1.06	0.35	0.39	
26	0.15	-0.04	0.17	0.45	0.21	0.28	1.20	0.96	1.18	0.83	0.33	0.34	
27	0.13	-0.03	0.33	0.21	0.16	0.25	0.84	0.80	1.22	0.60	0.31	0.26	
28	0.12	-0.06	0.41	0.14	0.17	0.20	0.86	0.65	2.03	0.49	0.28	0.26	
29	0.14	-0.05	0.45	0.09	0.36	0.17	1.37	0.68	1.79	0.50		0.38	
30	0.12	-0.02	0.17	0.05	0.57	0.16	1.31	0.62	1.12	0.41		1.23	
31		0.02		0.10	0.60		1.31		0.84	0.43		0.55	
Mean	0.06	-0.06	0.04	0.11	0.26	0.58	0.82	0.82	0.91	0.62	0.66	0.33	
Max	0.16	0.02	0.45	0.45	1.38	1.72	1.93	1.95	2.81	2.49	3.78	1.24	3.78
Min	-0.06	-0.10	-0.10	-0.02	0.05	0.16	0.10	0.28	0.34	0.25	0.22	0.15	-0.10

Annual Max Momentary Gage Height — 5.35 M (AD), at 18.00 Hours, on Jan 12, 1998
Zero Gage at Bottom Elevation — 0.00 M (AD), River Bed -0.31 M (AD)
Left Bank Elevation — 7.82 M (AD)
Right Bank Elevation — 7.83 M (AD), Drainage Area 75 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.32	0.36	0.34	0.67	0.94	3.42	0.76	4.10	2.34	4.50	1.98	1.20	
2	0.30	0.36	0.30	0.58	0.82	8.50	0.70	10.65	3.56	4.45	1.64	1.12	
3	0.30	0.34	0.28	0.49	0.64	9.08	1.72	5.62	6.04	3.60	1.32	1.04	
4	0.32	0.26	0.24	0.49	0.55	4.45	5.92	3.75	3.47	3.20	1.48	1.00	
5	0.32	0.26	0.38	0.55	0.82	2.79	6.10	2.43	10.02	2.79	1.52	0.94	
6	0.30	0.26	0.36	1.04	1.44	1.84	10.51	2.02	18.11	2.48	1.44	0.94	
7	0.30	0.26	0.34	1.52	1.00	1.08	8.04	2.52	9.74	2.25	1.40	0.91	
8	0.28	0.24	0.30	1.16	0.88	0.91	3.80	3.51	6.34	2.02	1.32	0.94	
9	0.28	0.24	0.24	0.85	0.94	0.97	2.38	2.70	4.66	1.89	1.20	0.91	
10	0.28	0.24	0.20	0.61	0.85	3.51	4.78	2.21	3.56	1.76	1.08	0.88	
11	0.30	0.22	0.24	0.52	0.79	1.93	3.65	2.12	3.06	1.64	1.48	1.36	
12	0.38	0.20	0.32	0.43	0.64	1.24	2.61	1.93	2.79	1.48	15.10	2.34	
13	0.88	0.20	0.24	0.38	0.58	1.04	3.33	1.60	2.52	1.44	6.76	1.28	
14	0.82	0.24	0.28	0.36	0.61	1.28	2.38	1.40	2.25	1.40	28.96	1.00	
15	0.82	0.32	0.34	0.61	0.97	1.72	3.15	1.32	1.93	1.32	7.85	0.97	
16	0.82	0.30	0.34	0.58	0.79	6.52	3.56	3.95	1.80	1.28	4.60	0.94	
17	0.79	0.22	0.32	0.49	0.58	4.30	2.65	7.65	1.80	1.24	3.11	0.88	
18	0.76	0.20	0.38	0.61	0.70	2.56	2.12	6.10	1.68	1.24	2.56	0.88	
19	0.76	0.20	0.34	1.40	0.70	2.43	1.84	5.56	1.56	1.20	2.25	0.85	
20	0.73	0.26	0.36	0.70	6.88	7.39	1.60	3.47	2.79	1.48	2.07	0.85	
21	0.73	0.22	0.32	0.64	2.52	3.20	1.60	2.25	1.93	1.52	1.93	6.04	
22	0.73	0.22	0.36	1.04	1.56	2.07	4.45	2.56	1.98	1.72	1.80	1.56	
23	0.73	0.30	0.67	0.79	1.44	2.25	3.42	3.65	1.72	14.65	1.60	1.52	
24	0.73	0.28	1.08	0.67	2.21	1.76	2.93	10.51	2.12	15.01	1.52	2.52	
25	0.82	0.36	1.08	0.64	1.32	1.60	3.47	7.00	2.12	4.96	1.60	1.76	
26	0.85	0.32	0.91	2.02	1.04	1.32	5.80	4.40	5.68	3.75	1.52	1.56	
27	0.79	0.34	1.52	1.04	0.88	1.20	3.80	3.60	5.92	2.70	1.44	1.24	
28	0.76	0.28	1.84	0.82	0.91	1.00	3.90	2.93	11.22	2.21	1.32	1.24	
29	0.82	0.30	2.02	0.67	1.64	0.91	6.82	3.06	9.54	2.25		1.72	
30	0.76	0.36	0.91	0.55	2.56	0.88	6.46	2.79	5.32	1.84		5.98	
31		0.46		0.70	2.70		6.46		3.80	1.93		2.48	
Total	17.78	8.62	16.85	23.62	40.90	83.15	120.71	117.36	141.37	95.20	101.85	48.85	816.26 CMSDAY
Mean	0.59	0.28	0.56	0.76	1.32	2.77	3.89	3.91	4.56	3.07	3.64	1.58	2.24 CMS
Max	0.88	0.46	2.02	2.02	6.88	9.08	10.51	10.65	18.11	15.01	28.96	6.04	28.96 CMS
Min	0.28	0.20	0.20	0.36	0.55	0.88	0.70	1.32	1.56	1.20	1.08	0.85	0.20 CMS
Runoff	1.536	0.745	1.456	2.041	3.534	7.184	10.429	10.140	12.214	8.225	8.800	4.221	70.525 MCM

Momentary Peak 52.90 CMS, at 5.35 M (AD), at 18.00 Hours, on Jan 12, 1998

Runoff Yield 29.82 Liters/Second/Square KM, Momentary Peak Yield 705.333 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

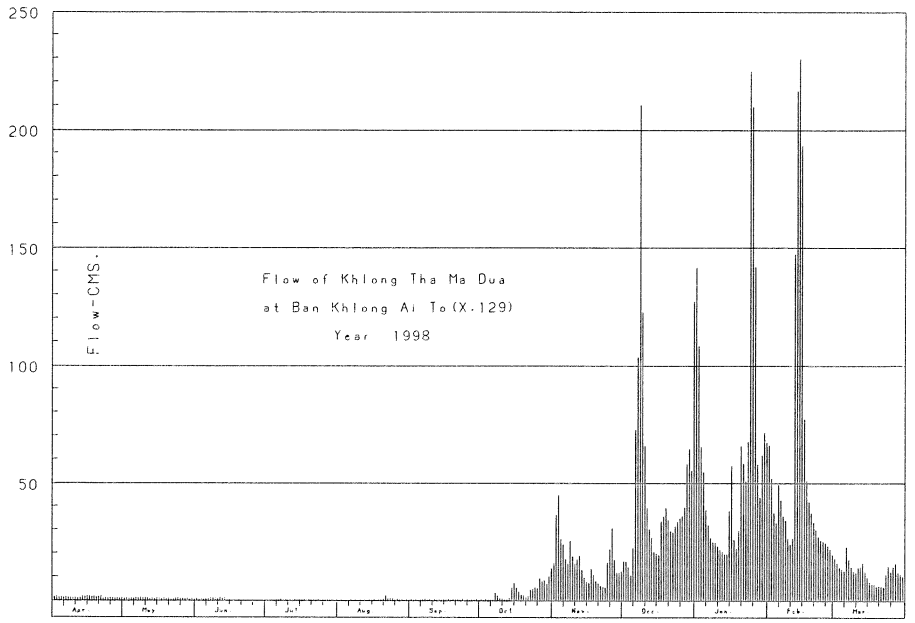
Khlong Tha Ma Dua at Ban Khlong Ai To, Phatthalung (X.129)

Location	Lat. 07°-23'-19" N., Long. 100°-06'-44" E., on right bank near Wat Ban Ai To, Ban Khlong Ai To, Amphoe Ta Mot, Phatthalung.
Drainage Area	332 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+13.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 20 meters from the top staff gage.
Elevation	+20.510 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1982 to date.
Rating Operation	
Period of Rating	1983 to date.
Rated by Float	-
Rated by Current Meter	1983 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Flow regulated by Tha Chiat weir about 4 kilometers above gage site. Stage-discharge relation defined by 18 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	13.69	13.63	13.60	13.51	13.53	13.57	13.55	14.61	14.63	18.59	16.44	14.69	
2	13.69	13.63	13.59	13.51	13.52	13.56	13.55	15.42	14.64	17.71	15.97	14.60	
3	13.66	13.63	13.58	13.52	13.51	13.56	13.56	15.74	14.52	16.42	15.46	14.52	
4	13.66	13.63	13.59	13.53	13.51	13.56	13.57	15.03	14.36	16.07	15.29	14.47	
5	13.66	13.63	13.60	13.54	13.51	13.56	13.56	14.95	14.88	15.50	15.89	14.45	
6	13.66	13.63	13.61	13.55	13.51	13.57	13.56	14.67	16.66	15.27	15.66	14.91	
7	13.66	13.64	13.63	13.56	13.52	13.57	13.85	14.60	17.57	15.05	15.40	14.67	
8	13.64	13.64	13.63	13.55	13.52	13.56	13.71	15.00	20.24	14.99	15.34	14.53	
9	13.64	13.64	13.63	13.54	13.52	13.56	13.62	14.74	18.09	14.97	15.04	14.43	
10	13.64	13.63	13.61	13.53	13.52	13.56	13.59	14.59	16.44	14.92	14.95	14.41	
11	13.64	13.62	13.65	13.53	13.52	13.56	13.58	14.67	15.53	14.86	15.05	14.52	
12	13.65	13.61	13.63	13.53	13.53	13.56	13.57	14.75	15.20	14.82	18.73	14.52	
13	13.69	13.61	13.63	13.54	13.53	13.56	13.62	14.47	15.05	14.77	20.38	14.60	
14	13.70	13.61	13.53	13.54	13.53	13.56	14.02	14.29	14.82	14.78	20.69	14.43	
15	13.70	13.62	13.51	13.55	13.53	13.57	14.17	14.18	14.78	15.48	19.83	14.29	
16	13.70	13.61	13.51	13.56	13.53	13.56	14.00	14.17	14.76	16.15	16.82	14.18	
17	13.70	13.61	13.51	13.55	13.54	13.56	13.87	14.49	15.32	15.03	15.94	14.14	
18	13.70	13.61	13.51	13.54	13.55	13.56	13.78	14.35	15.41	14.87	15.63	14.11	
19	13.70	13.61	13.51	13.53	13.57	13.56	13.73	14.22	15.54	15.17	15.45	14.06	
20	13.70	13.60	13.51	13.53	13.57	13.58	13.68	14.14	15.34	16.43	15.31	14.06	
21	13.70	13.60	13.51	13.53	13.76	13.57	13.70	14.08	15.16	16.19	15.18	14.05	
22	13.62	13.60	13.51	13.53	13.62	13.57	13.95	14.02	15.15	15.94	15.08	14.04	
23	13.63	13.63	13.51	13.54	13.61	13.57	13.96	14.03	15.25	16.50	15.01	14.37	
24	13.63	13.63	13.51	13.53	13.60	13.56	14.03	14.61	15.31	20.57	15.00	14.53	
25	13.63	13.62	13.51	13.55	13.58	13.56	13.98	14.87	15.38	20.22	14.97	14.43	
26	13.63	13.61	13.50	13.54	13.58	13.57	14.29	15.22	15.40	18.60	14.93	14.52	
27	13.63	13.61	13.50	13.53	13.56	13.57	14.22	14.66	15.55	16.17	14.86	14.60	
28	13.63	13.60	13.50	13.53	13.56	13.56	14.22	14.41	16.17	15.69	14.77	14.41	
29	13.63	13.59	13.51	13.53	13.56	13.56	14.14	14.39	16.40	16.31		14.36	
30	13.63	13.59	13.51	13.53	13.56	13.55	14.32	14.44	16.08	16.62		14.33	
31		13.60		13.53	13.57		14.49		18.21	16.49		14.28	
Mean	13.66	13.62	13.55	13.54	13.55	13.56	13.85	14.59	15.74	16.17	16.04	14.40	
Max	13.70	13.64	13.65	13.56	13.76	13.58	14.49	15.74	20.24	20.57	20.69	14.91	20.69
Min	13.62	13.59	13.50	13.51	13.51	13.55	13.55	14.02	14.36	14.77	14.77	14.04	13.50

Annual Max Momentary Gage Height 20.73 M (MSL), at 18.00 Hours, on Feb 14, 1998
Zero Gage at Bottom Elevation 13.00 M (MSL), River Bed 13.96 M (MSL)
Left Bank Elevation 22.43 M (MSL)
Right Bank Elevation 22.37 M (MSL), Drainage Area 332 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.90	1.30	1.00	0.55	0.65	0.85	0.75	16.22	16.67	142.02	66.20	18.02	
2	1.90	1.30	0.95	0.55	0.60	0.80	0.75	36.55	16.90	108.85	52.10	16.00	
3	1.60	1.30	0.90	0.60	0.55	0.80	0.80	45.35	14.40	65.60	37.65	14.40	
4	1.60	1.30	0.95	0.65	0.55	0.80	0.85	26.28	11.20	55.10	33.09	13.40	
5	1.60	1.30	1.00	0.70	0.55	0.80	0.80	24.25	22.50	38.75	49.70	13.00	
6	1.60	1.30	1.10	0.75	0.55	0.85	0.80	17.57	72.80	32.56	43.15	23.25	
7	1.60	1.40	1.30	0.80	0.60	0.85	3.63	16.00	103.95	26.80	36.00	17.57	
8	1.40	1.40	1.30	0.75	0.60	0.80	2.10	25.50	210.70	25.25	34.41	14.60	
9	1.40	1.40	1.30	0.70	0.60	0.80	1.20	19.15	122.87	24.75	26.54	12.60	
10	1.40	1.30	1.10	0.65	0.60	0.80	0.95	15.80	66.20	23.50	24.25	12.20	
11	1.40	1.20	1.50	0.65	0.60	0.80	0.90	17.57	39.57	22.00	26.80	14.40	
12	1.50	1.10	1.30	0.65	0.65	0.80	0.85	19.37	30.70	21.00	147.41	14.40	
13	1.90	1.10	1.30	0.70	0.65	0.80	1.20	13.40	26.80	19.83	216.65	16.00	
14	2.00	1.10	0.65	0.70	0.65	0.80	5.78	9.83	21.00	20.05	229.83	12.60	
15	2.00	1.20	0.55	0.75	0.65	0.85	7.88	8.02	20.05	38.20	193.27	9.83	
16	2.00	1.10	0.55	0.80	0.65	0.80	5.50	7.88	19.60	57.50	77.70	8.02	
17	2.00	1.10	0.55	0.75	0.70	0.80	3.87	13.80	33:88	26.28	51.20	7.46	
18	2.00	1.10	0.55	0.70	0.75	0.80	2.80	11.00	36.28	22.25	42.33	7.04	
19	2.00	1.10	0.55	0.65	0.85	0.80	2.30	8.64	39.85	29.92	37.38	6.34	
20	2.00	1.00	0.55	0.65	0.85	0.90	1.80	7.46	34.41	65.90	33.62	6.34	
21	2.00	1.00	0.55	0.65	2.60	0.85	2.00	6.62	29.66	58.70	30.18	6.20	
22	1.20	1.00	0.55	0.65	1.20	0.85	4.87	5.78	29.40	51.20	27.58	6.06	
23	1.30	1.30	0.55	0.70	1.10	0.85	5.00	5.92	32.03	68.00	25.76	11.40	
24	1.30	1.30	0.55	0.65	1.00	0.80	5.92	16.22	33.62	224.72	25.50	14.60	
25	1.30	1.20	0.55	0.75	0.90	0.80	5.25	22.25	35.47	209.85	24.75	12.60	
26	1.30	1.10	0.50	0.70	0.90	0.85	9.83	31.23	36.00	142.40	23.75	14.40	
27	1.30	1.10	0.50	0.65	0.80	0.85	8.64	17.35	40.13	58.10	22.00	16.00	
28	1.30	1.00	0.50	0.65	0.80	0.80	8.64	12.20	58.10	43.97	19.83	12.20	
29	1.30	0.95	0.55	0.65	0.80	0.80	7.46	11.80	65.00	62.30		11.20	
30	1.30	0.95	0.55	0.65	0.80	0.75	10.40	12.80	55.40	71.60		10.60	
31		1.00		0.65	0.85		13.80		127.38	67.70		9.66	
Total	48.40	36.30	24.30	21.05	24.60	24.50	127.32	501.81	1502.52	1924.65	1658.63	382.39	6276.47 CMSDAY
Mean	1.61	1.17	0.81	0.68	0.79	0.82	4.11	16.73	48.47	62.09	59.24	12.34	17.20 CMS
Max	2.00	1.40	1.50	0.80	2.60	0.90	13.80	45.35	210.70	224.72	229.83	23.25	229.83 CMS
Min	1.20	0.95	0.50	0.55	0.55	0.75	0.75	5.78	11.20	19.83	19.83	6.06	0.50 CMS
Runoff	4.182	3.136	2.100	1.819	2.125	2.117	11.000	43.356	129.818	166.290	143.306	33.039	542.287 MCM

Momentary Peak 231.52 CMS, at 20.73 M (MSL), at 18.00 Hours, on Feb 14, 1998
Runoff Yield 51.79 Liters/Second/Square KM, Momentary Peak Yield 697.349 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

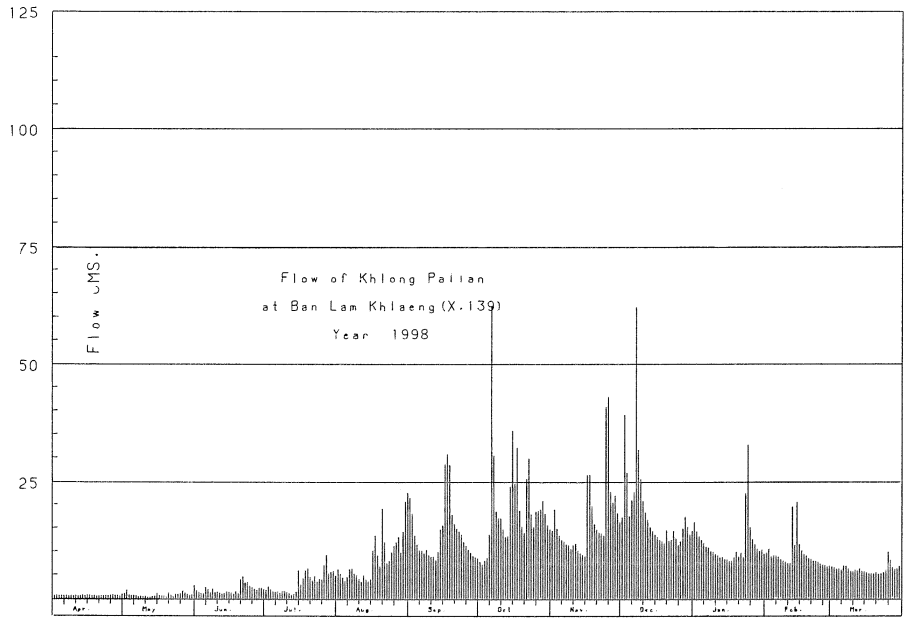
Khlong Palian at Ban Lam Khlaeng(2), Trang (X.139)

Location	Lat.07°-19'-08" N., Long. 99°-49'-03" E., on right bank at Ban Lam Khlaeng(2), Amphoe Palian, Trang.
Drainage Area	153 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 11 meters from the top staff gage.
Elevation	+5.106 m.(A.D.)
Gage Reading Frequency	13-time daily readings at 06.00 - 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1983 to date.
Rating Operation	
Period of Rating	1983 to date.
Rated by Float	-
Rated by Current Meter	1983 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	Overbank flow starts at elevation +4.28 m.(A.D.),records are channel flow only.
General Description	Records good. Stage-discharge relation defined by 73 discharge measurements made in 1998.

Gage Height in Meter (AD) Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.09	1.14	1.19	1.20	1.58	2.47	1.69	2.11	2.27	2.22	1.82	1.62	
2	1.09	1.20	1.17	1.28	1.49	2.31	1.64	2.36	3.21	2.11	1.87	1.60	
3	1.09	1.11	1.13	1.21	1.44	2.06	1.71	2.15	2.70	2.04	1.77	1.59	
4	1.08	1.09	1.14	1.18	1.37	1.93	1.74	2.05	2.29	2.00	1.78	1.58	
5	1.09	1.09	1.26	1.17	1.45	1.86	2.07	2.00	2.45	1.95	1.79	1.57	
6	1.08	1.08	1.21	1.17	1.58	1.85	4.01	1.97	2.52	1.91	1.76	1.63	
7	1.08	1.07	1.16	1.15	1.58	1.82	2.86	1.94	4.01	1.89	1.73	1.63	
8	1.08	1.07	1.22	1.17	1.51	1.86	2.34	1.92	2.91	1.85	1.70	1.58	
9	1.08	1.07	1.16	1.19	1.47	1.80	2.26	1.88	2.65	1.83	1.69	1.55	
10	1.08	1.07	1.16	1.15	1.41	1.76	2.27	1.92	2.44	1.81	1.67	1.54	
11	1.08	1.06	1.14	1.13	1.37	1.76	2.13	1.95	2.33	1.78	1.66	1.56	
12	1.09	1.06	1.13	1.11	1.47	1.72	2.04	1.85	2.25	1.76	2.39	1.56	
13	1.09	1.06	1.13	1.11	1.41	1.84	2.04	1.82	2.17	1.75	1.92	1.58	
14	1.09	1.08	1.18	1.17	1.36	2.13	2.58	1.79	2.11	1.73	2.43	1.55	
15	1.09	1.13	1.16	1.56	1.41	2.19	3.08	1.78	2.07	1.72	1.94	1.53	
16	1.09	1.08	1.14	1.30	1.85	2.78	2.60	2.68	2.03	1.70	1.85	1.52	
17	1.09	1.08	1.13	1.43	2.05	2.87	2.93	2.69	2.00	1.70	1.81	1.51	
18	1.08	1.07	1.17	1.55	1.79	2.78	2.35	2.39	1.97	1.76	1.78	1.50	
19	1.08	1.06	1.13	1.59	1.62	2.30	2.17	2.21	1.94	1.83	1.75	1.51	
20	1.08	1.14	1.40	1.44	2.37	2.21	2.08	2.13	2.13	1.77	1.73	1.52	
21	1.08	1.10	1.46	1.39	1.96	2.14	2.65	2.10	1.99	1.82	1.71	1.50	
22	1.09	1.07	1.35	1.45	1.67	2.11	2.84	2.08	1.99	1.76	1.70	1.50	
23	1.08	1.11	1.35	1.37	1.70	2.06	2.30	2.06	2.11	2.51	1.69	1.53	
24	1.09	1.12	1.29	1.41	1.83	1.97	2.17	3.27	2.02	2.96	1.66	1.56	
25	1.09	1.12	1.25	1.41	1.92	1.91	2.34	3.35	1.93	2.17	1.65	1.84	
26	1.10	1.18	1.23	1.63	1.96	1.86	2.34	2.53	1.97	2.00	1.63	1.71	
27	1.10	1.15	1.21	1.80	2.04	1.83	2.36	2.43	2.15	1.94	1.62	1.61	
28	1.08	1.11	1.24	1.50	1.82	1.78	2.44	2.49	2.28	1.87	1.62	1.57	
29	1.08	1.10	1.25	1.53	2.10	1.75	2.31	2.32	2.16	1.85		1.59	
30	1.11	1.10	1.21	1.54	2.44	1.74	2.20	2.22	2.07	1.86		1.62	
31		1.30		1.46	2.52		2.13		2.11	1.81		1.57	
Mean	1.09	1.11	1.21	1.35	1.73	2.05	2.34	2.21	2.30	1.92	1.79	1.58	
Max	1.11	1.30	1.46	1.80	2.52	2.87	4.01	3.35	4.01	2.96	2.43	1.84	4.01
Min	1.08	1.06	1.13	1.11	1.36	1.72	1.64	1.78	1.93	1.70	1.62	1.50	1.06

Annual Max Momentary Gage Height 5.17 M (AD), at 17.00 Hours, on Oct 6, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.44 M (AD)
Left Bank Elevation 4.27 M (AD)
Right Bank Elevation 4.41 M (AD), Drainage Area 153 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.90	1.40	1.90	2.00	6.54	21.68	8.06	14.56	17.43	16.41	9.92	7.08	
2	0.90	2.00	1.70	2.88	5.37	18.25	7.36	19.28	39.36	14.56	10.72	6.80	
3	0.90	1.10	1.30	2.11	4.72	13.76	8.34	15.20	26.90	13.44	9.18	6.67	
4	0.80	0.90	1.40	1.80	3.87	11.68	8.76	13.60	17.84	12.80	9.32	6.54	
5	0.90	0.90	2.66	1.70	4.85	10.56	13.92	12.80	21.22	12.00	9.46	6.41	
6	0.80	0.80	2.11	1.70	6.54	10.40	62.31	12.32	22.80	11.36	9.04	7.22	
7	0.80	0.70	1.60	1.50	6.54	9.92	30.64	11.84	62.31	11.04	8.62	7.22	
8	0.80	0.70	2.22	1.70	5.63	10.56	18.87	11.52	31.84	10.40	8.20	6.54	
9	0.80	0.70	1.60	1.90	5.11	9.60	17.23	10.88	25.75	10.08	8.06	6.15	
10	0.80	0.70	1.60	1.50	4.33	9.04	17.43	11.52	21.00	9.76	7.78	6.02	
11	0.80	0.60	1.40	1.30	3.87	9.04	14.88	12.00	18.66	9.32	7.64	6.28	
12	0.90	0.60	1.30	1.10	5.11	8.48	13.44	10.40	17.02	9.04	19.89	6.28	
13	0.90	0.60	1.30	1.10	4.33	10.24	13.44	9.92	15.52	8.90	11.52	6.54	
14	0.90	0.80	1.80	1.70	3.76	14.88	24.15	9.46	14.56	8.62	20.77	6.15	
15	0.90	1.30	1.60	6.28	4.33	15.84	36.04	9.32	13.92	8.48	11.84	5.89	
16	0.90	0.80	1.40	3.10	10.40	28.74	24.60	26.44	13.28	8.20	10.40	5.76	
17	0.90	0.80	1.30	4.59	13.60	30.88	32.32	26.67	12.80	8.20	9.76	5.63	
18	0.80	0.70	1.70	6.15	9.46	28.74	19.07	19.89	12.32	9.04	9.32	5.50	
19	0.80	0.60	1.30	6.67	7.08	18.05	15.52	16.20	11.84	10.08	8.90	5.63	
20	0.80	1.40	4.20	4.72	19.48	16.20	14.08	14.88	14.88	9.18	8.62	5.76	
21	0.80	1.00	4.98	4.09	12.16	15.04	25.75	14.40	12.64	9.92	8.34	5.50	
22	0.90	0.70	3.65	4.85	7.78	14.56	30.16	14.08	12.64	9.04	8.20	5.50	
23	0.80	1.10	3.65	3.87	8.20	13.76	18.05	13.76	14.56	22.57	8.06	5.89	
24	0.90	1.20	2.99	4.33	10.08	12.32	15.52	40.95	13.12	33.04	7.64	6.28	
25	0.90	1.20	2.55	4.33	11.52	11.36	18.87	43.07	11.68	15.52	7.50	10.24	
26	1.00	1.80	2.33	7.22	12.16	10.56	18.87	23.02	12.32	12.80	7.22	8.34	
27	1.00	1.50	2.11	9.60	13.44	10.08	19.28	20.77	15.20	11.84	7.08	6.94	
28	0.80	1.10	2.44	5.50	9.92	9.32	21.00	22.12	17.64	10.72	7.08	6.41	
29	0.80	1.00	2.55	5.89	14.40	8.90	18.25	18.46	15.36	10.40		6.67	
30	1.10	1.00	2.11	6.02	21.00	8.76	16.00	16.41	13.92	10.56		7.08	
31		3.10		4.98	22.80		14.88		14.56	9.76		6.41	
Total	26.00	32.80	64.75	116.18	278.38	421.20	617.09	515.74	584.89	367.08	270.08	201.33	3495.52 CMSDAY
Mean	0.87	1.06	2.16	3.75	8.98	14.04	19.91	17.19	18.87	11.84	9.65	6.49	9.58 CMS
Max	1.10	3.10	4.98	9.60	22.80	30.88	62.31	43.07	62.31	33.04	20.77	10.24	62.31 CMS
Min	0.80	0.60	1.30	1.10	3.76	8.48	7.36	9.32	11.68	8.20	7.08	5.50	0.60 CMS
Runoff	2.246	2.834	5.594	10.038	24.052	36.392	53.317	44.560	50.535	31.716	23.335	17.395	302.013 MCM

Momentary Peak 102.89 CMS, at 5.17 M (AD), at 17.00 Hours, on Oct 6, 1998
Runoff Yield 62.59 Liters/Second/Square KM, Momentary Peak Yield 672.484 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

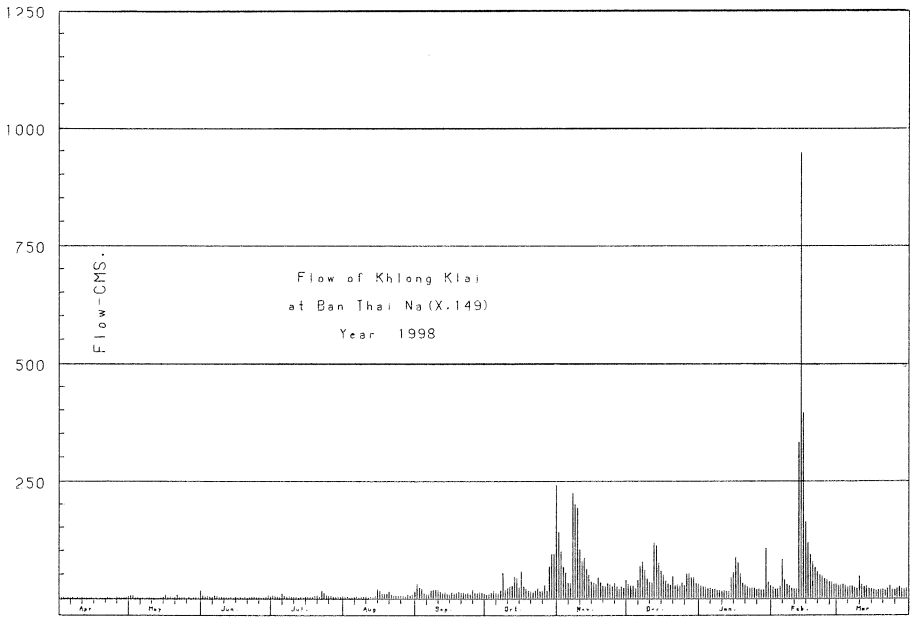
Khlong Klai at Ban Thai Na, Nakhon Si Thammarat (X.149)

Location	Lat.08°-43'-48" N., Long. 99°-44'-52" E., on left bank at Ban Thai Na, Amphoe Tha Sa La, Nakhon Si Thammarat.
Drainage Area	469 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+28.30 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank near the station office.
Elevation	+34.588 m.(M.S.L.)
Gage Reading Frequency	13-time daily readings at 06.00-18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 44 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	28.55	28.67	28.66	28.65	28.58	29.10	28.71	30.03	29.09	29.05	29.00	29.07	
2	28.54	28.65	28.61	28.63	28.57	29.01	28.71	29.74	29.05	29.04	28.96	29.06	
3	28.54	28.54	28.62	28.58	28.55	28.95	28.81	29.49	29.04	29.01	28.94	29.10	
4	28.54	28.53	28.60	28.58	28.56	28.79	28.87	29.36	28.98	28.98	29.05	29.05	
5	28.53	28.51	28.56	28.78	28.57	28.74	28.80	29.14	29.21	28.97	29.62	29.02	
6	28.53	28.51	28.66	28.61	28.58	28.70	28.75	29.12	29.49	28.95	29.21	29.03	
7	28.53	28.50	28.58	28.57	28.56	28.90	28.90	30.48	29.59	28.93	29.10	29.05	
8	28.53	28.52	28.55	28.62	28.57	28.89	29.37	30.36	29.42	28.91	29.04	29.00	
9	28.53	28.53	28.57	28.59	28.59	28.94	28.90	30.33	29.25	28.89	28.99	28.98	
10	28.53	28.51	28.56	28.58	28.57	28.89	28.99	29.78	29.14	28.88	28.97	29.30	
11	28.52	28.50	28.54	28.55	28.56	28.83	29.02	29.60	29.14	28.87	28.94	29.08	
12	28.52	28.50	28.54	28.54	28.58	28.80	29.06	29.64	29.87	28.86	30.94	29.03	
13	28.52	28.51	28.53	28.55	28.57	28.81	29.29	29.45	29.84	28.85	32.46	29.03	
14	28.51	28.51	28.53	28.55	28.61	28.75	29.24	29.31	29.56	29.27	31.15	28.97	
15	28.50	28.59	28.54	28.58	28.95	28.73	29.00	29.18	29.41	29.37	30.17	28.94	
16	28.50	28.68	28.54	28.55	28.86	28.81	29.39	29.13	29.32	29.65	29.87	28.92	
17	28.50	28.56	28.53	28.58	28.76	28.76	29.04	29.11	29.18	29.57	29.70	28.91	
18	28.50	28.58	28.53	28.55	28.72	28.77	28.93	29.26	29.12	29.34	29.58	28.90	
19	28.50	28.55	28.54	28.64	28.76	28.85	28.89	29.16	29.07	29.14	29.48	28.93	
20	28.50	28.53	28.54	28.64	28.84	28.77	28.84	29.06	29.30	29.07	29.38	28.92	
21	28.53	28.72	28.54	28.56	28.71	28.79	28.81	29.02	29.07	29.02	29.33	28.90	
22	28.51	28.56	28.58	28.90	28.66	28.76	28.90	29.13	29.08	28.99	29.29	28.95	
23	28.49	28.55	28.55	28.77	28.64	28.77	28.96	29.08	29.06	28.97	29.25	29.06	
24	28.49	28.54	28.55	28.68	28.65	28.73	28.87	29.04	29.13	28.99	29.21	28.92	
25	28.59	28.53	28.54	28.60	28.63	28.91	28.86	29.12	29.08	28.95	29.18	28.93	
26	28.53	28.53	28.53	28.63	28.61	28.81	29.06	29.02	29.35	28.93	29.15	28.96	
27	28.51	28.52	28.56	28.59	28.61	28.80	28.88	28.96	29.34	28.92	29.10	29.03	
28	28.50	28.51	28.58	28.57	28.69	28.81	29.50	29.02	29.27	28.90	29.09	28.94	
29	28.53	28.55	28.65	28.58	28.67	28.81	29.70	29.00	29.26	29.80		28.96	
30	28.59	28.56	28.62	28.59	28.70	28.74	29.70	29.22	29.13	29.16		28.96	
31		28.90		28.59	28.86		30.55		29.09	29.05		28.90	
Mean	28.52	28.56	28.57	28.61	28.66	28.82	29.07	29.38	29.26	29.07	29.51	28.99	
Max	28.59	28.90	28.66	28.90	28.95	29.10	30.55	30.48	29.87	29.80	32.46	29.30	32.46
Min	28.49	28.50	28.53	28.54	28.55	28.70	28.71	28.96	28.98	28.85	28.94	28.90	28.49

Annual Max Momentary Gage Height 33.50 M (MSL), at 2.00 Hours, on Feb 12, 1998
Zero Gage at Bottom Elevation 28.30 M (MSL), River Bed 25.95 M (MSL)
Left Bank Elevation 35.98 M (MSL)
Right Bank Elevation 35.88 M (MSL), Drainage Area 469 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.50	8.80	8.40	8.00	5.40	32.50	10.40	144.50	31.75	28.75	25.00	30.25	
2	4.20	8.00	6.40	7.20	5.10	25.75	10.40	101.60	28.75	28.00	22.80	29.50	
3	4.20	4.20	6.80	5.40	4.50	22.25	14.55	69.90	28.00	25.75	21.70	32.50	
4	4.20	3.90	6.00	5.40	4.80	13.60	17.85	56.00	23.90	23.90	28.75	28.75	
5	3.90	3.30	4.80	13.20	5.10	11.60	14.00	35.50	41.00	23.35	84.80	26.50	
6	3.90	3.30	8.40	6.40	5.40	10.00	12.00	34.00	69.90	22.25	41.00	27.25	
7	3.90	3.00	5.40	5.10	4.80	19.50	19.50	227.60	80.90	21.15	32.50	28.75	
8	3.90	3.60	4.50	6.80	5.10	18.95	57.00	202.00	62.20	20.05	28.00	25.00	
9	3.90	3.90	5.10	5.70	5.70	21.70	19.50	196.00	45.00	18.95	24.45	23.90	
10	3.90	3.30	4.80	5.40	5.10	18.95	24.45	107.20	35.50	18.40	23.35	50.00	
11	3.60	3.00	4.20	4.50	4.80	15.65	26.50	82.00	35.50	17.85	21.70	31.00	
12	3.60	3.00	4.20	4.20	5.40	14.00	29.50	87.60	120.50	17.30	335.00	27.25	
13	3.60	3.30	3.90	4.50	5.10	14.55	49.00	65.50	116.00	16.75	950.00	27.25	
14	3.30	3.30	3.90	4.50	6.40	12.00	44.00	51.00	77.60	47.00	396.50	23.35	
15	3.00	5.70	4.20	5.40	22.25	11.20	25.00	38.50	61.10	57.00	165.50	21.70	
16	3.00	9.20	4.20	4.50	17.30	14.55	59.00	34.75	52.00	89.00	120.50	20.60	
17	3.00	4.80	3.90	5.40	12.40	12.40	28.00	33.25	38.50	78.70	96.00	20.05	
18	3.00	5.40	3.90	4.50	10.80	12.80	21.15	46.00	34.00	54.00	79.80	19.50	
19	3.00	4.50	4.20	7.60	12.40	16.75	18.95	37.00	30.25	35.50	68.80	21.15	
20	3.00	3.90	4.20	7.60	16.20	12.80	16.20	29.50	50.00	30.25	58.00	20.60	
21	3.90	10.80	4.20	4.80	10.40	13.60	14.55	26.50	30.25	26.50	53.00	19.50	
22	3.30	4.80	5.40	19.50	8.40	12.40	19.50	34.75	31.00	24.45	49.00	22.25	
23	2.70	4.50	4.50	12.80	7.60	12.80	22.80	31.00	29.50	23.35	45.00	29.50	
24	2.70	4.20	4.50	9.20	8.00	11.20	17.85	28.00	34.75	24.45	41.00	20.60	
25	5.70	3.90	4.20	6.00	7.20	20.05	17.30	34.00	31.00	22.25	38.50	21.15	
26	3.90	3.90	3.90	7.20	6.40	14.55	29.50	26.50	55.00	21.15	36.25	22.80	
27	3.30	3.60	4.80	5.70	6.40	14.00	18.40	22.80	54.00	20.60	32.50	27.25	
28	3.00	3.30	5.40	5.10	9.60	14.55	71.00	26.50	47.00	19.50	31.75	21.70	
29	3.90	4.50	8.00	5.40	8.80	14.55	96.00	25.00	46.00	110.00		22.80	
30	5.70	4.80	6.80	5.70	10.00	11.60	96.00	42.00	34.75	37.00		22.80	
31		19.50		5.70	17.30		243.00		31.75	28.75		19.50	
Total	110.70	159.20	153.10	208.40	264.15	470.80	1162.85	1976.45	1487.35	1031.90	2951.15	784.70	10760.75 CMSDAY
Mean	3.69	5.14	5.10	6.72	8.52	15.69	37.51	65.88	47.98	33.29	105.40	25.31	29.48 CMS
Max	5.70	19.50	8.40	19.50	22.25	32.50	243.00	227.60	120.50	110.00	950.00	50.00	950.00 CMS
Min	2.70	3.00	3.90	4.20	4.50	10.00	10.40	22.80	23.90	16.75	21.70	19.50	2.70 CMS
Runoff	9.564	13.755	13.228	18.006	22.823	40.677	100.470	170.765	128.507	89.156	254.979	67.798	929.729 MCM

Momentary Peak 1640.00 CMS, at 33.50 M (MSL), at 2.00 Hours, on Feb 12, 1998
Runoff Yield 62.86 Liters/Second/Square KM, Momentary Peak Yield 3496.802 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

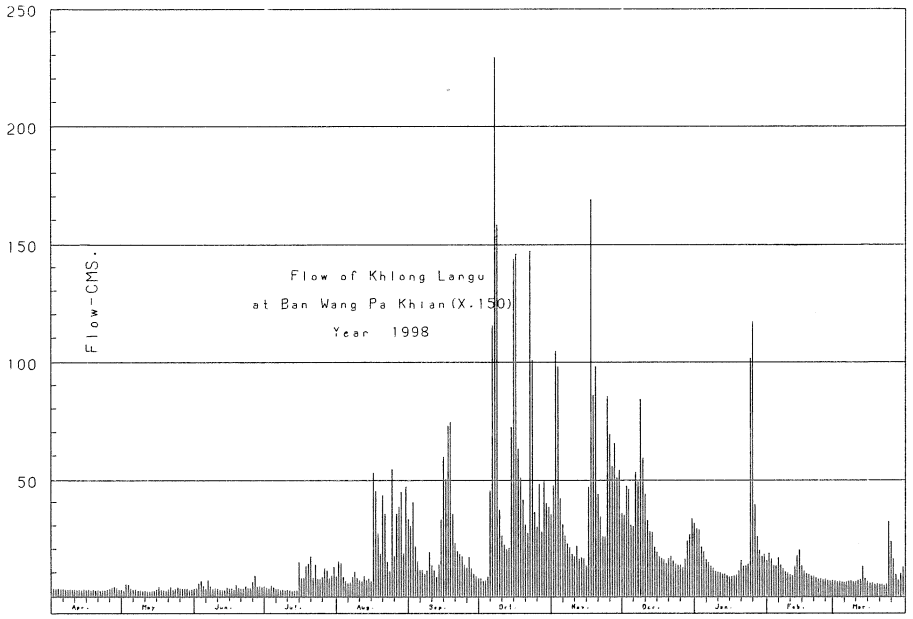
Khlong Langu at Ban Wang Pa Khian, Satun (X.150)

Location	Lat.06°-56'-30" N., Long. 99°-52'-33" E., on right bank at Ban Wang Pa Khian, Amphoe Langu, Satun.
Drainage Area	552 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 5 meters from the top staff gage.
Elevation	+8.520 m.(A.D.)
Gage Reading Frequency	13-time daily readings at 06.00-18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1984 to date.
Rated by Float	-
Rated by Current Meter	1984 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 59 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.75	0.69	0.79	0.80	1.54	2.21	1.11	2.90	2.40	2.18	1.72	1.04	
2	0.75	0.91	0.94	0.78	1.50	2.63	1.05	4.67	2.89	2.15	1.60	1.03	
3	0.75	0.92	1.05	0.87	1.17	1.86	1.04	4.51	2.83	1.85	1.46	1.03	
4	0.74	0.76	0.85	0.83	1.03	1.54	1.18	2.68	2.24	1.75	1.43	1.02	
5	0.73	0.72	0.76	0.76	0.97	1.35	2.81	2.25	2.21	1.60	1.64	1.01	
6	0.73	0.71	1.07	0.74	0.98	1.33	4.94	2.04	3.10	1.52	1.47	1.00	
7	0.72	0.69	0.84	0.71	1.17	1.25	7.59	1.91	2.96	1.45	1.37	1.05	
8	0.72	0.67	0.75	0.70	1.29	1.32	6.00	1.83	4.13	1.38	1.31	1.03	
9	0.72	0.67	0.77	0.70	1.14	1.75	2.50	1.71	3.31	1.32	1.26	1.03	
10	0.71	0.67	0.75	0.70	1.05	1.45	2.04	1.65	2.75	1.28	1.22	1.01	
11	0.71	0.66	0.73	0.69	1.04	1.32	1.89	1.87	2.32	1.27	1.21	1.05	
12	0.70	0.65	0.70	0.68	1.18	1.17	1.81	1.60	2.13	1.25	1.44	1.10	
13	0.70	0.65	0.71	0.67	1.07	1.48	1.82	1.64	2.10	1.23	1.67	1.44	
14	0.72	0.68	0.80	0.70	1.10	2.32	3.76	1.61	1.85	1.21	1.80	1.11	
15	0.71	0.71	0.76	1.54	1.04	3.33	5.65	1.45	1.74	1.18	1.45	1.03	
16	0.71	0.82	0.76	1.11	3.09	3.00	5.70	2.87	1.66	1.17	1.31	0.98	
17	0.70	0.72	0.73	1.14	2.81	3.78	3.44	6.25	1.63	1.21	1.26	0.96	
18	0.70	0.68	0.90	1.43	2.09	3.82	3.02	4.17	1.58	1.21	1.22	0.93	
19	0.70	0.68	0.80	1.50	1.71	2.43	2.67	4.51	1.51	1.33	1.20	0.93	
20	0.69	0.72	0.74	1.65	2.73	1.91	2.24	2.76	1.61	1.57	1.17	0.94	
21	0.68	0.82	0.75	1.13	2.42	1.77	2.10	2.37	1.66	1.43	1.14	0.92	
22	0.68	0.73	0.86	1.48	1.55	1.70	5.73	2.04	1.57	1.45	1.11	0.90	
23	0.70	0.74	0.77	1.11	1.32	1.67	4.58	2.02	1.48	1.48	1.10	0.93	
24	0.71	0.82	0.79	1.08	3.16	1.46	2.46	4.16	1.47	4.60	1.09	2.30	
25	0.76	0.75	1.01	1.17	1.66	1.41	2.20	3.65	1.45	4.98	1.09	1.95	
26	0.79	0.77	1.21	1.37	2.42	1.65	2.91	3.20	1.39	2.59	1.07	1.60	
27	0.84	0.77	0.85	1.34	2.55	1.38	2.12	3.53	1.61	2.04	1.05	1.24	
28	0.77	0.74	0.84	1.11	2.80	1.25	2.97	3.02	1.96	1.78	1.05	1.08	
29	0.73	0.71	0.83	1.19	1.71	1.17	2.60	3.13	2.06	1.67		1.25	
30	0.70	0.72	0.84	1.43	2.87	1.13	2.55	2.44	2.35	1.70		1.43	
31		0.74		1.19	2.34		2.41		2.26	1.58		1.31	
Mean	0.72	0.73	0.83	1.04	1.76	1.86	3.06	2.81	2.14	1.76	1.32	1.15	
Max	0.84	0.92	1.21	1.65	3.16	3.82	7.59	6.25	4.13	4.98	1.80	2.30	7.59
Min	0.68	0.65	0.70	0.67	0.97	1.13	1.04	1.45	1.39	1.17	1.05	0.90	0.65

Annual Max Momentary Gage Height 7.63 M (AD), at 12.00 Hours, on Oct 7, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.81 M (AD)
Left Bank Elevation 11.33 M (AD)
Right Bank Elevation 11.35 M (AD), Drainage Area 552 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.57	2.94	4.00	4.10	15.12	30.25	7.94	47.90	35.00	29.52	18.72	6.96	
2	3.57	5.37	5.71	3.89	14.40	40.78	7.10	104.80	47.63	28.80	16.20	6.82	
3	3.57	5.48	7.10	4.91	8.78	21.84	6.96	98.49	46.01	21.60	13.68	6.82	
4	3.47	3.68	4.68	4.44	6.82	15.12	8.92	42.08	31.00	19.35	13.14	6.68	
5	3.37	3.26	3.68	3.68	6.06	11.75	45.47	31.25	30.25	16.20	17.04	6.54	
6	3.37	3.15	7.38	3.47	6.17	11.41	115.60	26.16	53.30	14.76	13.86	6.40	
7	3.26	2.94	4.56	3.15	8.78	10.05	229.55	23.04	49.52	13.50	12.09	7.10	
8	3.26	2.74	3.57	3.05	10.73	11.24	158.20	21.12	84.62	12.26	11.07	6.82	
9	3.26	2.74	3.78	3.05	8.36	19.35	37.50	18.51	59.30	11.24	10.22	6.82	
10	3.15	2.74	3.57	3.05	7.10	13.50	26.16	17.25	43.90	10.56	9.54	6.54	
11	3.15	2.63	3.37	2.94	6.96	11.24	22.56	22.08	33.00	10.39	9.37	7.10	
12	3.05	2.52	3.05	2.84	8.92	8.78	20.64	16.20	28.32	10.05	13.32	7.80	
13	3.05	2.52	3.15	2.74	7.38	14.04	20.88	17.04	27.60	9.71	17.67	13.32	
14	3.26	2.84	4.10	3.05	7.80	33.00	72.80	16.41	21.60	9.37	20.40	7.94	
15	3.15	3.15	3.68	15.12	6.96	59.90	144.00	13.50	19.14	8.92	13.50	6.82	
16	3.15	4.33	3.68	7.94	53.03	50.60	146.00	47.09	17.46	8.78	11.07	6.17	
17	3.05	3.26	3.37	8.36	45.47	73.40	63.20	169.33	16.83	9.37	10.22	5.94	
18	3.05	2.84	5.25	13.14	27.36	74.62	51.14	85.98	15.84	9.37	9.54	5.60	
19	3.05	2.84	4.10	14.40	18.51	35.75	41.82	98.49	14.58	11.41	9.20	5.60	
20	2.94	3.26	3.47	17.25	43.38	23.04	31.00	44.16	16.41	15.66	8.78	5.71	
21	2.84	4.33	3.57	8.22	35.50	19.77	27.60	34.25	17.46	13.14	8.36	5.48	
22	2.84	3.37	4.79	14.04	15.30	18.30	147.20	26.16	15.66	13.50	7.94	5.25	
23	3.05	3.47	3.78	7.94	11.24	17.67	101.22	25.68	14.04	14.04	7.80	5.60	
24	3.15	4.33	4.00	7.52	54.92	13.68	36.50	85.64	13.86	102.00	7.66	32.50	
25	3.68	3.57	6.54	8.78	17.46	12.78	30.00	69.50	13.50	117.20	7.66	24.00	
26	4.00	3.78	9.37	12.09	35.50	17.25	48.17	56.00	12.43	39.75	7.38	16.20	
27	4.56	3.78	4.68	11.58	38.75	12.26	28.08	65.90	16.41	26.16	7.10	9.88	
28	3.78	3.47	4.56	7.94	45.20	10.05	49.79	51.14	24.24	19.98	7.10	7.52	
29	3.37	3.15	4.44	9.06	18.51	8.78	40.00	54.11	26.64	17.67		10.05	
30	3.05	3.26	4.56	13.14	47.09	8.22	38.75	36.00	33.75	18.30		13.14	
31		3.47		9.06	33.50		35.25		31.50	15.84		11.07	
Total	99.07	105.21	135.54	233.94	671.06	708.42	1840.00	1465.26	910.80	678.40	319.63	280.19	7447.52 CMSDAY
Mean	3.30	3.39	4.52	7.55	21.65	23.61	59.35	48.84	29.38	21.88	11.42	9.04	20.40 CMS
Max	4.56	5.48	9.37	17.25	54.92	74.62	229.55	169.33	84.62	117.20	20.40	32.50	229.55 CMS
Min	2.84	2.52	3.05	2.74	6.06	8.22	6.96	13.50	12.43	8.78	7.10	5.25	2.52 CMS
Runoff	8.560	9.090	11.711	20.212	57.980	61.207	158.976	126.598	78.693	58.614	27.616	24.208	643.466 MCM

Momentary Peak 231.38 CMS, at 7.63 M (AD), at 12.00 Hours, on Oct 7, 1998

Runoff Yield 36.96 Liters/Second/Square KM, Momentary Peak Yield 419.167 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

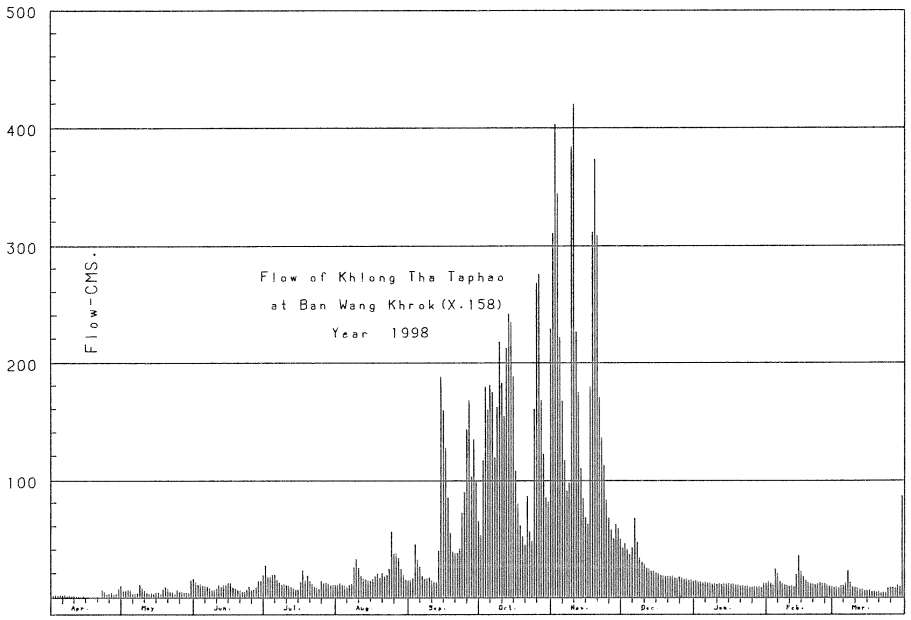
Khlong Tha Taphao at Ban Wang Khrok, Chumphon (X.158)

Location	Lat. 10-35-34 N., Long. 99-08-42 E., on right bank at the bridge on Chumphon - Prachuap Khiri Khan Highway, Amphoe Tha Sae, Chumphon.
Drainage Area	1,819 sq.km
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-A.D.
Location	On right bank about 1.00 meters from the top staff gage.
Elevation	+11.796 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 67 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.09	3.37	3.66	4.06	3.57	3.71	4.58	8.07	4.38	3.70	3.68	3.51	
2	3.10	3.35	3.60	3.82	3.63	3.78	5.73	8.91	4.44	3.68	3.64	3.50	
3	3.11	3.41	3.60	3.80	3.60	4.44	6.64	8.39	4.35	3.67	3.56	3.49	
4	3.11	3.37	3.57	3.85	3.55	4.16	6.38	7.15	4.25	3.66	4.00	3.55	
5	3.11	3.22	3.53	3.87	3.51	4.03	6.65	6.48	4.37	3.66	3.88	3.58	
6	3.10	3.21	3.52	3.74	3.56	3.84	6.57	5.74	4.86	3.65	3.69	3.63	
7	3.08	3.25	3.46	3.65	3.62	3.77	5.78	5.28	4.48	3.64	3.62	3.96	
8	3.08	3.60	3.40	3.60	4.03	3.76	6.40	5.39	4.20	3.62	3.60	3.66	
9	3.07	3.46	3.39	3.61	4.17	3.80	7.11	8.74	4.13	3.62	3.56	3.53	
10	3.06	3.37	3.47	3.59	4.01	3.70	6.68	9.05	4.08	3.61	3.55	3.52	
11	3.05	3.25	3.56	3.55	3.84	3.65	6.30	7.21	4.02	3.62	3.54	3.46	
12	3.04	3.22	3.52	3.52	3.75	3.66	7.04	6.57	3.99	3.61	3.53	3.44	
13	3.03	3.22	3.57	3.46	3.75	4.32	7.38	5.63	3.95	3.61	3.86	3.42	
14	3.02	3.22	3.59	3.43	3.70	6.74	7.30	5.16	3.94	3.62	4.24	3.39	
15	3.01	3.26	3.63	3.40	3.70	6.37	6.74	4.87	3.91	3.62	3.92	3.36	
16	3.00	3.27	3.63	3.69	3.74	5.90	5.59	4.76	3.88	3.62	3.81	3.39	
17	2.99	3.22	3.51	3.95	3.83	5.18	5.07	6.63	3.86	3.61	3.73	3.35	
18	2.98	3.41	3.45	3.70	3.88	4.63	4.74	8.08	3.83	3.60	3.65	3.34	
19	2.98	3.52	3.41	3.85	3.80	4.31	4.56	8.65	3.83	3.58	3.63	3.33	
20	2.98	3.44	3.37	3.71	3.89	4.27	4.43	8.06	3.82	3.56	3.60	3.33	
21	2.97	3.33	3.34	3.60	3.81	4.29	5.19	6.52	3.83	3.55	3.60	3.28	
22	3.41	3.28	3.31	3.53	3.86	4.35	4.66	6.03	3.83	3.55	3.61	3.27	
23	3.30	3.23	3.42	3.48	4.00	4.93	4.48	5.67	3.80	3.54	3.66	3.29	
24	3.21	3.39	3.51	3.46	4.65	5.26	6.39	5.13	3.77	3.52	3.62	3.46	
25	3.18	3.33	3.42	3.71	4.28	6.14	7.66	4.86	3.82	3.52	3.63	3.51	
26	3.26	3.29	3.40	3.62	4.27	6.48	7.74	4.68	3.78	3.52	3.58	3.48	
27	3.18	3.29	3.51	3.66	4.19	5.50	6.48	4.54	3.76	3.52	3.55	3.49	
28	3.19	3.25	3.69	3.61	4.00	6.01	5.82	4.75	3.75	3.52	3.52	3.56	
29	3.45	3.28	3.71	3.58	3.84	5.43	5.18	4.69	3.73	3.51		3.54	
30	3.54	3.70	3.84	3.56	3.74	4.81	5.10	4.52	3.72	3.63		5.20	
31		3.77		3.60	3.70		7.24		3.71	3.64		4.15	
Mean	3.12	3.35	3.52	3.65	3.85	4.71	6.05	6.34	4.00	3.60	3.68	3.55	
Max	3.54	3.77	3.84	4.06	4.65	6.74	7.74	9.05	4.86	3.70	4.24	5.20	9.05
Min	2.97	3.21	3.31	3.40	3.51	3.65	4.43	4.52	3.71	3.51	3.52	3.27	2.97

Annual Max Momentary Gage Height 9.89 M (MSL), at 21.00 Hours, on Nov 9, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed 1.39 M (MSL)
Left Bank Elevation 14.44 M (MSL)
Right Bank Elevation 14.32 M (MSL), Drainage Area 1819 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.14	6.19	13.30	27.70	10.78	14.80	53.00	310.35	43.00	14.50	13.90	9.34	
2	2.25	5.85	11.50	18.25	12.40	16.90	116.80	403.65	46.00	13.90	12.70	9.10	
3	2.35	6.94	11.50	17.50	11.50	46.00	180.20	344.90	41.50	13.60	10.54	8.86	
4	2.35	6.19	10.78	19.37	10.30	32.20	160.60	221.75	36.50	13.30	25.00	10.30	
5	2.35	3.64	9.82	20.12	9.34	26.35	181.00	168.00	42.50	13.30	20.50	11.02	
6	2.25	3.47	9.58	15.70	10.54	19.00	174.75	117.40	68.30	13.00	14.20	12.40	
7	2.04	4.15	8.14	13.00	12.10	16.60	119.80	91.40	48.00	12.70	12.10	23.50	
8	2.04	11.50	6.70	11.50	26.35	16.30	162.00	97.45	34.00	12.10	11.50	13.30	
9	1.93	8.14	6.53	11.80	32.65	17.50	218.35	384.10	30.85	12.10	10.54	9.82	
10	1.83	6.19	8.38	11.26	25.45	14.50	183.40	420.17	28.60	11.80	10.30	9.58	
11	1.72	4.15	10.54	10.30	19.00	13.00	155.00	226.90	25.90	12.10	10.06	8.14	
12	1.62	3.64	9.58	9.58	16.00	13.30	212.40	174.75	24.62	11.80	9.82	7.66	
13	1.51	3.64	10.78	8.14	16.00	40.00	242.20	110.80	23.13	11.80	19.75	7.18	
14	1.41	3.64	11.26	7.42	14.50	188.20	235.00	84.80	22.75	12.10	36.00	6.53	
15	1.30	4.32	12.40	6.70	14.50	159.90	188.20	68.85	21.63	12.10	22.00	6.02	
16	1.20	4.49	12.40	14.20	15.70	127.50	108.45	62.80	20.50	12.10	17.87	6.53	
17	1.14	3.64	9.34	23.13	18.62	85.90	79.85	179.40	19.75	11.80	15.40	5.85	
18	1.08	6.94	7.90	14.50	20.50	55.65	61.70	311.40	18.62	11.50	13.00	5.68	
19	1.08	9.58	6.94	19.37	17.50	39.50	52.00	373.75	18.62	11.02	12.40	5.51	
20	1.08	7.66	6.19	14.80	20.88	37.50	45.50	309.30	18.25	10.54	11.50	5.51	
21	1.02	5.51	5.68	11.50	17.87	38.50	86.45	171.00	18.62	10.30	11.50	4.66	
22	6.94	4.66	5.17	9.82	19.75	41.50	57.30	136.10	18.62	10.30	11.80	4.49	
23	5.00	3.81	7.18	8.62	25.00	72.15	48.00	113.20	17.50	10.06	13.30	4.83	
24	3.47	6.53	9.34	8.14	56.75	90.30	161.30	83.15	16.60	9.58	12.10	8.14	
25	3.09	5.51	7.18	14.80	38.00	143.80	268.00	68.30	18.25	9.58	12.40	9.34	
26	4.32	4.83	6.70	12.10	37.50	168.00	276.00	58.40	16.90	9.58	11.02	8.62	
27	3.09	4.83	9.34	13.30	33.55	103.50	168.00	51.00	16.30	9.58	10.30	8.86	
28	3.20	4.15	14.20	11.80	25.00	134.70	122.30	62.25	16.00	9.58	9.58	10.54	
29	7.90	4.66	14.80	11.02	19.00	99.65	85.90	58.95	15.40	9.34		10.06	
30	10.06	14.50	19.00	10.54	15.70	65.55	81.50	50.00	15.10	12.40		87.00	
31		16.60		11.50	14.50		229.60		14.80	12.70		31.75	
Total	82.76	189.55	292.15	417.48	637.23	1938.25	4514.55	5314.27	817.11	360.16	401.08	370.12	15334.71 CMSDAY
Mean	2.76	6.11	9.74	13.47	20.56	64.61	145.63	177.14	26.36	11.62	14.32	11.94	42.01 CMS
Max	10.06	16.60	19.00	27.70	56.75	188.20	276.00	420.17	68.30	14.50	36.00	87.00	420.17 CMS
Min	1.02	3.47	5.17	6.70	9.34	13.00	45.50	50.00	14.80	9.34	9.58	4.49	1.02 CMS
Runoff	7.150	16.377	25.242	36.070	55.057	167.465	390.057	459.153	70.598	31.118	34.653	31.978	1324.919 MCM

Momentary Peak 526.60 CMS, at 9.89 M (MSL), at 21.00 Hours, on Nov 9, 1998
Runoff Yield 23.10 Liters/Second/Square KM, Momentary Peak Yield 289.500 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

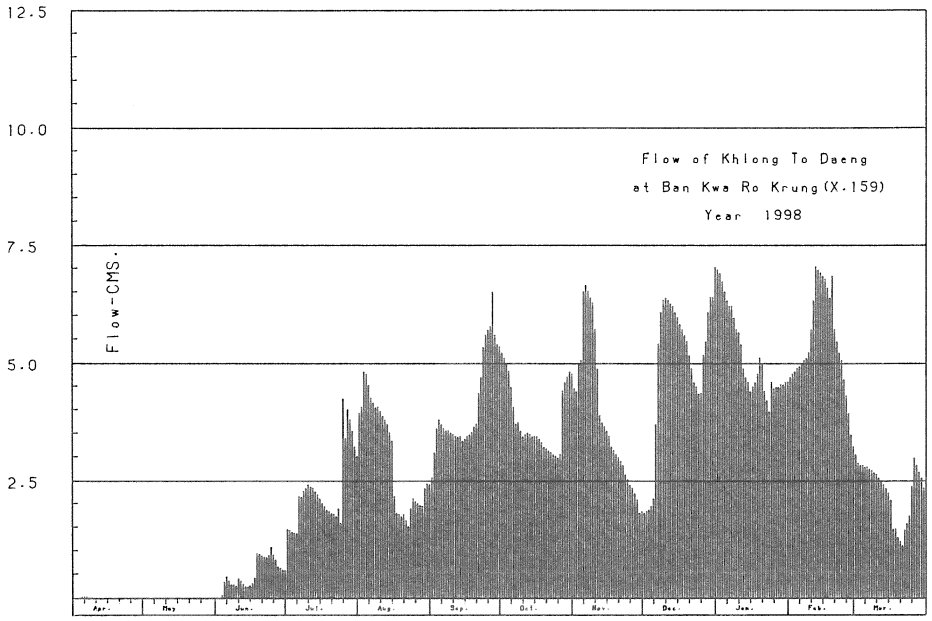
Khlong To Daeng at Ban Kwa Ro Krung, Narathiwat (X.159)

Location	Lat. 06°-05'-08" N., Long. 102°-01'-20" E., on right bank downstream from the bridge of Ban Lu Bo Lu Song-Ban Khlong Chang Road, Amphoe Sungai Kolok, Narathiwat.
Drainage Area	Flood plain.
Type of Gage	Staff gage.
Zero Gage at Bottom	+2.10 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+4.630 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1984 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.19	2.11	2.16	2.91	3.56	3.23	3.81	3.67	3.02	4.09	3.72	3.36	
2	2.20	2.11	2.16	2.90	3.59	3.37	3.78	3.66	3.03	4.08	3.73	3.31	
3	2.21	2.11	2.25	2.89	3.74	3.49	3.77	3.77	3.04	4.05	3.74	3.30	
4	2.22	2.11	2.42	2.88	3.73	3.53	3.74	3.78	3.06	4.02	3.75	3.30	
5	2.23	2.11	2.49	2.88	3.69	3.51	3.68	4.02	3.11	3.99	3.76	3.29	
6	2.23	2.11	2.43	3.12	3.63	3.49	3.59	4.04	3.51	3.97	3.77	3.29	
7	2.22	2.11	2.39	3.12	3.61	3.48	3.51	4.02	3.84	3.97	3.78	3.28	
8	2.21	2.11	2.38	3.15	3.59	3.48	3.52	4.00	3.95	3.93	3.79	3.27	
9	2.20	2.11	2.37	3.17	3.59	3.47	3.48	3.98	3.99	3.89	3.81	3.26	
10	2.19	2.11	2.46	3.19	3.57	3.46	3.45	3.89	4.00	3.88	3.89	3.25	
11	2.18	2.11	2.43	3.18	3.55	3.45	3.46	3.75	3.99	3.84	3.99	3.23	
12	2.17	2.11	2.39	3.17	3.53	3.45	3.47	3.55	3.98	3.75	4.10	3.21	
13	2.16	2.11	2.36	3.15	3.51	3.45	3.46	3.52	3.97	3.72	4.09	3.19	
14	2.15	2.11	2.35	3.13	3.47	3.43	3.45	3.50	3.95	3.70	4.08	3.17	
15	2.14	2.11	2.37	3.11	3.43	3.44	3.45	3.48	3.93	3.66	4.07	3.14	
16	2.13	2.11	2.40	3.08	3.12	3.45	3.45	3.45	3.91	3.68	4.06	3.10	
17	2.12	2.11	2.47	3.06	3.02	3.46	3.44	3.40	3.89	3.70	4.03	2.91	
18	2.11	2.11	2.73	3.04	3.01	3.47	3.42	3.38	3.87	3.73	4.00	2.91	
19	2.11	2.11	2.72	3.03	3.00	3.50	3.40	3.36	3.85	3.79	4.07	2.85	
20	2.11	2.11	2.70	3.02	3.01	3.51	3.39	3.34	3.80	3.77	3.89	2.82	
21	2.11	2.11	2.69	3.01	2.97	3.65	3.38	3.32	3.75	3.66	3.85	2.79	
22	2.11	2.11	2.69	3.00	2.93	3.72	3.37	3.30	3.70	3.62	3.81	2.90	
23	2.11	2.11	2.71	3.05	3.05	3.83	3.36	3.25	3.68	3.57	3.78	2.95	
24	2.11	2.11	2.78	2.95	3.11	3.87	3.35	3.22	3.65	3.70	3.71	3.00	
25	2.11	2.11	2.71	3.63	3.09	3.89	3.34	3.19	3.65	3.67	3.64	3.18	
26	2.11	2.11	2.67	3.44	3.08	3.90	3.36	3.17	3.80	3.68	3.56	3.34	
27	2.11	2.11	2.61	3.58	3.07	4.02	3.66	3.14	3.85	3.68	3.46	3.30	
28	2.11	2.11	2.59	3.53	3.06	3.87	3.70	3.10	3.95	3.69	3.40	3.26	
29	2.11	2.11	2.57	3.48	3.17	3.84	3.72	3.02	4.00	3.69		3.23	
30	2.11	2.11	2.56	3.40	3.20	3.83	3.74	3.03	4.00	3.70		3.17	
31		2.11		3.35	3.19		3.73		4.10	3.70		3.08	
Mean	2.15	2.11	2.50	3.15	3.32	3.58	3.53	3.51	3.74	3.79	3.83	3.15	
Max	2.23	2.11	2.78	3.63	3.74	4.02	3.81	4.04	4.10	4.09	4.10	3.36	4.10
Min	2.11	2.11	2.16	2.88	2.93	3.23	3.34	3.02	3.02	3.57	3.40	2.79	2.11

Annual Max Momentary Gage Height 4.10 M (MSL), at 18.00 Hours, on Feb 12, 1998
Zero Gage at Bottom Elevation 2.10 M (MSL), River Bed 2.16 M (MSL)
Left Bank Elevation 5.85 M (MSL)
Right Bank Elevation 5.83 M (MSL), Drainage Area Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	1.48	3.94	2.57	5.23	4.46	1.82	6.99	4.71	3.07	
2	0.00	0.00	0.00	1.45	4.07	3.11	5.11	4.41	1.85	6.92	4.77	2.88	
3	0.02	0.00	0.08	1.42	4.83	3.62	5.00	5.00	1.89	6.73	4.83	2.84	
4	0.03	0.00	0.35	1.39	4.77	3.80	4.83	5.06	1.96	6.53	4.89	2.84	
5	0.05	0.00	0.47	1.39	4.55	3.71	4.50	6.53	2.13	6.34	4.94	2.80	
6	0.05	0.00	0.37	2.17	4.26	3.62	4.07	6.66	3.71	6.21	5.00	2.80	
7	0.03	0.00	0.30	2.17	4.17	3.57	3.71	6.53	5.41	6.21	5.06	2.76	
8	0.02	0.00	0.29	2.28	4.07	3.57	3.75	6.40	6.09	5.97	5.11	2.72	
9	0.00	0.00	0.27	2.35	4.07	3.53	3.57	6.28	6.34	5.72	5.23	2.68	
10	0.00	0.00	0.42	2.42	3.98	3.49	3.45	5.72	6.40	5.66	5.72	2.64	
11	0.00	0.00	0.37	2.38	3.89	3.45	3.49	4.89	6.34	5.41	6.34	2.57	
12	0.00	0.00	0.30	2.35	3.80	3.45	3.53	3.89	6.28	4.89	7.05	2.49	
13	0.00	0.00	0.26	2.28	3.71	3.45	3.49	3.75	6.21	4.71	6.99	2.42	
14	0.00	0.00	0.24	2.21	3.53	3.36	3.45	3.66	6.09	4.60	6.92	2.35	
15	0.00	0.00	0.27	2.13	3.36	3.40	3.45	3.57	5.97	4.41	6.86	2.24	
16	0.00	0.00	0.32	2.03	2.17	3.45	3.45	3.45	5.84	4.50	6.79	2.10	
17	0.00	0.00	0.44	1.96	1.82	3.49	3.40	3.23	5.72	4.60	6.60	1.48	
18	0.00	0.00	0.97	1.89	1.79	3.53	3.32	3.15	5.60	4.77	6.40	1.48	
19	0.00	0.00	0.95	1.85	1.75	3.66	3.23	3.07	5.47	5.11	6.86	1.30	
20	0.00	0.00	0.90	1.82	1.79	3.71	3.19	3.00	5.17	5.00	5.72	1.21	
21	0.00	0.00	0.88	1.79	1.66	4.36	3.15	2.92	4.89	4.41	5.47	1.13	
22	0.00	0.00	0.88	1.75	1.54	4.71	3.11	2.84	4.60	4.22	5.23	1.45	
23	0.00	0.00	0.92	1.92	1.92	5.35	3.07	2.64	4.50	3.98	5.06	1.60	
24	0.00	0.00	1.10	1.60	2.13	5.60	3.03	2.53	4.36	4.60	4.66	1.75	
25	0.00	0.00	0.92	4.26	2.06	5.72	3.00	2.42	4.36	4.46	4.31	2.38	
26	0.00	0.00	0.83	3.40	2.03	5.78	3.07	2.35	5.17	4.50	3.94	3.00	
27	0.00	0.00	0.68	4.03	1.99	6.53	4.41	2.24	5.47	4.50	3.49	2.84	
28	0.00	0.00	0.64	3.80	1.96	5.60	4.60	2.10	6.09	4.55	3.23	2.68	
29	0.00	0.00	0.61	3.57	2.35	5.41	4.71	1.82	6.40	4.55		2.57	
30	0.00	0.00	0.59	3.23	2.45	5.35	4.83	1.85	6.40	4.60		2.35	
31		0.00		3.03	2.42		4.77		7.05	4.60		2.03	
Total	0.20	0.00	15.62	71.80	92.83	123.95	118.97	116.42	155.58	160.25	152.18	71.45	1079.25 CMSDAY
Mean	0.01	0.00	0.52	2.32	2.99	4.13	3.84	3.88	5.02	5.17	5.44	2.30	2.96 CMS
Max	0.05	0.00	1.10	4.26	4.83	6.53	5.23	6.66	7.05	6.99	7.05	3.07	7.05 CMS
Min	0.00	0.00	0.00	1.39	1.54	2.57	3.00	1.82	1.82	3.98	3.23	1.13	0.00 CMS
Runoff	0.017	0.000	1.350	6.204	8.021	10.709	10.279	10.059	13.442	13.846	13.148	6.173	93.247 MCM

Momentary Peak 7.05 CMS, at 4.10 M (MSL), at 18.00 Hours, on Feb 12, 1998
Runoff Yield ********* Liters/Second/Square KM, Momentary Peak Yield ********* Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

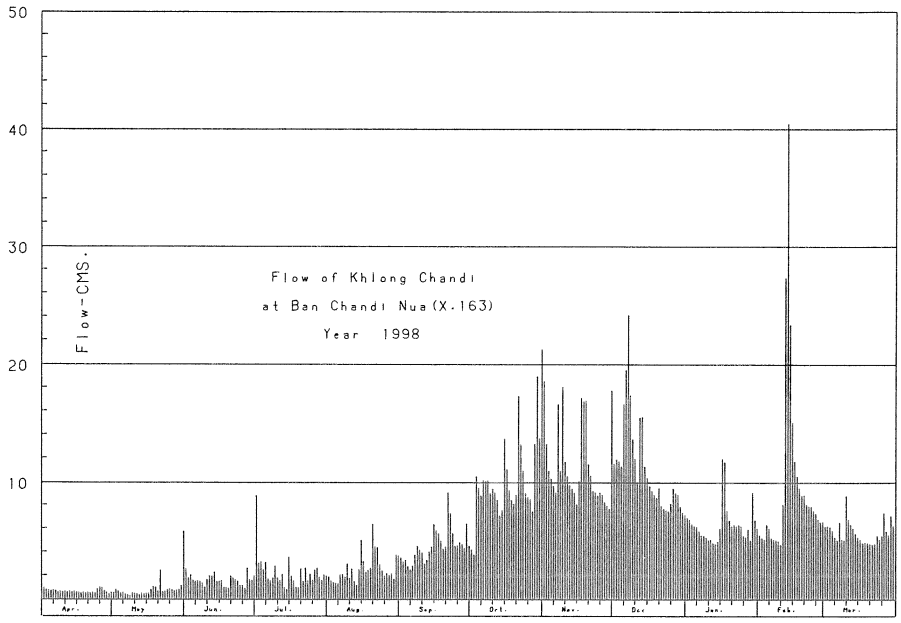
Khlong Chandi at Ban Chandi Nua, Nakhon Si Thammarat (X.163)

Location	Lat.08°-20'-34" N., Long. 99°-37'-12" E., on left bank at the bridge near Wat Manao Wan, Amphoe Chawang, Nakhon Si Thammarat.
Drainage Area	97 sq.k.m.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 5.80 meters from the top staff gage.
Elevation	+6.007 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 47 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.44	0.40	0.60	1.00	0.54	0.68	0.73	1.44	1.13	0.90	0.82	0.86	
2	0.43	0.43	0.53	0.64	0.50	0.65	0.70	1.21	1.15	0.89	0.81	0.86	
3	0.42	0.41	0.55	0.65	0.49	0.66	1.08	1.10	1.14	0.87	0.80	0.86	
4	0.42	0.40	0.51	0.60	0.48	0.62	1.03	1.07	1.12	0.86	0.87	0.84	
5	0.42	0.40	0.50	0.65	0.48	0.60	1.00	1.04	1.36	0.86	0.85	0.81	
6	0.42	0.38	0.50	0.52	0.55	0.62	1.06	1.01	1.48	0.84	0.81	0.80	
7	0.41	0.38	0.50	0.50	0.56	0.70	1.06	1.36	1.66	0.82	0.80	0.88	
8	0.41	0.36	0.48	0.53	0.53	0.76	1.06	1.10	1.39	0.82	0.80	0.80	
9	0.41	0.40	0.45	0.62	0.64	0.73	1.01	1.42	1.23	0.81	0.79	0.80	
10	0.41	0.39	0.51	0.53	0.52	0.71	1.03	1.14	1.15	0.80	0.77	1.00	
11	0.41	0.39	0.54	0.50	0.60	0.64	1.01	1.08	1.05	0.80	0.96	0.89	
12	0.41	0.38	0.54	0.56	0.50	0.66	0.98	1.04	1.31	0.78	1.77	0.87	
13	0.41	0.39	0.58	0.44	0.46	0.72	0.91	1.03	1.31	0.77	2.19	0.85	
14	0.41	0.39	0.50	0.43	0.60	0.75	0.93	1.01	1.12	0.79	1.63	0.83	
15	0.41	0.39	0.50	0.68	0.80	0.87	1.23	0.96	1.07	0.85	1.29	0.81	
16	0.40	0.39	0.50	0.54	0.65	0.84	1.11	1.06	1.04	1.15	1.14	0.80	
17	0.40	0.43	0.45	0.50	0.58	0.83	1.02	1.38	1.02	1.14	1.08	0.78	
18	0.40	0.45	0.44	0.45	0.59	0.79	0.98	1.37	1.00	0.93	1.03	0.78	
19	0.40	0.45	0.44	0.44	0.61	0.74	0.96	1.37	0.99	0.89	1.00	0.78	
20	0.40	0.41	0.54	0.60	0.87	0.75	1.00	1.13	1.03	0.86	1.00	0.77	
21	0.40	0.59	0.53	0.50	0.75	1.01	1.39	1.08	0.95	0.87	0.96	0.77	
22	0.40	0.41	0.51	0.61	0.75	0.92	1.21	1.02	0.94	0.86	0.95	0.77	
23	0.40	0.41	0.50	0.50	0.63	0.83	1.10	1.01	0.93	0.87	0.95	0.82	
24	0.43	0.43	0.46	0.56	0.59	0.76	1.01	1.00	0.93	0.86	0.93	0.80	
25	0.45	0.43	0.46	0.51	0.54	0.76	0.99	1.01	0.96	0.82	0.92	0.82	
26	0.44	0.43	0.44	0.59	0.56	0.78	0.98	1.00	1.03	0.81	0.89	0.92	
27	0.42	0.42	0.61	0.61	0.55	0.77	0.93	0.97	1.01	0.85	0.88	0.84	
28	0.40	0.42	0.51	0.53	0.56	0.74	1.21	0.95	1.00	0.80	0.88	0.82	
29	0.39	0.43	0.51	0.51	0.52	0.87	1.46	0.94	0.95	1.01		0.91	
30	0.40	0.46	0.54	0.55	0.70	0.76	1.23	1.41	0.92	0.89		0.86	
31		0.84		0.54	0.69		1.55		0.91	0.85		0.83	
Mean	0.41	0.43	0.51	0.56	0.59	0.75	1.06	1.12	1.11	0.87	1.02	0.83	
Max	0.45	0.84	0.61	1.00	0.87	1.01	1.55	1.44	1.66	1.15	2.19	1.00	2.19
Min	0.39	0.36	0.44	0.43	0.46	0.60	0.70	0.94	0.91	0.77	0.77	0.77	0.36

Annual Max Momentary Gage Height 2.46 M (AD), at 15.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.33 M (AD)
Left Bank Elevation 7.03 M (AD)
Right Bank Elevation 6.96 M (AD), Drainage Area 97 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.00	0.60	2.60	8.90	2.00	3.60	4.23	18.56	11.56	7.00	5.48	6.24	
2	0.90	0.90	1.90	3.10	1.60	3.22	3.85	13.23	11.97	6.81	5.29	6.24	
3	0.80	0.70	2.10	3.22	1.50	3.35	10.54	10.95	11.77	6.43	5.10	6.24	
4	0.80	0.60	1.70	2.60	1.40	2.85	9.51	10.34	11.36	6.24	6.43	5.86	
5	0.80	0.60	1.60	3.22	1.40	2.60	8.90	9.72	16.68	6.24	6.05	5.29	
6	0.80	0.45	1.60	1.80	2.10	2.85	10.13	9.10	19.52	5.86	5.29	5.10	
7	0.70	0.45	1.60	1.60	2.20	3.85	10.13	16.68	24.28	5.48	5.10	6.62	
8	0.70	0.30	1.40	1.90	1.90	4.60	10.13	10.95	17.37	5.48	5.10	5.10	
9	0.70	0.60	1.10	2.85	3.10	4.23	9.10	18.08	13.69	5.29	4.98	5.10	
10	0.70	0.52	1.70	1.90	1.80	3.97	9.51	11.77	11.97	5.10	4.72	8.90	
11	0.70	0.52	2.00	1.60	2.60	3.10	9.10	10.54	9.92	5.10	8.14	6.81	
12	0.70	0.45	2.00	2.20	1.60	3.35	8.52	9.72	15.53	4.85	27.36	6.43	
13	0.70	0.52	2.40	1.00	1.20	4.10	7.19	9.51	15.53	4.72	40.47	6.05	
14	0.70	0.52	1.60	0.90	2.60	4.48	7.57	9.10	11.36	4.98	23.44	5.67	
15	0.70	0.52	1.60	3.60	5.10	6.43	13.69	8.14	10.34	6.05	15.07	5.29	
16	0.60	0.52	1.60	2.00	3.22	5.86	11.15	10.13	9.72	11.97	11.77	5.10	
17	0.60	0.90	1.10	1.60	2.40	5.67	9.31	17.14	9.31	11.77	10.54	4.85	
18	0.60	1.10	1.00	1.10	2.50	4.98	8.52	16.91	8.90	7.57	9.51	4.85	
19	0.60	1.10	1.00	1.00	2.73	4.35	8.14	16.91	8.71	6.81	8.90	4.85	
20	0.60	0.70	2.00	2.60	6.43	4.48	8.90	11.56	9.51	6.24	8.90	4.72	
21	0.60	2.50	1.90	1.60	4.48	9.10	17.37	10.54	7.95	6.43	8.14	4.72	
22	0.60	0.70	1.70	2.73	4.48	7.38	13.23	9.31	7.76	6.24	7.95	4.72	
23	0.60	0.70	1.60	1.60	2.97	5.67	10.95	9.10	7.57	6.43	7.95	5.48	
24	0.90	0.90	1.20	2.20	2.50	4.60	9.10	8.90	7.57	6.24	7.57	5.10	
25	1.10	0.90	1.20	1.70	2.00	4.60	8.71	9.10	8.14	5.48	7.38	5.48	
26	1.00	0.90	1.00	2.50	2.20	4.85	8.52	8.90	9.51	5.29	6.81	7.38	
27	0.80	0.80	2.73	2.73	2.10	4.72	7.57	8.33	9.10	6.05	6.62	5.86	
28	0.60	0.80	1.70	1.90	2.20	4.35	13.23	7.95	8.90	5.10	6.62	5.48	
29	0.52	0.90	1.70	1.70	1.80	6.43	19.04	7.76	7.95	9.10		7.19	
30	0.60	1.20	2.00	2.10	3.85	4.60	13.69	17.84	7.38	6.81		6.24	
31		5.86		2.00	3.72		21.30		7.19	6.05		5.67	
Total	21.72	28.73	50.33	71.45	81.68	138.22	320.83	346.77	348.02	199.21	276.68	178.63	2062.27 CMSDAY
Mean	0.72	0.93	1.68	2.30	2.63	4.61	10.35	11.56	11.23	6.43	9.88	5.76	5.65 CMS
Max	1.10	5.86	2.73	8.90	6.43	9.10	21.30	18.56	24.28	11.97	40.47	8.90	40.47 CMS
Min	0.52	0.30	1.00	0.90	1.20	2.60	3.85	7.76	7.19	4.72	4.72	4.72	0.30 CMS
Runoff	1.877	2.482	4.349	6.173	7.057	11.942	27.720	29.961	30.069	17.212	23.905	15.434	178.180 MCM

Momentary Peak 50.28 CMS, at 2.46 M (AD), at 15.00 Hours, on Feb 13, 1998

Runoff Yield 58.25 Liters/Second/Square KM, Momentary Peak Yield 518.351 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

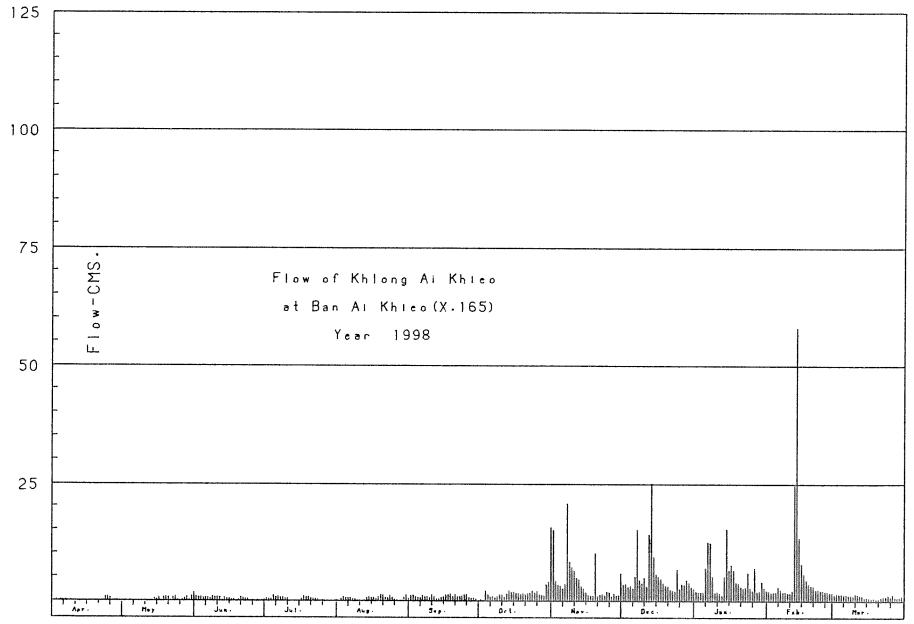
Khlong Ai Khieo at Ban Ai Khieo, Nakhon Si Thammarat (X.165)

Location	Lat. 08°-33'-47" N., Long. 99°-48'-59" E., on right bank at Ban Ai Khieo, Amphoe Phrom Khiri, Nakhon Si Thammarat.
Drainage Area	25 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 9 meters from the top staff gage.
Elevation	+9.738 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.87	0.84	1.00	0.91	0.85	1.02	0.87	2.08	1.34	1.16	1.15	1.06	
2	0.87	0.83	0.99	0.91	0.90	1.06	0.86	1.40	1.33	1.12	1.13	1.07	
3	0.87	0.83	0.98	0.89	0.98	0.99	1.17	1.33	1.28	1.14	1.12	1.08	
4	0.86	0.83	0.96	1.05	0.96	0.98	1.07	1.29	1.29	1.12	1.14	1.07	
5	0.86	0.82	0.95	0.99	0.95	0.97	0.99	1.24	1.25	1.63	1.26	1.06	
6	0.85	0.82	0.94	0.98	0.93	1.02	0.98	1.33	1.48	1.95	1.20	1.05	
7	0.85	0.82	0.93	0.97	0.91	1.00	0.96	2.32	2.08	1.95	1.14	1.05	
8	0.85	0.85	0.99	0.95	0.88	0.98	0.99	1.71	1.43	1.48	1.13	1.03	
9	0.84	0.85	0.99	0.93	0.87	0.97	1.07	1.63	1.35	1.13	1.12	1.02	
10	0.84	0.84	0.96	0.91	0.86	1.05	1.04	1.58	1.46	1.13	1.11	1.09	
11	0.84	0.83	0.99	0.80	0.85	0.99	0.99	1.47	1.29	1.10	1.17	1.05	
12	0.84	0.83	0.86	0.86	0.84	0.91	1.09	1.43	2.04	1.04	2.47	1.04	
13	0.83	0.82	0.95	0.85	0.96	0.89	1.17	1.29	2.49	1.48	3.52	1.00	
14	0.83	0.93	0.93	0.84	0.98	0.98	1.14	1.23	1.77	2.09	2.00	0.95	
15	0.83	0.86	0.91	0.82	0.96	1.00	1.12	1.14	1.53	1.60	1.68	0.94	
16	0.82	0.99	0.87	0.92	0.94	1.04	1.11	1.04	1.48	1.66	1.52	0.93	
17	0.82	0.85	0.87	1.01	0.92	1.07	1.09	1.03	1.45	1.60	1.43	0.92	
18	0.82	0.98	0.85	0.99	0.98	1.07	1.08	1.02	1.35	1.38	1.33	0.92	
19	0.82	0.97	0.88	0.97	1.07	1.01	1.08	1.82	1.31	1.35	1.31	0.91	
20	0.81	0.99	0.99	0.95	1.04	1.06	1.07	1.00	1.28	1.28	1.28	0.88	
21	0.81	0.87	0.95	0.93	0.98	0.99	1.09	1.07	1.22	1.23	1.21	0.97	
22	0.81	0.96	0.92	0.91	0.95	1.01	1.12	1.07	1.17	1.27	1.20	0.97	
23	1.00	1.00	0.89	0.87	1.03	1.01	1.16	1.05	1.17	1.56	1.19	0.99	
24	0.98	0.85	0.86	0.86	0.98	1.07	1.12	1.14	1.60	1.24	1.17	1.03	
25	0.97	0.85	0.85	0.85	0.87	1.06	1.15	1.14	1.24	1.19	1.16	0.99	
26	0.87	0.86	0.83	0.83	0.86	0.98	1.07	0.99	1.33	1.62	1.13	1.05	
27	0.87	0.94	0.88	0.83	0.85	0.95	1.06	1.08	1.33	1.15	1.12	0.98	
28	0.85	0.98	0.85	0.82	0.83	0.92	1.01	1.04	1.42	1.15	1.11	0.93	
29	0.85	0.88	0.84	0.81	0.98	0.89	1.34	1.03	1.36	1.40		0.97	
30	0.84	1.02	0.90	0.86	1.04	0.88	1.38	1.53	1.28	1.24		1.00	
31		1.11		0.85	0.93		2.10		1.22	1.19		0.99	
Mean	0.86	0.89	0.92	0.90	0.93	0.99	1.11	1.32	1.44	1.38	1.38	1.00	
Max	1.00	1.11	1.00	1.05	1.07	1.07	2.10	2.32	2.49	2.09	3.52	1.09	3.52
Min	0.81	0.82	0.83	0.80	0.83	0.88	0.86	0.99	1.17	1.04	1.11	0.88	0.80

Annual Max Momentary Gage Height 3.75 M (AD), at 6.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.65 M (AD)
Left Bank Elevation 11.19 M (AD)
Right Bank Elevation 11.11 M (AD), Drainage Area 25 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.35	0.20	1.00	0.55	0.25	1.14	0.35	15.24	3.66	2.12	2.05	1.42	
2	0.35	0.15	0.95	0.55	0.50	1.42	0.30	4.20	3.57	1.84	1.91	1.49	
3	0.35	0.15	0.90	0.45	0.90	0.95	2.19	3.57	3.12	1.98	1.84	1.56	
4	0.30	0.15	0.80	1.35	0.80	0.90	1.49	3.21	3.21	1.84	1.98	1.49	
5	0.30	0.10	0.75	0.95	0.75	0.85	0.95	2.76	2.85	7.19	2.94	1.42	
6	0.25	0.10	0.70	0.90	0.65	1.14	0.90	3.57	5.20	12.55	2.40	1.35	
7	0.25	0.10	0.65	0.85	0.55	1.00	0.80	20.94	15.24	12.55	1.98	1.35	
8	0.25	0.25	0.95	0.75	0.40	0.90	0.95	8.52	4.57	5.20	1.91	1.21	
9	0.20	0.25	0.95	0.65	0.35	0.85	1.49	7.19	3.75	1.91	1.84	1.14	
10	0.20	0.20	0.80	0.55	0.30	1.35	1.28	6.45	4.95	1.91	1.77	1.63	
11	0.20	0.15	0.95	0.00	0.25	0.95	0.95	5.08	3.21	1.70	2.19	1.35	
12	0.20	0.15	0.30	0.30	0.20	0.55	1.63	4.57	14.32	1.28	24.72	1.28	
13	0.15	0.10	0.75	0.25	0.80	0.45	2.19	3.21	25.24	5.20	58.02	1.00	
14	0.15	0.65	0.65	0.20	0.90	0.90	1.98	2.67	9.51	15.47	13.40	0.75	
15	0.15	0.30	0.55	0.10	0.80	1.00	1.84	1.98	5.82	6.70	8.02	0.70	
16	0.10	0.95	0.35	0.60	0.70	1.28	1.77	1.28	5.20	7.69	5.70	0.65	
17	0.10	0.25	0.35	1.07	0.60	1.49	1.63	1.21	4.83	6.70	4.57	0.60	
18	0.10	0.90	0.25	0.95	0.90	1.49	1.56	1.14	3.75	4.02	3.57	0.60	
19	0.10	0.85	0.40	0.85	1.49	1.07	1.56	10.34	3.39	3.75	3.39	0.55	
20	0.05	0.95	0.95	0.75	1.28	1.42	1.49	1.00	3.12	3.12	3.12	0.40	
21	0.05	0.35	0.75	0.65	0.90	0.95	1.63	1.49	2.58	2.67	2.49	0.85	
22	0.05	0.80	0.60	0.55	0.75	1.07	1.84	1.49	2.19	3.03	2.40	0.85	
23	1.00	1.00	0.45	0.35	1.21	1.07	2.12	1.35	2.19	6.20	2.33	0.95	
24	0.90	0.25	0.30	0.30	0.90	1.49	1.84	1.98	6.70	2.76	2.19	1.21	
25	0.85	0.25	0.25	0.25	0.35	1.42	2.05	1.98	2.76	2.33	2.12	0.95	
26	0.35	0.30	0.15	0.15	0.30	0.90	1.49	0.95	3.57	7.03	1.91	1.35	
27	0.35	0.70	0.40	0.15	0.25	0.75	1.42	1.56	3.57	2.05	1.84	0.90	
28	0.25	0.90	0.25	0.10	0.15	0.60	1.07	1.28	4.45	2.05	1.77	0.65	
29	0.25	0.40	0.20	0.05	0.90	0.45	3.66	1.21	3.84	4.20		0.85	
30	0.20	1.14	0.50	0.30	1.28	0.40	4.02	5.82	3.12	2.76		1.00	
31		1.77		0.25	0.65		15.70		2.58	2.33		0.95	
Total	8.35	14.76	17.80	15.72	21.01	30.20	64.14	127.24	166.06	142.13	164.37	32.45	804.23 CMSDAY
Mean	0.28	0.48	0.59	0.51	0.68	1.01	2.07	4.24	5.36	4.58	5.87	1.05	2.20 CMS
Max	1.00	1.77	1.00	1.35	1.49	1.49	15.70	20.94	25.24	15.47	58.02	1.63	58.02 CMS
Min	0.05	0.10	0.15	0.00	0.15	0.40	0.30	0.95	2.19	1.28	1.77	0.40	0.00 CMS
Runoff	0.721	1.275	1.538	1.358	1.815	2.609	5.542	10.994	14.348	12.280	14.202	2.804	69.485 MCM

Momentary Peak 67.03 CMS, at 3.75 M (AD), at 6.00 Hours, on Feb 13, 1998
Runoff Yield 88.13 Liters/Second/Square KM, Momentary Peak Yield 2681.200 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

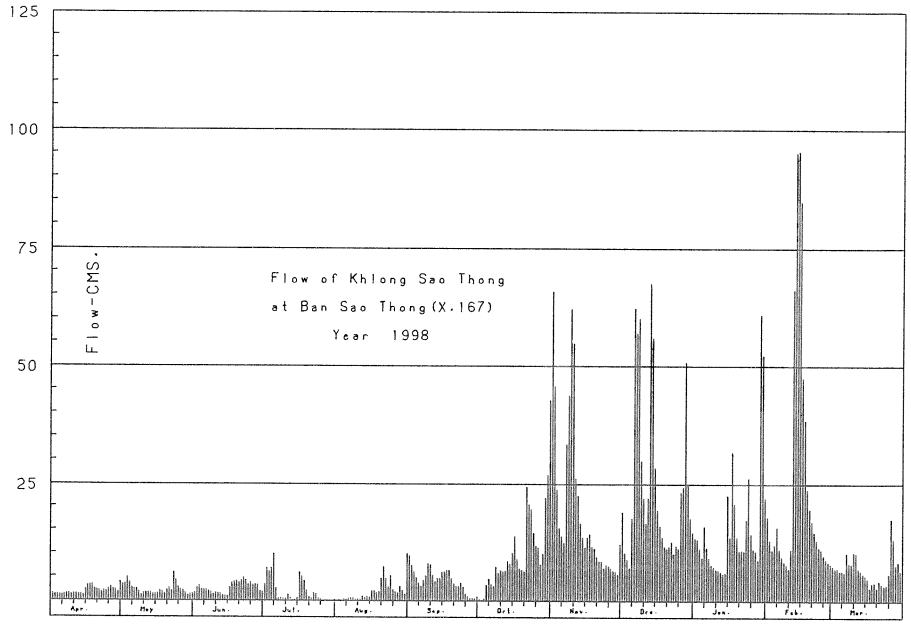
Khlong Sao Thong at Ban Sao Thong, Nakhon Si Thammarat (X.167)

Location	Lat. 08°-16'-44" N., Long. 99°-54'-31" E., on right bank at the bridge, Ban Sao Thong, Amphoe Ron Phibun, Nakhon Si Thammarat.
Drainage Area	268 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 4.50 meters from the top staff gage.
Elevation	+4.030 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1986 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Fairly stable by some silting.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 43 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.66	0.85	0.68	0.86	0.42	1.25	0.46	3.21	1.70	1.45	1.65	1.12	
2	0.65	0.87	0.81	1.09	0.41	1.14	0.42	2.66	1.29	1.43	1.42	1.09	
3	0.64	0.96	0.83	1.05	0.41	1.04	0.46	1.90	1.21	1.33	1.32	1.09	
4	0.64	0.89	0.78	1.09	0.47	0.96	0.84	1.55	1.10	1.24	1.37	1.06	
5	0.64	0.81	0.75	1.28	0.46	0.87	0.94	1.46	1.64	1.57	1.56	1.06	
6	0.64	0.77	0.75	0.78	0.46	0.83	0.85	1.39	3.12	1.35	1.33	1.03	
7	0.67	0.78	0.73	0.51	0.54	0.91	0.83	2.27	2.98	1.23	1.24	1.29	
8	0.66	0.70	0.69	0.49	0.50	0.99	1.11	2.61	3.06	1.15	1.19	1.16	
9	0.65	0.64	0.66	0.49	0.46	1.15	1.03	3.11	2.14	1.11	1.14	1.16	
10	0.65	0.67	0.68	0.46	0.44	1.15	1.07	2.92	1.82	1.08	1.09	1.30	
11	0.65	0.70	0.68	0.65	0.47	0.99	1.04	2.00	1.60	1.06	1.32	1.28	
12	0.65	0.70	0.66	0.52	0.59	0.90	1.06	1.85	1.83	1.05	3.22	1.09	
13	0.64	0.68	0.63	0.40	0.56	0.94	1.19	1.60	3.25	1.01	3.93	1.05	
14	0.63	0.66	0.60	0.35	0.58	0.95	1.15	1.45	2.95	1.03	3.94	1.02	
15	0.78	0.65	0.60	0.53	0.57	1.03	1.29	1.35	2.09	1.85	3.68	0.98	
16	0.83	0.66	0.81	1.04	0.72	1.05	1.46	1.45	1.71	1.45	2.71	0.94	
17	0.85	0.74	0.87	0.97	0.74	1.06	1.21	1.49	1.57	2.21	2.44	0.81	
18	0.85	0.70	0.90	0.91	0.68	1.07	1.09	1.35	1.45	1.77	1.90	0.87	
19	0.79	0.67	0.90	0.73	0.72	0.94	1.06	1.34	1.36	1.45	1.73	0.88	
20	0.76	0.74	0.89	0.59	0.94	0.87	1.05	1.24	1.33	1.31	1.61	0.81	
21	0.73	0.79	0.91	0.52	1.12	0.82	1.93	1.20	1.35	1.31	1.51	0.91	
22	0.71	0.74	0.96	0.69	0.94	0.83	1.77	1.19	1.41	1.31	1.42	0.86	
23	0.73	1.04	0.91	0.65	0.82	0.87	1.72	1.10	1.28	1.63	1.35	0.84	
24	0.73	0.91	0.86	0.51	0.98	0.82	1.50	1.14	1.36	2.00	1.32	0.84	
25	0.77	0.82	0.88	0.42	0.77	0.67	1.37	1.13	1.33	1.49	1.26	1.02	
26	0.81	0.75	0.85	0.41	0.70	0.58	1.34	1.09	1.88	1.33	1.21	1.64	
27	0.78	0.75	0.86	0.39	0.69	0.52	1.15	1.06	1.92	1.30	1.19	1.43	
28	0.75	0.67	0.84	0.40	0.82	0.48	1.27	1.04	2.81	1.21	1.15	1.13	
29	0.71	0.63	0.73	0.40	0.73	0.47	1.83	1.01	1.96	3.08		1.19	
30	0.90	0.64	0.70	0.40	0.66	0.59	2.03	1.38	1.64	2.85		1.05	
31		0.67		0.42	1.28		2.57		1.50	1.82		1.01	
Mean	0.72	0.75	0.78	0.65	0.67	0.89	1.23	1.65	1.86	1.50	1.79	1.06	
Max	0.90	1.04	0.96	1.28	1.28	1.25	2.57	3.21	3.25	3.08	3.94	1.64	3.94
Min	0.63	0.63	0.60	0.35	0.41	0.47	0.42	1.01	1.10	1.01	1.09	0.81	0.35

Annual Max Momentary Gage Height 3.95 M (AD), at 9.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.05 M (AD)
Left Bank Elevation 6.39 M (AD)
Right Bank Elevation 6.39 M (AD), Drainage Area 268 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.54	3.50	1.72	3.64	0.28	9.57	0.44	65.90	19.05	13.55	17.87	7.40	
2	1.45	3.78	2.94	6.95	0.24	7.70	0.28	45.70	10.35	13.13	12.92	6.95	
3	1.36	5.04	3.22	6.35	0.24	6.20	0.44	23.75	8.80	11.14	10.94	6.95	
4	1.36	4.06	2.62	6.95	0.48	5.04	3.36	15.65	7.10	9.38	11.92	6.50	
5	1.36	2.94	2.35	10.16	0.44	3.78	4.76	13.76	17.64	16.07	15.86	6.50	
6	1.36	2.53	2.35	2.62	0.44	3.22	3.50	12.31	62.42	11.53	11.14	6.05	
7	1.63	2.62	2.17	0.64	0.76	4.34	3.22	33.56	57.08	9.19	9.38	10.35	
8	1.54	1.90	1.81	0.56	0.60	5.46	7.25	43.95	60.11	7.85	8.45	8.00	
9	1.45	1.36	1.54	0.56	0.44	7.85	6.05	62.03	29.88	7.25	7.70	8.00	
10	1.45	1.63	1.72	0.44	0.36	7.85	6.65	54.92	21.87	6.80	6.95	10.55	
11	1.45	1.90	1.72	1.45	0.48	5.46	6.20	26.10	16.70	6.50	10.94	10.16	
12	1.45	1.90	1.54	0.68	0.96	4.20	6.50	22.57	22.11	6.35	66.30	6.95	
13	1.36	1.72	1.27	0.20	0.84	4.76	8.45	16.70	67.50	5.75	95.09	6.35	
14	1.27	1.54	1.00	0.15	0.92	4.90	7.85	13.55	56.00	6.05	95.51	5.90	
15	2.62	1.45	1.00	0.72	0.88	6.05	10.35	11.53	28.53	22.57	84.78	5.32	
16	3.22	1.54	2.94	6.20	2.08	6.35	13.76	13.55	19.29	13.55	47.45	4.76	
17	3.50	2.26	3.78	5.18	2.26	6.50	8.80	14.39	16.07	31.79	38.64	2.94	
18	3.50	1.90	4.20	4.34	1.72	6.65	6.95	11.53	13.55	20.69	23.75	3.78	
19	2.71	1.63	4.20	2.17	2.08	4.76	6.50	11.33	11.72	13.55	19.76	3.92	
20	2.44	2.26	4.06	0.96	4.76	3.78	6.35	9.38	11.14	10.74	16.94	2.94	
21	2.17	2.71	4.34	0.68	7.40	3.08	24.45	8.60	11.53	10.74	14.81	4.34	
22	1.99	2.26	5.04	1.81	4.76	3.22	20.69	8.45	12.71	10.74	12.92	3.64	
23	2.17	6.20	4.34	1.45	3.08	3.78	19.52	7.10	10.16	17.40	11.53	3.36	
24	2.17	4.34	3.64	0.64	5.32	3.08	14.60	7.70	11.72	26.10	10.94	3.36	
25	2.53	3.08	3.92	0.28	2.53	1.63	11.92	7.55	11.14	14.39	9.77	5.90	
26	2.94	2.35	3.50	0.24	1.90	0.92	11.33	6.95	23.28	11.14	8.80	17.64	
27	2.62	2.35	3.64	0.19	1.81	0.68	7.85	6.50	24.22	10.55	8.45	13.13	
28	2.35	1.63	3.36	0.20	3.08	0.52	9.96	6.20	50.96	8.80	7.85	7.55	
29	1.99	1.27	2.17	0.20	2.17	0.48	22.11	5.75	25.16	60.88		8.45	
30	4.20	1.36	1.90	0.20	1.54	0.96	26.91	12.11	17.64	52.40		6.35	
31		1.63		0.28	10.16		42.67		14.60	21.87		5.75	
Total	63.15	76.64	84.00	67.09	65.01	132.77	329.67	599.07	770.03	488.44	697.36	209.74	3582.97 CMSDAY
Mean	2.11	2.47	2.80	2.16	2.10	4.43	10.63	19.97	24.84	15.76	24.91	6.77	9.82 CMS
Max	4.20	6.20	5.04	10.16	10.16	9.57	42.67	65.90	67.50	60.88	95.51	17.64	95.51 CMS
Min	1.27	1.27	1.00	0.15	0.24	0.48	0.28	5.75	7.10	5.75	6.95	2.94	0.15 CMS
Runoff	5.456	6.622	7.258	5.797	5.617	11.471	28.483	51.760	66.531	42.201	60.252	18.122	309.569 MCM

Momentary Peak 95.93 CMS, at 3.95 M (AD), at 9.00 Hours, on Feb 13, 1998
Runoff Yield 36.63 Liters/Second/Square KM, Momentary Peak Yield 357.948 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

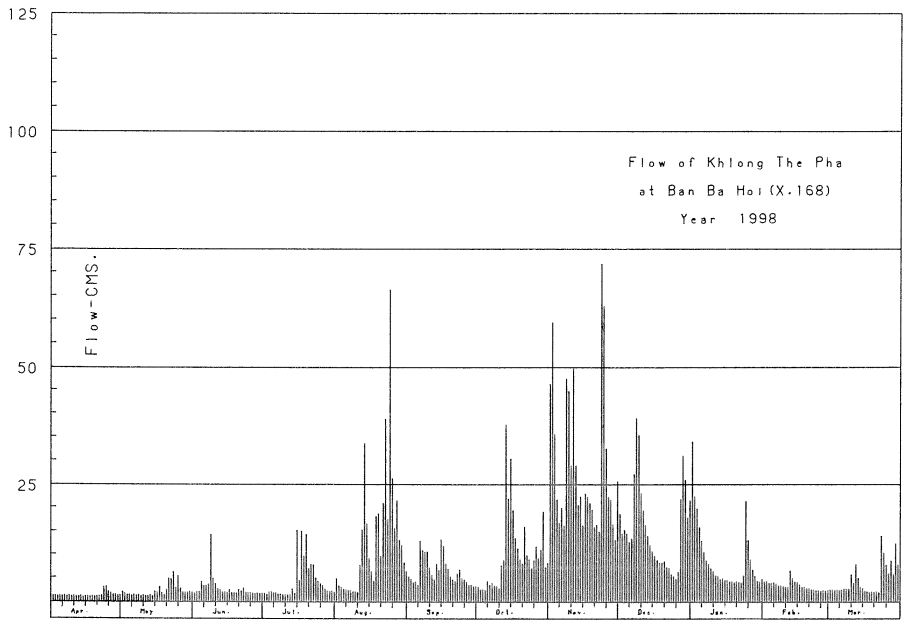
Khlong The Pha at Ban Ba Hoi, Yala (X.168)

Location	Lat.06°-25'-40" N., Long. 100°-55'-41" E., on right bank at the bridge near Wat Bahoi, Tambon Bahoi, King Amphoe Ka Bang, Yala.
Drainage Area	315 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.38 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 5 meters from the station office.
Elevation	+8.991 m.(A.D.)
Gage Reading Frequency	13-time daily readings at 06.00 - 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1987 to date.
Rated by Float	-
Rated by Current Meter	1987 to date.
Stability of Channel Regimes	Fairly stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 49 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.50	0.61	0.57	0.55	0.80	0.82	0.67	1.89	1.27	1.64	0.76	0.64	
2	0.49	0.55	0.59	0.54	0.70	0.79	0.64	2.14	1.15	1.36	0.76	0.63	
3	0.49	0.53	0.61	0.59	0.67	0.75	0.63	1.67	1.18	1.30	0.74	0.63	
4	0.49	0.52	0.75	0.61	0.65	0.75	0.63	1.35	1.15	1.20	0.73	0.63	
5	0.49	0.51	0.69	0.58	0.63	0.71	0.76	1.22	1.09	1.10	0.75	0.63	
6	0.49	0.51	0.69	0.56	0.63	1.10	0.71	1.30	1.12	1.02	0.72	0.63	
7	0.49	0.51	0.72	0.54	0.62	1.04	0.73	1.21	1.48	0.96	0.70	0.65	
8	0.49	0.50	1.15	0.53	0.61	1.02	0.70	1.91	1.74	0.92	0.69	0.64	
9	0.48	0.49	0.80	0.53	0.60	1.03	0.68	1.86	1.67	0.89	0.69	0.65	
10	0.48	0.49	0.72	0.52	0.60	0.89	0.66	1.52	1.38	0.86	0.68	0.84	
11	0.48	0.49	0.65	0.52	0.92	0.83	0.91	1.95	1.29	0.83	0.67	0.73	
12	0.48	0.49	0.63	0.51	1.18	0.79	0.96	1.52	1.21	0.82	0.87	0.92	
13	0.48	0.50	0.60	0.64	1.63	0.93	1.71	1.32	1.14	0.80	0.80	0.81	
14	0.47	0.49	0.59	0.57	1.22	0.87	1.35	1.36	1.07	0.80	0.76	0.67	
15	0.47	0.60	0.58	1.18	0.97	1.11	1.56	1.21	1.03	0.78	0.74	0.65	
16	0.47	0.58	0.63	0.78	0.86	1.07	1.29	1.38	0.99	0.77	0.71	0.62	
17	0.47	0.68	0.58	1.17	0.77	0.93	1.12	1.36	0.96	0.76	0.68	0.60	
18	0.47	0.56	0.56	0.99	1.26	0.88	1.05	1.33	0.93	0.75	0.67	0.60	
19	0.47	0.53	0.58	1.15	1.27	0.82	0.96	1.29	0.93	0.75	0.66	0.60	
20	0.47	0.63	0.63	0.89	0.99	0.78	0.93	1.20	0.95	0.75	0.65	0.60	
21	0.47	0.80	0.62	0.92	1.33	0.77	1.20	1.21	0.90	0.74	0.64	0.60	
22	0.51	0.80	0.65	0.92	1.74	0.84	1.00	1.17	0.89	0.74	0.63	0.59	
23	0.67	0.86	0.59	0.81	1.24	0.88	0.96	2.35	0.84	0.83	0.63	1.14	
24	0.69	0.66	0.57	0.76	2.26	0.80	0.89	2.20	0.82	1.34	0.62	1.02	
25	0.60	0.82	0.57	0.73	1.46	0.79	0.96	1.61	0.80	1.11	0.62	0.92	
26	0.56	0.66	0.57	0.69	1.19	0.75	1.06	1.36	0.86	0.96	0.62	0.84	
27	0.53	0.60	0.56	0.65	1.34	0.71	0.97	1.34	1.35	0.88	0.62	0.95	
28	0.52	0.57	0.56	0.61	1.11	0.70	1.04	1.21	1.57	0.82	0.62	0.84	
29	0.51	0.59	0.56	0.61	1.07	0.69	1.28	1.11	1.45	0.77		1.08	
30	0.50	0.60	0.55	0.61	0.94	0.68	0.90	1.44	1.25	0.75		0.92	
31		0.58		0.60	0.86		0.93		1.34	0.79		0.91	
Mean	0.51	0.59	0.64	0.71	1.04	0.85	0.96	1.50	1.15	0.93	0.69	0.75	
Max	0.69	0.86	1.15	1.18	2.26	1.11	1.71	2.35	1.74	1.64	0.87	1.14	2.35
Min	0.47	0.49	0.55	0.51	0.60	0.68	0.63	1.11	0.80	0.74	0.62	0.59	0.47

Annual Max Momentary Gage Height 4.91 M (AD), at 22.00 Hours, on Nov 23, 1998
Zero Gage at Bottom Elevation 0.38 M (AD), River Bed 0.18 M (AD)
Left Bank Elevation 9.66 M (AD)
Right Bank Elevation 9.51 M (AD), Drainage Area 315 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.45	2.34	1.97	1.83	5.00	5.50	3.18	46.50	18.80	34.24	4.44	2.76	
2	1.38	1.83	2.12	1.75	3.60	4.86	2.76	59.56	14.50	22.40	4.44	2.62	
3	1.38	1.67	2.34	2.12	3.18	4.30	2.62	35.69	15.40	20.00	4.16	2.62	
4	1.38	1.60	4.30	2.34	2.90	4.30	2.62	22.00	14.50	16.00	4.02	2.62	
5	1.38	1.52	3.46	2.05	2.62	3.74	4.44	16.80	12.70	13.00	4.30	2.62	
6	1.38	1.52	3.46	1.90	2.62	13.00	3.74	20.00	13.60	10.60	3.88	2.62	
7	1.38	1.52	3.88	1.75	2.48	11.20	4.02	16.40	27.32	9.00	3.60	2.90	
8	1.38	1.45	14.50	1.67	2.34	10.60	3.60	47.50	39.09	8.00	3.46	2.76	
9	1.30	1.38	5.00	1.67	2.20	10.90	3.32	45.00	35.69	7.25	3.46	2.90	
10	1.30	1.38	3.88	1.60	2.20	7.25	3.04	28.98	23.20	6.50	3.32	6.00	
11	1.30	1.38	2.90	1.60	8.00	5.75	7.75	49.50	19.60	5.75	3.18	4.02	
12	1.30	1.38	2.62	1.52	15.40	4.86	9.00	28.98	16.40	5.50	6.75	8.00	
13	1.30	1.45	2.20	2.76	33.75	8.25	37.64	20.80	14.20	5.00	5.00	5.25	
14	1.23	1.38	2.12	1.97	16.80	6.75	22.00	22.40	12.10	5.00	4.44	3.18	
15	1.23	2.20	2.05	15.40	9.25	13.30	30.64	16.40	10.90	4.72	4.16	2.90	
16	1.23	2.05	2.62	4.72	6.50	12.10	19.60	23.20	9.75	4.58	3.74	2.48	
17	1.23	3.32	2.05	15.10	4.58	8.25	13.60	22.40	9.00	4.44	3.32	2.20	
18	1.23	1.90	1.90	9.75	18.40	7.00	11.50	21.20	8.25	4.30	3.18	2.20	
19	1.23	1.67	2.05	14.50	18.80	5.50	9.00	19.60	8.25	4.30	3.04	2.20	
20	1.23	2.62	2.62	7.25	9.75	4.72	8.25	16.00	8.75	4.30	2.90	2.20	
21	1.23	5.00	2.48	8.00	21.20	4.58	16.00	16.40	7.50	4.16	2.76	2.20	
22	1.52	5.00	2.90	8.00	39.09	6.00	10.00	15.10	7.25	4.16	2.62	2.12	
23	3.18	6.50	2.12	5.25	17.60	7.00	9.00	71.95	6.00	5.75	2.62	14.20	
24	3.46	3.04	1.97	4.44	66.46	5.00	7.25	62.80	5.50	21.60	2.48	10.60	
25	2.20	5.50	1.97	4.02	26.49	4.86	9.00	32.79	5.00	13.30	2.48	8.00	
26	1.90	3.04	1.97	3.46	15.70	4.30	11.80	22.40	6.50	9.00	2.48	6.00	
27	1.67	2.20	1.90	2.90	21.60	3.74	9.25	21.60	22.00	7.00	2.48	8.75	
28	1.60	1.97	1.90	2.34	13.30	3.60	11.20	16.40	31.05	5.50	2.48	6.00	
29	1.52	2.12	1.90	2.34	12.10	3.46	19.20	13.30	26.08	4.58		12.40	
30	1.45	2.20	1.83	2.34	8.50	3.32	7.50	25.66	18.00	4.30		8.00	
31		2.05		2.20	6.50		8.25		21.60	4.86		7.75	
Total	45.95	74.18	88.98	138.54	418.91	197.99	320.77	877.31	488.48	279.09	99.19	151.07	3180.46 CMSDAY
Mean	1.53	2.39	2.97	4.47	13.51	6.60	10.35	29.24	15.76	9.00	3.54	4.87	8.71 CMS
Max	3.46	6.50	14.50	15.40	66.46	13.30	37.64	71.95	39.09	34.24	6.75	14.20	71.95 CMS
Min	1.23	1.38	1.83	1.52	2.20	3.32	2.62	13.30	5.00	4.16	2.48	2.12	1.23 CMS
Runoff	3.970	6.409	7.688	11.970	36.194	17.106	27.715	75.800	42.205	24.113	8.570	13.052	274.792 MCM

Momentary Peak 285.22 CMS, at 4.91 M (AD), at 22.00 Hours, on Nov 23, 1998
Runoff Yield 27.66 Liters/Second/Square KM, Momentary Peak Yield 905.460 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

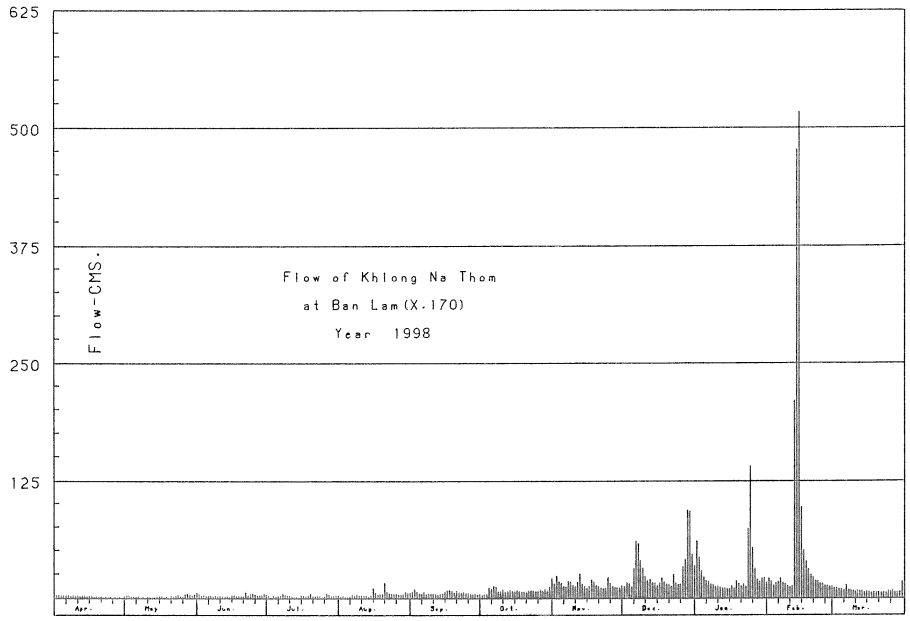
Khlong Na Thom at Ban Lam, Phattalung (X.170)

Location	Lat. 07°-33'-22" N., Long. 99°-59'-31" E., on left bank at the bridge, Ban Lam, Amphoe Muang, Phatthalung.
Drainage Area	269 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 21 meters from the top staff gage.
Elevation	+6.597 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1987 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Rather unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 42 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.58	0.60	0.63	0.56	0.54	0.75	0.60	1.05	0.96	1.98	1.25	0.93	
2	0.57	0.57	0.58	0.50	0.54	0.88	0.60	1.32	1.11	1.70	1.14	0.91	
3	0.57	0.54	0.57	0.55	0.52	0.76	0.65	1.15	1.06	1.43	1.02	0.89	
4	0.56	0.51	0.56	0.54	0.51	0.70	0.91	1.08	0.97	1.28	1.07	0.87	
5	0.56	0.50	0.56	0.55	0.51	0.66	0.89	0.98	1.48	1.18	1.15	0.85	
6	0.56	0.50	0.55	0.55	0.60	0.75	0.99	0.94	1.97	1.12	1.23	1.01	
7	0.55	0.50	0.53	0.67	0.57	0.65	0.93	1.17	1.94	1.06	1.11	0.86	
8	0.55	0.50	0.52	0.57	0.61	0.65	0.80	1.12	1.62	1.01	1.04	0.83	
9	0.54	0.49	0.53	0.57	0.58	0.68	0.77	1.02	1.49	0.97	1.00	0.82	
10	0.54	0.48	0.53	0.54	0.55	0.63	0.84	0.95	1.28	0.96	0.96	0.80	
11	0.54	0.48	0.52	0.52	0.57	0.63	0.77	1.11	1.15	0.93	0.97	0.81	
12	0.54	0.48	0.53	0.51	0.56	0.62	0.80	1.37	1.22	0.92	3.51	0.81	
13	0.53	0.49	0.52	0.50	0.53	0.63	0.82	1.07	1.11	0.90	5.32	0.79	
14	0.53	0.49	0.52	0.50	0.55	0.70	0.79	0.97	1.06	0.89	5.56	0.77	
15	0.53	0.54	0.58	0.60	0.91	0.77	0.76	0.91	1.00	0.90	2.51	0.76	
16	0.52	0.52	0.55	0.53	0.70	0.82	0.83	0.96	1.08	0.96	1.82	0.75	
17	0.52	0.50	0.55	0.51	0.63	0.84	0.76	1.21	1.25	0.92	1.62	0.74	
18	0.51	0.48	0.52	0.59	0.62	0.78	0.76	1.11	1.11	1.15	1.46	0.74	
19	0.51	0.48	0.53	0.64	0.67	0.73	0.74	1.02	1.05	1.05	1.35	0.73	
20	0.50	0.54	0.51	0.56	1.11	0.80	0.74	0.95	1.01	0.99	1.26	0.72	
21	0.50	0.51	0.72	0.53	0.76	0.73	0.79	0.91	0.98	1.03	1.19	0.73	
22	0.50	0.55	0.57	0.55	0.70	0.73	0.82	0.90	1.34	0.98	1.15	0.72	
23	0.49	0.59	0.63	0.53	0.65	0.73	0.78	0.89	1.06	2.16	1.09	0.73	
24	0.49	0.52	0.68	0.50	0.66	0.71	0.80	1.26	1.04	2.89	1.05	0.79	
25	0.49	0.54	0.59	0.51	0.63	0.69	0.75	1.07	1.02	1.86	1.01	0.79	
26	0.48	0.61	0.58	0.70	0.61	0.67	0.84	0.99	1.50	1.48	0.98	0.82	
27	0.48	0.66	0.59	0.60	0.64	0.66	0.80	0.94	1.66	1.22	0.97	0.77	
28	0.48	0.60	0.57	0.55	0.61	0.64	0.85	0.91	2.43	1.13	0.96	0.73	
29	0.48	0.58	0.68	0.53	0.78	0.63	0.81	0.93	2.39	1.25		0.79	
30	0.51	0.60	0.60	0.58	0.67	0.62	0.94	0.98	1.74	1.25		1.14	
31		0.74		0.55	0.74		1.23		1.52	1.10		0.81	
Mean	0.52	0.54	0.57	0.55	0.64	0.71	0.81	1.04	1.34	1.25	1.60	0.81	
Max	0.58	0.74	0.72	0.70	1.11	0.88	1.23	1.37	2.43	2.89	5.56	1.14	5.56
Min	0.48	0.48	0.51	0.50	0.51	0.62	0.60	0.89	0.96	0.89	0.96	0.72	0.48

Annual Max Momentary Gage Height 7.80 M (AD), at 23.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -1.76 M (AD)
Left Bank Elevation 8.14 M (AD)
Right Bank Elevation 8.31 M (AD), Drainage Area 269 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.60	4.00	4.60	3.20	2.80	7.00	4.00	15.50	12.80	61.70	22.00	11.90	
2	3.40	3.40	3.60	2.00	2.80	10.40	4.00	24.80	17.30	44.50	18.20	11.30	
3	3.40	2.80	3.40	3.00	2.40	7.20	5.00	18.50	15.80	29.65	14.60	10.70	
4	3.20	2.20	3.20	2.80	2.20	6.00	11.30	16.40	13.10	23.20	16.10	10.10	
5	3.20	2.00	3.20	3.00	2.20	5.20	10.70	13.40	32.40	19.40	18.50	9.50	
6	3.20	2.00	3.00	3.00	4.00	7.00	13.70	12.20	61.05	17.60	21.20	14.30	
7	3.00	2.00	2.60	5.40	3.40	5.00	11.90	19.10	59.10	15.80	17.30	9.80	
8	3.00	2.00	2.40	3.40	4.20	5.00	8.00	17.60	40.10	14.30	15.20	8.90	
9	2.80	1.80	2.60	3.40	3.60	5.60	7.40	14.60	32.95	13.10	14.00	8.60	
10	2.80	1.60	2.60	2.80	3.00	4.60	9.20	12.50	23.20	12.80	12.80	8.00	
11	2.80	1.60	2.40	2.40	3.40	4.60	7.40	17.30	18.50	11.90	13.10	8.30	
12	2.80	1.60	2.60	2.20	3.20	4.40	8.00	26.80	20.80	11.60	210.65	8.30	
13	2.60	1.80	2.40	2.00	2.60	4.60	8.60	16.10	17.30	11.00	476.80	7.80	
14	2.60	1.80	2.40	2.00	3.00	6.00	7.80	13.10	15.80	10.70	517.20	7.40	
15	2.60	2.80	3.60	4.00	11.30	7.40	7.20	11.30	14.00	11.00	97.95	7.20	
16	2.40	2.40	3.00	2.60	6.00	8.60	8.90	12.80	16.40	12.80	51.30	7.00	
17	2.40	2.00	3.00	2.20	4.60	9.20	7.20	20.40	22.00	11.60	40.10	6.80	
18	2.20	1.60	2.40	3.80	4.40	7.60	7.20	17.30	17.30	18.50	31.30	6.80	
19	2.20	1.60	2.60	4.80	5.40	6.60	6.80	14.60	15.50	15.50	26.00	6.60	
20	2.00	2.80	2.20	3.20	17.30	8.00	6.80	12.50	14.30	13.70	22.40	6.40	
21	2.00	2.20	6.40	2.60	7.20	6.60	7.80	11.30	13.40	14.90	19.70	6.60	
22	2.00	3.00	3.40	3.00	6.00	6.60	8.60	11.00	25.60	13.40	18.50	6.40	
23	1.80	3.80	4.60	2.60	5.00	6.60	7.60	10.70	15.80	75.00	16.70	6.60	
24	1.80	2.40	5.60	2.00	5.20	6.20	8.00	22.40	15.20	140.45	15.50	7.80	
25	1.80	2.80	3.80	2.20	4.60	5.80	7.00	16.10	14.60	53.90	14.30	7.80	
26	1.60	4.20	3.60	6.00	4.20	5.40	9.20	13.70	33.50	32.40	13.40	8.60	
27	1.60	5.20	3.80	4.00	4.80	5.20	8.00	12.20	42.30	20.80	13.10	7.40	
28	1.60	4.00	3.40	3.00	4.20	4.80	9.50	11.30	94.35	17.90	12.80	6.60	
29	1.60	3.60	5.60	2.60	7.60	4.60	8.30	11.90	92.25	22.00		7.80	
30	2.20	4.00	4.00	3.60	5.40	4.40	12.20	13.40	46.70	22.00		18.20	
31		6.80		3.00	6.80		21.20		34.60	17.00		8.30	
Total	74.20	85.80	102.00	95.80	152.80	186.20	268.50	460.80	908.00	810.10	1780.70	267.80	5192.70 CMSDAY
Mean	2.47	2.77	3.40	3.09	4.93	6.21	8.66	15.36	29.29	26.13	63.60	8.64	14.23 CMS
Max	3.60	6.80	6.40	6.00	17.30	10.40	21.20	26.80	94.35	140.45	517.20	18.20	517.20 CMS
Min	1.60	1.60	2.20	2.00	2.20	4.40	4.00	10.70	12.80	10.70	12.80	6.40	1.60 CMS
Runoff	6.411	7.413	8.813	8.277	13.202	16.088	23.198	39.813	78.451	69.993	153.852	23.138	448.649 MCM

Momentary Peak 920.00 CMS, at 7.80 M (AD), at 23.00 Hours, on Feb 13, 1998
Runoff Yield 52.89 Liters/Second/Square KM, Momentary Peak Yield 3420.074 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

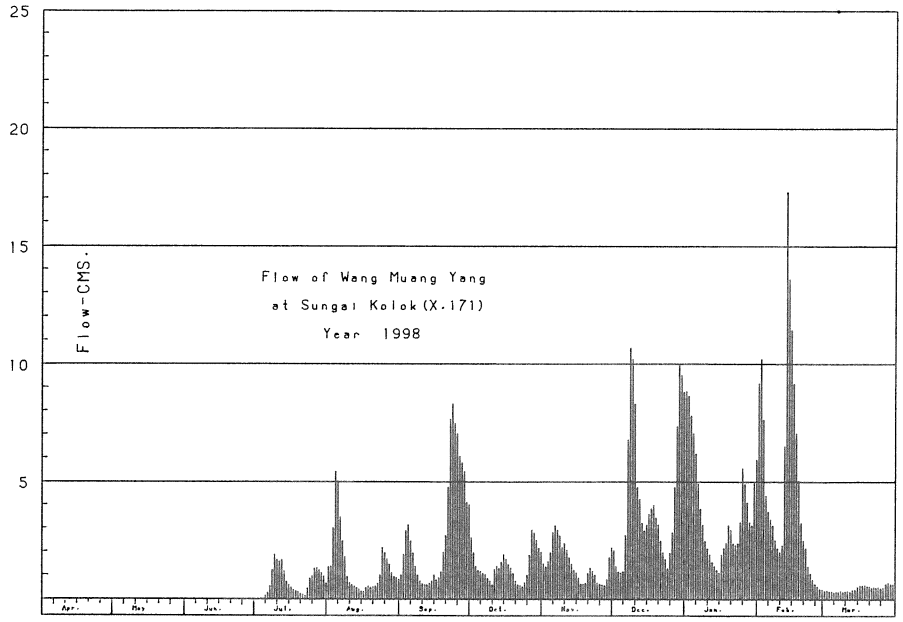
Khlong Wang Muang Yang at Ban Pa Ye, Narathiwat (X.171)

Location	Lat. 06°-05'-28" n., Long. 101°-57'-24" E., on left bank at the bridge, Ban Pa Ye, Amphoe Sungai Kolok, Narathiwat.
Drainage Area	839 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+6.03 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bnak about 12.00 meters from the top staff gage.
Elevation	+8.492 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1993 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.09	5.94	5.99	6.20	6.60	6.55	6.72	6.61	6.67	7.18	7.20	6.39	
2	6.07	5.94	6.00	6.24	6.60	6.65	6.66	6.60	6.60	7.17	7.26	6.39	
3	6.07	5.94	6.01	6.23	6.76	6.75	6.60	6.62	6.57	7.12	7.11	6.38	
4	6.07	5.94	6.02	6.23	6.95	6.77	6.58	6.66	6.56	7.07	6.87	6.37	
5	6.07	5.94	6.05	6.28	6.92	6.71	6.57	6.74	6.57	7.01	6.82	6.36	
6	6.06	5.94	6.06	6.35	6.80	6.66	6.56	6.77	6.73	6.91	6.79	6.36	
7	6.06	5.94	6.09	6.45	6.71	6.60	6.55	6.75	7.05	6.83	6.77	6.37	
8	6.06	5.94	6.09	6.58	6.64	6.55	6.53	6.73	7.29	6.77	6.71	6.38	
9	6.05	5.94	6.14	6.65	6.54	6.51	6.51	6.68	7.26	6.71	6.68	6.37	
10	6.05	5.94	6.16	6.63	6.50	6.49	6.48	6.70	7.15	6.68	6.66	6.37	
11	6.05	5.94	6.16	6.62	6.48	6.47	6.58	6.67	6.90	6.65	6.69	6.38	
12	6.05	5.94	6.18	6.63	6.45	6.48	6.60	6.64	6.86	6.62	7.03	6.37	
13	6.04	5.94	6.18	6.57	6.44	6.49	6.59	6.61	6.78	6.60	7.62	6.40	
14	6.04	5.94	6.19	6.51	6.41	6.51	6.62	6.58	6.75	6.58	7.44	6.41	
15	6.04	5.94	6.18	6.47	6.38	6.55	6.65	6.56	6.77	6.56	7.33	6.44	
16	5.94	5.94	6.18	6.44	6.36	6.52	6.63	6.53	6.81	6.65	7.20	6.46	
17	5.94	5.94	6.19	6.40	6.44	6.53	6.61	6.49	6.83	6.68	7.07	6.47	
18	5.94	5.94	6.21	6.38	6.45	6.57	6.59	6.48	6.84	6.70	6.92	6.47	
19	5.94	5.94	6.20	6.36	6.44	6.66	6.56	6.50	6.80	6.77	6.78	6.46	
20	5.94	5.94	6.19	6.33	6.44	6.73	6.51	6.56	6.77	6.75	6.71	6.45	
21	5.94	5.94	6.18	6.30	6.46	6.90	6.48	6.59	6.71	6.70	6.68	6.44	
22	5.94	5.94	6.18	6.29	6.49	7.11	6.46	6.57	6.66	6.69	6.60	6.44	
23	5.94	5.94	6.17	6.42	6.55	7.15	6.45	6.55	6.63	6.70	6.56	6.44	
24	5.94	5.94	6.16	6.53	6.68	7.10	6.50	6.50	6.59	6.78	6.52	6.44	
25	5.94	5.94	6.16	6.54	6.66	7.07	6.55	6.49	6.66	6.96	6.49	6.43	
26	5.94	5.94	6.15	6.59	6.63	7.00	6.65	6.47	6.74	6.91	6.45	6.43	
27	5.94	5.94	6.21	6.59	6.61	6.98	6.75	6.47	6.90	6.85	6.42	6.49	
28	5.94	5.94	6.21	6.58	6.56	6.95	6.74	6.52	7.09	6.78	6.41	6.50	
29	5.94	5.94	6.20	6.56	6.54	6.85	6.71	6.64	7.25	6.77		6.49	
30	5.94	5.94	6.19	6.54	6.53	6.84	6.68	6.68	7.22	6.91		6.48	
31		5.94		6.50	6.52		6.66		7.18	6.99		6.47	
Mean	6.00	5.94	6.14	6.45	6.57	6.72	6.59	6.60	6.84	6.81	6.85	6.42	
Max	6.09	5.94	6.21	6.65	6.95	7.15	6.75	6.77	7.29	7.18	7.62	6.50	7.62
Min	5.94	5.94	5.99	6.20	6.36	6.47	6.45	6.47	6.56	6.56	6.41	6.36	5.94

Annual Max Momentary Gage Height 7.66 M (MSL), at 9.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 6.03 M (MSL), River Bed 5.94 M (MSL)
Left Bank Elevation 9.31 M (MSL)
Right Bank Elevation 9.31 M (MSL), Drainage Area 839 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	1.40	1.05	2.62	1.50	2.10	8.86	9.20	0.38	
2	0.00	0.00	0.00	0.08	1.40	1.90	2.00	1.40	1.40	8.69	10.22	0.38	
3	0.00	0.00	0.00	0.06	3.06	2.95	1.40	1.60	1.19	7.84	7.67	0.36	
4	0.00	0.00	0.00	0.06	5.45	3.17	1.26	2.00	1.12	7.08	4.41	0.34	
5	0.00	0.00	0.00	0.16	5.06	2.51	1.19	2.84	1.19	6.24	3.76	0.32	
6	0.00	0.00	0.00	0.30	3.50	2.00	1.12	3.17	2.73	4.93	3.39	0.32	
7	0.00	0.00	0.00	0.55	2.51	1.40	1.05	2.95	6.80	3.89	3.17	0.34	
8	0.00	0.00	0.00	1.26	1.80	1.05	0.91	2.73	10.73	3.17	2.51	0.36	
9	0.00	0.00	0.00	1.90	0.98	0.77	0.77	2.20	10.22	2.51	2.20	0.34	
10	0.00	0.00	0.00	1.70	0.70	0.67	0.64	2.40	8.35	2 20	2.00	0.34	
11	0.00	0.00	0.00	1.60	0.64	0.61	1.26	2.10	4.80	1.90	2.30	0.36	
12	0.00	0.00	0.00	1.70	0.55	0.64	1.40	1.80	4.28	1.60	6.52	0.34	
13	0.00	0.00	0.00	1.19	0.52	0.67	1.33	1.50	3.28	1.40	17.34	0.40	
14	0.00	0.00	0.00	0.77	0.43	0.77	1.60	1.26	2.95	1.26	13.60	0.43	
15	0.00	0.00	0.00	0.61	0.36	1.05	1.90	1.12	3.17	1.12	11.47	0.52	
16	0.00	0.00	0.00	0.52	0.32	0.84	1.70	0.91	3.63	1.90	9.20	0.58	
17	0.00	0.00	0.00	0.40	0.52	0.91	1.50	0.67	3.89	2.20	7.08	0.61	
18	0.00	0.00	0.02	0.36	0.55	1.19	1.33	0.64	4.02	2.40	5.06	0.61	
19	0.00	0.00	0.00	0.32	0.52	2.00	1.12	0.70	3.50	3.17	3.28	0.58	
20	0.00	0.00	0.00	0.26	0.52	2.73	0.77	1.12	3.17	2.95	2.51	0.55	
21	0.00	0.00	0.00	0.20	0.58	4.80	0.64	1.33	2.51	2.40	2.20	0.52	
22	0.00	0.00	0.00	0.18	0.67	7.67	0.58	1.19	2.00	2.30	1.40	0.52	
23	0.00	0.00	0.00	0.46	1.05	8.35	0.55	1.05	1.70	2.40	1.12	0.52	
24	0.00	0.00	0.00	0.91	2.20	7.50	0.70	0.70	1.33	3.28	0.84	0.52	
25	0.00	0.00	0.00	0.98	2.00	7.08	1.05	0.67	2.00	5.58	0.67	0.49	
26	0.00	0.00	0.00	1.33	1.70	6.10	1.90	0.61	2.84	4.93	0.55	0.49	
27	0.00	0.00	0.02	1.33	1.50	5.84	2.95	0.61	4.80	4.15	0.46	0.67	
28	0.00	0.00	0.02	1.26	1.12	5.45	2.84	0.84	7.36	3.28	0.43	0.70	
29	0.00	0.00	0.00	1.12	0.98	4.15	2.51	1.80	10.05	3.17		0.67	
30	0.00	0.00	0.00	0.98	0.91	4.02	2.20	2.20	9.54	4.93		0.64	
31		0.00		0.70	0.84		2.00		8.86	5.97		0.61	
Total	0.00	0.00	0.06	23.25	44.34	89.84	44.79	45.61	135.51	117.70	134.56	14.81	650.47 CMSDAY
Mean	0.00	0.00	0.00	0.75	1.43	2.99	1.44	1.52	4.37	3.80	4.81	0.48	1.78 CMS
Max	0.00	0.00	0.02	1.90	5.45	8.35	2.95	3.17	10.73	8.86	17.34	0.70	17.34 CMS
Min	0.00	0.00	0.00	0.00	0.32	0.61	0.55	0.61	1.12	1.12	0.43	0.32	0.00 CMS
Runoff	0.000	0.000	0.005	2.009	3.831	7.762	3.870	3.941	11.708	10.169	11.626	1.280	56.201 MCM

Momentary Peak 18.22 CMS, at 7.66 M (MSL), at 9.00 Hours, on Feb 13, 1998
Runoff Yield 2.12 Liters/Second/Square KM, Momentary Peak Yield 21.716 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

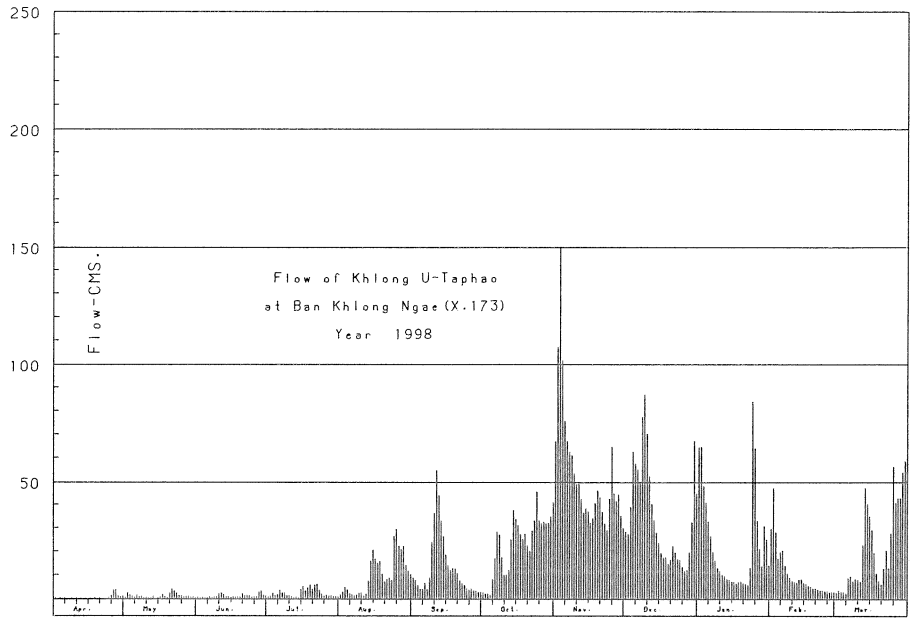
Khlong U Taphao at Ban Khlong Ngae, Songkhla (X.173)

Location	Lat. 06°47'44" N., Long. 100°26'46" E., on right bank at the bridge on Hat Yai- Sadao Highway, Ban Pang La, Amphoe Hat Yai, Songkhla.
Drainage Area	982 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 1.13 meters from the top staff gage.
Elevation	+5.932 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1989 to date.
Rating Operation	
Period of Rating	1989 to date.
Rated by Float	-
Rated by Current Meter	1989 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 63 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.35	0.51	0.47	0.55	0.77	1.93	0.95	5.09	3.84	5.05	3.94	1.01	
2	0.35	0.93	0.45	0.57	1.06	1.78	0.90	5.63	3.79	5.06	4.73	1.12	
3	0.34	0.83	0.44	0.96	1.34	1.51	0.84	5.98	4.50	4.76	3.86	1.08	
4	0.33	0.61	0.43	0.69	1.22	1.20	0.79	5.57	5.02	4.56	2.82	1.00	
5	0.32	0.50	0.42	0.85	0.94	1.24	1.84	5.23	4.94	4.20	3.12	0.95	
6	0.32	0.72	0.46	1.15	0.76	1.61	2.87	5.10	4.89	3.73	3.16	1.91	
7	0.32	0.61	0.44	0.99	0.71	1.24	3.86	5.02	4.80	3.13	2.53	1.96	
8	0.32	0.54	0.46	0.93	0.72	1.89	3.78	5.00	5.25	2.73	2.12	1.75	
9	0.32	0.44	0.60	0.73	0.97	3.50	2.87	4.86	5.38	2.40	1.89	1.82	
10	0.34	0.38	0.86	0.67	0.93	4.39	2.05	4.77	5.15	2.22	1.75	1.79	
11	0.33	0.39	0.99	0.57	0.71	4.89	2.03	4.78	4.84	2.08	1.66	1.73	
12	0.31	0.38	0.80	0.47	0.85	4.66	2.30	4.61	4.55	1.97	1.68	3.42	
13	0.30	0.56	0.57	0.47	1.76	4.22	3.59	4.41	4.23	1.87	1.79	4.73	
14	0.29	0.35	0.49	0.46	2.72	3.72	4.44	4.47	3.85	1.80	1.86	4.55	
15	0.28	0.37	0.49	1.21	3.22	3.01	4.27	4.43	3.47	1.72	1.65	4.32	
16	0.28	0.48	0.47	1.39	2.80	2.50	4.07	4.15	3.08	1.66	1.54	3.94	
17	0.35	0.84	0.51	1.15	2.65	2.31	3.79	4.27	2.89	1.61	1.45	3.06	
18	0.35	0.52	0.46	1.30	2.70	2.35	3.63	4.56	2.87	1.66	1.37	2.14	
19	0.32	0.46	0.54	1.53	2.11	2.39	3.78	4.71	2.62	1.73	1.29	1.71	
20	0.29	0.96	0.93	1.21	1.72	2.12	3.38	4.63	2.77	1.58	1.25	1.58	
21	0.27	1.22	0.64	1.47	1.80	1.78	3.17	4.41	3.35	1.53	1.20	2.34	
22	0.30	1.12	0.78	1.58	1.91	1.58	3.89	4.15	3.11	1.51	1.16	3.20	
23	0.36	0.91	0.64	1.19	1.74	1.50	4.22	3.90	2.83	2.42	1.11	2.41	
24	0.42	0.73	0.52	0.84	3.73	1.27	4.70	4.62	2.75	5.34	1.10	3.80	
25	0.74	0.64	0.45	0.68	3.94	1.20	4.24	5.06	2.46	5.05	1.06	4.92	
26	1.19	0.50	0.64	0.71	3.39	1.23	4.14	4.67	2.21	4.24	1.03	4.57	
27	1.14	0.59	1.06	0.69	3.24	1.16	4.21	4.59	2.31	3.23	1.00	4.62	
28	0.67	0.57	1.08	0.68	3.35	1.08	4.13	4.66	3.08	2.46	0.99	4.63	
29	0.46	0.51	0.79	0.62	2.55	1.03	4.18	4.33	4.20	4.07		4.87	
30	0.57	0.49	0.61	0.56	2.23	0.99	4.31	4.00	5.10	3.58		4.96	
31		0.48		0.59	2.06		4.57		4.67	2.54		4.81	
Mean	0.42	0.62	0.62	0.89	1.95	2.18	3.28	4.72	3.83	2.95	1.93	2.93	
Max	1.19	1.22	1.08	1.58	3.94	4.89	4.70	5.98	5.38	5.34	4.73	4.96	5.98
Min	0.27	0.35	0.42	0.46	0.71	0.99	0.79	3.90	2.21	1.51	0.99	0.95	0.27

Annual Max Momentary Gage Height 6.04 M (AD), at 6.00 Hours, on Nov 2, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -3.89 M (AD)
Left Bank Elevation 8.11 M (AD)
Right Bank Elevation 8.12 M (AD), Drainage Area 982 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.67	1.07	0.97	1.17	1.89	9.41	2.75	67.13	28.50	64.63	29.75	3.06	
2	0.67	2.65	0.92	1.22	3.36	8.15	2.50	107.15	27.87	65.25	47.27	3.72	
3	0.65	2.15	0.90	2.80	5.11	6.22	2.20	150.20	39.50	48.44	28.75	3.48	
4	0.63	1.33	0.87	1.61	4.33	4.20	1.97	101.68	62.75	41.12	17.20	3.00	
5	0.60	1.05	0.85	2.25	2.70	4.46	8.64	76.18	58.05	33.00	20.20	2.75	
6	0.60	1.72	0.95	3.90	1.86	6.88	17.70	67.75	55.17	27.12	20.60	9.24	
7	0.60	1.33	0.90	2.95	1.68	4.46	28.75	62.75	50.00	20.30	14.51	9.66	
8	0.60	1.15	0.95	2.65	1.72	9.07	27.75	61.50	77.63	16.34	11.02	7.93	
9	0.60	0.90	1.30	1.76	2.85	24.25	17.70	53.45	87.05	13.40	9.07	8.47	
10	0.65	0.75	2.30	1.54	2.65	36.61	10.43	48.83	70.88	11.87	7.93	8.23	
11	0.63	0.77	2.95	1.22	1.68	55.17	10.26	49.22	52.30	10.68	7.25	7.78	
12	0.58	0.75	2.00	0.97	2.25	44.54	12.55	42.59	40.85	9.75	7.40	23.25	
13	0.55	1.20	1.22	0.97	8.00	33.38	25.37	37.07	33.57	8.90	8.23	47.27	
14	0.52	0.67	1.02	0.95	16.24	27.00	37.88	38.69	28.62	8.30	8.81	40.85	
15	0.50	0.72	1.02	4.26	21.20	19.10	34.33	37.61	23.87	7.70	7.18	35.28	
16	0.50	1.00	0.97	5.44	17.00	14.25	31.38	32.38	19.80	7.25	6.41	29.75	
17	0.67	2.20	1.07	3.90	15.58	12.64	27.87	34.33	17.90	6.88	5.83	19.60	
18	0.67	1.10	0.95	4.85	16.05	12.98	25.88	41.12	17.70	7.25	5.30	11.19	
19	0.60	0.95	1.15	6.34	10.94	13.32	27.75	46.49	15.29	7.78	4.78	7.63	
20	0.52	2.80	2.65	4.26	7.70	11.02	22.80	43.37	16.71	6.67	4.52	6.67	
21	0.48	4.33	1.44	5.96	8.30	8.15	20.70	37.07	22.50	6.34	4.20	12.89	
22	0.55	3.72	1.93	6.67	9.24	6.67	29.13	32.38	20.10	6.22	3.96	21.00	
23	0.70	2.55	1.44	4.14	7.85	6.15	33.38	29.25	17.30	13.57	3.66	13.49	
24	0.85	1.76	1.10	2.20	27.12	4.65	46.10	42.98	16.53	84.15	3.60	28.00	
25	1.79	1.44	0.92	1.58	29.75	4.20	33.76	65.25	13.91	64.63	3.36	56.90	
26	4.14	1.05	1.44	1.68	22.90	4.39	32.25	44.93	11.79	33.76	3.18	41.39	
27	3.84	1.27	3.36	1.61	21.40	3.96	33.19	41.93	12.64	21.30	3.00	42.98	
28	1.54	1.22	3.48	1.58	22.50	3.48	32.13	44.54	19.80	13.91	2.95	43.37	
29	0.95	1.07	1.97	1.37	14.68	3.18	32.75	35.47	33.00	31.38		54.02	
30	1.22	1.02	1.33	1.20	11.96	2.95	35.09	30.50	67.75	25.25		59.20	
31		1.00		1.27	10.51		41.39		44.93	14.59		50.57	
Total	28.07	46.69	44.32	84.27	331.00	404.89	746.33	1603.79	1104.26	737.73	299.92	712.62	6143.89 CMSDAY
Mean	0.94	1.51	1.48	2.72	10.68	13.50	24.08	53.46	35.62	23.80	10.71	22.99	16.83 CMS
Max	4.14	4.33	3.48	6.67	29.75	55.17	46.10	150.20	87.05	84.15	47.27	59.20	150.20 CMS
Min	0.48	0.67	0.85	0.95	1.68	2.95	1.97	29.25	11.79	6.22	2.95	2.75	0.48 CMS
Runoff	2.425	4.034	3.829	7.281	28.598	34.983	64.483	138.567	95.408	63.740	25.913	61.570	530.832 MCM

Momentary Peak 159.80 CMS, at 6.04 M (AD), at 6.00 Hours, on Nov 2, 1998

Runoff Yield 17.14 Liters/Second/Square KM, Momentary Peak Yield 162.729 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

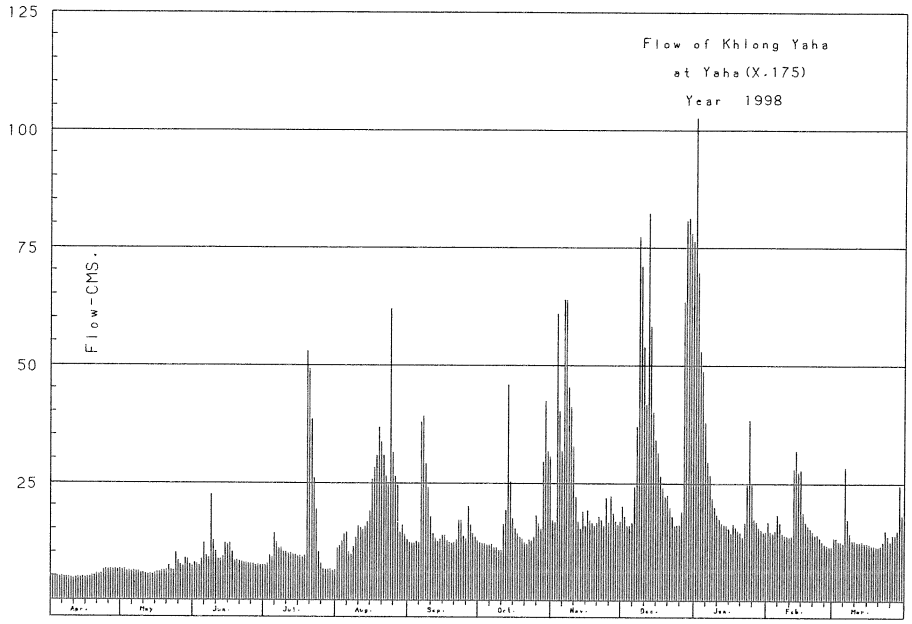
Khlong Yaha at Yaha, Yala (X.175)

Location	Lat. 06°-28'-25" N., Long. 101°-08'-32" E., on left bank on the bridge on Yala- Yaha road, Ban Yaha, Amphoe Yaha, Yala.
Drainage Area	350 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On left bank about 17.80 meters from the third staff gage.
Elevation	+5.670 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1989 to date.
Rating Operation	
Period of Rating	1990 to date.
Rated by Float	-
Rated by Current Meter	1990 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 38 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.92	2.00	2.08	2.05	2.24	2.30	2.30	2.54	2.69	6.12	2.53	2.36	
2	1.92	2.00	2.06	2.06	2.26	2.30	2.30	2.53	2.58	4.81	2.42	2.35	
3	1.91	1.98	2.05	2.16	2.32	2.29	2.29	4.46	2.49	4.13	2.41	2.32	
4	1.91	1.98	2.11	2.13	2.39	2.32	2.28	3.60	2.48	3.95	2.43	2.31	
5	1.91	1.98	2.30	2.41	2.42	2.30	2.28	3.22	2.52	3.50	2.60	2.30	
6	1.91	1.98	2.16	2.30	2.19	3.50	2.28	4.58	2.87	3.11	2.52	3.06	
7	1.91	1.98	2.13	2.24	2.17	3.55	2.25	4.57	3.46	2.99	2.41	2.56	
8	1.90	1.97	2.80	2.24	2.25	3.10	2.24	3.82	5.12	2.76	2.38	2.40	
9	1.90	1.96	2.32	2.20	2.36	2.86	2.22	3.64	4.87	2.68	2.38	2.33	
10	1.88	1.95	2.20	2.19	2.48	2.58	2.21	3.26	4.17	2.60	2.37	2.32	
11	1.90	1.95	2.12	2.18	2.47	2.41	2.50	2.78	3.66	2.56	2.37	2.31	
12	1.90	1.94	2.11	2.18	2.44	2.35	2.65	2.53	5.33	2.51	3.05	2.31	
13	1.90	1.94	2.15	2.17	2.48	2.32	3.84	2.46	4.34	2.50	3.22	2.31	
14	1.90	1.94	2.29	2.16	2.52	2.34	2.92	2.63	3.59	2.49	3.01	2.30	
15	1.90	1.95	2.28	2.15	2.64	2.39	2.56	2.49	3.33	2.46	3.04	2.29	
16	1.90	1.96	2.29	2.15	2.94	2.38	2.46	2.65	3.20	2.41	2.62	2.28	
17	1.91	1.97	2.20	2.14	3.06	2.33	2.40	2.54	2.98	2.50	2.53	2.27	
18	1.92	1.98	2.10	2.15	3.17	2.30	2.37	2.52	2.86	2.47	2.48	2.26	
19	1.93	1.99	2.10	4.13	3.45	2.30	2.34	2.48	2.78	2.43	2.46	2.26	
20	1.94	1.99	2.09	3.97	3.30	2.30	2.30	2.52	2.79	2.41	2.42	2.25	
21	1.94	2.04	2.09	3.53	3.18	2.34	2.29	2.58	2.67	2.37	2.39	2.26	
22	1.94	2.00	2.08	2.96	2.98	2.55	2.34	2.55	2.59	2.52	2.39	2.31	
23	2.00	1.98	2.07	2.65	2.90	2.54	2.32	2.48	2.49	2.91	2.36	2.44	
24	2.00	2.19	2.07	2.20	4.50	2.38	2.37	2.77	2.49	3.52	2.31	2.37	
25	2.00	2.09	2.06	2.06	3.20	2.34	2.60	2.52	2.50	2.90	2.29	2.32	
26	2.00	2.05	2.06	2.00	2.97	2.69	2.51	2.78	2.63	2.55	2.27	2.38	
27	2.00	2.04	2.05	2.00	2.89	2.50	2.45	2.62	4.56	2.53	2.26	2.39	
28	2.00	2.13	2.05	2.00	2.42	2.40	3.12	2.53	5.26	2.46	2.25	2.43	
29	2.00	2.11	2.05	2.00	2.49	2.37	3.69	2.50	5.29	2.44		2.89	
30	2.00	2.06	2.04	1.99	2.39	2.32	3.22	2.53	5.15	2.42		2.60	
31		2.03		1.99	2.34		3.16		5.08	2.42		2.43	
Mean	1.93	2.00	2.15	2.35	2.70	2.50	2.55	2.92	3.51	2.92	2.51	2.39	
Max	2.00	2.19	2.80	4.13	4.50	3.55	3.84	4.58	5.33	6.12	3.22	3.06	6.12
Min	1.88	1.94	2.04	1.99	2.17	2.29	2.21	2.46	2.48	2.37	2.25	2.25	1.88

Annual Max Momentary Gage Height 6.20 M (AD), at 6.00 Hours, on Jan 1, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.61 M (AD)
Left Bank Elevation 10.33 M (AD)
Right Bank Elevation 10.38 M (AD), Drainage Area 350 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	5.24	6.60	8.12	7.55	11.16	12.30	12.30	17.00	20.18	102.72	16.80	13.44	
2	5.24	6.60	7.74	7.74	11.54	12.30	12.30	16.80	17.80	69.74	14.60	13.25	
3	5.07	6.26	7.55	9.64	12.68	12.11	12.11	61.17	16.00	53.09	14.40	12.68	
4	5.07	6.26	8.69	9.07	14.01	12.68	11.92	40.20	15.80	48.68	14.80	12.49	
5	5.07	6.26	12.30	14.40	14.60	12.30	11.92	31.84	16.60	38.00	18.20	12.30	
6	5.07	6.26	9.64	12.30	10.21	38.00	11.92	64.11	24.14	29.42	16.60	28.32	
7	5.07	6.26	9.07	11.16	9.83	39.10	11.35	63.87	37.12	26.78	14.40	17.40	
8	4.90	6.09	22.60	11.16	11.35	29.20	11.16	45.49	77.34	21.72	13.82	14.20	
9	4.90	5.92	12.68	10.40	13.44	23.92	10.78	41.16	71.21	19.96	13.82	12.87	
10	4.56	5.75	10.40	10.21	15.80	17.80	10.59	32.72	54.07	18.20	13.63	12.68	
11	4.90	5.75	8.88	10.02	15.60	14.40	16.20	22.16	41.64	17.40	13.63	12.49	
12	4.90	5.58	8.69	10.02	15.00	13.25	19.30	16.80	82.48	16.40	28.10	12.49	
13	4.90	5.58	9.45	9.83	15.80	12.68	45.98	15.40	58.23	16.20	31.84	12.49	
14	4.90	5.58	12.11	9.64	16.60	13.06	25.24	18.86	39.98	16.00	27.22	12.30	
15	4.90	5.75	11.92	9.45	19.08	14.01	17.40	16.00	34.26	15.40	27.88	12.11	
16	4.90	5.92	12.11	9.45	25.68	13.82	15.40	19.30	31.40	14.40	18.64	11.92	
17	5.07	6.09	10.40	9.26	28.32	12.87	14.20	17.00	26.56	16.20	16.80	11.73	
18	5.24	6.26	8.50	9.45	30.74	12.30	13.63	16.60	23.92	15.60	15.80	11.54	
19	5.41	6.43	8.50	53.09	36.90	12.30	13.06	15.80	22.16	14.80	15.40	11.54	
20	5.58	6.43	8.31	49.17	33.60	12.30	12.30	16.60	22.38	14.40	14.60	11.35	
21	5.58	7.36	8.31	38.66	30.96	13.06	12.11	17.80	19.74	13.63	14.01	11.54	
22	5.58	6.60	8.12	26.12	26.56	17.20	13.06	17.20	18.00	16.60	14.01	12.49	
23	6.60	6.26	7.93	19.30	24.80	17.00	12.68	15.80	16.00	25.02	13.44	15.00	
24	6.60	10.21	7.93	10.40	62.15	13.82	13.63	21.94	16.00	38.44	12.49	13.63	
25	6.60	8.31	7.74	7.74	31.40	13.06	18.20	16.60	16.20	24.80	12.11	12.68	
26	6.60	7.55	7.74	6.60	26.34	20.18	16.40	22.16	18.86	17.20	11.73	13.82	
27	6.60	7.36	7.55	6.60	24.58	16.20	15.20	18.64	63.62	16.80	11.54	14.01	
28	6.60	9.07	7.55	6.60	14.60	14.20	29.64	16.80	80.77	15.40	11.35	14.80	
29	6.60	8.69	7.55	6.60	16.00	13.63	42.36	16.20	81.50	15.00		24.58	
30	6.60	7.74	7.36	6.43	14.01	12.68	31.84	16.80	78.07	14.60		18.20	
31		7.17		6.43	13.06		30.52		76.36	14.60		14.80	
Total	164.85	207.95	285.44	424.49	646.40	491.73	544.70	768.82	1218.39	797.20	461.66	435.14	6446.77 CMSDAY
Mean	5.50	6.71	9.51	13.69	20.85	16.39	17.57	25.63	39.30	25.72	16.49	14.04	17.66 CMS
Max	6.60	10.21	22.60	53.09	62.15	39.10	45.98	64.11	82.48	102.72	31.84	28.32	102.72 CMS
Min	4.56	5.58	7.36	6.43	9.83	12.11	10.59	15.40	15.80	13.63	11.35	11.35	4.56 CMS
Runoff	14.243	17.967	24.662	36.676	55.849	42.485	47.062	66.426	105.269	68.878	39.887	37.596	557.001 MCM

Momentary Peak 104.80 CMS, at 6.20 M (AD), at 6.00 Hours, on Jan 1, 1998
Runoff Yield 50.46 Liters/Second/Square KM, Momentary Peak Yield 299.429 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

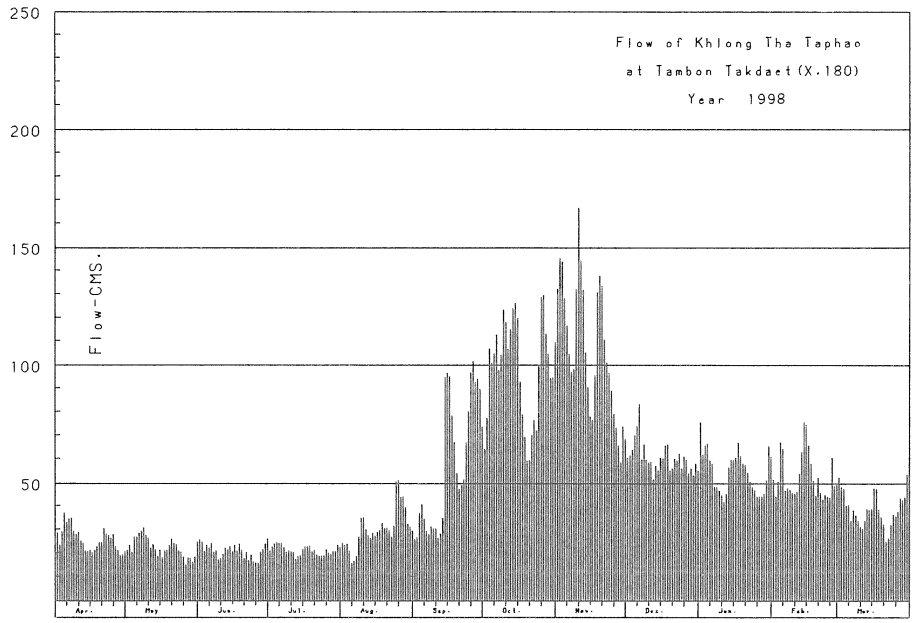
Khlong Tha Taphao at Tambon Tak Daet, Chumphon (X.180)

Location	Lat. 10°-29'-42" N., Long. 99°-10'-23" E., on left bank at the highway bridge near the railway bridge, Amphoe Muang, Chumphon.
Drainage Area	2,045 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 3.00 meters from the top staff gage.
Elevation	+5.896 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1993 to date.
Rating Operation	
Period of Rating	1998 to date.
Rated by Float	-
Rated by Current Meter	1998 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 40 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.02	-0.21	-0.07	-0.23	-0.11	-0.06	0.92	2.36	0.83	1.18	0.61	0.63	
2	-0.14	-0.15	-0.09	-0.16	-0.15	-0.04	1.21	2.61	0.86	0.86	0.44	0.53	
3	0.04	-0.24	-0.23	-0.13	-0.12	0.25	1.84	2.59	0.91	0.96	0.59	0.52	
4	0.25	-0.03	-0.15	-0.10	-0.23	0.35	1.71	2.27	1.05	0.97	0.99	0.34	
5	0.15	-0.02	-0.18	-0.11	-0.40	0.19	1.79	2.04	1.14	0.81	0.92	0.34	
6	0.18	0.02	-0.12	-0.12	-0.38	0.04	1.96	1.79	1.34	0.77	0.50	0.17	
7	0.20	0.05	-0.24	-0.17	-0.30	0.01	1.65	1.63	0.82	0.54	0.52	0.28	
8	0.04	0.08	-0.23	-0.25	-0.03	0.10	1.78	1.66	0.97	0.53	0.51	0.23	
9	0.01	0.00	-0.35	-0.23	0.20	0.07	2.18	2.35	0.81	0.50	0.47	0.16	
10	0.03	-0.05	-0.34	-0.23	0.20	0.08	2.07	3.03	0.79	0.45	0.47	0.10	
11	-0.08	-0.19	-0.27	-0.25	0.07	-0.05	1.83	2.59	0.79	0.37	0.48	0.07	
12	-0.12	-0.13	-0.19	-0.34	-0.01	0.02	2.00	2.35	0.62	0.46	0.68	0.17	
13	-0.22	-0.20	-0.20	-0.31	-0.04	0.19	2.19	1.80	0.75	0.74	0.89	0.30	
14	-0.24	-0.30	-0.17	-0.29	0.02	1.59	2.23	1.50	0.71	0.82	1.18	0.28	
15	-0.21	-0.22	-0.23	-0.20	-0.01	1.62	2.10	1.23	0.83	0.81	1.15	0.30	
16	-0.26	-0.33	-0.15	-0.17	0.03	1.59	1.55	1.19	0.83	0.83	0.96	0.52	
17	-0.21	-0.22	-0.22	-0.16	0.05	1.24	1.25	1.60	0.95	0.99	0.78	0.52	
18	-0.17	-0.22	-0.13	-0.16	0.14	0.98	1.04	2.33	0.97	0.85	0.60	0.29	
19	-0.10	-0.14	-0.22	-0.23	0.08	0.68	0.80	2.47	0.70	0.78	0.45	0.21	
20	-0.11	-0.06	-0.33	-0.22	0.08	0.51	0.81	2.38	0.73	0.76	0.63	0.12	
21	0.08	-0.12	-0.25	-0.29	0.05	0.56	1.05	1.92	0.82	0.69	0.47	-0.10	
22	0.01	-0.13	-0.36	-0.30	-0.02	0.61	1.19	1.72	0.81	0.59	0.41	-0.04	
23	0.00	-0.22	-0.28	-0.31	0.11	0.98	1.10	1.62	0.87	0.54	0.45	0.12	
24	-0.05	-0.25	-0.39	-0.29	0.59	1.28	1.69	1.47	0.73	0.50	0.44	0.23	
25	0.01	-0.32	-0.41	-0.20	0.61	1.63	2.29	1.26	0.85	0.44	0.42	0.22	
26	-0.17	-0.43	-0.40	-0.26	0.43	1.73	2.30	1.12	0.81	0.43	0.84	0.26	
27	-0.21	-0.32	-0.24	-0.27	0.43	1.54	1.97	0.95	0.67	0.44	0.54	0.42	
28	-0.29	-0.34	-0.21	-0.24	0.31	1.57	1.79	0.79	0.73	0.46	0.56	0.39	
29	-0.29	-0.39	-0.12	-0.23	0.13	1.48	1.58	1.13	0.66	0.61		0.43	
30	-0.24	-0.32	-0.06	-0.15	0.09	1.13	1.58	1.02	0.77	0.95		0.67	
31		-0.09		-0.18	0.05		1.89		0.70	0.84		0.83	
Mean	-0.07	-0.18	-0.23	-0.22	0.06	0.73	1.66	1.83	0.83	0.69	0.64	0.31	
Max	0.25	0.08	-0.06	-0.10	0.61	1.73	2.30	3.03	1.34	1.18	1.18	0.83	3.03
Min	-0.29	-0.43	-0.41	-0.34	-0.40	-0.06	0.80	0.79	0.62	0.37	0.41	-0.10	-0.43

Annual Max Momentary Gage Height 3.06 M (MSL), at 15.00 Hours, on Nov 10, 1998
Zero Gage at Bottom Elevation 0.00 M (MSL), River Bed -5.54 M (MSL)
Left Bank Elevation 3.80 M (MSL)
Right Bank Elevation 3.90 M (MSL), Drainage Area 2045 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	28.74	21.71	25.90	21.13	24.70	26.20	64.56	132.64	60.69	76.10	51.42	52.26	
2	23.80	23.50	25.30	23.20	23.50	26.80	77.46	145.12	61.98	61.98	44.60	48.20	
3	29.48	20.84	21.13	24.10	24.40	37.30	107.16	144.10	64.13	66.28	50.60	47.80	
4	37.30	27.10	23.50	25.00	21.13	41.10	100.88	128.23	70.25	66.71	67.57	40.72	
5	33.55	27.40	22.60	24.70	16.20	35.03	104.72	116.96	74.30	59.83	64.56	40.72	
6	34.66	28.74	24.40	24.40	16.78	29.48	113.04	104.72	83.44	58.14	47.00	34.29	
7	35.40	29.85	20.84	22.90	19.10	28.37	98.00	97.04	60.26	48.60	47.80	38.44	
8	29.48	30.96	21.13	20.55	27.10	31.70	104.24	98.48	66.71	48.20	47.40	36.54	
9	28.37	28.00	17.65	21.13	35.40	30.59	123.82	132.15	59.83	47.00	45.80	33.92	
10	29.11	26.50	17.94	21.13	35.40	30.96	118.43	166.99	58.98	45.00	45.80	31.70	
11	25.60	22.30	19.97	20.55	30.59	26.50	106.67	144.10	58.98	41.86	46.20	30.59	
12	24.40	24.10	22.30	17.94	27.70	28.74	115.00	132.15	51.84	45.40	54.36	34.29	
13	21.42	22.00	22.00	18.81	26.80	35.03	124.31	105.20	57.30	56.88	63.27	39.20	
14	20.84	19.10	22.90	19.39	28.74	95.13	126.27	90.90	55.62	60.26	76.10	38.44	
15	21.71	21.42	21.13	22.00	27.70	96.56	119.90	78.38	60.69	59.83	74.75	39.20	
16	20.26	18.23	23.50	22.90	29.11	95.13	93.25	76.55	60.69	60.69	66.28	47.80	
17	21.71	21.42	21.42	23.20	29.85	78.84	79.30	95.60	65.85	67.57	58.56	47.80	
18	22.90	21.42	24.10	23.20	33.18	67.14	69.80	131.17	66.71	61.55	51.00	38.82	
19	25.00	23.80	21.42	21.13	30.96	54.36	59.40	138.10	55.20	58.56	45.00	35.78	
20	24.70	26.20	18.23	21.42	30.96	47.40	59.83	133.62	56.46	57.72	52.26	32.44	
21	30.96	24.40	20.55	19.39	29.85	49.40	70.25	111.08	60.26	54.78	45.80	25.00	
22	28.37	24.10	17.36	19.10	27.40	51.42	76.55	101.36	59.83	50.60	43.40	26.80	
23	28.00	21.42	19.68	18.81	32.07	67.14	72.50	96.56	62.41	48.60	45.00	32.44	
24	26.50	20.55	16.49	19.39	50.60	80.68	99.92	89.49	56.46	47.00	44.60	36.54	
25	28.37	18.52	15.99	22.00	51.42	97.04	129.21	79.76	61.55	44.60	43.80	36.16	
26	22.90	15.57	16.20	20.26	44.20	101.84	129.70	73.40	59.83	44.20	61.12	37.68	
27	21.71	18.52	20.84	19.97	44.20	92.78	113.53	65.85	53.94	44.60	48.60	43.80	
28	19.39	17.94	21.71	20.84	39.58	94.19	104.72	58.98	56.46	45.40	49.40	42.62	
29	19.39	16.49	24.40	21.13	32.81	89.96	94.66	73.85	53.52	51.42		44.20	
30	20.84	18.52	26.20	23.50	31.33	73.85	94.66	68.90	58.14	65.85		53.94	
31		25.30		22.60	29.85		109.61		55.20	61.12		60.69	
Total	784.86	705.92	636.78	665.77	952.61	1740.66	3061.35	3211.43	1887.51	1706.33	1482.05	1228.82	18064.09 CMSDAY
Mean	26.16	22.77	21.23	21.48	30.73	58.02	98.75	107.05	60.89	55.04	52.93	39.64	49.49 CMS
Max	37.30	30.96	26.20	25.00	51.42	101.84	129.70	166.99	83.44	76.10	76.10	60.69	166.99 CMS
Min	19.39	15.57	15.99	17.94	16.20	26.20	59.40	58.98	51.84	41.86	43.40	25.00	15.57 CMS
Runoff	67.812	60.991	55.018	57.523	82.306	150.393	264.501	277.468	163.081	147.427	128.049	106.170	1560.738 MCM

Momentary Peak 168.58 CMS, at 3.06 M (MSL), at 15.00 Hours, on Nov 10, 1998

Runoff Yield 24.20 Liters/Second/Square KM, Momentary Peak Yield 82.435 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

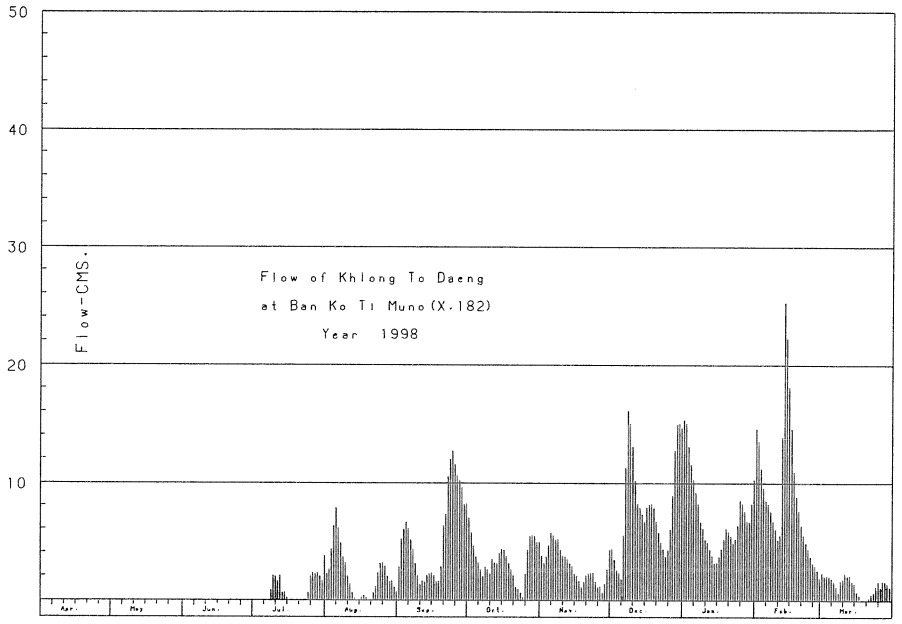
Khlong To Daeng at Ban To Daeng, Narathiwat (X.182)

Location	Lat. 06°-04'-28" N., Long. 101°-58'-08" E., on right bank at the bridge, Ban To Daeng, Amphoe Sungai Kolok, Narathiwat.
Drainage Area	Flood plain.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank at the abutment of the bridge.
Elevation	+3.888 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1993 to date.
Rating Operation	
Period of Rating	1993 to date.
Rated by Float	-
Rated by Current Meter	1993 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.70	0.53	0.60	0.86	1.10	1.12	1.26	1.15	1.17	1.50	1.48	1.10	
2	0.70	0.53	0.63	0.85	1.11	1.20	1.22	1.13	1.14	1.49	1.45	1.09	
3	0.69	0.53	0.67	0.84	1.17	1.23	1.18	1.15	1.11	1.44	1.39	1.09	
4	0.69	0.51	0.70	0.83	1.24	1.25	1.15	1.18	1.10	1.40	1.34	1.09	
5	0.69	0.51	0.69	0.85	1.29	1.23	1.13	1.22	1.08	1.36	1.31	1.08	
6	0.68	0.50	0.70	0.91	1.23	1.20	1.11	1.21	1.21	1.33	1.30	1.07	
7	0.68	0.50	0.69	0.93	1.19	1.17	1.09	1.20	1.39	1.30	1.28	1.05	
8	0.67	0.50	0.69	1.04	1.15	1.13	1.12	1.20	1.52	1.25	1.25	1.03	
9	0.66	0.49	0.69	1.09	1.13	1.09	1.11	1.17	1.49	1.23	1.23	1.07	
10	0.65	0.49	0.69	1.09	1.09	1.06	1.10	1.15	1.44	1.20	1.20	1.08	
11	0.65	0.48	0.69	1.07	1.06	1.07	1.14	1.15	1.36	1.19	1.21	1.10	
12	0.65	0.48	0.70	1.09	1.03	1.07	1.13	1.14	1.30	1.17	1.46	1.09	
13	0.65	0.47	0.70	1.03	1.01	1.09	1.13	1.13	1.29	1.15	1.74	1.09	
14	0.63	0.47	0.71	1.03	1.00	1.10	1.16	1.12	1,27	1.13	1.67	1.07	
15	0.63	0.47	0.71	1.01	0.99	1.10	1.17	1.10	1.25	1.13	1.57	1.06	
16	0.63	0.45	0.72	0.99	1.01	1.09	1.17	1.09	1.29	1.15	1.48	1.03	
17	0.62	0.45	0.72	0.97	1.02	1.07	1.15	1.07	1.30	1.17	1.38	1.02	
18	0.61	0.45	0.78	0.97	1.01	1.07	1.13	1.05	1.30	1.20	1.32	1.00	
19	0.60	0.43	0.79	0.95	1.00	1.12	1.11	1.07	1.29	1.23	1.28	1.00	
20	0.60	0.43	0.82	0.93	1.00	1.24	1.09	1.09	1.25	1.22	1.24	0.98	
21	0.59	0.43	0.83	0.91	1.03	1.27	1.05	1.10	1.22	1.21	1.21	1.01	
22	0.58	0.47	0.84	0.90	1.05	1.37	1.04	1.10	1.19	1.19	1.19	1.02	
23	0.57	0.49	0.83	1.00	1.10	1.41	1.03	1.10	1.17	1.20	1.17	1.03	
24	0.57	0.53	0.82	1.03	1.13	1.43	1.01	1.07	1.15	1.24	1.15	1.05	
25	0.57	0.53	0.82	1.09	1.13	1.40	1.10	1.05	1.17	1.31	1.13	1.07	
26	0.56	0.53	0.81	1.10	1.12	1.37	1.17	1.05	1.23	1.30	1.12	1.05	
27	0.55	0.55	0.81	1.10	1.09	1.36	1.21	1.03	1.32	1.28	1.11	1.07	
28	0.55	0.55	0.80	1.10	1.07	1.34	1.21	1.06	1.43	1.25	1.08	1.07	
29	0.54	0.57	0.81	1.09	1.07	1.30	1.21	1.11	1.49	1.25		1.06	
30	0.54	0.57	0.80	1.07	1.05	1.30	1.19	1.17	1.49	1.30		1.05	
31		0.57		1.15	1.03		1.19		1.48	1.36		1.03	
Mean	0.62	0.50	0.74	1.00	1.09	1.21	1.14	1.12	1.29	1.26	1.31	1.05	
Max	0.70	0.57	0.84	1.15	1.29	1.43	1.26	1.22	1.52	1.50	1.74	1.10	1.74
Min	0.54	0.43	0.60	0.83	0.99	1.06	1.01	1.03	1.08	1.13	1.08	0.98	0.43

Annual Max Momentary Gage Height 1.75 M (AD), at 18.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed -2.17 M (AD)
Left Bank Elevation 3.89 M (AD)
Right Bank Elevation 3.87 M (AD), Drainage Area Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	2.30	2.88	7.00	3.75	4.33	15.40	14.64	2.30	
2	0.00	0.00	0.00	0.00	2.59	5.20	5.80	3.17	3.46	15.02	13.50	2.07	
3	0.00	0.00	0.00	0.00	4.33	6.10	4.62	3.75	2.59	13.12	11.26	2.07	
4	0.00	0.00	0.00	0.00	6.40	6.70	3.75	4.62	2.30	11.60	9.56	2.07	
5	0.00	0.00	0.00	0.00	7.90	6.10	3.17	5.80	1.84	10.24	8.54	1.84	
6	0.00	0.00	0.00	0.00	6.10	5.20	2.59	5.50	5.50	9.22	8.20	1.61	
7	0.00	0.00	0.00	0.00	4.91	4.33	2.07	5.20	11.26	8.20	7.60	1.15	
8	0.00	0.00	0.00	0.92	3.75	3.17	2.88	5.20	16.18	6.70	6.70	0.69	
9	0.00	0.00	0.00	2.07	3.17	2.07	2.59	4.33	15.02	6.10	6.10	1.61	
10	0.00	0.00	0.00	2.07	2.07	1.38	2.30	3.75	13.12	5.20	5.20	1.84	
11	0.00	0.00	0.00	1.61	1.38	1.61	3.46	3.75	10.24	4.91	5.50	2.30	
12	0.00	0.00	0.00	2.07	0.69	1.61	3.17	3.46	8.20	4.33	13.88	2.07	
13	0.00	0.00	0.00	0.69	0.23	2.07	3.17	3.17	7.90	3.75	25.38	2.07	
14	0.00	0.00	0.00	0.69	0.00	2.30	4.04	2.88	7.30	3.17	22.24	1.61	
15	0.00	0.00	0.00	0.23	0.00	2.30	4.33	2.30	6.70	3.17	18.13	1.38	
16	0.00	0.00	0.00	0.00	0.23	2.07	4.33	2.07	7.90	3.75	14.64	0.69	
17	0.00	0.00	0.00	0.00	0.46	1.61	3.75	1.61	8.20	4.33	10.92	0.46	
18	0.00	0.00	0.00	0.00	0.23	1.61	3.17	1.15	8.20	5.20	8.88	0.00	
19	0.00	0.00	0.00	0.00	0.00	2.88	2.59	1.61	7.90	6.10	7.60	0.00	
20	0.00	0.00	0.00	0.00	0.00	6.40	2.07	2.07	6.70	5.80	6.40	0.00	
21	0.00	0.00	0.00	0.00	0.69	7.30	1.15	2.30	5.80	5.50	5.50	0.23	
22	0.00	0.00	0.00	0.00	1.15	10.58	0.92	2.30	4.91	4.91	4.91	0.46	
23	0.00	0.00	0.00	0.00	2.30	11.98	0.69	2.30	4.33	5.20	4.33	0.69	
24	0.00	0.00	0.00	0.69	3.17	12.74	0.23	1.61	3.75	6.40	3.75	1.15	
25	0.00	0.00	0.00	2.07	3.17	11.60	2.30	1.15	4.33	8.54	3.17	1.61	
26	0.00	0.00	0.00	2.30	2.88	10.58	4.33	1.15	6.10	8.20	2.88	1.15	
27	0.00	0.00	0.00	2.30	2.07	10.24	5.50	0.69	8.88	7.60	2.59	1.61	
28	0.00	0.00	0.00	2.30	1.61	9.56	5.50	1.38	12.74	6.70	1.84	1.61	
29	0.00	0.00	0.00	2.07	1.61	8.20	5.50	2.59	15.02	6.70		1.38	
30	0.00	0.00	0.00	1.61	1.15	8.20	4.91	4.33	15.02	8.20		1.15	
31		0.00		3.75	0.69		4.91		14.64	10.24		0.69	
Total	0.00	0.00	0.00	27.44	67.23	168.57	106.79	88.94	250.36	223.50	253.84	39.56	1226.23 CMSDAY
Mean	0.00	0.00	0.00	0.89	2.17	5.62	3.44	2.96	8.08	7.21	9.07	1.28	3.36 CMS
Max	0.00	0.00	0.00	3.75	7.90	12.74	7.00	5.80	16.18	15.40	25.38	2.30	25.38 CMS
Min	0.00	0.00	0.00	0.00	0.00	1.38	0.23	0.69	1.84	3.17	1.84	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	2.371	5.809	14.564	9.227	7.684	21.631	19.310	21.932	3.418	105.946 MCM

Momentary Peak 25.85 CMS, at 1.75 M (AD), at 18.00 Hours, on Feb 13, 1998
Runoff Yield ********* Liters/Second/Square KM, Momentary Peak Yield ********* Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Pa Se Mat at Ban Ko Ti Mung, Narathiwat (X.183)

Location — Lat. 06°-04'-39" N., Long. 102°-00'-23" E., on left bank at the bridge, Ban Pa Se Mat, Amphoe Sungai Kolok, Narathiwat.

Drainage Area — Flood plain.

Type of Gage — Staff gage.

Zero Gage at Bottom — +0.00 m.(A.D.)

Bench Mark — B.M.-H.D.

Location — On left bank about 5.00 meters from the top staff gage.

Elevation — +3.366 m.(A.D.)

Gage Reading Frequency — 5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.

Basis of Mean Daily Gage Height — Arithmetic mean of 5 readings.

Period of Available Gage Records — 1993 to date.

Rating Operation

Period of Rating — 1993 to date.

Rated by Float — -

Rated by Current Meter — 1993 to date.

Stability of Channel Regimes — Fairly stable.

Overbank Flow Conditions — No overbank flow.

General Description — Records fair. Stage-discharge relation defined by 14 discharge measurements made in 1998.

Gage Height in Meter (A.D), Water Year April 1, 1998 to March 31, 1999

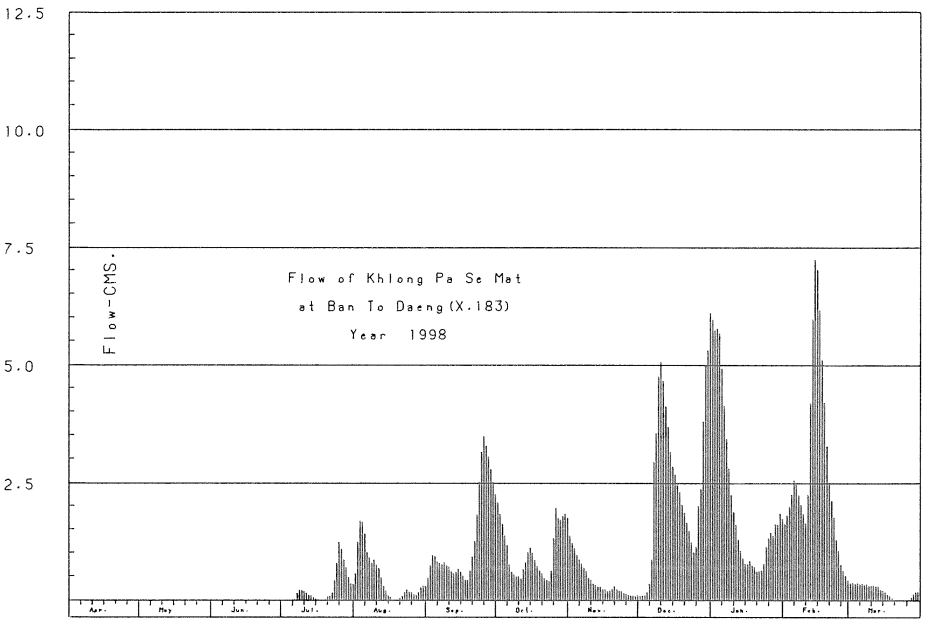
Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.33	0.33	0.33	0.81	1.45	1.39	2.03	1.82	0.99	2.77	1.90	1.31	
2	0.33	0.33	0.33	0.82	1.77	1.57	1.96	1.77	0.98	2.73	1.95	1.31	
3	0.33	0.33	0.33	0.73	1.92	1.66	1.90	1.72	1.02	2.74	2.01	1.30	
4	0.33	0.33	0.33	0.70	1.91	1.66	1.82	1.67	1.09	2.72	2.07	1.30	
5	0.33	0.33	0.33	0.82	1.84	1.61	1.75	1.63	1.30	2.60	2.14	1.29	
6	0.33	0.33	0.33	0.89	1.69	1.59	1.57	1.58	1.63	2.46	2.12	1.29	
7	0.33	0.33	0.33	1.09	1.64	1.58	1.48	1.54	2.23	2.33	2.07	1.28	
8	0.33	0.33	0.33	1.16	1.60	1.60	1.44	1.48	2.35	2.20	2.02	1.28	
9	0.33	0.33	0.33	1.17	1.62	1.57	1.42	1.40	2.57	2.07	1.96	1.27	
10	0.33	0.33	0.33	1.12	1.57	1.54	1.41	1.35	2.62	1.98	1.90	1.27	
11	0.33	0.33	0.33	1.07	1.53	1.49	1.39	1.30	2.55	1.89	2.07	1.26	
12	0.33	0.33	0.33	1.03	1.40	1.45	1.52	1.27	2.46	1.80	2.47	1.26	
13	0.33	0.33	0.33	0.99	1.26	1.48	1.60	1.25	2.38	1.70	2.77	1.24	
14	0.33	0.33	0.34	0.93	1.14	1.51	1.69	1.23	2.27	1.64	2.96	1.19	
15	0.33	0.33	0.34	0.88	1.02	1.48	1.73	1.20	2.21	1.58	2.93	1.15	
16	0.33	0.33	0.34	0.85	0.91	1.42	1.68	1.17	2.17	1.59	2.80	1.10	
17	0.33	0.33	0.44	0.80	0.79	1.37	1.62	1.15	2.12	1.61	2.63	1.04	
18	0.33	0.33	0.64	0.76	0.73	1.35	1.55	1.14	2.08	1.57	2.47	0.98	
19	0.33	0.33	0.59	0.71	0.78	1.50	1.50	1.21	2.02	1.54	2.30	0.92	
20	0.33	0.33	0.55	0.97	0.89	1.65	1.45	1.24	1.97	1.49	2.13	0.84	
21	0.33	0.33	0.49	0.96	1.00	1.79	1.38	1.20	1.91	1.48	2.04	0.80	
22	0.33	0.33	0.49	1.10	1.12	1.96	1.37	1.16	1.85	1.50	1.94	0.77	
23	0.33	0.33	0.59	1.36	1.17	2.13	1.34	1.12	1.77	1.58	1.80	0.76	
24	0.33	0.33	0.56	1.59	1.13	2.27	1.49	1.09	1.69	1.74	1.70	0.75	
25	0.33	0.33	0.53	1.77	1.08	2.34	1.81	1.04	1.74	1.81	1.58	0.75	
26	0.33	0.33	0.49	1.72	1.03	2.30	2.00	1.01	2.01	1.84	1.49	0.82	
27	0.33	0.33	0.46	1.63	1.03	2.25	1.94	0.99	2.10	1.82	1.43	0.93	
28	0.33	0.33	0.44	1.53	1.09	2.20	1.92	0.97	2.40	1.90	1.35	1.04	
29	0.33	0.33	0.43	1.41	1.23	2.13	1.95	0.98	2.61	1.89		1.12	
30	0.33	0.33	0.42	1.29	1.25	2.07	1.96	1.00	2.66	1.97		1.10	
31		0.33		1.29	1.26		1.94		2.79	1.93		1.09	
Mean	0.33	0.33	0.41	1.10	1.29	1.73	1.66	1.29	2.02	1.95	2.11	1.09	
Max	0.33	0.33	0.64	1.77	1.92	2.34	2.03	1.82	2.79	2.77	2.96	1.31	2.96
Min	0.33	0.33	0.33	0.70	0.73	1.35	1.34	0.97	0.98	1.48	1.35	0.75	0.33

Annual Max Momentary Gage Height — 2.98 M (A.D), at 18.00 Hours, on Feb 14, 1998

Zero Gage at Bottom Elevation — 0.00 M (A.D), River Bed — 0.29 M (A.D)

Left Bank Elevation — 3.28 M (A.D)

Right Bank Elevation — 3.25 M (A.D), Drainage Area — Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.00	0.56	0.47	2.09	1.37	0.10	5.98	1.63	0.37	
2	0.00	0.00	0.00	0.01	1.23	0.75	1.83	1.23	0.09	5.73	1.80	0.37	
3	0.00	0.00	0.00	0.00	1.70	0.95	1.63	1.10	0.11	5.79	2.00	0.36	
4	0.00	0.00	0.00	0.00	1.66	0.95	1.37	0.97	0.16	5.67	2.25	0.36	
5	0.00	0.00	0.00	0.01	1.43	0.83	1.18	0.87	0.36	4.94	2.55	0.35	
6	0.00	0.00	0.00	0.04	1.03	0.78	0.75	0.77	0.87	4.14	2.46	0.35	
7	0.00	0.00	0.00	0.16	0.90	0.77	0.61	0.70	2.95	3.45	2.25	0.34	
8	0.00	0.00	0.00	0.21	0.80	0.80	0.54	0.61	3.55	2.80	2.04	0.34	
9	0.00	0.00	0.00	0.22	0.85	0.75	0.51	0.48	4.77	2.25	1.83	0.32	
10	0.00	0.00	0.00	0.18	0.75	0.70	0.50	0.42	5.06	1.89	1.63	0.32	
11	0.00	0.00	0.00	0.15	0.69	0.62	0.47	0.36	4.66	1.60	2.25	0.31	
12	0.00	0.00	0.00	0.12	0.48	0.56	0.67	0.32	4.14	1.30	4.20	0.31	
13	0.00	0.00	0.00	0.10	0.31	0.61	0.80	0.30	3.70	1.05	5.98	0.29	
14	0.00	0.00	0.00	0.07	0.20	0.66	1.03	0.28	3.15	0.90	7.23	0.23	
15	0.00	0.00	0.00	0.04	0.11	0.61	1.13	0.24	2.85	0.77	7.03	0.20	
16	0.00	0.00	0.00	0.03	0.06	0.51	1.00	0.22	2.67	0.78	6.16	0.17	
17	0.00	0.00	0.00	0.00	0.00	0.44	0.85	0.20	2.46	0.83	5.12	0.13	
18	0.00	0.00	0.00	0.00	0.00	0.42	0.72	0.20	2.30	0.75	4.20	0.09	
19	0.00	0.00	0.00	0.00	0.00	0.64	0.64	0.25	2.04	0.70	3.30	0.06	
20	0.00	0.00	0.00	0.09	0.04	0.92	0.56	0.29	1.86	0.62	2.51	0.02	
21	0.00	0.00	0.00	0.08	0.10	1.27	0.46	0.24	1.66	0.61	2.13	0.00	
22	0.00	0.00	0.00	0.17	0.18	1.83	0.44	0.21	1.47	0.64	1.76	0.00	
23	0.00	0.00	0.00	0.43	0.22	2.51	0.41	0.18	1.23	0.77	1.30	0.00	
24	0.00	0.00	0.00	0.78	0.19	3.15	0.62	0.16	1.03	1.15	1.05	0.00	
25	0.00	0.00	0.00	1.23	0.16	3.50	1.33	0.13	1.15	1.33	0.77	0.00	
26	0.00	0.00	0.00	1.10	0.12	3.30	1.96	0.11	2.00	1.43	0.62	0.01	
27	0.00	0.00	0.00	0.87	0.12	3.05	1.76	0.10	2.38	1.37	0.53	0.07	
28	0.00	0.00	0.00	0.69	0.16	2.80	1.70	0.09	3.80	1.63	0.42	0.13	
29	0.00	0.00	0.00	0.50	0.28	2.51	1.80	0.09	5.00	1.60		0.18	
30	0.00	0.00	0.00	0.35	0.30	2.25	1.83	0.10	5.31	1.86		0.17	
31		0.00		0.35	0.31		1.76		6.10	1.73		0.16	
Total	0.00	0.00	0.00	7.98	14.94	39.91	32.95	12.59	78.98	66.06	77.00	6.01	336.42 CMSDAY
Mean	0.00	0.00	0.00	0.26	0.48	1.33	1.06	0.42	2.55	2.13	2.75	0.19	0.92 CMS
Max	0.00	0.00	0.00	1.23	1.70	3.50	2.09	1.37	6.10	5.98	7.23	0.37	7.23 CMS
Min	0.00	0.00	0.00	0.00	0.00	0.42	0.41	0.09	0.09	0.61	0.42	0.00	0.00 CMS
Runoff	0.000	0.000	0.000	0.689	1.291	3.448	2.847	1.088	6.824	5.708	6.653	0.519	29.067 MCM

Momentary Peak 7.37 CMS, at 2.98 M (A.D), at 18.00 Hours, on Feb 14, 1998

Runoff Yield ********* Liters/Second/Square KM, Momentary Peak Yield ********* Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

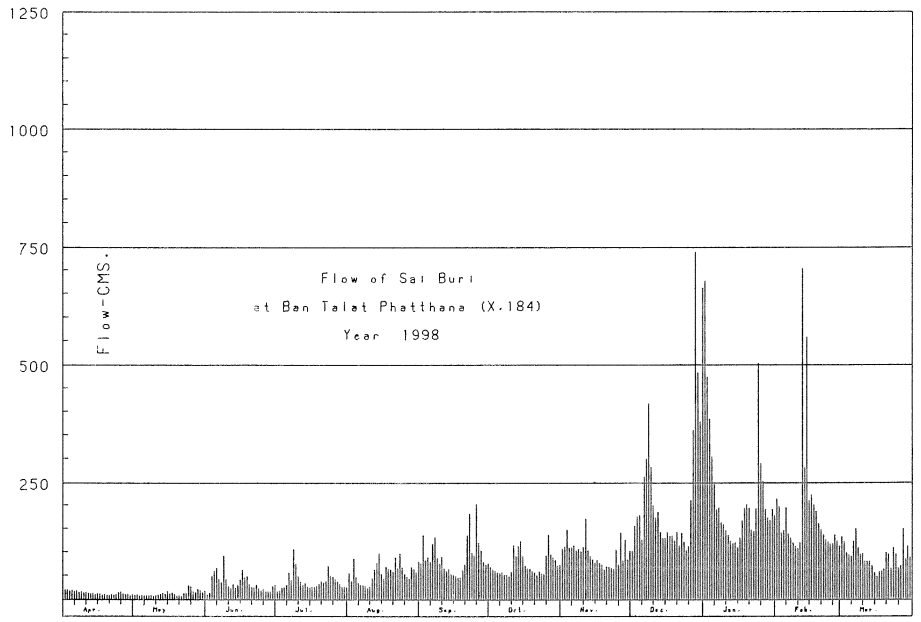
Sai Buri River at Ban Talat Phatthana, Narathiwat (X.184)

Location	Lat. 06°-13'-32" N., Long. 101°-30'-00" E., on right bank at the bridge, Ban Talat Phatthana, Amphoe Si Sakhon, Narathiwat.
Drainage Area	1,167 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 30 meters from the top staff gage.
Elevation	+10.518 m.(A.D.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 51 discharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.23	0.05	0.04	0.18	0.62	0.85	0.77	1.17	1.12	5.20	2.12	1.41	
2	0.21	0.04	0.13	0.18	0.45	1.45	0.73	1.20	1.62	3.94	1.99	1.30	
3	0.20	0.03	0.57	0.28	0.97	0.93	0.68	1.56	1.80	3.36	1.49	1.09	
4	0.20	0.02	0.67	0.27	0.53	0.98	0.66	1.18	1.84	2.79	1.53	1.03	
5	0.19	0.01	0.76	0.34	0.41	0.90	0.65	1.20	1.34	2.37	1.98	1.02	
6	0.17	0.01	0.48	0.65	0.34	1.25	0.64	1.22	2.49	1.94	1.48	1.31	
7	0.15	0.01	0.42	0.46	0.35	1.40	0.60	1.13	2.76	1.96	1.38	1.58	
8	0.14	0.01	1.03	1.16	0.31	0.97	0.58	1.15	3.57	1.69	1.29	1.19	
9	0.13	0.01	0.48	0.84	0.27	0.86	0.57	1.12	2.64	1.64	1.21	1.04	
10	0.12	0.01	0.32	0.57	0.29	0.99	0.66	1.19	2.01	1.52	1.18	1.08	
11	0.11	0.05	0.25	0.42	0.52	0.74	1.23	1.78	1.78	1.44	1.28	0.89	
12	0.10	0.08	0.37	0.36	0.71	0.69	1.02	1.14	1.90	1.31	5.36	0.90	
13	0.09	0.10	0.25	0.39	0.88	0.72	1.23	1.01	1.51	1.28	2.63	0.89	
14	0.08	0.09	0.34	0.31	1.07	0.62	1.31	0.95	1.38	1.28	4.48	0.81	
15	0.07	0.16	0.48	0.29	0.62	0.60	1.00	0.88	1.38	1.19	2.09	0.64	
16	0.07	0.08	0.70	0.29	0.49	0.55	0.81	0.92	1.49	1.39	2.18	0.56	
17	0.06	0.12	0.52	0.30	0.80	0.53	0.73	0.87	1.43	1.72	2.03	0.65	
18	0.05	0.06	0.56	0.31	0.73	0.52	0.74	0.82	1.42	1.97	1.90	0.69	
19	0.05	0.01	0.35	0.39	0.73	0.71	0.66	0.72	1.33	2.02	1.67	0.72	
20	0.04	0.01	0.30	0.43	0.65	0.83	0.63	0.78	1.50	1.97	1.55	1.08	
21	0.04	0.01	0.26	0.39	1.00	1.43	0.59	0.77	1.21	1.54	1.46	1.04	
22	0.04	0.10	0.35	0.45	0.76	1.87	0.68	0.76	1.49	1.52	1.34	0.75	
23	0.06	0.09	0.24	0.81	1.06	1.09	0.61	0.72	1.31	1.94	1.31	1.19	
24	0.15	0.34	0.20	0.56	0.76	1.02	0.61	1.15	1.13	4.14	1.25	1.05	
25	0.14	0.29	0.22	0.55	0.62	2.03	1.02	0.84	1.20	2.70	1.28	0.76	
26	0.08	0.15	0.18	0.48	0.54	1.28	1.46	1.50	2.09	2.40	1.45	0.80	
27	0.07	0.14	0.16	0.44	0.51	1.13	1.06	0.91	3.20	1.95	1.31	1.58	
28	0.05	0.24	0.14	0.36	0.77	0.90	0.98	1.34	5.56	1.77	1.21	0.96	
29	0.03	0.19	0.32	0.30	0.74	0.82	0.94	0.95	4.01	1.73		1.21	
30	0.05	0.14	0.34	0.29	0.64	0.87	0.80	1.11	3.31	1.95		1.00	
31		0.17		0.27	0.91		0.82		5.12	1.82		0.98	
Mean	0.11	0.09	0.38	0.43	0.65	0.98	0.82	1.07	2.13	2.11	1.84	1.01	
Max	0.23	0.34	1.03	1.16	1.07	2.03	1.46	1.78	5.56	5.20	5.36	1.58	5.56
Min	0.03	0.01	0.04	0.18	0.27	0.52	0.57	0.72	1.12	1.19	1.18	0.56	0.01

Annual Max Momentary Gage Height 5.85 M (AD), at 9.00 Hours, on Feb 12, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.80 M (AD)
Left Bank Elevation 11.87 M (AD)
Right Bank Elevation 11.85 M (AD), Drainage Area 1167 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	22.40	11.00	10.40	18.80	55.80	77.00	69.30	109.85	104.60	678.00	215.60	135.05	
2	20.80	10.40	15.80	18.80	40.50	139.25	65.70	113.00	157.20	473.70	198.85	123.50	
3	20.00	9.80	51.30	26.40	89.00	85.00	61.20	150.80	177.00	386.20	143.45	101.45	
4	20.00	9.20	60.30	25.60	47.70	90.00	59.40	110.90	181.60	304.65	147.65	95.15	
5	19.40	8.60	68.40	31.20	36.90	82.00	58.50	113.00	127.70	248.10	197.70	94.10	
6	18.20	8.60	43.20	58.50	31.20	118.25	57.60	115.10	264.15	193.10	142.40	124.55	
7	17.00	8.60	37.80	41.40	32.00	134.00	54.00	105.65	300.60	195.40	131.90	152.90	
8	16.40	8.60	95.15	108.80	28.80	89.00	52.20	107.75	417.50	164.90	122.45	111.95	
9	15.80	8.60	43.20	76.00	25.60	78.00	51.30	104.60	284.40	159.40	114.05	96.20	
10	15.20	8.60	29.60	51.30	27.20	91.00	59.40	111.95	201.30	146.60	110.90	100.40	
11	14.60	11.00	24.00	37.80	46.80	66.60	116.15	174.80	174.80	138.20	121.40	81.00	
12	14.00	12.80	33.60	32.80	63.90	62.10	94.10	106.70	188.50	124.55	705.20	82.00	
13	13.40	14.00	24.00	35.20	80.00	64.80	116.15	93.05	145.55	121.40	283.05	81.00	
14	12.80	13.40	31.20	28.80	99.35	55.80	124.55	87.00	131.90	121.40	558.80	73.00	
15	12.20	17.60	43.20	27.20	55.80	54.00	92.00	80.00	131.90	111.95	211.70	57.60	
16	12.20	12.80	63.00	27.20	44.10	49.50	73.00	84.00	143.45	132.95	223.40	50.40	
17	11.60	15.20	46.80	28.00	72.00	47.70	65.70	79.00	137.15	168.20	203.90	58.50	
18	11.00	11.60	50.40	28.80	65.70	46.80	66.60	74.00	136.10	196.55	188.50	62.10	
19	11.00	8.60	32.00	35.20	65.70	63.90	59.40	64.80	126.65	202.60	162.70	64.80	
20	10.40	8.60	28.00	38.70	58.50	75.00	56.70	70.20	144.50	196.55	149.75	100.40	
21	10.40	8.60	24.80	35.20	92.00	137.15	53.10	69.30	114.05	148.70	140.30	96.20	
22	10.40	14.00	32.00	40.50	68.40	185.05	61.20	68.40	143.45	146.60	127.70	67.50	
23	11.60	13.40	23.20	73.00	98.30	101.45	54.90	64.80	124.55	193.10	124.55	111.95	
24	17.00	31.20	20.00	50.40	68.40	94.10	54.90	107.75	105.65	504.70	118.25	97.25	
25	16.40	27.20	21.60	49.50	55.80	203.90	94.10	76.00	113.00	292.50	121.40	68.40	
26	12.80	17.00	18.80	43.20	48.60	121.40	140.30	144.50	211.70	252.00	139.25	72.00	
27	12.20	16.40	17.60	39.60	45.90	105.65	98.30	83.00	363.00	194.25	124.55	152.90	
28	11.00	23.20	16.40	32.80	69.30	82.00	90.00	127.70	739.20	173.70	114.05	88.00	
29	9.80	19.40	29.60	28.00	66.60	74.00	86.00	87.00	484.55	169.30		114.05	
30	11.00	16.40	31.20	27.20	57.60	79.00	72.00	103.55	378.95	194.25		92.00	
31		18.20		25.60	83.00		74.00		664.40	179.30		90.00	
Total	431.00	422.60	1066.55	1221.50	1820.45	2753.40	2331.75	2988.15	7119.05	6912.80	5343.40	2896.30	35306.95 CMSDAY
Mean	14.37	13.63	35.55	39.40	58.72	91.78	75.22	99.61	229.65	222.99	190.84	93.43	96.73 CMS
Max	22.40	31.20	95.15	108.80	99.35	203.90	140.30	174.80	739.20	678.00	705.20	152.90	739.20 CMS
Min	9.80	8.60	10.40	18.80	25.60	46.80	51.30	64.80	104.60	111.95	110.90	50.40	8.60 CMS
Runoff	37.238	36.513	92.150	105.538	157.287	237.894	201.463	258.176	615.086	597.266	461.670	250.240	3050.521 MCM

Momentary Peak 790.00 CMS, at 5.85 M (AD), at 9.00 Hours, on Feb 12, 1998

Runoff Yield 82.89 Liters/Second/Square KM, Momentary Peak Yield 676.949 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

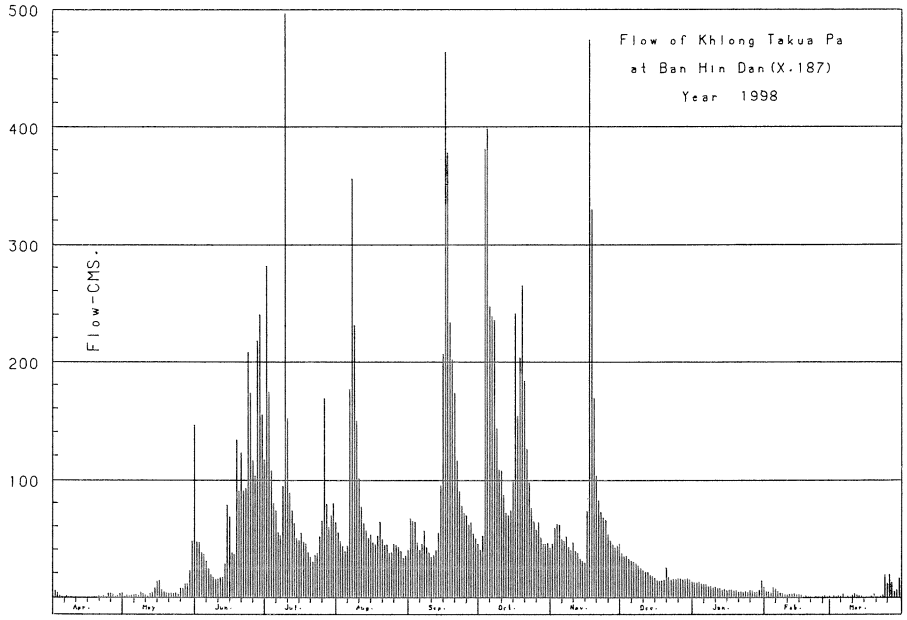
Khlong Takua Pa at Ban Hin Dan, Phang Nga, (X.187)

Location	Lat. 08°-46'-26" N., Long. 98°-23'-33" E., on left bank at the bridge on Surat Thani - Phang Nga Highway, Amphoe Takua Pa, Pang Nga.
Drainage Area	539 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+5.00 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 4.00 meters from the top staff gage.
Elevation	+11.405 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Unstable.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 65 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.19	6.03	6.72	7.92	6.79	6.88	6.66	6.70	6.63	6.31	6.16	6.01	
2	6.11	6.04	6.71	7.48	6.72	6.86	6.76	6.82	6.61	6.32	6.13	6.02	
3	6.05	6.04	6.64	7.15	6.68	6.86	8.23	6.84	6.61	6.32	6.12	6.03	
4	6.00	6.03	6.62	6.97	6.65	6.71	8.27	6.84	6.59	6.30	6.23	6.02	
5	6.00	6.06	6.56	6.93	6.69	6.66	7.80	6.74	6.57	6.29	6.22	6.03	
6	6.01	6.05	6.49	6.79	7.49	6.70	7.76	6.72	6.55	6.28	6.15	6.07	
7	6.00	6.05	6.43	6.76	8.16	6.80	7.75	6.76	6.54	6.26	6.12	6.03	
8	6.00	6.15	6.39	7.07	7.73	6.68	7.34	6.68	6.51	6.25	6.09	6.02	
9	5.99	6.08	6.37	8.50	7.37	6.64	7.15	6.65	6.49	6.24	6.07	6.01	
10	5.99	6.04	6.36	7.38	7.11	6.60	7.15	6.71	6.46	6.24	6.06	6.06	
11	5.98	6.03	6.39	7.03	6.95	6.62	7.02	6.65	6.44	6.23	6.06	6.08	
12	5.98	6.11	6.39	6.93	6.85	6.65	6.91	6.63	6.45	6.22	6.09	6.06	
13	5.97	6.12	6.54	6.85	6.80	6.79	6.90	6.59	6.42	6.20	6.08	6.02	
14	5.97	6.24	6.96	6.74	6.75	7.07	6.93	6.56	6.40	6.20	6.06	6.01	
15	5.97	6.34	6.89	6.73	6.77	7.62	7.10	6.55	6.38	6.19	6.05	6.01	
16	5.96	6.34	6.64	6.78	6.71	8.43	7.77	6.92	6.35	6.20	6.04	6.00	
17	5.96	6.20	6.62	6.72	6.70	8.22	7.39	8.45	6.34	6.19	6.02	6.00	
18	5.97	6.15	7.29	6.70	6.76	7.74	7.61	8.08	6.33	6.18	6.02	6.01	
19	6.02	6.10	7.04	6.64	6.86	7.60	7.86	7.46	6.36	6.17	6.02	6.09	
20	6.03	6.09	7.23	6.60	6.74	7.48	7.52	7.12	6.50	6.15	6.01	6.01	
21	6.02	6.12	7.04	6.56	6.69	7.20	7.25	6.99	6.39	6.14	6.01	5.99	
22	6.02	6.11	7.06	6.62	6.70	7.04	7.09	6.92	6.36	6.14	6.01	6.00	
23	6.02	6.10	7.63	6.63	6.63	6.96	6.94	6.88	6.36	6.13	6.01	6.06	
24	6.11	6.09	7.48	6.76	6.64	6.91	6.86	6.87	6.37	6.14	6.00	6.42	
25	6.09	6.22	7.20	6.86	6.70	6.90	6.81	6.77	6.37	6.17	6.01	6.31	
26	6.07	6.23	7.12	7.46	6.69	6.84	6.85	6.73	6.37	6.16	6.02	6.43	
27	6.03	6.30	7.67	6.97	6.68	6.85	6.75	6.70	6.36	6.14	6.02	6.31	
28	6.02	6.29	7.77	6.82	6.65	6.78	6.70	6.67	6.36	6.12	6.01	6.17	
29	6.11	6.47	7.40	6.90	6.59	6.74	6.70	6.69	6.38	6.20		6.19	
30	6.10	6.72	7.20	6.97	6.61	6.70	6.71	6.70	6.35	6.35		6.39	
31		7.35		6.85	6.66		6.67		6.33	6.24		6.32	
Mean	6.02	6.20	6.89	6.97	6.86	7.02	7.20	6.88	6.44	6.22	6.07	6.10	
Max	6.19	7.35	7.77	8.50	8.16	8.43	8.27	8.45	6.63	6.35	6.23	6.43	8.50
Min	5.96	6.03	6.36	6.56	6.59	6.60	6.66	6.55	6.33	6.12	6.00	5.99	5.96

Annual Max Momentary Gage Height 8.64 M (MSL), at 20.00 Hours, on Sep 16, 1998
Zero Gage at Bottom Elevation 5.00 M (MSL), River Bed 4.74 M (MSL)
Left Bank Elevation 11.60 M (MSL)
Right Bank Elevation 11.59 M (MSL), Drainage Area 539 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.32	1.84	47.88	281.60	55.86	67.80	41.04	45.60	37.62	12.65	5.48	1.28	
2	4.08	2.12	46.74	174.40	47.88	65.10	52.44	59.70	35.34	13.20	4.64	1.56	
3	2.40	2.12	38.76	108.50	43.32	65.10	382.00	62.40	35.34	13.20	4.36	1.84	
4	1.00	1.84	36.48	79.95	39.90	46.74	398.00	62.40	33.37	12.10	8.25	1.56	
5	1.00	2.68	30.88	74.55	44.46	41.04	248.00	50.16	31.71	11.55	7.70	1.84	
6	1.28	2.40	25.07	55.86	176.70	45.60	238.80	47.88	30.05	11.00	5.20	2.96	
7	1.00	2.40	20.09	52.44	356.80	57.00	236.50	52.44	29.22	9.90	4.36	1.84	
8	1.00	5.20	17.05	95.20	231.90	43.32	144.30	43.32	26.73	9.35	3.52	1.56	
9	0.90	3.24	15.95	497.00	150.15	38.76	108.50	39.90	25.07	8.80	2.96	1.28	
10	0.90	2.12	15.40	152.10	101.70	34.20	108.50	46.74	22.58	8.80	2.68	2.68	
11	0.80	1.84	17.05	88.80	77.25	36.48	87.20	39.90	20.92	8.25	2.68	3.24	
12	0.80	4.08	17.05	74.55	63.75	39.90	71.85	37.62	21.75	7.70	3.52	2.68	
13	0.70	4.36	29.22	63.75	57.00	55.86	70.50	33.37	19.26	6.60	3.24	1.56	
14	0.70	8.80	78.60	50.16	51.30	95.20	74.55	30.88	17.60	6.60	2.68	1.28	
15	0.70	14.30	69.15	49.02	53.58	206.60	100.00	30.05	16.50	6.32	2.40	1.28	
16	0.60	14.30	38.76	54.72	46.74	464.10	241.10	73.20	14.85	6.60	2.12	1.00	
17	0.60	6.60	36.48	47.88	45.60	378.00	154.05	473.50	14.30	6.32	1.56	1.00	
18	0.70	5.20	134.55	45.60	52.44	234.20	204.30	330.40	13.75	6.04	1.56	1.28	
19	1.56	3.80	90.40	38.76	65.10	202.00	264.80	169.80	15.40	5.76	1.56	3.52	
20	1.84	3.52	122.85	34.20	50.16	174.40	183.60	103.40	25.90	5.20	1.28	1.28	
21	1.56	4.36	90.40	30.88	44.46	117.00	126.75	82.65	17.05	4.92	1.28	0.90	
22	1.56	4.08	93.60	36.48	45.60	90.40	98.40	73.20	15.40	4.92	1.28	1.00	
23	1.56	3.80	208.90	37.62	37.62	78.60	75.90	67.80	15.40	4.64	1.28	2.68	
24	4.08	3.52	174.40	52.44	38.76	71.85	65.10	66.45	15.95	4.92	1.00	19.26	
25	3.52	7.70	117.00	65.10	45.60	70.50	58.35	53.58	15.95	5.76	1.28	12.65	
26	2.96	8.25	103.40	169.80	44.46	62.40	63.75	49.02	15.95	5.48	1.56	20.09	
27	1.84	12.10	218.10	79.95	43.32	63.75	51.30	45.60	15.40	4.92	1.56	12.65	
28	1.56	11.55	241.10	59.70	39.90	54.72	45.60	42.18	15.40	4.36	1.28	5.76	
29	4.08	23.41	156.00	70.50	33.37	50.16	45.60	44.46	16.50	6.60		6.32	
30	3.80	47.88	117.00	79.95	35.34	45.60	46.74	45.60	14.85	14.85		17.05	
31		146.25		63.75	41.04		42.18		13.75	8.80		13.20	
Total	55.40	365.66	2448.31	2865.21	2261.06	3096.38	4129.70	2403.20	658.86	246.11	82.27	148.08	18760.24 CMSDAY
Mean	1.85	11.80	81.61	92.43	72.94	103.21	133.22	80.11	21.25	7.94	2.94	4.78	51.40 CMS
Max	6.32	146.25	241.10	497.00	356.80	464.10	398.00	473.50	37.62	14.85	8.25	20.09	497.00 CMS
Min	0.60	1.84	15.40	30.88	33.37	34.20	41.04	30.05	13.75	4.36	1.00	0.90	0.60 CMS
Runoff	4.787	31.593	211.534	247.554	195.356	267.527	356.806	207.637	56.926	21.264	7.108	12.794	1620.885 MCM

Momentary Peak 566.40 CMS, at 8.64 M (MSL), at 20.00 Hours, on Sep 16, 1998
Runoff Yield 95.36 Liters/Second/Square KM, Momentary Peak Yield 1050.835 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

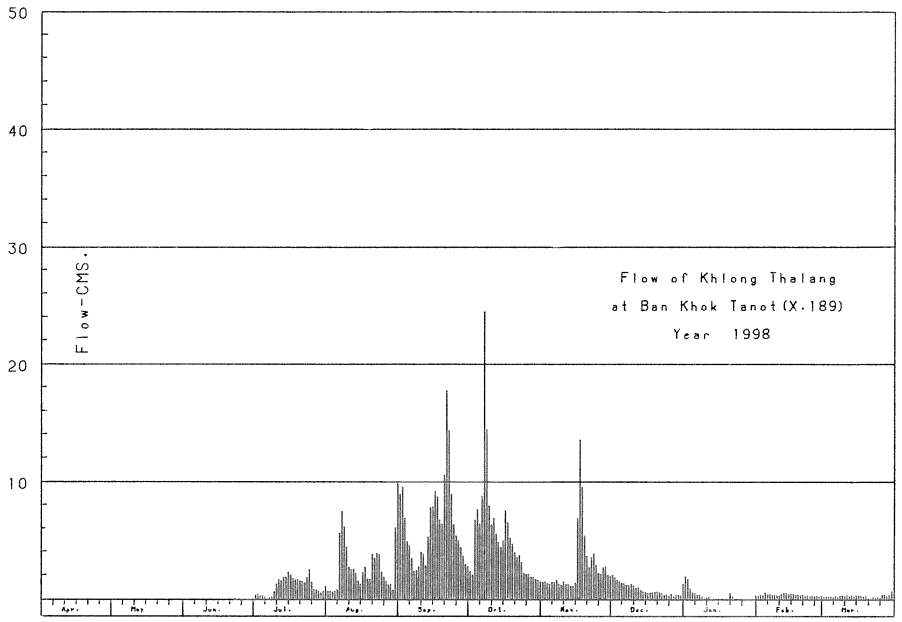
Khlong Thalang at Ban Khok Tanot, Phuket (X.189)

Location	Lat. 08°-00'-55" N., Long. 98°-19'-04" E., on right bank at the bridge about 3 kilometers from Thalang crossroads, Amphoe Thalang, Phuket.
Drainage Area	42 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.02 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 4.00 meters from the top staff gage.
Elevation	+3.487 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 29 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.68	0.68	0.68	1.34	1.41	2.04	1.60	1.50	1.57	1.55	1.33	1.31	
2	0.68	0.68	0.68	1.35	1.40	2.07	1.57	1.50	1.54	1.53	1.34	1.31	
3	0.68	0.68	0.68	1.33	1.40	1.92	1.91	1.49	1.52	1.43	1.34	1.32	
4	0.68	0.68	0.68	1.32	1.40	1.80	1.97	1.47	1.50	1.39	1.38	1.31	
5	0.68	0.68	0.68	1.31	1.42	1.77	1.89	1.50	1.49	1.37	1.36	1.31	
6	0.68	0.68	0.68	1.29	1.84	1.69	2.03	1.49	1.48	1.35	1.35	1.32	
7	0.68	0.68	0.68	1.28	1.96	1.60	2.74	1.52	1.47	1.34	1.35	1.31	
8	0.68	0.68	0.68	1.31	1.88	1.61	2.30	1.47	1.46	1.32	1.34	1.32	
9	0.68	0.68	0.68	1.39	1.76	1.63	1.99	1.47	1.48	1.31	1.34	1.34	
10	0.68	0.68	0.68	1.48	1.63	1.73	1.89	1.50	1.46	1.30	1.34	1.33	
11	0.68	0.68	0.68	1.52	1.61	1.71	1.92	1.48	1.44	1.30	1.35	1.33	
12	0.68	0.68	0.68	1.51	1.62	1.64	1.84	1.47	1.44	1.27	1.38	1.33	
13	0.68	0.68	0.68	1.54	1.58	1.82	1.79	1.46	1.42	1.28	1.37	1.33	
14	0.68	0.68	0.68	1.55	1.51	1.98	1.76	1.45	1.40	1.27	1.36	1.32	
15	0.68	0.68	0.68	1.59	1.47	1.98	1.80	1.49	1.40	1.24	1.36	1.33	
16	0.68	0.68	0.68	1.57	1.59	2.05	1.96	1.92	1.37	1.26	1.36	1.33	
17	0.68	0.68	0.68	1.53	1.63	2.03	1.90	2.26	1.39	1.26	1.35	1.32	
18	0.68	0.68	0.68	1.52	1.53	1.91	1.82	2.07	1.38	1.26	1.34	1.32	
19	0.68	0.68	0.68	1.52	1.52	1.89	1.78	1.83	1.40	1.23	1.34	1.32	
20	0.68	0.68	0.68	1.51	1.71	2.12	1.73	1.70	1.40	1.37	1.34	1.30	
21	0.68	0.68	0.68	1.50	1.69	2.45	1.69	1.63	1.39	1.32	1.33	1.29	
22	0.68	0.68	0.68	1.49	1.72	2.30	1.71	1.69	1.37	1.23	1.33	1.30	
23	0.68	0.68	0.68	1.54	1.71	2.04	1.66	1.72	1.34	1.29	1.32	1.30	
24	0.68	0.68	0.68	1.61	1.60	1.89	1.59	1.64	1.34	1.19	1.32	1.30	
25	0.68	0.68	0.68	1.50	1.55	1.83	1.58	1.59	1.33	1.09	1.32	1.30	
26	0.68	0.68	0.68	1.42	1.50	1.80	1.57	1.57	1.35	1.08	1.32	1.35	
27	0.68	0.68	0.68	1.42	1.47	1.76	1.55	1.63	1.32	1.07	1.32	1.34	
28	0.68	0.68	0.68	1.40	1.47	1.70	1.54	1.63	1.34	1.07	1.32	1.32	
29	0.68	0.68	0.68	1.38	1.42	1.65	1.53	1.57	1.35	1.07		1.33	
30	0.68	0.68	0.68	1.40	1.87	1.63	1.51	1.55	1.32	1.21		1.40	
31		0.68		1.45	2.09		1.50		1.48	1.33		1.37	
Mean	0.68	0.68	0.68	1.45	1.61	1.87	1.79	1.61	1.42	1.28	1.34	1.32	
Max	0.68	0.68	0.68	1.61	2.09	2.45	2.74	2.26	1.57	1.55	1.38	1.40	2.74
Min	0.68	0.68	0.68	1.28	1.40	1.60	1.50	1.45	1.32	1.07	1.32	1.29	0.68

Annual Max Momentary Gage Height 2.82 M (MSL), at 6.00 Hours, on Oct 7, 1998
Zero Gage at Bottom Elevation 0.02 M (MSL), River Bed 0.66 M (MSL)
Left Bank Elevation 3.54 M (MSL)
Right Bank Elevation 3.53 M (MSL), Drainage Area 42 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	0.42	0.78	9.02	2.40	1.55	2.15	1.97	0.37	0.28	
2	0.00	0.00	0.00	0.47	0.70	9.63	2.15	1.55	1.89	1.80	0.42	0.28	
3	0.00	0.00	0.00	0.37	0.70	6.92	6.76	1.47	1.72	0.95	0.42	0.33	
4	0.00	0.00	0.00	0.33	0.70	5.00	7.72	1.30	1.55	0.65	0.61	0.28	
5	0.00	0.00	0.00	0.28	0.87	4.61	6.44	1.55	1.47	0.56	0.51	0.28	
6	0.00	0.00	0.00	0.19	5.64	3.57	8.81	1.47	1.38	0.47	0.47	0.33	
7	0.00	0.00	0.00	0.14	7.56	2.40	24.56	1.72	1.30	0.42	0.47	0.28	
8	0.00	0.00	0.00	0.28	6.28	2.53	14.45	1.30	1.21	0.33	0.42	0.33	
9	0.00	0.00	0.00	0.65	4.48	2.79	8.04	1.30	1.38	0.28	0.42	0.42	
10	0.00	0.00	0.00	1.38	2.79	4.09	6.44	1.55	1.21	0.23	0.42	0.37	
11	0.00	0.00	0.00	1.72	2.53	3.83	6.92	1.38	1.04	0.23	0.47	0.37	
12	0.00	0.00	0.00	1.64	2.66	2.92	5.64	1.30	1.04	0.09	0.61	0.37	
13	0.00	0.00	0.00	1.89	2.23	5.32	4.87	1.21	0.87	0.14	0.56	0.37	
14	0.00	0.00	0.00	1.97	1.64	7.88	4.48	1.13	0.70	0.09	0.51	0.33	
15	0.00	0.00	0.00	2.32	1.30	7.88	5.00	1.47	0.70	0.00	0.51	0.37	
16	0.00	0.00	0.00	2.15	2.32	9.22	7.56	6.92	0.56	0.05	0.51	0.37	
17	0.00	0.00	0.00	1.80	2.79	8.81	6.60	13.59	0.65	0.05	0.47	0.33	
18	0.00	0.00	0.00	1.72	1.80	6.76	5.32	9.63	0.61	0.05	0.42	0.33	
19	0.00	0.00	0.00	1.72	1.72	6.44	4.74	5.48	0.70	0.00	0.42	0.33	
20	0.00	0.00	0.00	1.64	3.83	10.66	4.09	3.70	0.70	0.56	0.42	0.23	
21	0.00	0.00	0.00	1.55	3.57	17.75	3.57	2.79	0.65	0.33	0.37	0.19	
22	0.00	0.00	0.00	1.47	3.96	14.45	3.83	3.57	0.56	0.00	0.37	0.23	
23	0.00	0.00	0.00	1.89	3.83	9.02	3.18	3.96	0.42	0.19	0.33	0.23	
24	0.00	0.00	0.00	2.53	2.40	6.44	2.32	2.92	0.42	0.00	0.33	0.23	
25	0.00	0.00	0.00	1.55	1.97	5.48	2.23	2.32	0.37	0.00	0.33	0.23	
26	0.00	0.00	0.00	0.87	1.55	5.00	2.15	2.15	0.47	0.00	0.33	0.47	
27	0.00	0.00	0.00	0.87	1.30	4.48	1.97	2.79	0.33	0.00	0.33	0.42	
28	0.00	0.00	0.00	0.70	1.30	3.70	1.89	2.79	0.42	0.00	0.33	0.33	
29	0.00	0.00	0.00	0.61	0.87	3.05	1.80	2.15	0.47	0.00		0.37	
30	0.00	0.00	0.00	0.70	6.12	2.79	1.64	1.97	0.33	0.00		0.70	
31		0.00		1.13	10.04		1.55		1.38	0.37		0.56	
Total	0.00	0.00	0.00	36.95	90.23	192.44	169.12	87.98	28.65	9.81	12.15	10.54	637.87 CMSDAY
Mean	0.00	0.00	0.00	1.19	2.91	6.41	5.46	2.93	0.92	0.32	0.43	0.34	1.75 CMS
Max	0.00	0.00	0.00	2.53	10.04	17.75	24.56	13.59	2.15	1.97	0.61	0.70	24.56 CMS
Min	0.00	0.00	0.00	0.14	0.70	2.40	1.55	1.13	0.33	0.00	0.33	0.19	0.00 CMS
Runoff	0.000	0.000	0.000	3.192	7.796	16.627	14.612	7.601	2.475	0.848	1.050	0.911	55.112 MCM

Momentary Peak 26.50 CMS, at 2.82 M (MSL), at 6.00 Hours, on Oct 7, 1998
Runoff Yield 41.61 Liters/Second/Square KM, Momentary Peak Yield 630.952 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

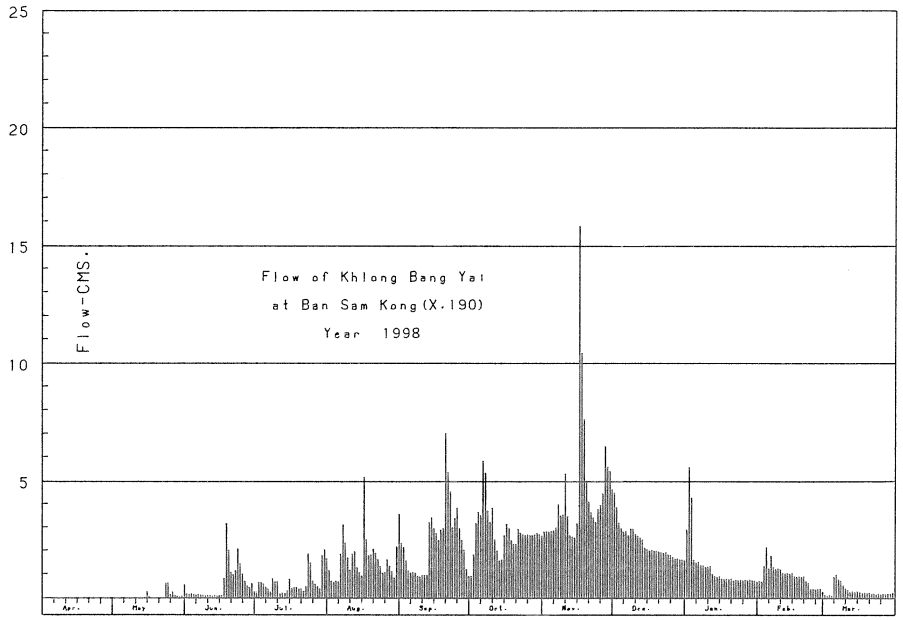
Khlong Bang Yai at Ban Sam Kong, Phuket (X.190)

Location	Lat. 07°-54'-13" N., Long. 98°-22'-49" E., on right bank at the bridge, Talat Yai, Amphoe Muang, Phuket.
Drainage Area	42 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+5.74 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 13.00 meters from the top staff gage.
Elevation	+10.044 m.(M.S.L)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable by some silting.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 31 disccharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.13	6.14	6.29	6.39	6.72	7.01	6.64	7.11	7.40	7.13	6.57	6.24	
2	6.13	6.14	6.29	6.55	6.57	6.97	6.90	7.11	7.30	7.56	6.57	6.24	
3	6.13	6.14	6.29	6.56	6.56	6.84	7.18	7.11	7.18	7.37	6.77	6.24	
4	6.13	6.14	6.29	6.52	6.57	6.71	7.26	7.11	7.14	6.84	6.97	6.24	
5	6.13	6.14	6.26	6.48	6.57	6.69	7.24	7.12	7.11	6.82	6.75	6.64	
6	6.13	6.14	6.26	6.44	6.90	6.69	7.60	7.14	7.11	6.82	6.89	6.66	
7	6.13	6.14	6.24	6.39	7.17	6.69	7.53	7.32	7.08	6.79	6.76	6.61	
8	6.13	6.14	6.23	6.61	7.01	6.64	7.27	7.24	7.13	6.78	6.74	6.58	
9	6.13	6.14	6.23	6.57	6.87	6.64	7.19	7.24	7.13	6.77	6.74	6.51	
10	6.13	6.14	6.23	6.56	6.72	6.65	7.29	7.52	7.09	6.77	6.74	6.46	
11	6.13	6.14	6.22	6.32	6.90	6.65	7.04	7.23	7.07	6.77	6.68	6.42	
12	6.13	6.14	6.22	6.32	6.93	6.66	6.94	7.08	7.06	6.68	6.68	6.39	
13	6.13	6.14	6.22	6.33	6.76	7.19	6.84	7.06	7.04	6.64	6.68	6.39	
14	6.13	6.14	6.22	6.41	6.69	7.22	6.84	7.06	6.97	6.64	6.68	6.39	
15	6.13	6.40	6.22	6.61	6.65	7.14	7.08	7.18	6.95	6.64	6.68	6.39	
16	6.13	6.16	6.22	6.46	7.50	7.09	7.17	8.66	6.94	6.61	6.64	6.36	
17	6.13	6.14	6.62	6.46	7.04	7.04	7.14	8.15	6.94	6.61	6.64	6.34	
18	6.14	6.14	7.18	6.46	6.89	7.12	7.04	7.84	6.94	6.61	6.64	6.34	
19	6.14	6.14	6.94	6.45	6.89	7.14	7.00	7.48	6.93	6.61	6.64	6.34	
20	6.14	6.14	6.69	6.44	6.96	7.76	7.00	7.34	6.93	6.61	6.64	6.34	
21	6.14	6.14	6.66	6.39	6.91	7.53	7.13	7.26	6.92	6.59	6.58	6.32	
22	6.14	6.14	6.72	6.49	6.85	7.41	7.10	7.22	6.92	6.59	6.54	6.30	
23	6.14	6.54	6.96	6.91	6.77	7.14	7.08	7.19	6.92	6.59	6.45	6.29	
24	6.14	6.54	6.80	6.81	6.69	7.22	7.08	7.28	6.90	6.59	6.44	6.29	
25	6.14	6.29	6.67	6.57	6.69	7.29	7.08	7.31	6.89	6.59	6.44	6.29	
26	6.14	6.37	6.58	6.53	6.84	7.14	7.08	7.40	6.87	6.59	6.44	6.29	
27	6.14	6.24	6.50	6.49	6.78	7.04	7.08	7.69	6.86	6.59	6.44	6.29	
28	6.14	6.19	6.46	6.44	6.70	6.94	7.08	7.56	6.85	6.59	6.40	6.29	
29	6.14	6.19	6.54	6.89	6.63	6.74	7.10	7.54	6.85	6.59		6.32	
30	6.14	6.19	6.40	6.95	6.98	6.64	7.08	7.42	6.84	6.57		6.32	
31		6.52		6.85	7.25		7.07		6.84	6.57		6.32	
Mean	6.13	6.21	6.46	6.54	6.84	6.99	7.10	7.37	7.00	6.73	6.64	6.37	
Max	6.14	6.54	7.18	6.95	7.50	7.76	7.60	8.66	7.40	7.56	6.97	6.66	8.66
Min	6.13	6.14	6.22	6.32	6.56	6.64	6.64	7.06	6.84	6.57	6.40	6.24	6.13

Annual Max Momentary Gage Height 8.84 M (MSL), at 12.00 Hours, on Nov 16, 1998
Zero Gage at Bottom Elevation 5.74 M (MSL), River Bed 6.88 M (MSL)
Left Bank Elevation 9.85 M (MSL)
Right Bank Elevation 9.83 M (MSL), Drainage Area 42 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.03	0.04	0.19	0.29	1.20	2.35	0.93	2.86	4.50	2.96	0.73	0.14	
2	0.03	0.04	0.19	0.68	0.73	2.17	1.88	2.86	3.91	5.59	0.73	0.14	
3	0.03	0.04	0.19	0.70	0.70	1.63	3.22	2.86	3.22	4.32	1.36	0.14	
4	0.03	0.04	0.19	0.60	0.73	1.16	3.67	2.86	3.01	1.63	2.17	0.14	
5	0.03	0.04	0.16	0.50	0.73	1.10	3.56	2.91	2.86	1.54	1.29	0.93	
6	0.03	0.04	0.16	0.40	1.88	1.10	5.86	3.01	2.86	1.54	1.84	1.00	
7	0.03	0.04	0.14	0.29	3.17	1.10	5.38	4.03	2.71	1.43	1.33	0.83	
8	0.03	0.04	0.13	0.83	2.35	0.93	3.73	3.56	2.96	1.39	1.26	0.75	
9	0.03	0.04	0.13	0.73	1.75	0.93	3.27	3.56	2.96	1.36	1.26	0.58	
10	0.03	0.04	0.13	0.70	1.20	0.97	3.85	5.32	2.76	1.36	1.26	0.45	
11	0.03	0.04	0.12	0.22	1.88	0.97	2.50	3.50	2.66	1.36	1.06	0.35	
12	0.03	0.04	0.12	0.22	2.01	1.00	2.05	2.71	2.61	1.06	1.06	0.29	
13	0.03	0.04	0.12	0.23	1.33	3.27	1.63	2.61	2.50	0.93	1.06	0.29	
14	0.03	0.04	0.12	0.32	1.10	3.44	1.63	2.61	2.17	0.93	1.06	0.29	
15	0.03	0.30	0.12	0.83	0.97	3.01	2.71	3.22	2.09	0.93	1.06	0.29	
16	0.03	0.06	0.12	0.45	5.18	2.76	3.17	15.86	2.05	0.83	0.93	0.26	
17	0.03	0.04	0.87	0.45	2.50	2.50	3.01	10.45	2.05	0.83	0.93	0.24	
18	0.04	0.04	3.22	0.45	1.84	2.91	2.50	7.66	2.05	0.83	0.93	0.24	
19	0.04	0.04	2.05	0.42	1.84	3.01	2.30	5.04	2.01	0.83	0.93	0.24	
20	0.04	0.04	1.10	0.40	2.13	7.01	2.30	4.15	2.01	0.83	0.93	0.24	
21	0.04	0.04	1.00	0.29	1.92	5.38	2.96	3.67	1.96	0.78	0.75	0.22	
22	0.04	0.04	1.20	0.52	1.67	4.57	2.81	3.44	1.96	0.78	0.65	0.20	
23	0.04	0.65	2.13	1.92	1.36	3.01	2.71	3.27	1.96	0.78	0.42	0.19	
24	0.04	0.65	1.46	1.50	1.10	3.44	2.71	3.79	1.88	0.78	0.40	0.19	
25	0.04	0.19	1.03	0.73	1.10	3.85	2.71	3.97	1.84	0.78	0.40	0.19	
26	0.04	0.27	0.75	0.63	1.63	3.01	2.71	4.50	1.75	0.78	0.40	0.19	
27	0.04	0.14	0.55	0.52	1.39	2.50	2.71	6.51	1.71	0.78	0.40	0.19	
28	0.04	0.09	0.45	0.40	1.13	2.05	2.71	5.59	1.67	0.78	0.30	0.19	
29	0.04	0.09	0.65	1.84	0.90	1.26	2.81	5.45	1.67	0.78		0.22	
30	0.04	0.09	0.30	2.09	2.22	0.93	2.71	4.64	1.63	0.73		0.22	
31		0.60		1.67	3.62		2.66		1.63	0.73		0.22	
Total	1.03	3.93	19.09	21.82	53.26	73.32	89.36	136.47	73.61	40.96	26.90	10.05	549.80 CMSDAY
Mean	0.03	0.13	0.64	0.70	1.72	2.44	2.88	4.55	2.37	1.32	0.96	0.32	1.51 CMS
Max	0.04	0.65	3.22	2.09	5.18	7.01	5.86	15.86	4.50	5.59	2.17	1.00	15.86 CMS
Min	0.03	0.04	0.12	0.22	0.70	0.93	0.93	2.61	1.63	0.73	0.30	0.14	0.03 CMS
Runoff	0.089	0.340	1.649	1.885	4.602	6.335	7.721	11.791	6.360	3.539	2.324	0.868	47.503 MCM

Momentary Peak 18.03 CMS, at 8.84 M (MSL), at 12.00 Hours, on Nov 16, 1998

Runoff Yield 35.86 Liters/Second/Square KM, Momentary Peak Yield 429.286 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

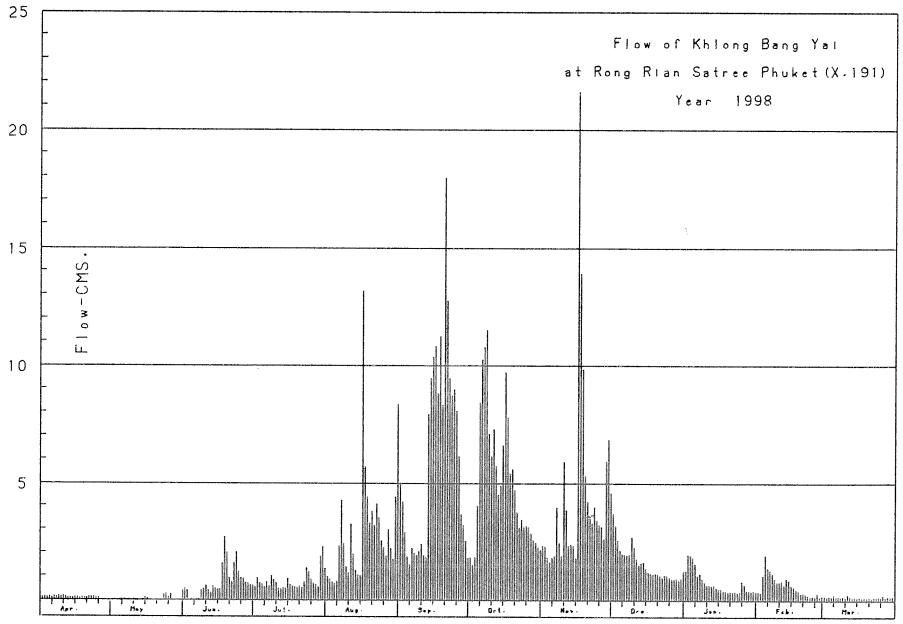
Khlong Bang Yai at Rong Rian Satree Phuket, Phuket (X.191)

Location	Lat. 07°-53'-20" N., Long. 98°-23'-40" E., on right bank at Rong Rian Satree Phuket, Talat Yai, Amphoe Muang, Phuket.
Drainage Area	55 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+1.42 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On right bank about 8.00 meters from the top staff gage.
Elevation	+4.830 m.(M.S.L.)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. Stage-discharge relation defined by 32 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.72	1.66	1.90	1.93	2.08	2.45	2.07	2.14	2.31	1.98	1.78	1.70	
2	1.72	1.66	1.87	2.05	2.03	2.37	2.02	2.14	2.25	2.09	1.78	1.70	
3	1.72	1.66	1.65	1.99	2.00	2.21	2.07	2.07	2.17	2.09	1.94	1.70	
4	1.72	1.66	1.65	1.96	1.97	2.08	2.35	2.04	2.12	2.07	2.09	1.70	
5	1.72	1.66	1.65	1.93	2.01	2.02	2.75	2.07	2.10	2.03	2.00	1.73	
6	1.73	1.66	1.65	1.99	2.32	2.13	2.89	2.08	2.09	1.94	1.98	1.70	
7	1.73	1.66	1.65	1.94	2.58	2.10	2.93	2.34	2.09	1.96	1.96	1.70	
8	1.74	1.66	1.87	2.08	2.33	2.09	2.98	2.16	2.09	1.92	1.92	1.70	
9	1.74	1.66	1.89	2.02	2.17	2.11	2.64	2.08	2.19	1.90	1.90	1.69	
10	1.74	1.66	1.95	1.99	2.11	2.15	2.56	2.54	2.13	1.87	1.90	1.69	
11	1.73	1.66	1.86	1.90	2.45	2.09	2.66	2.33	2.06	1.86	1.90	1.74	
12	1.72	1.66	1.82	1.90	2.26	2.07	2.52	2.14	2.02	1.86	1.87	1.69	
13	1.70	1.64	1.93	1.91	2.14	2.71	2.40	2.15	2.03	1.86	1.92	1.68	
14	1.71	1.64	1.91	1.91	2.09	2.83	2.44	2.14	2.04	1.84	1.91	1.68	
15	1.71	1.72	1.89	2.05	2.09	2.90	2.60	2.07	1.99	1.82	1.86	1.68	
16	1.71	1.67	1.88	1.95	3.10	2.93	2.85	3.60	1.97	1.82	1.84	1.68	
17	1.71	1.59	2.20	1.94	2.52	2.78	2.70	3.15	1.96	1.81	1.82	1.68	
18	1.71	1.59	2.37	1.92	2.39	2.96	2.49	2.86	1.95	1.80	1.80	1.67	
19	1.71	1.58	2.27	1.92	2.26	2.74	2.51	2.48	1.96	1.79	1.77	1.67	
20	1.71	1.58	2.06	1.93	2.32	3.40	2.42	2.37	1.95	1.79	1.76	1.67	
21	1.72	1.58	1.99	1.91	2.25	3.07	2.32	2.29	1.94	1.79	1.75	1.67	
22	1.72	1.58	2.20	2.00	2.36	2.83	2.24	2.26	1.93	1.79	1.72	1.67	
23	1.72	1.78	2.28	2.16	2.29	2.77	2.28	2.34	1.95	1.78	1.70	1.69	
24	1.72	1.79	2.12	2.12	2.17	2.79	2.24	2.28	1.94	1.78	1.70	1.69	
25	1.70	1.73	2.05	2.03	2.13	2.72	2.25	2.25	1.93	1.90	1.70	1.69	
26	1.69	1.77	2.05	1.98	2.08	2.56	2.24	2.24	1.92	1.87	1.76	1.72	
27	1.66	1.66	1.99	1.95	2.23	2.31	2.21	2.18	1.92	1.81	1.70	1.69	
28	1.62	1.63	1.97	1.93	2.13	2.25	2.17	2.54	1.92	1.80	1.70	1.69	
29	1.63	1.64	1.96	2.25	2.06	2.17	2.16	2.62	1.91	1.80		1.70	
30	1.63	1.63	1.94	2.31	2.39	2.07	2.13	2.41	1.92	1.80		1.69	
31		1.87		2.15	2.74		2.12		1.97	1.79		1.71	
Mean	1.71	1.66	1.95	2.00	2.26	2.49	2.43	2.35	2.02	1.87	1.84	1.69	
Max	1.74	1.87	2.37	2.31	3.10	3.40	2.98	3.60	2.31	2.09	2.09	1.74	3.60
Min	1.62	1.58	1.65	1.90	1.97	2.02	2.02	2.04	1.91	1.78	1.70	1.67	1.58

Annual Max Momentary Gage Height 3.90 M (MSL), at 18.00 Hours, on Nov 16, 1998
Zero Gage at Bottom Elevation 1.42 M (MSL), River Bed 1.25 M (MSL)
Left Bank Elevation 4.91 M (MSL)
Right Bank Elevation 4.92 M (MSL), Drainage Area 55 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.14	0.06	0.50	0.59	1.04	5.00	1.82	2.32	3.69	1.28	0.36	0.18	
2	0.14	0.06	0.44	0.95	0.89	4.23	1.52	2.32	3.20	1.94	0.36	0.18	
3	0.14	0.06	0.05	0.77	0.80	2.88	1.82	1.82	2.56	1.94	1.04	0.18	
4	0.14	0.06	0.05	0.68	0.71	1.88	4.05	1.64	2.16	1.82	1.94	0.18	
5	0.14	0.06	0.05	0.59	0.83	1.52	8.45	1.82	2.00	1.58	1.40	0.25	
6	0.16	0.06	0.05	0.77	2.34	2.24	10.27	1.88	1.94	1.04	1.28	0.18	
7	0.16	0.06	0.05	0.62	4.25	2.00	10.82	3.96	1.94	1.16	1.16	0.18	
8	0.18	0.06	0.44	1.04	2.41	1.94	11.52	2.48	1.94	0.92	0.92	0.18	
9	0.18	0.06	0.48	0.86	1.45	2.08	7.08	1.88	2.72	0.80	0.80	0.16	
10	0.18	0.06	0.65	0.77	1.15	2.40	6.16	5.94	2.24	0.68	0.80	0.16	
11	0.16	0.06	0.42	0.50	3.27	1.94	7.32	3.87	1.76	0.64	0.80	0.27	
12	0.14	0.06	0.34	0.50	1.96	1.82	5.72	2.32	1.52	0.64	0.68	0.16	
13	0.10	0.04	0.59	0.53	1.30	7.93	4.50	2.40	1.58	0.64	0.92	0.14	
14	0.12	0.04	0.53	0.53	1.07	9.49	4.90	2.32	1.64	0.56	0.86	0.14	
15	0.12	0.14	0.48	0.95	1.07	10.40	6.60	1.82	1.34	0.48	0.64	0.14	
16	0.12	0.07	0.46	0.65	13.20	10.82	9.75	21.60	1.22	0.48	0.56	0.14	
17	0.12	0.00	1.60	0.62	5.72	8.84	7.80	13.90	1.16	0.44	0.48	0.14	
18	0.12	0.00	2.69	0.56	4.41	11.24	5.40	9.88	1.10	0.40	0.40	0.13	
19	0.12	0.00	2.02	0.56	3.28	8.32	5.61	5.30	1.16	0.38	0.33	0.13	
20	0.12	0.00	0.98	0.59	3.78	18.00	4.70	4.23	1.10	0.38	0.31	0.13	
21	0.14	0.00	0.77	0.53	3.20	12.78	3.78	3.52	1.04	0.38	0.29	0.13	
22	0.14	0.00	1.60	0.80	4.14	9.49	3.12	3.28	0.98	0.38	0.22	0.13	
23	0.14	0.26	2.08	1.40	3.52	8.71	3.44	3.96	1.10	0.36	0.18	0.16	
24	0.14	0.28	1.20	1.20	2.56	8.97	3.12	3.44	1.04	0.36	0.18	0.16	
25	0.10	0.16	0.95	0.89	2.24	8.06	3.20	3.20	0.98	0.80	0.18	0.16	
26	0.09	0.24	0.95	0.74	1.88	6.16	3.12	3.12	0.92	0.68	0.31	0.22	
27	0.06	0.06	0.77	0.65	3.04	3.69	2.88	2.64	0.92	0.44	0.18	0.16	
28	0.02	0.03	0.71	0.59	2.24	3.20	2.56	5.94	0.92	0.40	0.18	0.16	
29	0.03	0.04	0.68	1.90	1.76	2.56	2.48	6.84	0.86	0.40		0.18	
30	0.03	0.03	0.62	2.27	4.41	1.82	2.24	4.60	0.92	0.40		0.16	
31		0.44		1.35	8.32		2.16		1.22	0.38		0.20	
Total	3.69	2.55	23.20	25.95	92.24	180.41	157.91	134.24	48.87	23.18	17.76	5.17	715.17 CMSDAY
Mean	0.12	0.08	0.77	0.84	2.98	6.01	5.09	4.47	1.58	0.75	0.63	0.17	1.96 CMS
Max	0.18	0.44	2.69	2.27	13.20	18.00	11.52	21.60	3.69	1.94	1.94	0.27	21.60 CMS
Min	0.02	0.00	0.05	0.50	0.71	1.52	1.52	1.64	0.86	0.36	0.18	0.13	0.00 CMS
Runoff	0.319	0.220	2.004	2.242	7.970	15.587	13.643	11.598	4.222	2.003	1.534	0.447	61.791 MCM

Momentary Peak 27.70 CMS, at 3.90 M (MSL), at 18.00 Hours, on Nov 16, 1998

Runoff Yield 35.62 Liters/Second/Square KM, Momentary Peak Yield 503.636 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

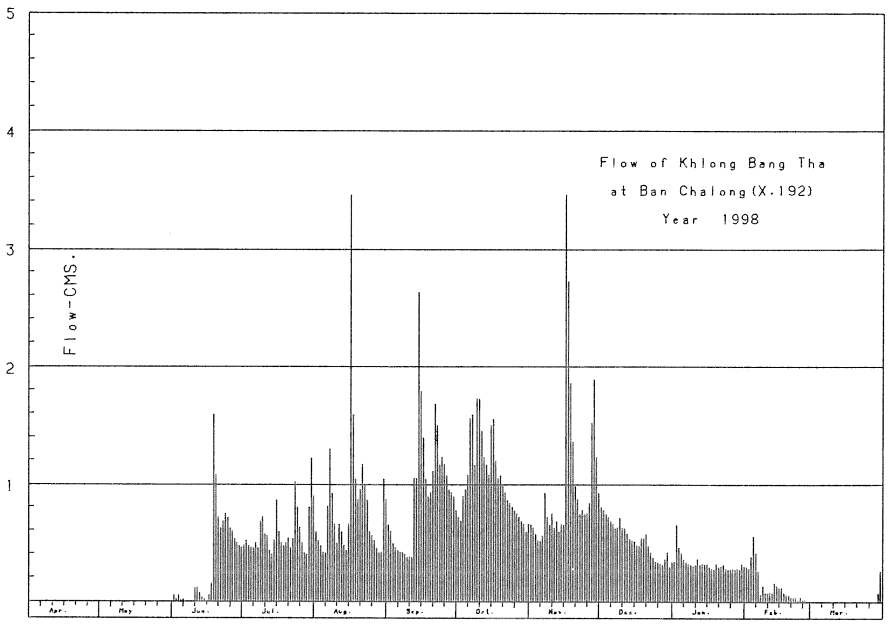
Khlong Bang Tha at Ban Chalong, Phuket (X.192)

Location	Lat. 07°-50'-16" N., Long. 98°-20'-25" E., on left bank at the bridge, Ban Chalong, Amphoe Muang, Phuket.
Drainage Area	6 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+2.66 m.(M.S.L.)
Bench Mark	B.M.-H.D.
Location	On left bank about 8.00 meters from the top staff gage.
Elevation	+6.00 m.(M.S.L)
Gage Reading Frequency	5-time daily readings at 06.00, 09.00, 12.00, 15.00 and 18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 5 readings.
Period of Available Gage Records	1996 to date.
Rating Operation	
Period of Rating	1996 to date.
Rated by Float	-
Rated by Current Meter	1996 to date.
Stability of Channel Regimes	Fairly stable by some scouring.
Overbank Flow Conditions	No overbank flow.
General Description	Records fair. No records on Apr.1-May 31, Jun..6-9,15,98. Stage-discharge relation defined by 29 discharge measurements made in 1998.

Gage Height in Meter (MSL), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.69	2.69	2.73	2.94	3.00	3.02	3.04	3.02	3.07	2.87	2.85	2.69	
2	2.69	2.69	2.71	2.96	2.96	3.00	3.03	3.01	3.06	3.02	2.84	2.69	
3	2.69	2.69	2.73	2.94	2.94	2.95	3.10	2.99	3.05	2.93	2.89	2.69	
4	2.69	2.69	2.71	2.93	2.91	2.93	3.12	2.96	3.04	2.91	2.98	2.69	
5	2.69	2.69	2.71	2.93	2.91	2.92	3.16	2.96	3.03	2.88	2.91	2.69	
6	2.69	2.69	2.69	2.95	3.07	2.91	3.31	2.98	3.02	2.87	2.83	2.69	
7	2.69	2.69	2.69	2.93	3.23	2.91	3.32	3.11	3.01	2.86	2.73	2.69	
8	2.69	2.69	2.69	3.03	3.11	2.90	3.19	3.04	3.01	2.86	2.77	2.69	
9	2.69	2.69	2.69	3.04	3.02	2.89	3.36	3.02	3.04	2.85	2.74	2.69	
10	2.69	2.69	2.76	2.99	2.95	2.89	3.36	3.05	3.01	2.86	2.74	2.69	
11	2.69	2.69	2.76	2.98	3.02	2.89	3.28	3.01	3.01	2.88	2.74	2.69	
12	2.69	2.69	2.74	2.92	3.00	3.15	3.21	3.03	2.99	2.86	2.74	2.69	
13	2.69	2.69	2.72	2.90	2.94	3.15	3.19	3.00	2.97	2.86	2.78	2.69	
14	2.69	2.69	2.71	2.96	2.92	3.61	3.16	3.02	2.96	2.86	2.77	2.69	
15	2.69	2.69	2.69	3.09	3.02	3.38	3.29	3.02	2.96	2.86	2.76	2.69	
16	2.69	2.69	2.73	3.00	3.80	3.26	3.31	3.80	2.94	2.85	2.76	2.69	
17	2.69	2.69	2.78	2.95	3.32	3.15	3.20	3.63	2.94	2.84	2.74	2.69	
18	2.69	2.69	3.32	2.94	3.15	3.10	3.15	3.40	2.97	2.84	2.73	2.69	
19	2.69	2.69	3.16	2.95	3.09	3.11	3.16	3.25	2.97	2.86	2.73	2.69	
20	2.69	2.69	3.04	2.97	3.12	3.17	3.13	3.13	2.99	2.85	2.72	2.69	
21	2.69	2.69	3.01	2.93	3.19	3.35	3.11	3.09	2.94	2.85	2.72	2.69	
22	2.69	2.69	3.03	2.97	3.13	3.29	3.09	3.05	2.91	2.86	2.72	2.69	
23	2.69	2.69	3.05	3.14	3.09	3.19	3.08	3.06	2.89	2.84	2.71	2.69	
24	2.69	2.69	3.04	3.07	3.00	3.21	3.07	3.05	2.87	2.84	2.72	2.69	
25	2.69	2.69	3.01	3.01	2.98	3.19	3.06	3.05	2.87	2.84	2.71	2.69	
26	2.69	2.69	3.00	2.95	2.96	3.16	3.05	3.08	2.86	2.84	2.71	2.69	
27	2.69	2.69	2.97	2.91	2.93	3.12	3.04	3.30	2.86	2.84	2.70	2.69	
28	2.69	2.69	2.95	2.90	2.91	3.11	3.03	3.41	2.88	2.84	2.69	2.70	
29	2.69	2.69	2.94	3.07	2.91	3.10	3.02	3.21	2.91	2.84		2.74	
30	2.69	2.69	2.93	3.21	3.15	3.06	3.00	3.11	2.85	2.86		2.83	
31		2.69		3.10	3.09		3.02		2.87	2.85		2.84	
Mean	2.69	2.69	2.86	2.99	3.06	3.10	3.15	3.13	2.96	2.86	2.77	2.70	
Max	2.69	2.69	3.32	3.21	3.80	3.61	3.36	3.80	3.07	3.02	2.98	2.84	3.80
Min	2.69	2.69	2.69	2.90	2.91	2.89	3.00	2.96	2.85	2.84	2.69	2.69	2.69

Annual Max Momentary Gage Height 4.21 M (MSL), at 18.00 Hours, on Nov 16, 1998
Zero Gage at Bottom Elevation 2.66 M (MSL), River Bed 2.52 M (MSL)
Left Bank Elevation 5.96 M (MSL)
Right Bank Elevation 5.94 M (MSL), Drainage Area 6 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.06	0.48	0.60	0.66	0.72	0.66	0.81	0.34	0.30	0.00	
2	0.00	0.00	0.02	0.52	0.52	0.60	0.69	0.63	0.78	0.66	0.28	0.00	
3	0.00	0.00	0.06	0.48	0.48	0.50	0.90	0.58	0.75	0.46	0.38	0.00	
4	0.00	0.00	0.02	0.46	0.42	0.46	0.96	0.52	0.72	0.42	0.56	0.00	
5	0.00	0.00	0.02	0.46	0.42	0.44	1.08	0.52	0.69	0.36	0.42	0.00	
6	0.00	0.00	0.00	0.50	0.81	0.42	1.56	0.56	0.66	0.34	0.26	0.00	
7	0.00	0.00	0.00	0.46	1.30	0.42	1.60	0.93	0.63	0.32	0.06	0.00	
8	0.00	0.00	0.00	0.69	0.93	0.40	1.17	0.72	0.63	0.32	0.14	0.00	
9	0.00	0.00	0.00	0.72	0.66	0.38	1.73	0.66	0.72	0.30	0.08	0.00	
10	0.00	0.00	0.12	0.58	0.50	0.38	1.73	0.75	0.63	0.32	0.08	0.00	
11	0.00	0.00	0.12	0.56	0.66	0.38	1.46	0.63	0.63	0.36	0.08	0.00	
12	0.00	0.00	0.08	0.44	0.60	1.05	1.23	0.69	0.58	0.32	0.08	0.00	
13	0.00	0.00	0.04	0.40	0.48	1.05	1.17	0.60	0.54	0.32	0.16	0.00	
14	0.00	0.00	0.02	0.52	0.44	2.64	1.08	0.66	0.52	0.32	0.14	0.00	
15	0.00	0.00	0.00	0.87	0.66	1.79	1.50	0.66	0.52	0.32	0.12	0.00	
16	0.00	0.00	0.06	0.60	3.46	1.40	1.56	3.46	0.48	0.30	0.12	0.00	
17	0.00	0.00	0.16	0.50	1.60	1.05	1.20	2.73	0.48	0.28	0.08	0.00	
18	0.00	0.00	1.60	0.48	1.05	0.90	1.05	1.86	0.54	0.28	0.06	0.00	
19	0.00	0.00	1.08	0.50	0.87	0.93	1.08	1.36	0.54	0.32	0.06	0.00	
20	0.00	0.00	0.72	0.54	0.96	1.11	0.99	0.99	0.58	0.30	0.04	0.00	
21	0.00	0.00	0.63	0.46	1.17	1.69	0.93	0.87	0.48	0.30	0.04	0.00	
22	0.00	0.00	0.69	0.54	0.99	1.50	0.87	0.75	0.42	0.32	0.04	0.00	
23	0.00	0.00	0.75	1.02	0.87	1.17	0.84	0.78	0.38	0.28	0.02	0.00	
24	0.00	0.00	0.72	0.81	0.60	1.23	0.81	0.75	0.34	0.28	0.04	0.00	
25	0.00	0.00	0.63	0.63	0.56	1.17	0.78	0.75	0.34	0.28	0.02	0.00	
26	0.00	0.00	0.60	0.50	0.52	1.08	0.75	0.84	0.32	0.28	0.02	0.00	
27	0.00	0.00	0.54	0.42	0.46	0.96	0.72	1.53	0.32	0.28	0.00	0.00	
28	0.00	0.00	0.50	0.40	0.42	0.93	0.69	1.90	0.36	0.28	0.00	0.00	
29	0.00	0.00	0.48	0.81	0.42	0.90	0.66	1.23	0.42	0.28		0.08	
30	0.00	0.00	0.46	1.23	1.05	0.78	0.60	0.93	0.30	0.32		0.26	
31		0.00		0.90	0.87		0.66		0.34	0.30		0.28	
Total	0.00	0.00	10.18	18.48	25.35	28.37	32.77	30.50	16.45	10.16	3.68	0.62	176.56 CMSDAY
Mean	0.00	0.00	0.34	0.60	0.82	0.95	1.06	1.02	0.53	0.33	0.13	0.02	0.48 CMS
Max	0.00	0.00	1.60	1.23	3.46	2.64	1.73	3.46	0.81	0.66	0.56	0.28	3.46 CMS
Min	0.00	0.00	0.00	0.40	0.42	0.38	0.60	0.52	0.30	0.28	0.00	0.00	0.00 CMS
Runoff	0.000	0.000	0.880	1.597	2.190	2.451	2.831	2.635	1.421	0.878	0.318	0.054	15.255 MCM

Momentary Peak 5.37 CMS, at 4.21 M (MSL), at 18.00 Hours, on Nov 16, 1998

Runoff Yield 80.62 Liters/Second/Square KM, Momentary Peak Yield 895.000 Liters/Second/Square KM

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

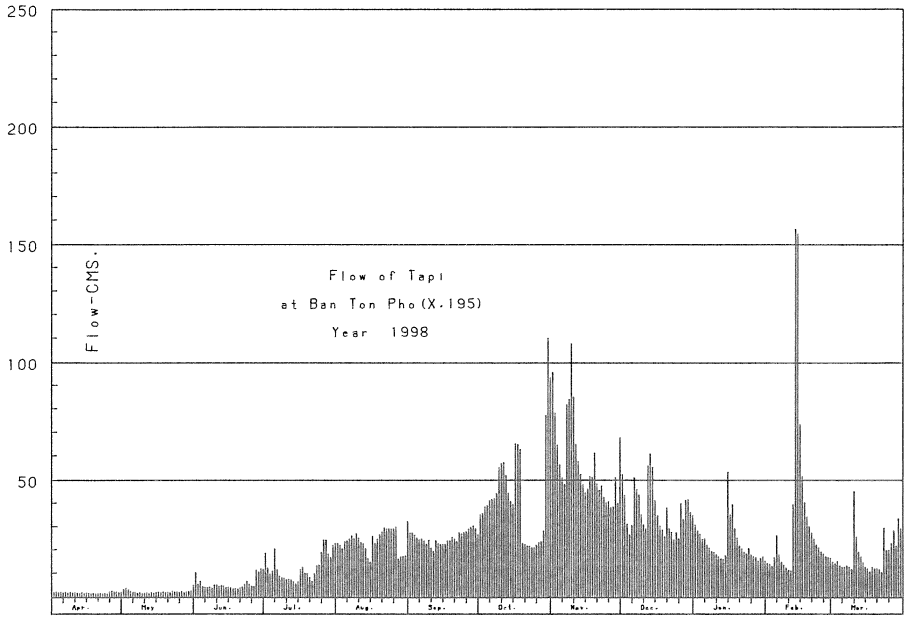
Tapi River at Ban Ton Pho, Nakhon Si Thammarat (X.195)

Location	Lat. 08°30'24" N., Long. 99°30'39" E., on right bank at the bridge, Ban Na Khliang, Amphoe Chawang, Nakhon Si Thammarat.
Drainage Area	480 sq.km.
Type of Gage	Staff gage.
Zero Gage at Bottom	+0.00 m.(A.D.)
Bench Mark	B.M.-H.D.
Location	On right bank about 5.00 meters from the top staff gage.
Elevation	+8.277 m.(A.D.)
Gage Reading Frequency	13-time daily readings at 06.00-18.00 hours.
Basis of Mean Daily Gage Height	Arithmetic mean of 13 readings.
Period of Available Gage Records	1998 to date.
Rating Operation	
Period of Rating	1998 to date.
Rated by Float	-
Rated by Current Meter	1998 to date.
Stability of Channel Regimes	Stable.
Overbank Flow Conditions	No overbank flow.
General Description	Records good. Stage-discharge relation defined by 55 disccharge measurements made in 1998.

Gage Height in Meter (AD), Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.36	1.47	1.80	2.04	2.16	2.26	2.44	3.54	2.81	2.34	1.92	1.93	
2	1.36	1.48	1.60	1.86	2.13	2.27	2.46	3.27	2.63	2.29	1.90	1.92	
3	1.36	1.45	1.64	1.76	2.10	2.24	2.52	3.05	2.35	2.25	1.88	1.94	
4	1.35	1.39	1.54	1.81	2.17	2.22	2.54	2.90	2.25	2.20	1.99	1.89	
5	1.35	1.37	1.50	2.10	2.19	2.19	2.58	2.78	2.34	2.21	2.24	1.87	
6	1.34	1.35	1.52	1.84	2.20	2.21	2.60	2.73	2.79	2.14	2.02	1.86	
7	1.34	1.33	1.51	1.73	2.23	2.18	2.60	3.33	2.68	2.10	1.94	1.89	
8	1.34	1.33	1.50	1.71	2.21	2.15	2.65	3.36	2.64	2.07	1.89	1.86	
9	1.33	1.32	1.56	1.69	2.26	2.19	2.87	3.72	2.44	2.05	1.86	1.84	
10	1.33	1.32	1.59	1.68	2.21	2.10	2.91	3.38	2.35	2.03	1.83	2.67	
11	1.33	1.32	1.52	1.67	2.17	2.07	2.91	3.06	2.30	2.00	1.81	2.22	
12	1.32	1.31	1.56	1.67	2.15	2.19	2.81	2.92	2.89	1.98	2.54	2.06	
13	1.32	1.33	1.53	1.63	2.10	2.15	2.65	2.82	2.99	1.96	4.38	2.00	
14	1.31	1.33	1.51	1.60	1.98	2.15	2.58	2.72	2.87	2.02	4.35	1.92	
15	1.31	1.32	1.50	1.63	1.94	2.14	2.54	2.65	2.59	2.83	3.20	1.87	
16	1.30	1.35	1.49	1.83	2.23	2.15	3.06	2.69	2.44	2.44	2.79	1.84	
17	1.30	1.36	1.48	1.87	2.16	2.18	3.06	2.79	2.33	2.55	2.57	1.81	
18	1.30	1.37	1.47	1.79	2.20	2.19	3.02	2.79	2.29	2.31	2.42	1.86	
19	1.30	1.36	1.48	1.77	2.25	2.22	2.16	3.00	2.23	2.21	2.33	1.85	
20	1.30	1.35	1.48	1.70	2.27	2.20	2.14	2.73	2.51	2.13	2.26	1.84	
21	1.29	1.35	1.53	1.65	2.32	2.18	2.13	2.68	2.31	2.09	2.20	1.83	
22	1.29	1.40	1.58	1.78	2.30	2.27	2.12	2.71	2.27	2.05	2.14	1.80	
23	1.29	1.39	1.65	1.88	2.31	2.25	2.11	2.62	2.19	2.04	2.10	2.31	
24	1.30	1.36	1.58	1.90	2.30	2.27	2.10	2.56	2.27	2.10	2.06	2.08	
25	1.36	1.37	1.55	2.06	2.31	2.28	2.14	2.57	2.21	2.03	2.03	2.07	
26	1.40	1.38	1.54	2.19	2.32	2.30	2.16	2.52	2.55	2.00	2.01	2.16	
27	1.39	1.37	1.82	2.20	1.98	2.32	2.18	2.52	2.40	2.00	2.00	2.29	
28	1.35	1.36	1.81	2.03	2.00	2.33	2.28	2.79	2.59	1.94	1.98	2.12	
29	1.35	1.40	1.84	2.00	2.01	2.31	3.26	2.56	2.59	1.99		2.41	
30	1.35	1.40	1.84	2.13	2.01	2.24	3.75	3.10	2.47	2.00		2.30	
31		1.56		2.15	2.38		3.50		2.43	1.94		2.14	
Mean	1.33	1.37	1.58	1.85	2.18	2.21	2.61	2.90	2.48	2.14	2.31	2.01	
Max	1.40	1.56	1.84	2.20	2.38	2.33	3.75	3.72	2.99	2.83	4.38	2.67	4.38
Min	1.29	1.31	1.47	1.60	1.94	2.07	2.10	2.52	2.19	1.94	1.81	1.80	1.29

Annual Max Momentary Gage Height 4.97 M (AD), at 20.00 Hours, on Feb 13, 1998
Zero Gage at Bottom Elevation 0.00 M (AD), River Bed 0.64 M (AD)
Left Bank Elevation 8.57 M (AD)
Right Bank Elevation 8.44 M (AD), Drainage Area 480 Square Kilometers



Discharge, in Cubic Meter per Second, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.44	3.92	11.00	18.92	23.48	27.58	35.32	96.10	52.50	31.02	14.84	15.16	
2	2.44	4.08	6.00	12.92	22.34	28.01	36.18	78.55	43.67	28.87	14.20	14.84	
3	2.44	3.60	7.00	10.00	21.20	26.72	38.76	65.00	31.45	27.15	13.56	15.48	
4	2.35	2.71	5.04	11.32	23.86	25.86	39.62	57.00	27.15	25.00	17.08	13.88	
5	2.35	2.53	4.40	21.20	24.62	24.62	41.34	51.02	31.02	25.43	26.72	13.24	
6	2.26	2.35	4.72	12.28	25.00	25.43	42.20	48.57	51.51	22.72	18.16	12.92	
7	2.26	2.17	4.56	9.25	26.29	24.24	42.20	82.45	46.12	21.20	15.48	13.88	
8	2.26	2.17	4.40	8.75	25.43	23.10	44.65	84.40	44.16	20.06	13.88	12.92	
9	2.17	2.08	5.36	8.25	27.58	24.62	55.50	108.40	35.32	19.30	12.92	12.28	
10	2.17	2.08	5.84	8.00	25.43	21.20	57.50	85.70	31.45	18.54	11.96	45.63	
11	2.17	2.08	4.72	7.75	23.86	20.06	57.50	65.60	29.30	17.40	11.32	25.86	
12	2.08	1.99	5.36	7.75	23.10	24.62	52.50	58.00	56.50	16.76	39.62	19.68	
13	2.08	2.17	4.88	6.75	21.20	23.10	44.65	53.00	61.50	16.12	156.86	17.40	
14	1.99	2.17	4.56	6.00	16.76	23.10	41.34	48.08	55.50	18.16	154.55	14.84	
15	1.99	2.08	4.40	6.75	15.48	22.72	39.62	44.65	41.77	53.50	74.00	13.24	
16	1.90	2.35	4.24	11.96	26.29	23.10	65.60	46.61	35.32	35.32	51.51	12.28	
17	1.90	2.44	4.08	13.24	23.48	24.24	65.60	51.51	30.59	40.05	40.91	11.32	
18	1.90	2.53	3.92	10.75	25.00	24.62	63.20	51.51	28.87	29.73	34.46	12.92	
19	1.90	2.44	4.08	10.25	27.15	25.86	23.48	62.00	26.29	25.43	30.59	12.60	
20	1.90	2.35	4.08	8.50	28.01	25.00	22.72	48.57	38.33	22.34	27.58	12.28	
21	1.81	2.35	4.88	7.25	30.16	24.24	22.34	46.12	29.73	20.82	25.00	11.96	
22	1.81	2.80	5.68	10.50	29.30	28.01	21.96	47.59	28.01	19.30	22.72	11.00	
23	1.81	2.71	7.25	13.56	29.73	27.15	21.58	43.18	24.62	18.92	21.20	29.73	
24	1.90	2.44	5.68	14.20	29.30	28.01	21.20	40.48	28.01	21.20	19.68	20.44	
25	2.44	2.53	5.20	19.68	29.73	28.44	22.72	40.91	25.43	18.54	18.54	20.06	
26	2.80	2.62	5.04	24.62	30.16	29.30	23.48	38.76	40.05	17.40	17.78	23.48	
27	2.71	2.53	11.64	25.00	16.76	30.16	24.24	38.76	33.60	17.40	17.40	28.87	
28	2.35	2.44	11.32	18.54	17.40	30.59	28.44	51.51	41.77	15.48	16.76	21.96	
29	2.35	2.80	12.28	17.40	17.78	29.73	77.90	40.48	41.77	17.08		34.03	
30	2.35	2.80	12.28	22.34	17.78	26.72	110.50	68.00	36.61	17.40		29.30	
31		5.36		23.10	32.74		93.50		34.89	15.48		22.72	
Total	65.28	81.67	183.89	406.78	756.40	770.15	1377.34	1742.51	1162.81	713.12	939.28	576.20	8775.43 CMSDAY
Mean	2.18	2.63	6.13	13.12	24.40	25.67	44.43	58.08	37.51	23.00	33.55	18.59	24.04 CMS
Max	2.80	5.36	12.28	25.00	32.74	30.59	110.50	108.40	61.50	53.50	156.86	45.63	156.86 CMS
Min	1.81	1.99	3.92	6.00	15.48	20.06	21.20	38.76	24.62	15.48	11.32	11.00	1.81 CMS
Runoff	5.640	7.056	15.888	35.146	65.353	66.541	119.002	150.553	100.467	61.614	81.154	49.784	758.197 MCM

Momentary Peak 203.57 CMS, at 4.97 M (AD), at 20.00 Hours, on Feb 13, 1998
Runoff Yield 50.09 Liters/Second/Square KM, Momentary Peak Yield 424.104 Liters/Second/Square KM

SUSPENDED SEDIMENT STATIONS

1. Ping River at Nawarat Bridge, Chiang Mai (P.1)
2. Ping River at Ban Tha Khae, Tak (P.2A)
3. Mae Taeng River at Mae Taeng, Chiang Mai (P.4A)
4. Nam Mae Klang at Pracha Uthit Bridge, Chiang Mai (P.24A)
5. Khlong Khlung at Ban Pang Wai, Kamphaeng Phet (P.35)
6. Nam Mae Tun at Ban Luang, Chiang Mai (P.64)
7. Wang River at Ban Don Chai, Lampang (W.3A)
8. Wang River at Ban Wang Man, Tak (W.4A)
9. Nam Mae Soi at Ban Nong Nao, Lampang (W.17)
10. Nam Mae Tui at Ban Tha Lo, Lampang (W.20)
11. Yom River at Phathana Pak Nua 8 bridge, Phrae (Y.1C)
12. Yom River at Ban Kaeng Luang, Sukhothai (Y.6)
13. Yom River at Bang Rakam, Phitsanulok (Y.16)
14. Nam Pi at Ban Mang, Phayao (Y.24)
15. Nam Mae Kok at Ban Mae Phu, Lampang (Y.26)
16. Nam Mae Lai at Ban Mae Lai, Phrae (Y.34)
17. Nan River at Bang Mun Nak, Phichit (N.8)
18. Nan River at Ban Bun Nak, Nan (N.13A)
19. Khwae Noi at Ban Yang, Phitsanulok (N.22)
20. Khek River at Ban Wang Nok Aen, Phitsanulok (N.24)
21. Nam Wa at Ban Hat Khao San, Nan (N.42)
22. Nam Haeng at Ban Hua Muang, Nan (N.63)
23. Nam Yao at Ban Pang Sa, Nan (N.65)
24. Nam Mae Lao at Ban Ton Yang, Chiang Rai (G.8)
25. Nam Mae Ing at Ban Nam Ing, Chiang Rai (I.14)
26. Huai Khun Kaeo at Ban Samo Thong, Uthai Thani (C.30)
27. Nam Mae Wong at Ban Pang Makha, Kamphaeng Phet (Ct.5A)
28. Khlong Pho at Ban Hang Rai, Nakhon Sawan (Ct.7)
29. Pasak River at Ban Tan Dieo, Phetchabun (S.3)

30. Pasak River at Phetchabun, Phetchabun (S.4B)
31. Lam Kong at Ban Wang Tha Di, Phetchabun (S.12)
32. Lam Sonthi at Ban Tha Yiam, Lop Buri (S.13)
33. Lam Sonthi at Ban Na Som, Lap Buri (S.14)
34. Lam Phaya Klang at Ban Pang Hu Sua, Lop Buri (S.31)
35. Loei River at Ban Fak Na, Loei (Kh.58A)
36. Huai Nam Kam at Ban Dan Muang Kham, Sakon Nakhon (Kh.63)
37. Lam Nam Kam at Ban Nong Rua Thong, Nakhon Phanom (Kh.69A)
38. Nam Mae Kham at Ban Mae Kham, Chiang Rai (Kh.72)
39. Nam Mae Chan at Ban Mae Khi, Chiang Rai (Kh.89)
40. Lam Nam Phung at Ban Tong Khop, Sakhon Nakhon (Kh.90)
41. Huai Bang Sai at Ban Luang Dong, Muk Dahan (Kh.92)
42. Chi River at Wat Tai Kosum, Maha Sarakham (E.1)
43. Mun River at Rasi Salai, Si Sa Ket (M.5)
44. Huai Samran at Muang, Si Sa Ket (M.9)
45. Lam Takhong at Vaccine Serum Office, Nakhon Ratchasima (M.89)
46. Huai Ta Thieo at Ban Na Hai, Ubon Ratchathani (M.127)
47. Huai Khayung at Ban Ta Nuad Hua Saphan, Si Sa Ket (M.142)
48. Huai Sang Kot at Ban Nong Udom, Si Sa Ket (M.143)
49. Huai Hin Lap at Ban Kaeng Hip, Nakhon Ratchasima (M.150)
50. Huai La-ong at Ban Na Phu, Amnart Charoen (M.155)
51. Huai Krasieo at Ban Thap Khlai, Uthai Thani (T.7)
52. Nakhon Nayok River at Khao Nang Buat, Nakhon Nayok (Ny.1B)
53. Khlong Ban Na at Ban Pa Kha, Nakhon Nayok (Ny.3)
54. Khlong Samo Pun at Haew Narok, Prachin Buri (Ny.4)
55. Khlong Ban Na at Ban Cha Om, Saraburi (Ny.6)
56. Khlong Phayat at Ban Chaman, Chanthaburi (Z.14)
57. Khlong Yai at Ban Pak Phraek, Rayong (Z.15)
58. Khlong Hin Dat at Ban Rong Sen, Chanthaburi (Z.21)
59. Khwae Noi River at Ban Lum Sum, Kanchanaburi (K.10)

60. Lam Taphoen at Ban Thung Na Nang Rok, Kanchanaburi (K.12)
61. Lam Phachi at Ban Bo Khem, Ratchaburi (K.17)
62. Huai Mae Nam Noi at Ban Sai Yok Noi, Kanchanaburi (K.22B)
63. Huai Mae Nam Lo at Ban Pak Huai Mae Nam Lo, Kanchanaburi (K.30)
64. Huai Mae Nam Noi at Ban Mae Nam Noi, Kanchanaburi (K.31)
65. Phetchaburi River at Ban Rai Phaniat, Phetchaburi (B.1A)
66. Phetchaburi River at Song Phi Nong, Phetchaburi (B.3)
67. Phetchaburi River at Ban Tha Yang, Phetchaburi (B.10)
68. Tapi River at Phrasaeng,Surat Thani (X.37A)
69. Khlong Rap Ro at Ban Tha Kham, Chumphon (X.46)
70. Khlong Chumphon at Wang Phai, Chumphon (X.53A)
71. Khlong Tha Di at Ban Pak Prik, Nakhon Si Thammrat (X.55)
72. Khlong Tha Sae at Tha Sae, Chumphon (X.64)
73. Khlong Ban Tan at Ban Wang Kong, Nakhon Si Thammarat (X.70)
74. Khlong Tam at Ban Khuan Lang (3), Songkhla (X.71)
75. Khlong Tan Yong Mat at Rangae, Narathiwat (X.73)
76. Khlong Takhian at Ban Rim Khlong, Surat Thani (X.103)
77. Khlong Tha Krachai at Ban Samo Thong, Surat Thani (X.104)
78. Khlong Bang Kaeo at Ban Khuan In No Mo, Phatthalung (X.109)
79. Khlong Waeng at Waeng, Narathiwat (X.121)
80. Khlong Palian at Ban Lam Khlaeng (2), Trang (X.139)
81. Khlong Klai at Ban Thai Na, Nakhon Si Thammarat (X.149)
82. Khlong Langu at Ban Wang Pa Khian, Satun (X.150)
83. Khlong Tha Taphao at Ban Wang Khrok, Chumphon (X.158)
84. Khlong Chandi at Ban Chandi Nua, Nakhon Si Thammarat (X.163)
85. Khlong Ai Khieo at Ban Ai Khieo, Nakhon Si Thammarat (X.165)
86. Khlong Sao Thong at Ban Sao Thong, Nakhon Si Thammarat (X.167)
87. Khlong U Taphao at Ban Khlong Ngae, Songkhla (X.173)
88. Sai Buri River at Ban Talat Phatthana, Narathiwat (X.184)
89. Tapi River at Ban Ton Pho, Nakhon Si Thammarat (X.195)

WATER YEAR 1998

PING RIVER BASIN

Ping River at Nawarat Bridge, Chiang Mai (P.1)

Location	Lat. 18°-47'-09" N., Long. 99°-00'-29" E., on left bank about 100 meters downstream from Nawarat Bridge, Amphoe Muang, Chiang Mai.
Drainage Area	6,355 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1993 - Cont'd
Actual Measurement	1993 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	26
R - Square	0.946
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:25:36.13

LQS/LQS02D/12

Station - Nawarat Bridge, A. Muang, Chiang Mai, (P.1)
Stream - Ping
River - Ping
River System - Ping River

Royal Irrigation Department
Thailand
Hydrology Division 210598
1.39060
QS = 2.9623 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	30.8	204.3	104.3	115.1	185.6	229.1	93.8	59.0	126.2	12.5	14.2	72.4	
2	35.0	204.3	126.2	137.6	161.1	324.7	86.5	104.3	104.3	10.1	10.9	104.3	
3	44.1	204.3	86.5	86.5	198.3	653.4	79.4	137.6	86.5	9.4	7.1	86.5	
4	54.8	204.3	65.6	137.6	266.2	512.8	65.6	365.4	79.4	9.4	6.4	79.4	
5	61.0	234.1	59.0	324.7	266.2	386.3	46.5	266.2	72.4	9.4	5.1	79.4	
6	141.2	254.6	65.6	407.5	266.2	365.4	34.8	115.1	65.6	7.9	5.1	65.6	
7	214.1	275.6	93.8	344.9	285.3	1038.4	34.8	86.5	52.6	6.4	6.4	65.6	
8	244.3	286.2	137.6	247.4	247.4	2656.9	29.3	65.6	46.5	6.4	21.4	59.0	
9	234.1	214.1	137.6	185.6	266.2	3145.6	27.3	52.6	40.5	5.1	46.5	52.6	
10	214.1	185.6	115.1	211.1	459.3	2714.1	29.3	46.5	34.8	4.5	46.5	52.6	
11	234.1	167.4	93.8	185.6	624.5	2266.4	79.4	46.5	27.3	3.5	46.5	34.8	
12	286.2	204.3	86.5	185.6	459.3	1765.1	93.8	65.6	29.3	3.5	59.0	34.8	
13	297.0	149.2	79.4	173.2	285.3	1038.4	93.8	52.6	29.3	3.5	46.5	34.8	
14	319.1	485.8	93.8	137.6	211.1	567.9	79.4	52.6	27.3	3.5	46.5	29.3	
15	307.9	285.3	72.4	137.6	198.3	485.8	72.4	52.6	27.3	3.5	34.8	23.3	
16	286.2	173.2	52.6	126.2	173.2	344.9	93.8	59.0	29.3	3.8	29.3	19.5	
17	286.2	149.2	65.6	104.3	173.2	485.8	86.5	59.0	29.3	5.7	46.5	17.7	
18	265.0	126.2	59.0	126.2	149.2	485.8	93.8	59.0	29.3	14.2	59.0	14.2	
19	244.3	137.6	72.4	104.3	161.1	459.3	137.6	72.4	29.3	25.3	52.6	14.2	
20	265.0	126.2	79.4	86.5	198.3	344.9	173.2	104.3	29.3	25.3	46.5	17.7	
21	275.6	115.1	52.6	72.4	211.1	285.3	161.1	104.3	29.3	52.6	34.8	25.3	
22	265.0	115.1	40.5	65.6	365.4	229.1	126.2	137.6	27.3	27.3	23.3	25.3	
23	254.6	104.3	34.8	59.0	567.9	161.1	104.3	149.2	29.3	27.3	21.4	23.3	
24	244.3	79.4	29.3	79.4	682.7	137.6	86.5	161.1	27.3	27.3	17.7	27.3	
25	244.3	72.4	23.3	72.4	807.2	137.6	52.6	149.2	19.5	17.7	21.4	34.8	
26	234.1	104.3	21.4	104.3	807.2	137.6	40.5	137.6	17.7	10.9	27.3	29.3	
27	224.1	173.2	17.7	115.1	624.5	149.2	34.8	126.2	17.7	10.1	29.3	23.3	
28	224.1	266.2	21.4	126.2	433.2	173.2	34.8	93.8	17.7	10.1	34.8	23.3	
29	204.3	304.8	23.3	86.5	285.3	149.2	29.3	93.8	17.7	10.9		23.3	
30	185.6	185.6	93.8	72.4	198.3	115.1	29.3	115.1	17.7	10.9		23.3	
31		149.2		104.3	185.6		34.8		12.5	10.9		21.4	
Total	6420.5	5941.4	2104.3	4522.7	10403.7	21946.0	2265.2	3190.3	1229.5	388.9	846.8	1237.6	60496.9 Ton
Mean	214.0	191.7	70.1	145.9	335.6	731.5	73.1	106.3	39.7	12.5	30.2	39.9	
Max	319.1	485.8	137.6	407.5	807.2	3145.6	173.2	365.4	126.2	52.6	59.0	104.3	3145.6
Min	30.8	72.4	17.7	59.0	149.2	115.1	27.3	46.5	12.5	3.5	5.1	14.2	3.5

WATER YEAR 1998

PING RIVER BASIN

Ping River at Ban Tha Khae, Tak (P.2A)

Location	Lat. 16-52-10 N., Long. 99-07-50 E., on right bank about 200 meters downstream from Kittikhachon I Bridge, Ban Tha Khae, Amphoe Muang, Tak.
Drainage Area	38,862 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1989 - Cont'd
Actual Measurement	1989 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.7438
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:23.48 LQS/LQS02D/12

Station - Ban Tha Khae, A. Muang, Tak, (P.2A)
Stream - Ping
River - Ping
River System - Ping River

Royal Irrigation Department
Thailand
Hydrology Division 220599
1.77830
QS = 0.0838 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4039.6	2283.5	83.7	492.6	88.6	196.3	120.6	104.3	865.4	228.5	605.5	566.7	
2	3539.5	1146.7	299.7	529.1	112.5	166.2	93.7	93.7	474.8	263.3	547.8	457.3	
3	3470.4	2442.0	228.5	529.1	69.5	217.7	93.7	390.1	492.6	299.7	625.3	547.8	
4	3068.5	1550.9	207.1	787.8	645.3	217.7	83.7	327.6	474.8	217.7	510.7	342.8	
5	3401.9	2442.0	287.5	196.3	547.8	207.1	65.1	228.5	510.7	510.7	492.6	390.1	
6	1736.8	1087.7	275.6	217.7	299.7	83.7	44.8	196.3	240.0	510.7	586.0	406.4	
7	3200.1	1340.1	74.1	275.6	474.8	175.9	20.6	175.9	374.0	492.6	625.3	358.2	
8	3470.4	1813.8	60.8	263.3	251.8	228.5	17.6	156.5	510.7	529.1	374.0	492.6	
9	3334.1	1775.1	973.8	83.7	175.9	263.3	60.8	196.3	240.0	457.3	918.9	440.0	
10	3266.8	2029.7	1272.8	78.8	93.7	287.5	69.5	737.9	358.2	492.6	787.8	406.4	
11	3893.8	839.2	946.1	312.7	689.4	762.7	93.7	547.8	287.5	327.6	586.0	406.4	
12	3539.5	1117.0	762.7	240.0	566.7	1239.7	83.7	586.0	510.7	547.8	665.7	492.6	
13	3334.1	1374.3	645.3	146.9	423.1	946.1	185.7	1030.0	196.3	406.4	665.7	586.0	
14	2283.5	946.1	423.1	120.6	689.4	713.5	406.4	1001.7	48.6	492.6	665.7	312.7	
15	2605.2	1306.2	120.6	69.5	1001.7	645.3	275.6	406.4	196.3	457.3	665.7	457.3	
16	2231.7	1550.9	839.2	112.5	390.1	566.7	625.3	287.5	251.8	390.1	713.5	689.4	
17	4187.8	1207.0	865.4	98.9	390.1	374.0	423.1	689.4	251.8	299.7	665.7	358.2	
18	4262.8	510.7	713.5	88.6	713.5	263.3	217.7	645.3	492.6	217.7	713.5	492.6	
19	4262.8	2716.5	1058.7	34.2	737.9	251.8	185.7	510.7	492.6	529.1	689.4	374.0	
20	2550.3	2388.6	510.7	88.6	737.9	275.6	312.7	645.3	146.9	390.1	665.7	474.8	
21	4113.4	2388.6	406.4	48.6	762.7	440.0	299.7	689.4	175.9	457.3	457.3	440.0	
22	4262.8	2660.6	88.6	16.0	529.1	406.4	406.4	566.7	665.7	566.7	625.3	492.6	
23	4113.4	2180.4	1239.7	22.1	196.3	474.8	529.1	251.8	358.2	492.6	547.8	510.7	
24	4749.8	1443.8	1340.1	48.6	120.6	492.6	104.3	737.9	275.6	457.3	440.0	390.1	
25	4039.6	1239.7	492.6	22.1	240.0	529.1	120.6	1176.7	207.1	474.8	586.0	299.7	
26	4580.8	813.3	1736.8	16.0	251.8	457.3	185.7	645.3	275.6	625.3	529.1	440.0	
27	1587.3	474.8	457.3	17.6	263.3	358.2	287.5	529.1	120.6	689.4	492.6	358.2	
28	3966.4	625.3	529.1	112.5	440.0	240.0	196.3	390.1	146.9	713.5	547.8	374.0	
29	3679.4	440.0	251.8	129.0	390.1	175.9	175.9	342.8	275.6	605.5		275.6	
30	2660.6	510.7	1058.7	56.6	166.2	138.0	287.5	312.7	251.8	839.2		406.4	
31		342.8		83.7	156.5		207.1		207.1	586.0		390.1	
Total	103433.1	44988.0	18250.0	5339.3	12616.0	11794.9	6279.8	14599.7	10376.4	14568.2	16996.4	13429.7	272671.5 Ton
Mean	3447.8	1451.2	608.3	172.2	407.0	393.2	202.6	486.7	334.7	469.9	607.0	433.2	
Max	4749.8	2716.5	1736.8	787.8	1001.7	1239.7	625.3	1176.7	865.4	839.2	918.9	689.4	4749.8
Min	1587.3	342.8	60.8	16.0	69.5	83.7	17.6	93.7	48.6	217.7	374.0	275.6	16.0

WATER YEAR 1998

PING RIVER BASIN

Mae Taeng River at Mae Taeng, Chiang Mai (P.4A)

Location	Lat. 19°-07'-15" N., Long. 98°-56'-51" E., on right bank at the bridge of Chiang Mai - Fang Highway, Amphoe Mae Taeng, Chiang Mai.
Drainage Area	1,902 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1992 - Cont'd
Actual Measurement	1992 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	26
R - Square	0.9024
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:25:42.50

LQS/LQS02D/12

Station - Mae Taeng, Mae Taeng, Chiang Mai, (P.4A)
Stream - Mae Taeng
River - Ping
River System - Ping River

Royal Irrigation Department
Thailand
Hydrology Division 210598
1.38230
QS = 3.3656 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.95	0.61	22.32	0.79	1.15	3.23	0.95	0.73	23.19	0.44	0.20	0.16	
2	0.79	0.67	17.31	0.73	1.78	2.91	0.79	0.73	6.06	0.44	0.20	0.16	
3	0.79	1.97	14.18	0.73	1.97	2.69	0.79	0.73	2.91	0.44	0.20	0.18	
4	0.73	3.55	11.94	1.97	2.18	2.69	0.79	0.73	2.91	0.50	0.20	0.18	
5	0.73	1.97	11.94	1.97	2.91	2.69	0.73	0.73	2.69	0.50	0.20	0.18	
6	0.73	1.15	10.77	1.97	3.23	2.69	0.79	0.67	2.69	0.24	0.20	0.18	
7	0.73	1.55	40.24	1.78	3.23	199.97	0.79	0.61	2.43	0.24	0.20	0.18	
8	0.73	2.18	24.07	1.78	3.23	531.83	0.79	0.61	1.97	0.24	0.20	0.18	
9	0.73	1.97	18.12	1.55	4.58	667.70	0.73	0.61	1.97	0.24	0.20	0.18	
10	0.73	1.97	15.72	1.55	19.77	498.91	0.73	0.61	1.97	0.24	0.20	0.18	
11	0.73	1.97	14.18	1.78	4.23	557.67	0.73	0.61	1.97	0.24	0.20	0.18	
12	0.73	1.97	11.94	1.78	2.91	205.75	0.73	0.61	1.97	0.24	0.20	0.16	
13	0.73	69.73	2.91	1.78	2.43	57.06	0.73	0.61	1.97	0.20	0.20	0.16	
14	0.73	10.20	2.91	1.78	2.18	17.31	0.95	5.31	0.61	0.20	0.20	0.16	
15	0.73	17.31	2.18	1.97	1.97	6.44	0.79	6.44	0.61	0.20	0.20	0.16	
16	0.73	28.58	2.18	2.91	1.55	6.44	0.79	8.53	0.61	0.24	0.18	0.16	
17	0.73	24.95	15.72	2.91	1.36	6.06	0.79	6.06	0.61	0.24	0.18	0.16	
18	0.73	20.61	11.94	2.91	0.95	2.91	0.79	6.06	0.50	0.24	0.18	0.16	
19	0.73	24.07	5.68	2.91	1.36	2.91	0.95	10.20	0.50	0.24	0.18	0.16	
20	0.73	26.75	2.69	0.95	1.15	2.91	1.15	45.89	0.55	0.24	0.16	0.16	
21	0.73	38.04	0.79	0.95	1.15	2.91	1.15	33.75	0.61	0.24	0.16	0.16	
22	0.73	28.58	0.79	0.79	1.36	1.55	1.15	35.88	0.61	0.29	0.16	0.16	
23	0.73	24.07	0.67	0.79	1.55	1.55	1.15	54.43	0.55	0.29	0.16	0.16	
24	0.73	18.94	0.67	0.79	34.81	1.55	1.15	49.38	0.55	0.29	0.16	0.16	
25	0.73	18.12	0.79	0.79	4.23	1.55	0.95	43.61	0.55	0.29	0.16	0.16	
26	0.73	34.81	0.67	0.79	2.69	1.55	0.95	31.65	0.55	0.29	0.16	0.16	
27	0.73	54.43	0.61	0.79	2.69	1.55	0.79	24.07	0.55	0.29	0.16	0.16	
28	0.73	55.74	0.73	0.79	2.18	1.36	0.73	22.32	0.50	0.20	0.16	0.16	
29	0.73	50.55	1.36	0.79	1.97	1.36	0.73	22.32	0.50	0.20		0.16	
30	0.73	32.69	0.79	0.79	1.97	1.36	0.73	24.95	0.50	0.20		0.16	
31		28.58		1.55	2.18		0.73		0.50	0.20		0.16	
Total	22.24	628.28	266.81	46.11	120.90	2797.06	26.49	439.44	64.66	8.58	5.16	5.14	4430.87 Ton
Mean	0.74	20.27	8.89	1.49	3.90	93.24	0.85	14.65	2.09	0.28	0.18	0.17	
Max	0.95	69.73	40.24	2.91	34.81	667.70	1.15	54.43	23.19	0.50	0.20	0.18	667.70
Min	0.73	0.61	0.61	0.73	0.95	1.36	0.73	0.61	0.50	0.20	0.16	0.16	0.16

WATER YEAR 1998

PING RIVER BASIN

Nam Mae Klang at Pracha Uthit Bridge , Chiang Mai (P.24A)

Location	Lat. 18-25-01 N., Long. 98-40-29 E., on left bank at Pracha Uthit Bridge , Amphoe Chom Thong , Chiang Mai.
Drainage Area	460 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	26
R - Square	0.8990
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:25:48.48 LQS/LQS02D/12

Station - Pracha Uthit Bridge, Chom Thong, Chiang Mai, (P.24A)
Stream - Nam Mae Klang
River - Ping
River System - Ping River

Royal Irrigation Department
Thailand
Hydrology Division 210598
1.26930
QS = 2.9936 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.54	0.12	1.63	1.06	1.06	6.94	2.26	1.06	4.92	0.46	0.39	14.15	
2	0.62	0.18	1.34	0.79	1.63	5.91	1.94	1.63	4.92	0.46	0.25	4.42	
3	0.18	0.25	1.94	0.62	1.94	14.15	1.94	22.80	4.42	0.46	0.25	1.06	
4	0.25	0.12	1.63	2.58	1.94	5.44	1.63	21.98	4.42	0.39	0.25	0.62	
5	0.62	0.25	3.26	20.31	2.26	3.61	1.34	9.09	4.42	0.39	0.25	0.54	
6	0.62	0.07	0.70	21.17	2.92	10.31	1.63	7.45	3.97	0.39	0.12	0.32	
7	0.54	0.05	0.62	11.56	2.26	256.23	1.34	6.45	3.97	0.39	0.07	0.46	
8	0.39	0.25	0.54	6.45	2.26	79.17	1.34	5.91	3.26	0.25	0.12	0.46	
9	0.39	0.25	0.54	4.92	48.21	37.13	1.34	2.92	2.92	0.18	0.12	0.39	
10	0.39	0.32	0.79	4.92	10.91	50.83	1.63	3.26	2.58	0.18	0.18	0.32	
11	0.39	0.39	1.63	5.91	6.94	107.52	1.34	3.26	2.58	0.25	0.18	0.25	
12	0.18	0.39	1.06	5.91	5.44	33.60	1.94	2.92	2.58	0.32	1.06	0.12	
13	0.25	0.70	1.06	5.91	5.44	14.84	3.61	2.92	2.26	0.39	0.32	0.07	
14	0.25	11.56	8.00	6.45	5.44	11.56	3.26	3.26	2.92	0.25	0.46	0.05	
15	0.25	8.57	3.26	6.45	6.94	12.23	4.42	3.61	1.94	0.46	0.32	0.05	
16	0.46	3.26	2.92	5.44	14.15	6.45	3.26	3.61	0.70	0.46	0.12	0.05	
17	0.46	5.44	2.58	3.61	10.31	5.44	2.58	3.97	0.62	0.46	0.32	0.05	
18	0.62	14.84	1.94	3.97	5.91	4.92	2.26	3.61	0.62	0.32	0.39	0.05	
19	0.70	13.52	1.63	3.26	3.26	8.57	2.58	3.61	0.62	0.39	0.18	0.12	
20	0.54	13.52	1.63	1.94	33.60	86.08	2.58	3.97	0.62	0.39	0.12	0.05	
21	0.62	5.91	1.06	1.34	8.57	13.52	2.58	3.26	0.62	0.32	0.18	0.05	
22	0.39	3.97	0.54	0.79	9.72	7.45	1.94	10.31	0.62	0.25	0.12	0.05	
23	0.32	2.26	0.46	0.70	49.51	4.92	1.63	12.84	0.54	0.18	0.18	0.07	
24	0.25	1.63	0.39	0.62	105.73	3.97	1.63	8.57	0.54	0.12	0.32	0.25	
25	0.18	1.63	0.46	0.62	24.74	3.26	1.63	7.45	0.46	0.12	0.25	0.25	
26	0.18	2.58	0.54	0.79	12.84	2.92	1.63	6.45	0.54	0.25	0.32	0.18	
27	0.12	1.94	0.46	1.06	7.45	2.26	1.63	5.91	0.54	0.18	0.25	0.25	
28	0.12	1.63	0.54	1.34	4.92	2.58	2.58	5.44	0.46	0.18	0.18	0.18	
29	0.25	1.34	0.54	1.63	3.61	2.26	1.94	7.45	0.46	0.46		0.18	
30	0.18	0.79	1.06	1.06	2.92	1.94	1.34	7.45	0.46	0.46		0.07	
31		0.79		1.06	2.92		1.34		0.39	0.46		0.07	
Total	11.25	98.52	44.75	134.24	405.75	806.01	64.09	192.42	60.89	10.22	7.27	25.20	1860.61 Ton
Mean	0.38	3.18	1.49	4.33	13.09	26.87	2.07	6.41	1.96	0.33	0.26	0.81	
Max	0.70	14.84	8.00	21.17	105.73	256.23	4.42	22.80	4.92	0.46	1.06	14.15	256.23
Min	0.12	0.05	0.39	0.62	1.06	1.94	1.34	1.06	0.39	0.12	0.07	0.05	0.05

WATER YEAR 1998

PING RIVER BASIN

Khlong Khlung at Ban Pang Wai, Kamphaeng Phet (P.35)

Location	Lat. 16°-04'-22" N., Long. 99°-24'-18" E., on right bank at Ban Pang Wai about 1.5 kilometers from Khao Song Phi Nong, Amphoe Khlong Khlung, Kamphaeng Phet.
Drainage Area	730 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1988 - Cont'd
Actual Measurement	1988 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	27
R - Square	0.9134
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:28.85

LQS/LQS02D/12

Station - Ban Pang Wai, Khlong Khlung, Kamphaeng Phet, (P.35)
Stream - Khlong Khlung
River - Ping
River System - Ping River

Royal Irrigation Department
Thailand
Hydrology Division 221099
1.36100
QS = 3.9118 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.30	0.30	8.25	2.09	23.21	30.39	156.53	7.29	22.79	3.39	2.50	1.82	
2	0.30	0.30	6.12	8.84	38.63	25.28	101.12	7.61	18.81	3.24	2.36	1.69	
3	0.47	0.15	6.73	13.24	18.40	26.96	143.10	8.57	16.90	2.94	2.36	1.69	
4	22.79	0.09	34.40	6.73	7.93	19.54	44.82	99.74	15.73	2.79	2.36	1.69	
5	10.81	0.30	47.27	5.59	18.81	21.19	37.18	173.77	13.61	2.64	2.36	1.69	
6	5.83	0.22	46.04	5.59	13.61	36.69	32.61	151.46	12.88	2.64	2.50	1.69	
7	4.18	0.30	37.18	6.73	6.43	133.23	25.28	61.82	11.87	2.36	2.50	1.69	
8	2.79	0.22	46.66	6.12	8.25	153.15	12.88	31.77	10.18	2.36	2.36	1.56	
9	2.36	0.22	35.83	5.59	20.36	237.65	42.90	22.79	5.59	2.36	2.36	1.56	
10	2.09	0.22	29.93	5.01	16.50	204.14	200.50	13.91	7.61	2.36	2.22	1.56	
11	1.95	0.22	19.95	4.34	40.50	119.58	293.52	25.63	10.46	2.36	2.22	1.56	
12	1.95	0.22	17.29	4.34	26.07	69.93	277.24	13.91	6.43	2.36	2.09	1.56	
13	1.82	0.22	12.51	9.84	23.98	41.00	369.87	11.16	6.43	2.22	2.09	1.44	
14	1.82	129.98	8.84	6.12	21.52	22.79	205.97	10.46	6.12	2.22	2.09	1.44	
15	1.69	9.84	6.43	7.04	25.63	21.52	116.69	10.18	5.01	2.22	2.09	1.44	
16	1.56	8.57	5.59	9.17	34.02	25.28	67.20	9.84	4.18	2.22	1.95	1.44	
17	1.56	7.04	4.68	19.54	25.28	115.25	51.66	9.50	4.18	2.22	1.95	1.44	
18	1.44	4.84	5.30	17.29	34.87	102.51	39.52	9.50	4.02	2.22	1.95	1.32	
19	1.32	4.18	5.01	17.29	66.30	82.57	42.90	9.17	3.86	2.09	1.95	1.44	
20	1.20	4.02	3.54	10.81	82.57	70.85	39.03	7.29	3.70	2.09	1.95	1.44	
21	1.20	3.54	3.24	7.29	884.85	101.12	23.55	6.43	3.54	2.09	1.82	1.32	
22	1.09	3.39	3.24	4.34	396.27	82.57	36.31	27.76	4.02	2.09	1.82	1.32	
23	1.09	5.59	2.94	17.61	204.14	46.66	25.63	83.76	3.86	2.09	1.82	1.56	
24	1.09	38.15	2.94	43.40	217.01	41.89	16.90	143.10	3.70	2.09	1.82	1.56	
25	0.87	23.21	2.79	25.63	139.79	40.50	23.98	55.49	3.39	1.95	1.69	1.56	
26	0.56	17.29	2.79	72.69	101.12	30.39	20.36	41.89	3.39	1.95	1.69	1.56	
27	0.56	13.91	2.94	46.66	141.44	37.66	18.40	32.14	3.24	1.95	1.69	1.44	
28	0.47	15.73	2.94	47.89	118.13	33.08	16.90	25.28	3.09	1.95	1.95	1.44	
29	0.47	30.85	2.94	25.28	69.93	29.57	15.42	27.40	3.09	1.95		1.44	
30	0.47	17.61	1.56	14.66	38.63	36.69	13.91	25.28	3.09	1.95		1.44	
31		9.50		8.57	27.76		13.24		3.09	2.22		1.44	
Total	76.10	350.22	415.87	485.33	2891.94	2039.63	2525.12	1163.90	227.86	71.58	58.51	47.24	10353.30 Ton
Mean	2.54	11.30	13.86	15.66	93.29	67.99	81.46	38.80	7.35	2.31	2.09	1.52	
Max	22.79	129.98	47.27	72.69	884.85	237.65	369.87	173.77	22.79	3.39	2.50	1.82	884.85
Min	0.30	0.09	1.56	2.09	6.43	19.54	12.88	6.43	3.09	1.95	1.69	1.32	0.09

WATER YEAR 1998

PING RIVER BASIN

Nam Mae Tun at Ban Luang , Chiang Mai (P.64)

Location	Lat. 17°-47'-01" N., Long. 98°-22'-31" E., on right bank at the bridge on highway , Ban Luang , Amphoe Omkoi , Chiang Mai.
Drainage Area	336 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	52
R - Square	0.8151
Remarks	Continued Sediment Station

RID Computer Center, Processing : 24-AUG-2000 05:42:29.91

LQS/LQS02D/12

Station - Ban Luang, Omkoi, Chiang Mai, (P.64)
Stream - Mae Tun
River - Ping
River System - Ping River

Royal Irrigation Department
Thailand
Hydrology Division 220598
1.48730
QS = 4.7183 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.31	0.23	0.34	4.65	3.97	15.24	6.89	3.32	4.65	0.25	0.31	12.26	
2	0.31	0.23	0.31	6.11	4.65	20.67	6.89	3.32	2.66	0.25	0.31	2.10	
3	0.31	0.23	0.31	16.60	5.36	26.61	6.11	6.11	2.66	0.25	0.31	0.31	
4	0.31	0.23	0.28	35.72	6.11	28.24	6.11	134.26	2.10	0.25	0.31	0.25	
5	0.28	0.23	0.28	48.64	6.89	16.60	5.36	28.24	2.10	0.25	0.34	0.23	
6	0.28	0.23	0.28	39.88	8.54	15.24	4.65	12.26	1.58	0.25	0.34	0.20	
7	0.28	0.34	0.28	23.58	12.26	341.90	5.36	7.70	1.12	0.28	0.31	0.20	
8	0.28	0.34	0.28	13.23	25.14	109.44	6.89	5.36	0.71	0.28	0.28	0.15	
9	0.28	0.37	0.28	11.31	46.40	53.54	6.89	4.65	0.71	0.37	0.28	0.15	
10	0.28	0.37	0.23	16.60	25.14	64.95	9.40	4.65	0.71	0.37	0.28	0.15	
11	0.28	0.34	0.28	16.60	22.05	248.21	8.54	4.65	0.37	0.37	0.28	0.18	
12	0.25	4.65	0.25	17.89	20.67	73.75	12.26	1.58	0.37	0.34	0.28	0.18	
13	0.25	0.71	0.25	16.60	19.21	46.40	12.26	1.58	0.34	0.34	0.28	0.18	
14	0.25	6.89	0.34	12.26	14.22	29.76	11.31	1.58	0.34	0.34	0.31	0.15	
15	0.25	1.12	12.26	11.31	14.22	26.61	8.54	1.58	0.34	0.34	0.28	0.13	
16	0.25	0.31	0.34	10.39	13.23	20.67	8.54	1.58	0.34	0.34	0.28	0.13	
17	0.25	0.31	0.31	9.40	20.67	20.67	7.70	2.10	0.34	1.12	0.25	0.13	
18	0.25	4.65	0.71	7.70	31.71	20.67	7.70	2.10	0.34	1.58	0.25	0.07	
19	0.25	15.24	1.12	6.89	22.05	20.67	12.26	2.10	0.34	1.12	0.25	0.09	
20	0.25	5.36	2.10	5.36	15.24	25.14	7.70	1.12	0.34	1.12	0.23	0.11	
21	0.25	3.32	0.71	4.65	35.72	33.69	6.89	1.58	0.34	0.71	0.28	0.09	
22	0.25	2.66	1.12	3.97	76.88	25.14	6.11	3.32	0.34	0.71	0.23	0.09	
23	0.23	0.37	0.37	3.32	50.92	17.89	8.54	8.54	0.34	0.71	0.23	0.04	
24	0.23	0.34	1.58	4.65	37.78	13.23	5.36	6.11	0.34	0.37	0.23	0.04	
25	0.23	0.31	2.10	4.65	25.14	10.39	6.89	4.65	0.28	0.37	0.20	0.04	
26	0.23	3.97	2.66	5.36	16.60	10.39	3.32	2.66	0.25	0.34	0.18	0.03	
27	0.23	3.32	1.12	9.40	17.89	10.39	2.66	2.66	0.28	0.34	0.18	0.01	
28	0.23	3.32	1.58	6.89	14.22	10.39	3.32	2.66	0.25	0.34	0.15	0.04	
29	0.23	6.89	23.58	6.11	10.39	8.54	12.26	3.32	0.25	2.10		0.01	
30	0.23	3.97	5.36	8.54	9.40	8.54	6.89	3.32	0.25	1.12		0.01	
31		0.37		33.69	11.31		6.11		0.25	1.12		0.01	
Total	7.79	71.22	61.01	421.95	643.98	1373.57	229.71	268.66	25.63	18.04	7.44	17.76	3146.76 Ton
Mean	0.26	2.30	2.03	13.61	20.77	45.79	7.41	8.96	0.83	0.58	0.27	0.57	
Max	0.31	15.24	23.58	48.64	76.88	341.90	12.26	134.26	4.65	2.10	0.34	12.26	341.90
Min	0.23	0.23	0.23	3.32	3.97	8.54	2.66	1.12	0.25	0.25	0.15	0.01	0.01

WATER YEAR 1998

WANG RIVER BASIN

Wang River at Ban Lom Laeb, Lampang (W.3A)

Location	Lat. 17°-38'-29" N., Long. 99°-14'-04" E., on right bank about 30 meters upstream from Siriyong Bridge, Amphoe Thoen, Lampang.
Drainage Area	8,985 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.9410
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:26:10.81

LQS/LQS02D/12

Station - Ban Don Chai, Thoen, Lampang, (W.3A)
Stream - Wang
River - Wang
River System - Wang River

Royal Irrigation Department
Thailand
Hydrology Division 220598
1.41350
QS = 1.6941 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.89	0.96	2.92	39.98	45.46	49.91	148.82	68.92	15.37	5.00	1.94	0.32	
2	20.52	0.86	2.67	11.35	41.62	52.18	82.01	59.16	12.11	2.67	1.72	0.28	
3	15.37	0.86	2.43	22.85	36.76	54.47	63.95	54.47	12.11	7.37	1.72	0.69	
4	14.51	0.78	3.18	41.62	27.59	76.69	56.80	66.39	20.52	15.37	1.28	1.06	
5	21.68	0.69	3.74	54.47	36.76	104.25	56.80	63.95	19.44	11.35	1.28	0.86	
6	27.59	0.51	4.17	66.39	52.18	148.82	41.62	74.08	18.32	8.38	1.28	0.78	
7	35.18	0.43	4.58	84.70	47.67	718.47	35.18	76.69	16.20	6.90	1.17	21.68	
8	30.56	1.06	5.46	101.39	36.76	1476.18	35.18	74.08	15.37	5.94	0.86	1.06	
9	12.88	2.17	4.58	87.42	36.76	4998.76	59.16	56.80	15.37	7.37	3.18	2.17	
10	7.37	3.18	4.17	52.18	36.76	3621.69	52.18	43.28	13.71	4.17	2.92	1.06	
11	5.94	5.46	3.47	76.69	38.36	2249.51	49.91	36.76	12.88	3.74	2.43	1.28	
12	4.58	5.00	2.43	98.55	79.34	1636.52	76.69	32.08	12.88	3.18	2.17	1.28	
13	3.18	3.47	4.17	128.50	135.18	1277.33	92.93	26.35	11.35	3.47	1.72	0.86	
14	2.43	135.18	6.40	131.83	104.25	1001.70	121.92	21.68	9.83	4.58	1.17	1.72	
15	1.94	5.94	7.37	107.14	95.73	765.29	141.95	19.44	7.37	5.00	1.17	29.07	
16	2.43	4.17	5.00	56.80	92.93	501.19	128.50	16.20	6.40	4.17	1.17	29.07	
17	2.67	2.17	3.18	41.62	92.93	627.48	115.94	15.37	7.37	3.74	1.28	26.35	
18	3.18	148.82	1.72	39.98	82.01	946.39	98.55	21.68	5.94	3.47	1.48	23.98	
19	3.18	41.62	1.48	39.98	82.01	983.16	98.55	18.32	6.40	2.43	1.17	22.85	
20	3.18	19.44	1.28	47.67	159.39	1431.27	311.49	15.37	5.46	1.94	1.06	22.85	
21	3.74	12.88	1.06	66.39	263.14	1353.66	115.94	15.37	4.58	1.94	0.86	21.68	
22	3.18	16.20	0.69	54.47	257.92	1532.89	101.39	19.44	5.00	1.72	0.78	19.44	
23	2.92	14.51	0.23	43.28	414.98	1320.78	90.17	25.19	4.58	1.28	0.78	18.32	
24	2.67	12.11	0.51	41.62	403.06	955.54	82.01	30.56	4.17	1.06	1.28	22.85	
25	2.17	11.35	1.06	38.36	227.23	695.38	59.16	33.62	4.17	1.28	2.67	33.62	
26	1.72	9.08	1.94	30.56	197.71	520.27	52.18	29.07	3.74	1.48	1.94	90.17	
27	1.28	7.89	2.67	36.76	152.29	420.98	54.47	26.35	3.74	5.46	0.96	33.62	
28	0.96	7.37	3.18	30.56	128.50	356.42	43.28	21.68	2.17	5.00	0.60	21.68	
29	0.86	6.40	4.58	36.76	95.73	227.23	43.28	19.44	3.74	3.74		12.11	
30	0.96	5.00	4.58	39.98	68.92	197.71	52.18	17.28	3.18	2.92		8.38	
31		3.18		41.62	52.18		74.08		4.17	2.43		7.89	
Total	246.72	488.74	94.90	1791.47	3622.11	30302.12	2636.27	1099.07	287.64	138.55	42.04	479.03	41228.66 Ton
Mean	8.22	15.77	3.16	57.79	116.84	1010.07	85.04	36.64	9.28	4.47	1.50	15.45	
Max	35.18	148.82	7.37	131.83	414.98	4998.76	311.49	76.69	20.52	15.37	3.18	90.17	4998.76
Min	0.86	0.43	0.23	11.35	27.59	49.91	35.18	15.37	2.17	1.06	0.60	0.28	0.23

WATER YEAR 1998

WANG RIVER BASIN

Wang River at Ban Wang Man, Tak (W.4A)

Location	Lat. 17°-12'-22" N., Long. 99°-06'-08" E., on right bank about 200 meters upstream from the bridge on highway, Amphoe Sam Ngao, Tak.
Drainage Area	10,507 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1989 - Cont'd
Actual Measurement	1989 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	0.8754
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:34.22

LQS/LQS02D/12

Station - Ban Wang Man, Sam Ngao, Tak, (W.4A)
Stream - Wang
River - Wang
River System - Wang River

Royal Irrigation Department
Thailand
Hydrology Division 221099
1.24140
QS = 3.0909 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	1.02	14.90	0.00	31.93	52.09	170.16	46.95	27.76	8.41	2.53	0.00	
2	0.00	0.75	9.64	0.00	31.09	53.09	129.78	53.09	26.93	8.41	2.53	0.00	
3	0.00	0.58	8.41	0.00	31.93	56.24	107.56	55.16	26.12	6.06	2.27	0.00	
4	0.00	0.00	6.95	0.00	32.78	57.25	84.01	57.25	25.31	5.50	2.16	0.00	
5	25.31	0.00	5.76	0.00	27.76	67.71	71.72	58.54	24.50	3.21	1.91	0.00	
6	25.31	0.00	3.88	133.36	26.12	71.72	59.84	57.25	23.70	3.21	1.91	0.00	
7	22.91	0.00	3.05	74.42	30.25	101.17	54.15	57.25	22.91	3.21	1.91	0.00	
8	21.33	0.00	2.16	39.02	33.63	129.78	51.03	57.25	22.12	3.21	1.91	0.00	
9	37.08	0.00	1.91	39.02	36.21	617.32	50.03	56.24	21.33	3.21	1.78	0.00	
10	31.93	0.00	2.02	40.98	34.49	1381.16	54.15	55.16	20.55	2.90	1.78	0.00	
11	25.31	0.00	2.42	44.94	32.78	2373.83	56.24	50.03	19.39	3.60	1.64	0.00	
12	17.65	0.00	1.64	81.25	31.93	2033.21	66.39	43.98	17.12	3.72	1.64	0.00	
13	14.90	0.00	3.21	50.03	34.49	1467.78	73.07	40.98	13.81	3.88	1.31	0.00	
14	11.15	0.00	3.48	63.75	39.02	1151.34	82.62	40.98	12.24	4.12	1.31	0.00	
15	9.02	70.38	9.64	74.42	44.94	864.27	90.18	40.98	10.66	4.12	1.12	0.00	
16	7.81	67.71	8.41	70.38	54.15	679.16	90.18	40.98	9.64	4.12	1.08	0.00	
17	6.63	109.17	7.81	58.54	63.75	431.18	91.73	40.98	9.64	4.12	1.02	0.00	
18	5.50	12.74	3.48	46.95	63.75	415.20	91.73	37.08	9.64	3.72	1.02	0.00	
19	3.88	20.55	1.78	41.99	63.75	492.11	87.08	31.93	9.64	2.53	1.02	0.00	
20	4.94	37.08	1.12	39.96	63.75	734.33	107.56	28.58	8.74	2.02	0.93	0.00	
21	5.50	37.08	0.11	38.08	65.07	901.72	135.20	28.58	8.74	1.91	0.84	0.00	
22	3.72	34.49	0.00	40.98	74.42	946.48	153.59	29.41	8.41	1.91	0.84	0.00	
23	3.48	32.78	0.00	41.99	96.43	985.17	126.22	29.41	7.81	1.91	0.72	0.00	
24	3.05	30.25	0.00	36.21	151.54	1024.16	91.73	29.41	7.49	1.78	0.00	0.00	
25	2.64	18.25	0.00	32.78	153.59	847.09	75.78	31.09	6.63	1.78	0.00	0.00	
26	2.42	18.25	0.00	30.25	140.58	593.23	70.38	31.09	6.06	1.54	0.00	0.00	
27	2.02	16.53	0.00	28.58	127.96	467.55	58.54	31.09	5.20	1.44	0.00	0.00	
28	1.78	12.24	0.00	28.58	112.40	314.36	53.09	32.78	4.65	1.78	0.00	0.00	
29	1.31	11.15	0.00	25.31	90.18	240.80	50.03	31.09	4.65	2.53		7.81	
30	1.18	9.02	0.00	27.76	69.05	232.78	46.95	28.58	6.32	2.53		28.58	
31		8.09		30.25	52.09		44.94		7.81	2.53		27.76	
Total	297.76	548.11	101.78	1259.78	1941.81	19783.28	2575.66	1253.17	435.52	104.92	35.18	64.15	28401.12 Ton
Mean	9.93	17.68	3.39	40.64	62.64	659.44	83.09	41.77	14.05	3.38	1.26	2.07	
Max	37.08	109.17	14.90	133.36	153.59	2373.83	170.16	58.54	27.76	8.41	2.53	28.58	2373.83
Min	0.00	0.00	0.00	0.00	26.12	52.09	44.94	28.58	4.65	1.44	0.00	0.00	0.00

WATER YEAR 1998

WANG RIVER BASIN

Nam Mae Soi at Ban Nong Nao, Lampang (W.17)

Location	Lat. 18°-43'-16" N., Long. 99°-34'-12" E., on right bank at the bridge of Lampang - Wang Nua Road, Ban Nong Nao, Amphoe Chae Hom, Lampang
Drainage Area	619 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1996 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.8810
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:26:16.64

LQS/LQS02D/12

Station - Ban Nong Nao, A. Chae Hom, Lampang, (W.17)
Stream - Nam Mae Soi
River - Wang
River System - Wang River

Royal Irrigation Department
Thailand
Hydrology Division 220598
1.33559
QS = 3.8167 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.63	0.47	12.77	3.51	1.84	31.01	9.31	4.92	10.15	0.57	0.90	0.87	
2	0.57	0.39	11.88	2.24	90.02	36.30	6.15	3.97	8.49	0.63	0.90	0.90	
3	0.57	0.28	6.91	2.24	60.03	26.11	4.92	3.97	7.69	0.66	0.90	0.90	
4	0.57	0.28	4.44	7.69	23.18	23.18	4.44	53.70	6.91	0.66	0.90	0.90	
5	0.57	0.28	3.07	82.00	11.88	18.95	4.44	49.58	7.69	0.63	0.90	0.90	
6	0.57	0.33	2.65	122.43	21.75	140.29	3.97	38.10	6.91	0.60	0.83	0.87	
7	0.63	0.28	2.24	60.03	13.67	239.23	4.44	26.11	6.15	0.60	0.83	0.87	
8	0.63	0.28	1.84	21.75	16.26	292.66	4.44	16.26	5.42	0.57	0.87	0.87	
9	0.60	0.28	0.98	16.26	26.11	639.88	3.97	13.67	5.42	0.83	0.87	0.87	
10	0.54	0.28	0.83	12.77	102.41	277.74	5.42	13.67	5.42	0.80	0.83	0.87	
11	0.54	0.28	0.83	16.26	112.31	174.53	13.67	16.26	4.44	0.80	0.83	0.83	
12	0.47	10.15	0.70	11.88	41.78	112.31	17.59	13.67	3.07	0.80	0.83	0.83	
13	0.47	11.88	0.70	9.31	21.75	53.70	14.95	14.95	2.65	0.76	0.83	0.83	
14	0.44	9.31	0.57	7.69	11.88	41.78	12.77	13.67	2.24	0.76	0.83	0.83	
15	0.44	8.49	0.57	4.92	9.31	45.54	11.88	13.67	0.98	0.83	0.83	0.83	
16	0.44	10.15	0.57	4.44	23.18	45.54	9.31	12.77	0.98	0.83	0.83	0.83	
17	0.44	10.15	0.57	4.44	24.64	49.58	8.49	10.15	0.98	0.83	0.83	0.83	
18	0.44	17.59	0.57	3.97	24.64	57.90	11.01	10.15	1.12	0.90	0.83	0.83	
19	0.44	53.70	0.44	3.51	32.75	39.93	39.93	13.67	0.98	0.90	0.83	0.83	
20	0.51	62.18	0.33	3.97	49.58	49.58	53.70	12.77	0.98	0.90	0.83	0.83	
21	0.51	60.03	0.33	3.51	43.65	38.10	23.18	11.88	1.12	0.83	0.83	0.83	
22	0.51	45.54	0.83	3.51	38.10	26.11	14.95	13.67	0.98	0.90	0.83	0.83	
23	0.51	24.64	0.83	3.07	36.30	23.18	6.91	18.95	1.47	0.90	0.83	0.83	
24	0.51	17.59	0.83	2.65	76.75	20.34	6.91	17.59	1.12	0.90	0.87	0.83	
25	0.51	31.01	0.83	2.24	45.54	14.95	6.91	11.88	1.12	0.90	0.87	0.83	
26	0.51	20.34	0.98	1.84	29.30	11.88	4.92	10.15	0.98	0.94	0.87	0.80	
27	0.51	18.95	0.98	2.24	60.03	6.91	4.44	10.15	0.98	0.98	0.87	0.80	
28	0.51	20.34	0.83	2.65	34.51	11.88	4.92	8.49	0.70	0.94	0.87	0.76	
29	0.44	16.26	1.47	2.65	14.95	11.01	5.42	8.49	0.57	0.94		0.76	
30	0.47	11.88	2.65	2.65	11.88	10.15	4.92	8.49	0.44	0.94		0.73	
31		8.49		2.65	12.77		4.92		0.57	0.94		0.63	
Total	15.50	472.10	64.02	430.97	1122.75	2570.25	333.20	475.42	98.72	24.97	23.87	25.75	5657.52 Ton
Mean	0.52	15.23	2.13	13.90	36.22	85.68	10.75	15.85	3.18	0.81	0.85	0.83	
Max	0.63	62.18	12.77	122.43	112.31	639.88	53.70	53.70	10.15	0.98	0.90	0.90	639.88
Min	0.44	0.28	0.33	1.84	1.84	6.91	3.97	3.97	0.44	0.57	0.83	0.63	0.28

WATER YEAR 1998

WANG RIVER BASIN

Nam Mae Tui at Ban Tha Lo, Lampang (W.20)

Location	Lat. 18°-18'-35" N., Long. 99°-27'-29" E., on left bank at the bridge of Lampang - Hang Chat Highway, Amphoe Muang, Lampang.
Drainage Area	1740 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1996 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	20
R - Square	0.8392
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:26:26.70

LQS/LQS02D/12

Station - Ban Tha Lo, A. Muang, Lampang, (W.20)
Stream - Mae Tui
River - Mae Tui
River System - Wang River

Royal Irrigation Department
Thailand
Hydrology Division 250598

QS = 1.25240 * 4.5865 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.19	0.01	0.14	298.32	4.08	8.65	8.20	8.20	5.17	5.17	0.14	2.02	
2	0.19	0.01	0.14	18.99	26.77	19.76	4.41	6.87	3.36	5.17	0.26	3.04	
3	0.19	0.01	0.14	6.87	38.26	19.76	2.67	4.41	3.36	1.59	1.41	1.28	
4	0.19	0.01	0.14	10.93	48.18	19.76	1.59	6.00	3.36	1.28	1.73	1.10	
5	0.19	0.01	0.16	18.23	9.11	22.18	1.28	13.02	3.04	2.67	2.02	1.10	
6	0.19	0.01	0.16	34.34	6.87	188.80	1.10	11.62	2.67	2.67	0.97	0.97	
7	0.14	0.03	0.16	28.92	3.04	291.14	0.97	8.20	1.73	2.67	0.32	0.97	
8	0.14	0.06	0.16	15.18	3.04	633.81	1.10	6.43	3.04	3.04	0.26	1.10	
9	0.14	0.06	0.16	30.00	1.73	485.68	1.73	4.82	1.59	1.73	0.19	1.28	
10	0.14	0.06	0.14	45.34	5.58	390.84	3.04	4.82	1.28	1.73	0.19	1.28	
11	0.19	0.11	0.14	56.82	6.43	320.06	4.41	4.82	0.97	2.67	0.19	1.41	
12	0.19	0.11	0.19	41.01	6.87	200.91	6.87	4.08	0.85	3.04	0.19	1.41	
13	0.32	0.11	0.32	18.99	13.02	138.90	9.58	4.08	0.85	1.59	0.19	0.26	
14	0.32	0.03	0.32	8.65	14.45	114.14	6.87	5.17	0.43	0.85	0.22	0.29	
15	0.32	0.03	0.32	6.87	13.73	76.30	4.41	5.17	0.32	0.26	0.26	0.19	
16	0.19	0.03	0.32	4.41	13.73	45.34	4.41	4.08	0.32	0.19	0.26	0.26	
17	0.19	0.03	0.69	3.69	22.18	55.01	4.41	3.36	0.32	0.19	0.97	0.26	
18	0.19	1.41	0.69	6.43	38.26	46.71	5.17	3.36	0.29	0.19	0.57	0.26	
19	0.19	0.97	0.69	7.30	66.02	42.44	5.17	5.17	0.29	0.19	0.69	0.26	
20	0.19	0.97	0.97	5.58	72.07	93.67	5.17	4.82	0.29	0.16	0.97	0.29	
21	0.19	0.19	1.41	4.08	162.93	89.27	5.17	4.41	0.29	0.32	0.85	0.29	
22	0.19	0.11	4.82	3.36	168.61	43.89	6.00	7.75	0.29	1.28	0.69	0.29	
23	0.19	0.06	4.41	3.36	33.22	27.84	5.17	7.75	0.29	0.97	0.43	3.36	
24	0.19	0.06	4.41	3.36	18.99	21.39	3.36	6.43	0.29	0.85	0.29	5.17	
25	0.19	0.06	4.41	3.36	15.91	21.39	3.36	6.43	0.32	0.43	0.26	3.04	
26	0.16	0.19	4.41	3.36	11.62	20.61	3.04	5.17	0.32	0.22	0.29	1.73	
27	0.16	0.14	4.41	3.36	7.30	15.91	2.02	4.41	0.32	0.16	0.26	1.10	
28	0.14	0.14	5.17	6.43	6.00	19.76	9.58	5.17	0.32	0.14	0.57	0.97	
29	0.14	0.14	6.43	7.30	5.17	19.76	13.02	4.82	0.32	0.16		0.69	
30	0.06	0.14	31.01	6.43	1.73	12.31	9.11	5.17	0.97	0.14		0.32	
31		0.14		4.82	13.02		7.75		5.17	0.14		0.29	
Total	5.60	5.44	77.04	716.09	857.92	3505.99	150.14	176.01	42.43	41.86	15.64	36.28	5630.44 Ton
Mean	0.19	0.18	2.57	23.10	27.67	116.87	4.84	5.87	1.37	1.35	0.56	1.17	
Max	0.32	1.41	31.01	298.32	168.61	633.81	13.02	13.02	5.17	5.17	2.02	5.17	633.81
Min	0.06	0.01	0.14	3.36	1.73	8.65	0.97	3.36	0.29	0.14	0.14	0.19	0.01

WATER YEAR 1998

YOM RIVER BASIN

Yom River at Ban Nam Khong, Phrae (Y.1C)

Location	Lat. 18°-07'-59" N., Long. 100°-07'-39" E., on right bank about 5 meters downstream from Phathana Phak Nua 8 bridge at Ban Nam Khong, Amphoe Muang, Phrae.
Drainage Area	7,624 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	19
R - Square	0.9352
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:26:33.49

LQS/LQS02D/12

Station - Ban Nam Khong, Muang, Phrae, (Y.1C)
Stream - Yom
River - Yom
River System - Yom River

Royal Irrigation Department
Thailand
Hydrology Division 250598
1.27410
QS = 3.4418 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.81	22.40	47.53	17.60	85.10	267.87	343.82	94.38	73.05	11.63	10.50	6.26	
2	4.81	20.13	100.68	42.19	94.38	411.26	304.42	85.10	73.05	11.63	11.63	7.28	
3	4.34	18.86	166.81	52.99	85.10	789.90	263.07	82.05	70.10	11.63	9.40	6.77	
4	4.34	17.60	244.05	58.58	79.02	851.26	239.35	79.02	55.77	11.63	9.40	6.77	
5	3.89	18.86	155.07	125.11	82.05	643.39	220.72	82.05	50.24	10.50	8.32	6.26	
6	5.28	29.51	110.85	158.97	76.02	643.39	199.48	79.02	44.84	10.50	7.80	6.77	
7	23.39	27.09	55.77	225.35	67.18	2241.61	186.97	76.02	50.24	11.63	3.01	6.77	
8	21.42	27.09	29.51	299.13	58.58	5954.60	191.12	76.02	31.97	17.60	1.42	6.26	
9	50.24	20.13	248.78	225.35	79.02	7047.64	216.44	70.10	27.09	11.63	6.77	5.77	
10	105.70	27.09	132.37	195.29	103.87	6724.77	203.69	58.58	29.51	10.50	7.28	5.77	
11	85.10	24.72	58.58	207.92	125.11	11480.32	186.97	52.99	27.09	10.50	9.40	5.77	
12	55.77	20.13	37.00	174.73	178.72	10945.59	191.12	52.99	24.72	8.32	8.32	5.77	
13	44.84	17.60	34.46	132.37	182.83	5729.82	216.44	47.53	22.40	12.78	3.44	6.26	
14	42.19	16.37	29.51	97.52	162.88	2911.28	199.48	47.53	22.40	11.63	3.44	6.77	
15	37.00	17.60	24.72	85.10	143.53	1462.85	182.83	44.84	22.40	11.63	5.28	6.26	
16	31.97	27.09	20.13	79.02	128.73	1141.65	174.73	42.19	24.72	10.50	5.77	5.77	
17	34.46	34.46	18.86	70.10	117.94	1390.69	166.81	39.58	22.40	10.50	6.26	5.28	
18	42.19	64.29	15.15	64.29	136.04	1557.82	178.72	37.00	22.40	8.32	6.77	5.28	
19	55.77	67.18	13.95	52.99	373.60	1277.37	443.43	39.58	22.40	8.32	7.28	5.28	
20	52.99	94.38	13.95	50.24	701.22	1473.34	404.89	47.53	22.40	9.40	3.89	5.77	
21	52.99	79.02	12.78	52.99	1115.28	2004.08	309.72	37.00	22.40	8.32	3.01	5.77	
22	58.58	85.10	11.63	55.77	1004.42	1611.12	267.87	39.58	20.13	8.32	6.77	5.77	
23	52.99	88.17	11.63	58.58	767.52	930.52	234.66	47.53	18.86	7.80	7.28	5.28	
24	73.05	76.02	9.40	58.58	551.78	723.17	199.48	47.53	17.60	6.26	8.32	5.77	
25	55.77	67.18	9.40	55.77	510.56	643.39	170.76	52.99	15.15	6.26	8.32	5.77	
26	44.84	61.42	9.40	52.99	443.43	558.72	151.21	79.02	13.95	3.44	6.26	5.77	
27	37.00	58.58	8.32	58.58	483.46	503.75	155.07	85.10	13.95	6.26	6.77	6.26	
28	31.97	58.58	11.63	64.29	544.87	456.69	170.76	85.10	13.95	15.15	6.26	6.77	
29	27.09	52.99	13.95	70.10	424.06	411.26	143.53	76.02	9.40	29.51		7.28	
30	24.72	44.84	17.60	67.18	293.87	385.91	132.37	73.05	10.50	10.50		6.77	
31		44.84		67.18	278.21		107.35		10.50	9.40		44.84	
Total	1169.50	1329.32	1673.47	3076.85	9478.38	73175.03	6757.28	1857.02	905.58	332.00	188.37	228.94	100171.74 Ton
Mean	38.98	42.88	55.78	99.25	305.75	2439.17	217.98	61.90	29.21	10.71	6.73	7.39	
Max	105.70	94.38	248.78	299.13	1115.28	11480.32	443.43	94.38	73.05	29.51	11.63	44.84	11480.32
Min	3.89	16.37	8.32	17.60	58.58	267.87	107.35	37.00	9.40	3.44	1.42	5.28	1.42

WATER YEAR 1998

YOM RIVER BASIN

Yom River at Ban Kaeng Luang, Sukhothai (Y.6)

Location	Lat. 17-26-03 N., Long. 99-47-32 E., on left bank about 150 meters upstream from Kaeng Luang, Amphoe Si Satchanalai, Sukhothai.
Drainage Area	12,658 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1978 - 1987, 1997 - Cont'd
Actual Measurement	1963 - 1987, 1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.9047
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:51.12

LQS/LQS02D/12

Station - Ban Kaeng Luang, Si Satchanalai, Sukhothai, (Y.6)
Stream - Yom
River - Yom
River System - Yom River

Royal Irrigation Department
Thailand
Hydrology Division 210699
1.60230
QS = 0.4832 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.9	6.6	23.4	15.2	54.1	459.8	392.9	92.9	40.1	4.5	0.0	0.0	
2	4.3	5.7	19.4	34.3	63.9	429.6	344.1	84.8	36.6	3.4	0.0	0.0	
3	4.1	4.7	23.4	63.9	147.9	459.8	294.4	76.9	33.2	3.0	0.0	0.0	
4	3.4	3.8	17.2	88.8	128.4	444.6	259.0	71.2	32.0	2.8	0.0	0.0	
5	3.0	3.2	16.5	88.8	115.1	1472.9	221.9	80.8	30.2	2.8	0.7	0.0	
6	2.8	2.7	29.3	159.5	115.1	2984.0	187.7	92.9	29.3	2.7	1.1	0.0	
7	5.4	2.7	78.8	208.8	92.9	2372.6	159.5	78.8	28.4	2.1	3.6	0.0	
8	4.1	2.5	58.6	253.3	99.9	6998.5	139.4	75.0	24.2	2.5	3.6	0.0	
9	3.6	2.3	41.3	200.3	179.4	10971.1	133.9	71.2	21.7	2.1	2.8	0.0	
10	3.8	2.8	32.0	226.4	649.1	12205.5	128.4	69.4	18.7	2.1	2.1	0.0	
11	3.2	3.8	20.9	392.9	544.0	9786.8	145.1	62.1	17.9	2.0	1.8	0.0	
12	3.2	3.6	15.8	400.1	407.4	12289.5	183.5	51.5	15.8	2.1	1.4	0.0	
13	9.2	5.7	63.9	282.4	337.8	15057.2	171.3	48.8	12.5	2.0	2.1	0.0	
14	25.0	34.3	37.7	217.5	429.6	10491.3	147.9	46.3	11.0	1.7	2.7	0.0	
15	19.4	22.5	25.9	147.9	264.8	5423.2	163.4	41.3	10.1	1.5	2.1	0.0	
16	14.1	17.2	17.2	112.5	191.8	3048.1	163.4	40.1	9.2	1.1	2.0	0.0	
17	11.5	10.1	12.5	84.8	145.1	1875.7	145.1	40.1	7.8	0.8	1.4	0.0	
18	9.6	167.3	10.1	73.1	109.9	1705.7	139.4	37.7	7.4	0.7	1.3	0.0	
19	10.1	92.9	7.8	264.8	183.5	2794.8	136.6	35.4	7.4	0.5	0.5	0.0	
20	8.3	43.8	6.6	179.4	179.4	2920.4	221.9	33.2	7.4	0.4	0.2	0.0	
21	6.2	52.8	5.4	90.8	306.5	2640.7	378.6	29.3	7.0	0.2	0.0	0.0	
22	8.3	51.5	4.7	62.1	1381.3	3210.6	378.6	29.3	6.6	0.2	0.0	0.0	
23	11.5	42.5	4.1	46.3	2671.2	2857.3	288.4	29.3	5.4	0.1	0.0	0.0	
24	12.0	38.9	2.7	36.6	2984.0	2147.3	213.2	35.4	5.4	0.1	0.0	0.0	
25	10.1	33.2	2.1	33.2	2271.4	1381.3	179.4	32.0	5.4	0.1	0.0	0.0	
26	10.1	28.4	1.8	30.2	1381.3	957.1	147.9	31.1	5.4	0.1	0.1	0.0	
27	9.6	48.8	1.5	28.4	901.7	749.3	131.1	32.0	5.2	0.1	0.0	0.0	
28	11.0	45.0	1.4	31.1	619.8	619.8	115.1	28.4	4.7	0.1	0.0	0.0	
29	10.5	33.2	1.7	31.1	459.8	525.7	102.3	32.0	4.3	0.1		0.0	
30	8.3	37.7	3.6	32.0	422.1	459.8	104.9	37.7	2.8	0.1		0.0	
31		32.0		55.5	385.7		104.9		3.4	0.1		0.0	
Total	250.6	882.2	587.3	3972.0	18223.9	119740.0	6023.2	1546.9	456.5	42.1	29.5	0.0	151754.2 Ton
Mean	8.4	28.5	19.6	128.1	587.9	3991.3	194.3	51.6	14.7	1.4	1.1	0.0	
Max	25.0	167.3	78.8	400.1	2984.0	15057.2	392.9	92.9	40.1	4.5	3.6	0.0	15057.2
Min	2.8	2.3	1.4	15.2	54.1	429.6	102.3	28.4	2.8	0.1	0.0	0.0	0.0

WATER YEAR 1998

YOM RIVER BASIN

Yom River at Bang Rakam, Phitsanulok (Y.16)

Location	Lat. 16-45-35 N., Long. 100-07-40 E., on right bank about 58 meters upstream from the old staff gage, Amphoe Bang Rakam, Phitsanulok.
Drainage Area	20,841 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1996 - 1998
Number of observation	28
R - Square	0.7800
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:56.21

LQS/LQS02D/12

Station - Bang Rakam, Bang Rakam, Phisanulok, (Y.16)
Stream - Yom
River - Yom
River System - Yom River

Royal Irrigation Department
Thailand
Hydrology Division 211099
0.76890
QS = 22.8450 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	11.29	30.24	172.17	7.62	312.68	794.96	1400.18	539.47	199.50	16.98	4.47	0.00	
2	11.29	31.52	143.58	4.47	316.68	792.66	1389.77	480.06	201.42	16.98	3.28	0.00	
3	11.29	31.52	126.69	52.35	322.64	779.01	1376.77	440.74	222.02	15.42	6.63	0.00	
4	11.29	31.52	116.70	116.70	332.66	765.29	1374.21	417.53	223.88	12.99	4.47	0.00	
5	11.29	31.52	118.20	442.83	330.53	756.11	1350.82	405.23	223.88	12.99	4.47	0.00	
6	11.29	20.71	115.30	606.64	320.65	749.22	1332.59	403.30	216.41	12.99	4.47	0.00	
7	10.41	12.15	107.88	615.79	306.67	749.22	1330.00	397.44	199.50	12.15	4.47	0.00	
8	10.41	6.63	100.31	703.14	296.56	785.81	1285.77	385.47	185.99	12.15	4.47	0.00	
9	10.41	4.47	95.78	737.63	286.92	830.98	1259.53	379.52	168.24	12.15	4.47	0.00	
10	10.41	1.92	83.19	763.03	294.52	882.63	1235.78	363.42	133.77	12.15	3.28	0.00	
11	9.51	0.00	78.26	792.66	330.53	925.89	1222.52	359.36	130.97	12.15	1.92	0.00	
12	9.51	0.00	70.00	813.03	387.50	953.59	1190.53	397.44	130.97	12.15	1.92	0.00	
13	9.51	0.00	61.43	815.25	504.35	971.06	1174.44	355.28	129.62	11.29	0.00	0.00	
14	8.58	0.00	57.74	823.09	568.31	1008.18	1148.39	316.68	126.69	10.41	0.00	0.00	
15	8.58	0.00	56.01	830.98	606.64	1015.55	1109.06	288.72	122.47	9.51	0.00	0.00	
16	8.58	0.00	56.01	823.09	622.63	1023.17	1059.07	263.64	120.98	10.41	0.00	0.00	
17	8.58	0.00	56.01	806.23	618.08	1061.62	1041.17	254.58	118.20	12.15	0.00	0.00	
18	8.58	0.00	52.35	732.99	588.20	1122.22	995.83	249.20	106.34	10.41	0.00	0.00	
19	110.85	76.68	52.35	696.29	579.31	1209.23	948.55	249.20	95.78	7.62	0.00	0.00	
20	101.88	88.03	54.12	677.85	592.82	1264.79	900.56	252.79	91.18	7.62	0.00	0.00	
21	92.68	133.77	54.12	588.20	599.74	1304.04	856.92	242.06	71.62	7.62	0.00	0.00	
22	81.52	174.18	40.12	530.76	618.08	1335.18	815.25	245.68	48.61	6.63	0.00	0.00	
23	56.01	185.99	42.47	480.06	652.60	1358.65	774.45	261.87	31.52	6.63	0.00	0.00	
24	42.47	185.99	42.47	417.53	714.59	1371.65	751.50	278.01	28.94	6.63	0.00	0.00	
25	31.52	185.99	40.12	393.48	779.01	1387.16	730.70	270.93	23.54	5.58	0.00	0.00	
26	23.54	185.99	28.94	363.42	833.54	1394.98	703.14	252.79	22.14	5.58	0.00	0.00	
27	20.71	189.90	22.14	351.19	864.65	1405.38	677.85	272.69	19.24	5.58	0.00	0.00	
28	28.94	191.85	23.54	334.70	869.83	1407.98	652.60	243.87	17.75	5.58	0.00	0.00	
29	30.24	174.18	12.15	322.64	849.17	1407.98	631.72	222.02	18.50	5.58		0.00	
30	30.24	180.16	9.51	316.68	813.03	1405.38	597.44	210.85	18.50	5.58		0.00	
31		184.02		314.68	804.01		566.10		16.98	5.58		0.00	
Total	831.41	2338.93	2089.66	16275.00	16917.13	32219.57	31883.21	9699.84	3465.15	307.24	48.32	0.00	116075.48 Ton
Mean	27.71	75.45	69.66	525.00	545.71	1073.99	1028.49	323.33	111.78	9.91	1.73	0.00	
Max	110.85	191.85	172.17	830.98	869.83	1407.98	1400.18	539.47	223.88	16.98	6.63	0.00	1407.98
Min	8.58	0.00	9.51	4.47	286.92	749.22	566.10	210.85	16.98	5.58	0.00	0.00	0.00

WATER YEAR 1998

YOM RIVER BASIN

Nam Pi at Ban Mang, Phayao (Y.24)

Location	Lat. 18-53-04 N., Long. 100-17-24 E., on right bank upstream of the bridge of Pong Sanuk - Chiang Muan Road, Ban Mang, Amphoe Chiang Muan, Phayao.
Drainage Area	597 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	36
R - Square	0.9125
Remarks	Continued Sediment Station

RID Computer Center, Processing : 24-AUG-2000 05:42:40.31

LQS/LQS02D/12

Station - Ban Mang, Chiang Muan, Phayao, (Y.24)
Stream - Nam Pi
River - Yom
River System - Yom River

Royal Irrigation Department
Thailand
Hydrology Division 250596

QS = 4.3646 QW ^ 1.22489

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.17	0.06	0.26	2.77	3.22	8.72	5.40	1.04	1.60	13.21	0.04	0.06	
2	0.17	0.06	0.26	2.01	3.22	74.42	4.91	1.04	1.60	12.62	0.04	0.06	
3	0.17	0.17	0.29	2.01	3.22	123.33	4.91	1.04	1.60	11.98	0.04	0.06	
4	0.17	0.17	0.39	4.47	3.22	22.61	4.91	1.04	1.60	11.34	0.04	0.06	
5	0.17	0.17	0.29	8.72	2.77	13.87	4.47	1.04	1.60	11.34	0.04	0.06	
6	0.17	0.17	0.23	8.24	2.77	548.01	4.47	0.84	1.60	9.77	0.04	0.06	
7	1.46	0.17	0.20	6.30	2.77	299.61	4.05	0.84	1.60	5.40	0.04	0.06	
8	0.43	0.14	0.20	6.30	2.01	218.89	3.63	0.84	1.60	3.22	0.06	0.06	
9	0.23	0.14	0.20	5.85	2.01	282.39	3.63	0.84	1.42	1.60	0.06	0.04	
10	0.17	0.14	0.17	4.47	2.01	739.62	3.63	0.84	1.42	0.50	0.06	0.04	
11	0.17	0.11	0.17	2.77	7.29	233.90	3.63	0.84	1.42	0.17	0.06	0.04	
12	0.17	0.11	0.17	2.01	4.91	105.41	3.63	1.04	1.42	0.17	0.06	0.04	
13	0.23	0.11	0.17	2.01	3.22	50.32	3.63	1.04	1.42	0.14	0.06	0.04	
14	0.23	0.11	0.17	2.01	2.38	35.85	3.63	1.42	1.42	0.11	0.06	0.04	
15	0.20	0.11	0.17	2.01	2.01	29.81	2.77	1.42	1.42	0.11	0.06	0.04	
16	0.43	0.11	0.17	2.01	2.01	21.03	2.77	1.60	1.42	0.11	0.06	0.04	
17	0.33	0.11	0.17	2.01	2.38	38.07	2.77	1.60	1.21	0.08	0.06	0.04	
18	0.29	0.23	0.17	2.01	4.91	83.80	2.38	1.60	1.21	0.08	0.06	0.04	
19	0.26	0.23	0.11	2.01	5.40	35.85	9.27	2.01	1.21	0.04	0.06	0.04	
20	0.26	0.20	0.11	1.60	109.84	30.80	4.05	2.01	1.21	0.02	0.06	0.04	
21	0.26	0.20	0.08	1.60	61.07	17.87	2.01	2.77	1.21	0.00	0.06	0.04	
22	0.23	0.20	0.08	1.60	19.40	15.20	2.01	2.38	1.21	0.00	0.06	0.04	
23	0.20	0.20	0.06	1.60	15.88	11.98	2.01	2.01	1.21	0.00	0.06	0.02	
24	0.17	0.20	0.04	1.42	13.87	11.34	2.01	2.01	2.01	0.00	0.06	0.02	
25	0.11	0.20	0.06	1.42	13.87	11.34	2.01	2.01	2.01	0.02	0.06	2.77	
26	0.11	0.20	0.06	269.68	12.62	11.98	1.82	2.01	3.22	0.02	0.06	1.42	
27	0.11	0.20	13.21	109.84	9.77	11.98	1.82	2.01	4.91	0.02	0.06	1.21	
28	0.08	0.20	28.83	31.80	8.24	10.83	1.82	2.01	6.76	0.02	0.06	0.33	
29	0.06	0.20	45.02	7.76	7.29	8.72	1.60	2.01	8.72	0.02		0.20	
30	0.06	0.20	31.80	5.40	6.30	6.30	1.42	1.82	11.34	0.02		0.17	
31		0.20		4.05	5.85		1.42		13.21	0.04		0.17	
Total	7.27	5.02	123.31	507.76	345.73	3113.85	102.49	45.02	84.81	82.17	1.54	7.35	4426.32 Ton
Mean	0.24	0.16	4.11	16.38	11.15	103.80	3.31	1.50	2.74	2.65	0.05	0.24	
Max	1.46	0.23	45.02	269.68	109.84	739.62	9.27	2.77	13.21	13.21	0.06	2.77	739.62
Min	0.06	0.06	0.04	1.42	2.01	6.30	1.42	0.84	1.21	0.00	0.04	0.02	0.00

WATER YEAR 1998

YOM RIVER BASIN

Nam Mae Mok at Ban Mae Phu, Lampang (Y.26)

Location	Lat. 17°-19'-45" N., Long. 99°-27'-42" E., on left bank downstream from Ban Mae Phu, Tambon Wiang Mok, Amphoe Thoen, Lampang.
Drainage Area	785 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	21
R - Square	0.8276
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:59.78

LQS/LQS02D/12

Station - Ban Mae Phu, Thoen, Lampang, (Y.26)
Stream - Nam Mae Mok
River - Yom
River System - Yom River

Royal Irrigation Department
Thailand
Hydrology Division 070699
1.32910
QS = 4.4648 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	8.34	3.10	12.20	7.32	6.33	2.89	2.31	0.90	0.04	0.00	
2	0.00	0.00	4.46	7.32	321.28	40.97	4.88	2.67	2.16	0.78	0.00	0.00	
3	0.00	0.00	2.02	2.31	7.79	17.13	4.29	2.52	2.16	0.90	0.00	0.00	
4	0.00	0.00	3.10	2.52	1.50	21.39	4.05	2.52	2.16	0.90	0.00	0.00	
5	0.00	0.00	3.49	3.65	3.65	21.39	3.65	3.82	2.02	0.78	0.00	0.00	
6	0.00	0.00	3.65	3.26	8.34	37.91	3.26	5.38	2.02	0.78	0.00	0.00	
7	0.00	0.00	9.39	3.82	17.13	39.43	2.89	4.46	1.82	0.67	0.00	0.00	
8	0.00	0.00	4.88	2.89	6.85	136.39	2.52	4.29	2.16	0.67	0.00	0.00	
9	0.00	0.00	3.10	2.02	29.31	50.46	2.89	4.05	2.16	0.67	0.00	0.00	
10	0.00	0.00	2.67	2.31	3.82	34.13	2.67	3.82	2.02	0.56	0.00	0.00	
11	0.00	0.00	2.89	2.16	50.46	22.53	5.38	3.65	2.02	0.56	0.00	0.00	
12	0.00	0.00	4.88	2.52	6.85	16.06	7.79	3.49	1.82	0.56	0.00	0.00	
13	0.00	0.00	2.67	3.49	22.53	11.59	8.83	3.26	1.82	0.56	0.00	0.00	
14	0.00	156.09	2.16	3.26	316.84	9.39	8.83	3.26	1.64	0.67	0.00	0.00	
15	0.00	57.05	2.16	3.10	39.43	7.32	10.48	3.10	1.64	0.56	0.00	0.00	
16	0.00	12.20	2.02	2.89	9.39	12.20	10.48	2.89	1.50	0.67	0.00	0.00	
17	0.00	2.89	2.02	3.65	558.94	62.13	4.88	2.67	1.50	0.56	0.00	0.00	
18	0.00	1.19	1.82	9.97	47.24	251.49	5.38	2.67	1.32	0.56	0.00	0.00	
19	0.00	27.07	1.64	58.73	83.42	743.58	4.88	2.52	1.32	0.46	0.00	0.00	
20	0.00	10.48	1.64	8.34	50.46	690.57	23.60	2.52	1.19	0.46	0.00	0.00	
21	0.00	7.79	1.50	2.16	432.38	164.73	22.53	2.52	1.19	0.36	0.00	0.00	
22	0.00	3.26	1.19	1.82	290.19	37.91	14.53	2.52	1.82	0.36	0.00	0.00	
23	0.00	2.89	1.02	1.82	117.36	17.13	11.07	3.10	1.64	0.27	0.00	0.00	
24	0.00	2.31	0.90	1.64	107.86	23.60	7.32	3.10	1.50	0.27	0.00	0.00	
25	0.00	1.82	0.78	1.64	96.53	20.26	6.33	3.10	1.32	0.18	0.00	0.00	
26	0.00	2.52	0.56	1.64	27.07	13.90	4.05	3.10	1.19	0.18	0.00	0.00	
27	0.00	6.85	0.27	2.02	18.13	12.73	3.82	2.89	1.02	0.11	0.00	0.00	
28	0.00	10.48	0.27	2.02	12.73	11.59	3.26	2.89	1.02	0.11	0.00	0.00	
29	0.00	3.65	0.46	2.02	4.88	9.97	3.49	2.52	0.90	0.11		0.00	
30	0.00	3.26	0.27	1.82	6.85	7.79	3.26	2.52	0.90	0.11		0.00	
31		22.53		1.82	5.38		3.10		0.90	0.04		0.00	
Total	0.00	334.33	76.22	151.73	2716.79	2552.99	210.72	94.71	50.16	15.33	0.04	0.00	6203.02 Ton
Mean	0.00	10.78	2.54	4.89	87.64	85.10	6.80	3.16	1.62	0.49	0.00	0.00	
Max	0.00	156.09	9.39	58.73	558.94	743.58	23.60	5.38	2.31	0.90	0.04	0.00	743.58
Min	0.00	0.00	0.27	1.64	1.50	7.32	2.52	2.52	0.90	0.04	0.00	0.00	0.00

WATER YEAR 1998

YOM RIVER BASIN

Nam Mae Lai at Ban Mae Lai, Phrae (Y.34)

Location	Lat. 18-13-07 N., Long. 100-12-35 E., on lefft bank at the bridge on highway, Ban Mae Lai, Amphoe Muang, Phrae.
Drainage Area	331 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	31
R - Square	0.9176
Remarks	Continued Sediment Station

RID Computer Center, Processing : 24-AUG-2000 05:42:45.10

LQS/LQS02D/12

Station - Ban Mae Lai, Muang, Phrae, (Y.34)
Stream - Nam Mae Lai
River - Yom
River System - Yom River

Royal Irrigation Department
Thailand
Hydrology Division 250598
1.24427
QS = 3.4128 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.51	2.04	1.85	2.07	4.55	24.53	8.90	1.62	2.43	1.85	2.07	1.88	
2	1.66	2.04	1.81	2.19	2.83	22.24	10.20	1.73	2.43	1.85	2.11	1.88	
3	1.44	2.00	1.85	2.04	2.83	52.03	12.84	1.96	1.81	1.85	2.04	1.88	
4	1.37	1.81	1.85	2.00	2.83	39.66	14.96	2.19	1.66	1.88	2.00	1.88	
5	1.33	1.59	1.81	6.22	4.24	26.86	19.99	2.59	1.77	2.04	2.00	1.85	
6	1.33	1.59	1.81	3.08	4.24	37.75	21.14	2.55	1.77	2.04	1.77	1.81	
7	1.19	1.55	1.88	2.83	4.96	65.84	21.14	2.55	1.62	2.04	1.81	1.81	
8	1.30	1.55	1.88	3.08	7.09	325.70	25.72	2.19	2.00	1.96	1.85	1.81	
9	1.23	1.55	2.07	3.08	30.41	113.37	32.18	2.19	2.00	1.88	1.85	1.81	
10	1.40	1.62	2.11	3.08	5.79	1850.65	23.35	2.19	2.00	1.88	1.85	1.81	
11	1.77	1.73	2.11	3.37	4.55	647.28	23.35	2.19	2.04	1.88	1.85	1.81	
12	2.27	1.66	2.04	3.08	4.24	522.26	32.18	2.19	2.04	1.88	1.85	1.81	
13	2.27	1.62	2.00	3.08	4.24	181.07	24.53	2.07	2.04	1.88	1.85	1.81	
14	2.35	1.77	2.07	3.37	4.24	63.49	23.35	2.07	2.04	1.88	1.88	1.81	
15	2.35	2.11	2.07	3.08	4.55	47.57	23.35	2.04	2.04	1.88	2.04	1.81	
16	2.35	2.19	2.07	3.08	4.55	45.37	23.35	2.04	2.04	1.88	2.04	1.81	
17	2.27	2.23	2.07	2.83	3.67	87.49	19.99	2.00	2.04	1.88	2.07	1.81	
18	2.23	2.19	2.11	2.83	23.35	49.79	22.24	2.00	2.00	1.85	2.07	1.81	
19	2.19	2.11	2.11	3.08	39.66	37.75	24.53	2.59	2.00	1.81	2.19	1.81	
20	2.23	2.23	2.11	3.08	121.88	214.99	21.14	2.59	2.04	1.73	2.35	1.81	
21	2.35	2.27	2.04	3.08	113.37	87.49	21.14	2.59	2.04	1.66	2.35	1.81	
22	2.35	2.11	2.04	2.83	35.92	63.49	19.99	2.71	2.04	1.66	2.35	1.81	
23	2.35	2.19	2.00	2.83	34.04	61.16	19.99	2.59	2.04	1.66	2.31	1.81	
24	2.11	2.11	2.00	3.67	26.86	47.57	28.59	2.59	2.04	1.66	2.27	1.81	
25	2.07	2.07	1.96	3.37	23.35	56.56	35.92	2.55	2.00	1.66	2.11	1.81	
26	2.07	2.04	2.00	3.37	24.53	35.92	41.52	2.55	1.88	1.66	1.88	1.81	
27	2.04	2.04	2.00	3.08	24.53	34.04	52.03	2.55	1.85	1.73	1.85	1.81	
28	2.04	2.04	2.07	3.08	23.35	32.18	45.37	2.55	1.85	1.73	1.85	1.81	
29	2.00	1.88	2.04	2.83	25.72	28.59	39.66	2.55	1.85	1.77		1.81	
30	2.04	1.85	2.04	2.83	23.35	12.84	30.41	2.35	1.85	1.85		1.81	
31		1.85		2.83	23.35		22.24		1.85	1.96		1.81	
Total	57.46	59.63	59.87	94.35	663.07	4915.53	785.29	69.12	61.10	56.82	56.51	56.43	6935.18 Ton
Mean	1.92	1.92	2.00	3.04	21.39	163.85	25.33	2.30	1.97	1.83	2.02	1.82	
Max	2.35	2.27	2.11	6.22	121.88	1850.65	52.03	2.71	2.43	2.04	2.35	1.88	1850.65
Min	1.19	1.55	1.81	2.00	2.83	12.84	8.90	1.62	1.62	1.66	1.77	1.81	1.19

WATER YEAR 1998

NAN RIVER BASIN

Nan River at Bang Mun Nak, Phichit (N.8)

Location	Lat. 16-01-50 N., Long. 100-22-53 E., on left bank opposite to Wat Bang Mun Nak, Amphoe Bang Mun Nak, Phichit.
Drainage Area	32,878 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	45
R - Square	0.7350
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:37.72

LQS/LQS02D/12

Station - Bang Mun Nak, Bang Mun Nak, Phichit, (N.8)
Stream - Nan
River - Nan
River System - Nan River

Royal Irrigation Department
Thailand
Hydrology Division 241099

QS = 1.54530 * 0.6513 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1370.5	1905.6	1088.3	1509.1	299.1	1402.1	1294.1	1261.2	1881.4	591.2	1170.1	1207.1	
2	1272.9	1869.2	1197.8	1609.4	287.3	1339.9	1360.8	1294.1	1797.0	473.2	1170.1	1349.6	
3	1737.5	1609.4	927.1	2713.5	392.9	1620.9	1327.3	893.4	1773.2	351.8	1097.2	1179.3	
4	1820.9	1170.1	786.3	4391.1	573.9	1714.0	1283.1	712.5	1820.9	392.9	1133.5	1124.4	
5	1749.4	662.8	732.8	5654.3	638.7	2129.5	1190.0	652.8	1820.9	360.2	1160.9	1235.2	
6	1749.4	614.8	842.4	7397.5	562.3	2257.7	1059.4	640.1	1979.4	412.4	942.8	1133.5	
7	1667.4	669.0	820.4	9060.9	412.4	2028.9	872.9	635.6	2323.8	378.6	872.9	1017.3	
8	1370.5	911.5	779.6	9895.0	303.0	2041.5	752.1	617.4	2193.4	489.4	880.5	1052.6	
9	1043.7	500.4	693.6	10924.0	272.6	2543.9	777.7	607.0	1785.1	669.0	850.0	1026.1	
10	1349.6	467.7	556.7	11262.3	662.8	3341.9	888.2	596.6	1832.9	650.8	746.1	950.7	
11	1563.7	591.2	539.5	11149.2	1391.5	5890.6	956.0	586.9	1857.0	820.4	687.3	1207.1	
12	1509.1	562.3	550.9	10076.1	1381.0	8417.4	1166.5	585.8	1761.4	772.8	1008.6	1301.5	
13	1609.4	517.1	772.8	9128.1	1930.0	10148.9	1636.5	982.5	1563.7	669.0	1291.9	1170.1	
14	1563.7	417.3	632.7	8022.8	3274.5	12967.9	1818.5	1644.0	1225.8	539.5	1282.4	1017.3	
15	1487.5	478.5	614.8	7100.9	4189.4	9123.7	1966.1	1797.0	1115.3	650.8	1097.2	950.7	
16	1311.0	793.1	591.2	6084.6	4867.3	4841.6	2469.7	1761.4	942.8	603.1	919.3	850.0	
17	1197.8	739.4	556.7	5037.0	5101.2	2305.8	2519.7	1737.5	739.4	662.8	799.9	850.0	
18	1151.7	662.8	392.9	4330.2	5079.8	1871.7	2553.2	1552.7	656.8	626.7	820.4	1124.4	
19	1235.2	966.5	388.1	3375.9	4169.5	1765.8	2370.9	1349.6	675.0	568.0	850.0	1133.5	
20	2270.8	958.6	500.4	2785.3	4189.4	1979.8	1979.8	1714.0	842.4	437.1	999.8	1197.8	
21	2516.0	934.9	489.4	2167.8	5101.2	2387.3	1713.6	1917.9	779.6	276.2	1142.6	1714.0	
22	2378.2	2283.7	603.1	1942.4	6365.7	2620.7	1687.8	2270.8	700.1	311.0	1106.3	1320.6	
23	2180.5	2727.8	603.1	1597.9	6994.2	1885.1	2782.4	2600.0	533.8	378.6	991.1	1106.3	
24	2350.9	2982.9	417.3	1291.9	7154.5	1687.8	3257.2	2843.2	437.1	500.4	857.6	958.6	
25	2419.2	2982.9	287.3	927.1	6782.4	1440.0	2855.8	2488.2	517.1	533.8	872.9	1052.6	
26	2557.9	2460.5	299.1	700.1	6808.7	1428.6	1687.8	2557.9	550.9	545.1	982.5	1216.4	
27	2614.1	1808.9	422.2	608.9	6729.8	1585.7	1104.9	2799.7	489.4	442.1	1052.6	1225.8	
28	2129.5	1632.5	467.7	533.8	5560.7	1649.2	883.1	2843.2	484.0	319.0	1151.7	1311.0	
29	2028.9	1632.5	462.4	484.0	3837.2	1560.6	781.4	2378.2	478.5	550.9		1339.9	
30	1433.9	1381.0	934.9	427.2	2828.7	1440.0	818.6	1991.7	373.8	1079.3		1370.5	
31		1444.6		364.4	1991.7		903.7		442.1	1197.8		1360.0	
Total	52640.8	39339.5	18951.5	142552.7	100133.4	97418.5	48718.8	46312.9	36374.0	17253.9	27938.2	36053.9	663688.1 Ton
Mean	1754.7	1269.0	631.7	4598.5	3230.1	3247.3	1571.6	1543.8	1173.4	556.6	997.8	1163.0	
Max	2614.1	2982.9	1197.8	11262.3	7154.5	12967.9	3257.2	2843.2	2323.8	1197.8	1291.9	1714.0	12967.9
Min	1043.7	417.3	287.3	364.4	272.6	1339.9	752.1	585.8	373.8	276.2	687.3	850.0	272.6

WATER YEAR 1998

NAN RIVER BASIN

Nan River at Ban Bun Nak, Nan (N .13A)

Location	Lat. 18°-33'-12" N., Long. 100°-46'-08" E., on left bank about 2 kilometers upstream from station N.13, Ban Bun Nak, Amphoe Sa, Nan.
Drainage Area	8,784 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1994 - Cont'd
Actual Measurement	1994 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.8679
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:29:32.50

LQS/LQS02D/12

Station - Ban Bun Nak, Sa, Nan, (N.13A)
Stream - Nan
River - Nan
River System - Nan River

Royal Irrigation Department
Thailand
Hydrology Division 250598
1.55290
QS = 0.5181 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	86.5	65.6	257.6	324.9	1576.3	4248.8	1472.6	646.7	203.3	134.1	97.7	56.0	
2	86.5	56.0	369.8	249.5	1273.0	6586.6	1305.5	608.4	210.8	134.1	103.5	56.0	
3	103.5	56.0	316.2	589.6	1102.3	5399.4	1240.7	608.4	203.3	127.8	97.7	56.0	
4	86.5	56.0	249.5	1655.3	927.8	5257.0	1129.5	369.8	203.3	127.8	97.7	56.0	
5	127.8	65.6	388.4	13377.4	866.0	4061.2	1102.3	388.4	188.7	127.8	92.1	56.0	
6	174.4	70.7	273.9	8858.4	886.5	6896.4	1048.6	333.8	188.7	127.8	86.5	56.0	
7	249.5	121.5	984.0	4769.3	886.5	12789.1	995.8	290.6	174.4	121.5	81.1	56.0	
8	210.8	103.5	571.9	3644.1	1371.5	22473.3	969.8	273.9	174.4	121.5	81.1	51.4	
9	188.7	92.1	307.6	2708.7	1900.5	39316.1	927.8	265.7	174.4	115.4	75.8	51.4	
10	153.8	75.8	218.3	1695.3	2811.1	44041.5	1102.3	257.6	167.4	115.4	75.8	46.9	
11	103.5	75.8	203.3	1305.5	4769.3	47296.6	1129.5	249.5	167.4	115.4	75.8	46.9	
12	86.5	75.8	226.0	1075.3	3880.4	25333.9	948.7	241.6	167.4	109.4	70.7	42.6	
13	81.1	81.1	181.5	948.7	2658.0	13774.8	927.8	233.7	160.6	109.4	70.7	42.6	
14	75.8	75.8	167.4	927.8	2170.0	9115.7	1102.3	233.7	160.6	115.4	70.7	38.4	
15	70.7	181.5	147.1	9462.9	2607.6	14176.4	995.8	233.7	153.8	115.4	70.7	38.4	
16	65.6	181.5	147.1	17191.6	2312.7	17993.9	995.8	226.0	153.8	115.4	65.6	38.4	
17	65.6	115.4	109.4	12306.0	3470.3	14075.6	948.7	218.3	147.1	115.4	65.6	38.4	
18	92.1	147.1	103.5	6818.5	5328.0	15443.2	969.8	218.3	147.1	109.4	65.6	34.4	
19	147.1	181.5	97.7	5045.9	3131.8	9814.7	1472.6	218.3	147.1	127.8	65.6	34.4	
20	210.8	147.1	103.5	4571.6	6206.7	9814.7	1576.3	249.5	147.1	121.5	65.6	30.5	
21	218.3	134.1	97.7	2759.7	8102.2	7530.9	1075.3	241.6	147.1	115.4	60.8	30.5	
22	188.7	115.4	203.3	1942.5	8019.7	6433.7	927.8	233.7	147.1	109.4	60.8	30.5	
23	153.8	115.4	174.4	1506.9	8773.2	4441.5	825.7	226.0	147.1	109.4	60.8	30.5	
24	127.8	127.8	134.1	1273.0	17080.4	3940.4	766.5	218.3	147.1	103.5	60.8	34.4	
25	109.4	121.5	109.4	995.8	22606.7	3299.5	725.7	218.3	147.1	103.5	60.8	81.1	
26	86.5	226.0	109.4	1048.6	17993.9	3021.8	685.8	218.3	147.1	103.5	60.8	109.4	
27	86.5	218.3	167.4	5761.4	12595.1	2507.9	646.7	210.8	147.1	97.7	60.8	109.4	
28	81.1	218.3	324.9	6896.4	7450.5	2217.2	666.2	203.3	147.1	97.7	60.8	75.8	
29	75.8	174.4	560.3	3880.4	8268.2	1900.5	725.7	203.3	140.6	92.1		65.6	
30	65.6	218.3	506.1	2607.6	5186.3	1615.6	666.2	203.3	140.6	92.1		60.8	
31		218.3		2076.7	4185.3		666.2		140.6	92.1		56.0	
Total	3660.3	3913.2	7810.7	128275.3	170397.8	364817.9	30740.0	8542.8	5039.3	3524.1	2062.0	1610.7	730394.1 Ton
Mean	122.0	126.2	260.4	4137.9	5496.7	12160.6	991.6	284.8	162.6	113.7	73.6	52.0	
Max	249.5	226.0	984.0	17191.6	22606.7	47296.6	1576.3	646.7	210.8	134.1	103.5	109.4	47296.6
Min	65.6	56.0	97.7	249.5	866.0	1615.6	646.7	203.3	140.6	92.1	60.8	30.5	30.5

WATER YEAR 1998

NAN RIVER BASIN

Khwae Noi at Ban Yang, Phitsanulok (N.22)

Location	Lat. 17°-01'-57" N., Long. 100°-22'-23" E., on left bank about 1 kilometers downstream from District Forestry office, Amphoe Wat Bot, Phitsanulok.
Drainage Area	4,841 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1963 - 1971, 1996 - Cont'd
Actual Measurement	1963 - 1971, 1996 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.8511
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:42.01 LQS/LQS02D/12

Station - Ban Yang, Wat Bot, Phitsanulok, (N.22)
Stream - Khwae Noi
River - Nan
River System - Nan River

Royal Irrigation Department
Thailand
Hydrology Division 081298
1.53820
QS = 1.7950 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	41.63	17.41	122.23	2359.65	316.78	519.81	327.81	181.40	71.67	22.47	18.15	8.51	
2	37.47	16.62	119.22	4585.91	554.31	589.57	322.19	149.82	69.28	22.47	18.96	6.99	
3	34.79	15.90	161.00	4946.59	625.60	545.71	305.88	177.25	66.91	22.47	19.72	6.59	
4	30.90	15.14	177.25	7603.96	367.01	690.52	248.29	897.82	66.91	21.34	18.15	6.59	
5	25.97	13.71	165.01	10252.87	248.29	718.86	224.68	571.85	64.67	20.56	18.15	7.94	
6	49.41	13.71	198.33	10011.82	198.33	1068.24	202.64	453.18	60.18	19.72	16.62	8.51	
7	47.40	17.41	189.80	8756.06	352.02	2229.78	177.25	333.29	55.80	19.72	15.14	7.94	
8	53.61	29.64	140.45	7412.44	786.92	1960.29	165.01	229.19	51.54	18.96	13.71	7.94	
9	57.93	21.34	110.59	7874.95	545.71	2626.99	173.14	177.25	49.41	18.15	12.33	6.99	
10	44.48	24.78	149.82	8578.83	652.99	3166.46	177.25	146.72	45.93	18.15	11.00	6.59	
11	38.84	71.67	119.22	5772.31	1374.94	3234.67	327.81	128.21	43.05	18.15	10.38	6.25	
12	32.18	62.36	76.44	3211.88	1855.93	2876.79	453.18	116.36	41.63	18.15	10.38	6.59	
13	24.78	55.80	60.18	3970.76	1995.52	3465.71	405.34	107.68	40.23	18.96	10.38	6.59	
14	22.47	51.54	53.61	3786.34	2193.15	2724.88	494.55	96.56	40.23	18.96	10.38	7.35	
15	20.56	43.05	45.93	1127.66	1374.94	1686.50	767.29	93.90	38.84	18.96	9.73	6.59	
16	15.90	45.93	40.23	747.83	887.64	1267.89	598.61	88.77	38.84	18.15	9.13	6.25	
17	18.15	81.31	38.84	699.85	652.99	1489.34	519.81	86.18	38.84	17.41	9.13	5.87	
18	19.72	91.26	55.80	662.36	571.85	1503.87	382.04	83.74	37.47	16.62	9.13	5.54	
19	21.34	99.35	45.93	486.09	836.63	1177.77	344.52	78.81	36.12	15.90	8.51	5.54	
20	34.79	143.51	37.47	486.09	1855.93	1115.06	960.51	76.44	34.79	15.90	8.51	5.17	
21	81.31	284.32	36.12	421.08	1942.76	1024.67	1346.84	73.99	34.79	15.90	7.94	4.82	
22	88.77	445.17	38.84	295.11	2549.59	1035.63	1014.00	86.18	34.79	15.14	8.51	5.17	
23	66.91	528.26	33.48	238.29	2767.99	826.46	554.31	93.90	34.79	15.14	8.51	5.17	
24	43.05	445.17	34.79	198.33	3917.76	887.64	338.98	119.22	33.48	14.45	8.51	5.17	
25	34.79	243.35	29.64	177.25	3891.35	1190.61	273.83	157.02	32.18	14.45	9.13	4.82	
26	30.90	116.36	24.78	137.29	2156.73	1035.63	224.68	131.29	30.90	13.71	9.13	5.54	
27	25.97	125.27	69.28	206.98	1736.73	846.84	194.04	99.35	29.64	12.99	8.51	5.54	
28	20.56	405.34	2359.65	181.40	1115.06	571.85	233.72	83.74	28.39	12.33	7.94	16.62	
29	18.15	571.85	3076.30	157.02	747.83	437.02	374.50	78.81	27.17	14.45		19.72	
30	18.15	405.34	2048.77	149.82	571.85	367.01	305.88	73.99	25.97	16.62		36.12	
31		229.19		273.83	461.43		258.43		24.78	17.41		215.77	
Total	1100.88	4731.06	9859.00	95770.66	40106.56	42882.08	12697.01	5271.91	1329.22	543.76	325.77	460.79	215078.70 Ton
Mean	36.70	152.61	328.63	3089.38	1293.76	1429.40	409.58	175.73	42.88	17.54	11.63	14.86	
Max	88.77	571.85	3076.30	10252.87	3917.76	3465.71	1346.84	897.82	71.67	22.47	19.72	215.77	10252.87
Min	15.90	13.71	24.78	137.29	198.33	367.01	165.01	73.99	24.78	12.33	7.94	4.82	4.82

WATER YEAR 1998

NAN RIVER BASIN

Khek River at Ban Wang Nok Aen, Phitsanulok (N.24)

Location	Lat. 16°-50'-35" N., Long. 100°-31'-20" E., on right bank about 2 kilometers downstream from Sakunothayan Fall, Amphoe Wang Thong, Phitsanulok.
Drainage Area	1,861 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1996 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1996 - 1998
Number of observation	26
R - Square	0.8576
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:31:46.60

LQS/LQS02D/12

Station - Ban Wang Nok Aen, Wang Thong, Phitsanulok, (N.24)
Stream - Khek
River - Nan
River System - Nan River

Royal Irrigation Department
Thailand
Hydrology Division 241099
1.42750
QS = 3.4470 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	17.3	3.4	111.2	1808.6	267.1	517.9	287.2	177.2	43.4	15.0	12.2	5.0	
2	15.0	2.3	575.1	1092.7	277.1	560.6	390.7	160.7	43.4	15.0	11.2	5.0	
3	15.0	1.9	263.8	2121.8	244.2	2680.1	357.9	152.6	43.4	15.0	9.6	5.0	
4	11.2	1.5	283.7	3811.2	203.6	2140.7	297.3	166.1	43.4	15.0	9.6	4.7	
5	11.2	1.1	244.2	6334.0	144.6	1072.0	270.4	155.2	43.4	15.0	9.6	4.5	
6	12.7	1.3	163.5	4071.0	124.8	990.6	241.1	104.6	42.3	15.0	9.1	4.2	
7	15.0	0.5	445.8	3533.0	144.6	1214.1	180.1	109.0	40.0	15.0	8.6	4.2	
8	15.0	0.4	120.2	5243.0	399.1	2469.6	209.8	104.6	38.9	14.5	8.6	4.2	
9	13.3	0.3	27.7	3095.5	1044.7	2646.6	370.0	96.0	36.7	14.5	8.1	4.2	
10	11.2	129.5	73.6	3623.2	527.2	1945.0	341.8	89.6	34.5	13.9	8.1	3.9	
11	9.6	20.6	180.1	2326.4	541.5	1381.8	977.3	87.8	32.4	13.3	8.1	3.7	
12	9.1	17.3	177.2	1406.5	541.5	950.7	503.8	80.6	31.4	13.3	7.7	3.7	
13	7.7	15.0	171.6	983.9	480.8	1285.1	527.2	77.1	31.4	13.3	7.2	3.7	
14	6.7	13.3	171.6	579.9	390.7	1017.6	1488.8	71.9	28.6	12.7	7.2	3.7	
15	5.4	13.3	68.5	579.9	560.6	950.7	983.9	68.5	28.6	12.2	7.2	3.9	
16	4.5	34.5	43.4	807.7	628.9	614.2	725.3	66.8	27.7	12.2	6.7	3.9	
17	1.9	37.8	43.4	766.2	1581.4	614.2	480.8	63.5	27.7	12.2	6.7	3.9	
18	0.6	370.0	41.1	555.8	1357.3	880.8	532.1	63.5	25.8	12.2	6.3	3.9	
19	0.5	679.3	41.1	579.9	2009.6	880.8	983.9	63.5	25.8	11.7	5.9	3.7	
20	0.3	789.8	41.1	428.8	2804.1	856.3	674.3	60.2	25.8	11.2	5.9	3.7	
21	20.6	386.5	41.1	353.7	2680.1	760.2	450.2	57.0	25.8	10.6	5.4	3.7	
22	15.0	476.5	51.7	277.1	3716.8	584.7	329.8	66.8	25.8	10.6	5.4	3.7	
23	15.0	142.0	106.8	212.8	2781.5	508.4	337.7	111.2	25.8	10.6	5.4	3.7	
24	14.5	32.4	65.2	200.6	2266.0	565.3	250.8	194.4	24.9	10.6	5.4	3.7	
25	11.7	17.3	63.5	390.7	2056.1	589.7	241.1	113.5	24.1	10.1	5.4	3.7	
26	10.1	26.7	58.6	231.5	1365.6	441.6	215.8	82.4	23.2	9.6	5.0	3.7	
27	7.7	311.0	58.6	177.2	917.7	386.5	212.8	66.8	22.3	9.1	5.0	3.7	
28	6.3	325.9	58.6	293.9	766.2	311.0	619.1	58.6	20.6	8.1	5.0	3.9	
29	5.4	293.9	48.1	206.6	517.9	304.2	244.2	55.4	17.3	32.4		3.7	
30	4.2	188.5	51.7	197.6	407.5	260.6	203.6	51.7	17.3	42.3		3.7	
31		188.5		203.6	370.0		188.5		16.5	15.8		3.7	
Total	293.7	4522.3	3891.8	46494.3	32118.8	30381.6	14117.3	2876.8	938.2	442.0	205.6	123.6	136406.0 Ton
Mean	9.8	145.9	129.7	1499.8	1036.1	1012.7	455.4	95.9	30.3	14.3	7.3	4.0	
Max	20.6	789.8	575.1	6334.0	3716.8	2680.1	1488.8	194.4	43.4	42.3	12.2	5.0	6334.0
Min	0.3	0.3	27.7	177.2	124.8	260.6	180.1	51.7	16.5	8.1	5.0	3.7	0.3

WATER YEAR 1998

NAN RIVER BASIN

Nam Wa at Ban Hat Khao San, Nan (N.42)

Location	Lat. 18°-34'-08" N., Long. 100°-52'-28" E., on right bank at Ban Hat Khao San, Amphoe Sa, Nan.
Drainage Area	2,107 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	27
R - Square	0.8754
Remarks	Continued Sediment Station

RID Computer Center, Processing : 24-AUG-2000 05:42:50.34 LQS/LQS02D/12

Station - Ban Hat Khao San, Sa, Nan, (N.42)
Stream - Nam Wa
River - Nan
River System - Nan River

Royal Irrigation Department
Thailand
Hydrology Division 270598
1.85337
QS = 0.3102 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	41.7	18.8	83.6	104.9	541.7	1626.0	391.9	117.8	61.0	29.5	24.3	15.1	
2	52.9	16.3	236.5	98.7	439.4	1649.2	369.1	117.8	52.9	29.5	24.3	15.1	
3	41.7	16.3	65.2	264.7	369.1	1446.6	336.1	124.5	52.9	29.5	22.9	15.1	
4	31.8	16.3	88.5	5391.8	294.3	1672.5	314.9	294.3	50.0	29.5	21.5	16.3	
5	41.7	17.5	52.9	4987.0	264.7	1011.6	294.3	201.2	50.0	29.5	21.5	16.3	
6	93.5	22.9	698.4	2253.0	284.3	2571.2	274.4	131.4	52.9	27.3	20.1	16.3	
7	192.7	22.9	346.9	1534.6	357.9	3087.4	264.7	111.2	47.1	27.3	20.1	16.3	
8	69.6	25.8	88.5	1029.6	639.3	5757.9	264.7	104.9	47.1	27.3	20.1	15.1	
9	50.0	22.9	65.2	823.8	807.6	10806.0	294.3	88.5	44.4	27.3	20.1	15.1	
10	31.8	17.5	44.4	528.4	1298.8	10496.0	294.3	88.5	41.7	25.8	20.1	15.1	
11	25.8	17.5	98.7	415.3	2080.4	6523.3	255.1	83.6	41.7	25.8	20.1	15.1	
12	22.9	17.5	65.2	314.9	1084.3	3842.8	209.7	78.8	41.7	25.8	20.1	15.1	
13	21.5	29.5	44.4	294.3	840.2	2670.9	209.7	78.8	39.1	25.8	20.1	15.1	
14	20.1	31.8	39.1	5443.5	958.7	1996.5	294.3	78.8	39.1	25.8	18.8	15.1	
15	20.1	36.6	78.8	12501.8	1084.3	10342.5	255.1	74.1	39.1	25.8	18.8	15.1	
16	20.1	44.4	36.6	5864.6	1065.9	3232.4	245.7	74.1	39.1	25.8	18.8	15.1	
17	22.9	25.8	25.8	2376.9	1218.6	2571.2	209.7	74.1	39.1	25.8	18.8	14.0	
18	41.7	138.5	25.8	2080.4	958.7	2473.2	284.3	74.1	39.1	25.8	17.5	14.0	
19	52.9	52.9	27.3	1403.6	775.7	1696.0	304.5	74.1	39.1	24.3	17.5	14.0	
20	93.5	41.7	25.8	1047.7	1319.4	1918.9	218.5	78.8	39.1	24.3	17.5	13.1	
21	65.2	31.8	24.3	713.6	2910.5	1944.6	184.5	69.6	36.6	24.3	16.3	13.1	
22	44.4	31.8	192.7	528.4	3016.1	1446.6	160.7	69.6	36.6	22.9	16.3	13.1	
23	31.8	29.5	65.2	464.0	3803.3	1084.3	145.7	69.6	36.6	22.9	16.3	13.1	
24	25.8	25.8	39.1	346.9	9297.4	976.2	138.5	65.2	36.6	22.9	16.3	15.1	
25	22.9	29.5	31.8	294.3	6026.2	807.6	131.4	61.0	34.2	22.9	16.3	65.2	
26	21.5	236.5	31.8	2604.2	4248.9	683.4	124.5	56.9	34.2	22.9	15.1	25.8	
27	20.1	98.7	50.0	3269.2	2538.3	596.6	160.7	56.9	34.2	21.5	15.1	17.5	
28	20.1	52.9	451.6	2505.6	3418.0	541.7	160.7	56.9	31.8	21.5	15.1	15.1	
29	18.8	41.7	464.0	1403.6	2670.9	476.6	124.5	65.2	31.8	22.9		13.1	
30	17.5	98.7	192.7	1011.6	1649.2	427.3	138.5	61.0	31.8	22.9		13.1	
31		184.5		744.3	1382.3		131.4		31.8	24.3		13.1	
Total	1277.0	1494.8	3780.8	62645.2	57644.4	86377.0	7186.4	2781.3	1272.4	789.4	529.8	518.8	226297.3 Ton
Mean	42.6	48.2	126.0	2020.8	1859.5	2879.2	231.8	92.7	41.0	25.5	18.9	16.7	
Max	192.7	236.5	698.4	12501.8	9297.4	10806.0	391.9	294.3	61.0	29.5	24.3	65.2	12501.8
Min	17.5	16.3	24.3	98.7	264.7	427.3	124.5	56.9	31.8	21.5	15.1	13.1	13.1

WATER YEAR 1998

NAN RIVER BASIN

Nam Haeng at Ban Hua Muang, Nan (N.63)

Location	Lat. 18°-21'-48" N., Long. 100°-43'-41" E., on left bank at the bridge on road, Ban Hua Muang, Amphoe Sa, Nan.
Drainage Area	788 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.9066
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:29:41.33 LQS/LQS02D/12

Station - Ban Hua Muang, Na Noi, Nan, (N.63)
Stream - Nam Haeng
River - Nan
River System - Nan River

Royal Irrigation Department
Thailand
Hydrology Division 080998
1.42300
QS = 6.0691 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.29	0.66	2.93	2.93	6.42	1078.00	14.01	7.40	2.46	0.84	2.93	2.26	
2	3.88	0.66	1.59	3.73	4.98	326.38	13.35	6.95	2.01	0.70	1.59	2.26	
3	5.81	0.45	2.01	4.98	4.98	449.84	12.59	7.40	1.83	0.57	1.42	2.01	
4	1.95	0.23	2.46	6.42	4.58	516.12	10.50	38.46	1.83	0.70	1.42	1.59	
5	2.20	0.20	2.46	10.50	4.58	423.67	10.50	11.85	1.59	0.70	2.01	2.26	
6	2.73	0.17	2.93	7.40	14.01	363.40	10.50	9.20	0.84	0.70	2.01	2.26	
7	1.47	0.17	2.93	5.47	17.68	492.98	12.59	7.96	0.84	0.80	2.01	2.01	
8	0.84	0.17	2.46	4.98	28.43	2768.25	20.22	7.40	0.57	0.70	1.83	2.26	
9	0.66	0.17	1.83	4.11	10.50	656.45	25.60	5.98	0.53	0.57	0.84	1.59	
10	0.66	0.11	1.83	4.11	5.47	6190.72	20.22	4.58	0.53	0.70	0.70	1.42	
11	0.49	0.11	0.37	3.73	5.98	971.31	14.01	3.73	0.53	2.01	1.20	1.42	
12	0.41	0.11	0.37	3.73	6.42	734.93	14.01	2.93	0.53	0.57	1.42	1.20	
13	0.41	0.14	0.23	4.11	5.98	593.45	24.16	2.93	0.45	0.57	1.83	0.80	
14	0.41	0.33	0.17	4.58	6.42	67.94	20.22	2.93	0.53	0.84	2.01	0.80	
15	0.20	0.33	0.17	4.58	5.98	1436.27	17.68	2.73	0.45	0.84	2.93	0.84	
16	0.09	0.20	0.17	5.47	4.98	276.76	20.22	2.73	0.33	0.70	2.26	1.04	
17	2.93	0.20	0.17	6.42	6.42	140.77	24.16	2.93	0.23	0.84	2.26	1.04	
18	100.12	0.23	0.14	5.98	6.42	79.74	233.49	2.93	0.23	0.70	2.46	1.83	
19	87.08	0.33	0.14	5.47	12.59	35.06	63.39	2.93	0.37	1.04	2.46	1.59	
20	11.22	0.33	0.14	5.47	74.95	334.89	31.77	2.93	0.23	2.01	2.73	0.84	
21	4.98	0.33	0.14	5.47	122.67	116.80	26.94	4.98	0.23	2.46	2.01	0.84	
22	4.98	0.37	0.23	4.98	26.94	63.39	20.22	4.98	0.20	2.26	2.01	0.80	
23	2.93	0.37	0.45	4.98	20.22	53.24	14.01	4.58	0.20	2.26	1.42	0.84	
24	2.93	0.33	0.37	4.58	12.59	35.06	11.85	4.58	0.53	2.46	1.20	4.98	
25	2.93	0.33	0.30	4.58	11.85	33.33	10.50	3.73	0.53	2.46	1.20	2.93	
26	2.93	0.23	0.23	4.58	10.50	26.94	10.50	2.93	0.57	2.46	1.42	2.46	
27	2.93	0.23	0.37	4.11	8.62	24.16	12.59	2.93	0.70	2.26	1.42	2.46	
28	2.93	0.20	7.40	4.11	7.40	24.16	13.35	2.73	1.04	2.46	2.26	2.26	
29	1.83	2.46	26.94	11.22	7.40	20.22	12.59	2.73	1.04	2.46		2.26	
30	1.83	4.98	4.98	10.50	6.95	20.22	10.50	2.46	1.04	2.01		1.59	
31		2.93		5.98	6.95		7.96		1.04	2.01		1.42	
Total	258.05	18.06	66.91	169.26	479.86	18354.46	764.20	173.51	24.03	42.66	51.26	54.16	20456.41 Ton
Mean	8.60	0.58	2.23	5.46	15.48	611.82	24.65	5.78	0.78	1.38	1.83	1.75	
Max	100.12	4.98	26.94	11.22	122.67	6190.72	233.49	38.46	2.46	2.46	2.93	4.98	6190.72
Min	0.09	0.11	0.14	2.93	4.58	20.22	7.96	2.46	0.20	0.57	0.70	0.80	0.09

WATER YEAR 1998

NAN RIVER BASIN

Nam Yao at Ban Pang Sa, Nan (N.65)

Location	Lat. 19°-13'-47" N., Long. 100°-45'-26" E., on right bank at the bridge on highway, Ban Pang Sa, Amphoe Tha Wang Pha, Nan.
Drainage Area	637 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.9383
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:29:46.43

LQS/LQS02D/12

Station - Ban Pang Sa, Tha Wang Sa, Nan, (N.65)
Stream - Huai Nam Yao
River - Nan
River System - Nan River

Royal Irrigation Department
Thailand
Hydrology Division 270598
1.72180
QS = 1.0935 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.22	11.29	217.01	15.70	38.65	57.13	44.45	23.37	9.92	5.30	4.18	1.90	
2	3.70	14.18	86.38	15.70	35.93	71.12	41.55	23.37	9.92	5.30	3.67	1.90	
3	3.70	19.00	261.67	23.37	30.57	61.65	41.55	23.37	12.68	5.30	3.67	1.90	
4	2.35	19.00	529.47	415.54	28.10	48.53	38.65	21.10	12.68	4.73	3.18	1.90	
5	2.20	28.10	81.15	636.17	30.57	105.14	38.65	21.10	11.29	4.73	3.18	1.90	
6	1.39	21.10	313.40	157.94	30.57	166.20	38.65	19.00	11.29	4.73	3.18	1.54	
7	1.39	23.37	196.01	91.74	30.57	157.94	35.93	19.00	11.29	4.73	2.73	1.54	
8	1.00	21.10	66.32	66.32	33.20	13343.16	33.20	17.35	9.92	4.73	2.73	1.54	
9	0.83	19.00	41.55	52.75	44.45	2408.79	33.20	17.35	8.68	4.73	2.73	1.54	
10	0.59	19.00	38.65	44.45	57.13	2817.51	33.20	15.70	8.68	4.73	2.73	1.54	
11	0.59	8.68	35.93	38.65	44.45	2528.15	33.20	14.18	8.68	4.73	2.73	1.54	
12	0.55	8.68	35.93	35.93	38.65	896.71	30.57	14.18	8.68	4.73	2.73	1.21	
13	0.55	9.92	30.57	33.20	35.93	400.21	30.57	14.18	8.68	4.73	2.73	1.21	
14	0.55	8.68	28.10	66.32	33.20	250.18	30.57	14.18	8.68	4.73	2.73	1.21	
15	0.55	23.37	25.65	3390.09	30.57	385.13	28.10	12.68	7.46	4.73	2.73	1.21	
16	1.76	23.37	19.00	692.57	28.10	299.81	30.57	12.68	7.46	4.73	2.30	1.21	
17	2.20	25.65	19.00	875.18	28.10	341.35	33.20	11.29	7.46	4.73	2.30	1.21	
18	48.53	38.65	19.00	415.54	25.65	462.95	30.57	11.29	7.46	4.73	2.30	1.21	
19	48.53	19.00	19.00	185.84	25.65	157.94	33.20	11.29	7.46	4.73	2.30	0.91	
20	44.45	19.00	19.00	126.67	25.65	141.94	30.57	11.29	6.36	4.18	2.30	0.91	
21	44.45	44.45	35.93	81.15	28.10	105.14	30.57	19.00	6.36	4.18	2.30	0.91	
22	28.10	33.20	35.93	66.32	41.55	91.74	28.10	15.70	6.36	3.67	1.90	0.91	
23	25.65	28.10	15.70	57.13	52.75	91.74	28.10	14.18	6.36	3.67	1.90	0.91	
24	19.00	23.37	15.70	44.45	86.38	71.12	9.92	12.68	6.36	3.67	1.90	2.73	
25	23.37	19.00	15.70	44.45	1932.86	61.65	9.92	12.68	6.36	3.18	1.90	2.73	
26	7.46	17.35	15.70	48.53	370.29	57.13	15.70	11.29	6.36	3.18	1.90	2.30	
27	7.46	17.35	41.55	71.12	157.94	57.13	21.10	12.68	6.36	3.18	1.90	1.90	
28	15.70	17.35	35.93	48.53	105.14	52.75	25.65	12.68	5.30	3.18	1.90	1.54	
29	14.18	30.57	21.10	48.53	66.32	44.45	25.65	12.68	5.30	3.18		1.21	
30	14.18	30.57	19.00	44.45	52.75	44.45	23.37	9.92	5.30	3.18		1.21	
31		30.57		41.55	57.13		23.37		5.30	4.18		1.21	
Total	369.18	672.02	2335.03	7975.88	3626.90	25778.84	931.60	461.44	250.45	134.21	72.73	46.59	42654.88 Ton
Mean	12.31	21.68	77.83	257.29	117.00	859.29	30.05	15.38	8.08	4.33	2.60	1.50	
Max	48.53	44.45	529.47	3390.09	1932.86	13343.16	44.45	23.37	12.68	5.30	4.18	2.73	13343.16
Min	0.55	8.68	15.70	15.70	25.65	44.45	9.92	9.92	5.30	3.18	1.90	0.91	0.55

WATER YEAR 1998

NAM MAE KOG RIVER BASIN

Nam Mae Lao at Ban Ton Yang, Chiang Rai (G.8)

Location	Lat. 19-47-27 N., Long. 99-45-12 E., on left bank at the bridge of Chiang Rai - Phayao Highway, Amphoe Mae Lao, Chiang Rai.
Drainage Area	2,934 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	0.9460
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:29:50.97 LQS/LQS02D/12

Station - Ban Ton Yang, K.A. Mae Lao, Chiang Rai, (G.8)
Stream - Nam Mae Lao
River - Nam Mae Kok
River System - Nam Mae Kok

Royal Irrigation Department
Thailand
Hydrology Division 270598
1.48150
QS = 3.8677 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.26	3.42	239.74	168.37	24.95	1155.44	74.28	30.38	115.47	2.38	2.38	1.34	
2	0.62	53.77	338.26	124.57	80.96	1080.27	59.39	28.28	103.42	2.04	2.38	1.34	
3	0.62	39.02	306.18	95.84	107.45	1290.86	34.61	251.45	103.42	2.38	2.04	1.34	
4	0.36	34.61	239.74	173.48	293.69	1006.77	30.38	865.93	95.84	2.38	2.04	1.34	
5	0.92	36.86	251.45	596.77	251.45	815.53	26.33	482.77	99.61	2.68	1.51	1.34	
6	0.92	32.42	318.84	1136.49	257.48	1705.66	22.17	300.03	88.30	2.38	1.34	1.34	
7	2.93	24.95	702.76	917.30	168.37	1774.51	20.77	216.89	84.53	2.38	1.34	2.04	
8	2.48	36.86	399.47	482.77	99.61	2153.60	23.50	200.34	77.29	2.68	1.34	1.86	
9	2.04	51.10	269.45	269.45	189.28	2874.94	26.33	168.37	77.29	3.04	1.34	1.51	
10	1.64	36.86	251.45	216.89	687.28	4937.53	51.10	138.63	68.22	3.42	1.51	1.51	
11	1.64	36.86	281.37	211.40	815.53	4245.69	23.50	115.47	68.22	3.04	1.86	1.18	
12	1.64	39.02	269.45	233.85	474.81	2808.86	59.39	129.21	59.39	1.86	1.68	0.75	
13	1.26	26.33	239.74	233.85	338.26	1592.89	30.38	133.89	56.49	1.68	2.04	0.62	
14	1.26	26.33	194.79	211.40	211.40	849.02	18.16	129.21	51.10	1.68	2.38	0.50	
15	2.93	26.33	99.61	168.37	163.13	766.12	13.28	120.00	45.89	1.68	2.68	0.50	
16	3.93	23.50	56.49	385.58	129.21	1891.21	16.94	120.00	36.86	3.81	2.68	1.03	
17	5.32	34.61	36.86	275.39	124.57	2265.90	14.50	115.47	26.33	5.38	2.38	0.75	
18	7.26	68.22	22.17	143.43	120.00	2651.87	45.89	107.45	22.17	7.83	1.86	0.62	
19	2.93	80.96	20.77	107.45	216.89	1353.83	84.53	103.42	19.50	5.00	1.86	0.50	
20	7.26	77.29	20.77	80.96	257.48	900.07	65.19	111.52	18.16	4.57	1.86	0.36	
21	3.42	95.84	19.50	53.77	239.74	626.48	51.10	107.45	14.50	4.57	1.51	0.23	
22	3.42	129.21	19.50	43.60	585.02	474.81	32.42	107.45	12.44	3.04	1.34	0.23	
23	5.32	124.57	23.50	39.02	443.95	300.03	24.95	120.00	7.19	2.68	1.34	0.30	
24	3.42	115.47	22.17	30.38	702.76	245.46	19.50	133.89	4.57	2.38	1.34	0.36	
25	2.93	115.47	18.16	26.33	1460.93	306.18	14.50	115.47	4.16	1.86	1.34	0.50	
26	2.48	107.45	18.16	39.02	1155.44	211.40	10.88	115.47	3.04	1.68	1.34	0.50	
27	1.26	133.89	18.16	68.22	527.42	194.79	7.83	115.47	2.68	1.51	1.18	0.44	
28	2.04	168.37	56.49	111.52	351.57	138.63	7.83	115.47	2.38	1.51	1.34	0.44	
29	2.48	163.13	143.43	51.10	269.45	99.61	19.50	115.47	2.68	2.04		0.44	
30	2.48	173.48	133.89	34.61	421.39	80.96	24.95	115.47	3.04	2.68		0.44	
31		163.13		28.28	718.35		32.42		3.42	2.68		0.30	
Total	78.47	2279.33	5032.32	6759.46	11887.82	40798.92	986.50	5030.32	1377.60	88.92	49.23	25.95	74394.84 Ton
Mean	2.62	73.53	167.74	218.05	383.48	1359.96	31.82	167.68	44.44	2.87	1.76	0.84	
Max	7.26	173.48	702.76	1136.49	1460.93	4937.53	84.53	865.93	115.47	7.83	2.68	2.04	4937.53
Min	0.36	3.42	18.16	26.33	24.95	80.96	7.83	28.28	2.38	1.51	1.18	0.23	0.23

WATER YEAR 1998

NAM MAE ING BASIN

Nam Mae Ing at Ban Nam Ing, Chiang Rai (I.14)

Location	Lat. 19-50-00 N., Long. 100-12-15 E., on right bank at the bridge on road about 2 kilometers from King Amphoe Khun Tan, Chiang Rai.
Drainage Area	6,155 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D- 49
Period of Available Records	1994 - Cont'd
Actual Measurement	1994 - Cont'd
Using Rating Curve Water Year	1994 - 1998
Number of observation	138
R - Square	0.9140
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:29:55.79

LQS/LQS02D/12

Station - Ban Nam Ing, K.A. Khuntan, Chiang Rai, (I.14)
Stream - Nam Mae Ing
River - Nam Mae Ing
River System - Nam Mae Ing

Royal Irrigation Department
Thailand
Hydrology Division 270598
1.15920
QS = 4.7473 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	33.67	30.67	51.66	90.36	265.68	958.25	2104.99	147.31	97.32	25.61	19.75	9.99	
2	31.67	28.97	56.27	99.66	282.97	1191.34	1930.63	147.31	94.99	23.95	22.45	16.44	
3	39.80	26.44	84.20	106.72	300.41	1279.93	1706.44	161.96	88.30	23.13	20.96	18.61	
4	28.97	24.78	94.99	150.22	282.97	1197.22	1497.75	269.12	84.20	24.78	19.75	17.16	
5	25.61	28.97	86.25	465.13	323.28	1097.95	1214.87	272.58	82.17	23.95	18.55	17.16	
6	21.56	25.61	84.20	778.47	293.41	1352.01	936.84	228.47	78.11	23.13	18.55	16.44	
7	17.88	25.61	130.34	794.12	241.73	1968.36	726.61	216.15	74.08	22.31	17.95	16.44	
8	24.78	33.67	159.01	657.24	222.30	2459.61	528.39	248.54	72.08	19.35	16.77	15.01	
9	33.67	36.72	124.80	541.34	319.45	3081.67	436.84	279.50	68.33	17.88	15.01	11.84	
10	35.70	35.70	94.99	545.66	397.16	3433.17	416.94	289.93	63.12	17.16	14.11	13.10	
11	37.74	49.22	92.67	611.11	444.84	3605.01	373.61	311.82	64.85	17.16	13.67	12.47	
12	34.68	59.68	88.30	652.48	436.84	3605.01	361.91	315.63	64.85	16.44	15.01	13.73	
13	23.13	78.11	80.13	657.24	361.91	3452.21	308.01	300.41	63.12	15.72	15.60	17.88	
14	28.12	262.24	74.08	606.72	315.63	3195.12	385.36	258.80	61.40	15.01	15.01	18.61	
15	26.44	304.20	66.59	541.34	276.03	3055.58	385.36	216.15	59.68	28.55	14.11	17.16	
16	28.97	150.22	63.12	477.54	262.24	3247.67	365.80	176.79	57.97	19.75	13.22	17.16	
17	42.01	90.36	57.97	448.85	251.95	3309.80	358.02	170.84	56.27	16.77	12.78	15.72	
18	45.60	72.08	52.88	416.94	255.37	3256.44	342.52	167.87	54.57	16.77	12.34	10.60	
19	43.20	68.33	50.44	465.13	289.93	3151.42	319.45	156.08	52.88	16.18	11.90	12.47	
20	43.20	72.08	49.22	666.78	502.61	2986.13	282.97	138.70	51.66	15.60	14.11	4.64	
21	51.66	64.85	48.01	576.08	652.48	2804.89	262.24	116.56	44.40	15.01	15.01	2.52	
22	56.27	66.59	45.60	444.84	773.26	2667.87	258.80	109.08	40.83	12.78	13.73	12.78	
23	57.97	64.85	43.20	385.36	1046.86	2537.68	245.13	104.36	36.72	12.34	13.73	20.96	
24	54.57	63.12	42.01	327.12	1279.93	2405.17	225.38	99.66	34.68	13.22	16.44	23.95	
25	50.44	61.40	38.77	315.63	1325.73	2312.22	206.97	97.32	33.67	13.67	16.44	25.47	
26	46.80	56.27	36.72	389.29	1411.38	2381.88	182.78	90.36	31.67	12.78	15.72	26.24	
27	42.01	54.57	35.70	888.91	1531.16	2451.82	161.96	88.30	31.67	12.34	15.01	24.71	
28	40.83	66.59	43.20	706.44	1268.06	2436.26	150.22	94.99	30.67	18.55	15.01	24.71	
29	36.72	78.11	56.27	502.61	1041.20	2358.63	147.31	97.32	29.82	24.71		26.24	
30	33.67	63.12	86.25	361.91	936.84	2258.24	147.31	97.32	28.97	23.95		26.24	
31		56.27		289.93	815.06		150.22		28.12	23.95		26.24	
Total	1117.34	2199.40	2117.84	14961.17	18408.67	75498.58	17121.63	5469.23	1761.17	582.50	442.69	532.69	140212.92 Ton
Mean	37.24	70.95	70.59	482.62	593.83	2516.62	552.31	182.31	56.81	18.79	15.81	17.18	
Max	57.97	304.20	159.01	888.91	1531.16	3605.01	2104.99	315.63	97.32	28.55	22.45	26.24	3605.01
Min	17.88	24.78	35.70	90.36	222.30	958.25	147.31	88.30	28.12	12.34	11.90	2.52	2.52

WATER YEAR 1998

CHAO PHRAYA RIVER BASIN

Huai Khun Kaeo at Ban Samo Thong, Uthai Thani (C.30)

Location	Lat. 15-21-01 N., Long. 99-32-22 E., on right bank infront of Wat Samo Thong School, Ban Samo Thong, Amphoe Ban Rai, Uthai Thani.
Drainage Area	110,569 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	18
R - Square	0.8308
Remarks	Continued Sediment Station

RID Computer Center, Processing : 15-AUG-2000 01:22:20.26

LQS/LQS02D/12

Station - Ban Samo Thong, K.A Huai Khot, Uthai Thani, (C.30)
Stream - Huai Khun Kaeo
River - Chao Phraya
River System - Chao Phraya

Royal Irrigation Department
Thailand
Hydrology Division 280598
1.60465
QS = 8.2097 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.74	2.44	21.46	79.62	17.45	53.34	28.04	11.74	71.41	1.13	0.39	0.27	
2	4.74	2.44	7.82	23.58	11.74	134.42	23.58	9.71	56.85	0.95	0.39	0.27	
3	4.74	3.24	60.45	17.45	7.82	53.34	16.24	40.41	37.80	0.83	0.39	0.27	
4	4.74	2.87	46.84	13.93	5.29	37.80	11.74	35.26	28.04	0.67	0.39	0.27	
5	4.74	2.87	13.93	19.42	4.21	128.43	9.71	23.58	21.46	0.62	0.39	0.27	
6	4.74	2.87	12.82	9.71	8.74	53.34	6.93	12.82	15.07	0.52	0.39	0.27	
7	7.82	2.87	8.74	7.82	46.84	35.26	6.33	10.71	12.82	0.62	0.39	0.27	
8	5.29	2.44	35.26	146.71	43.58	25.77	6.93	9.71	10.71	0.62	0.39	0.27	
9	5.74	2.44	112.48	60.45	13.93	35.26	53.34	7.82	8.74	0.67	0.39	0.27	
10	5.29	2.44	23.58	32.78	10.71	17.45	200.25	5.29	6.93	0.67	0.39	0.27	
11	4.74	2.44	9.71	28.04	19.42	16.24	592.39	4.74	6.33	0.67	0.39	0.27	
12	4.21	2.87	12.82	15.07	8.74	13.93	274.01	3.71	5.29	1.45	0.39	0.27	
13	4.21	112.48	56.85	9.71	3.71	10.71	497.09	3.24	4.74	0.95	0.31	0.27	
14	3.71	49.92	11.74	10.71	6.93	8.74	208.21	2.44	4.21	0.95	0.31	0.27	
15	3.71	7.82	6.93	23.58	6.33	5.29	134.42	1.89	3.24	0.83	0.27	0.27	
16	3.71	4.21	4.74	11.74	16.24	37.80	84.01	1.89	3.24	0.83	0.27	0.27	
17	3.71	3.71	6.33	32.78	16.24	15.07	146.71	1.89	3.24	0.78	0.27	0.27	
18	3.71	2.87	2.87	67.58	12.82	13.93	314.59	3.24	3.24	0.78	0.27	0.20	
19	3.71	56.85	6.33	25.77	9.71	12.82	1502.37	7.82	2.87	0.67	0.27	0.20	
20	3.71	7.82	3.24	19.42	37.80	11.74	368.24	4.21	2.44	0.67	0.27	0.20	
21	3.71	3.71	2.44	7.82	84.01	64.12	208.21	2.87	2.04	0.62	0.27	0.20	
22	4.21	3.71	1.81	4.21	32.78	16.24	128.43	71.41	1.89	0.62	0.27	0.20	
23	3.71	23.58	4.74	3.24	178.76	28.04	93.04	84.01	1.81	0.52	0.27	0.17	
24	3.24	4.21	21.46	4.74	430.85	28.04	64.12	75.32	1.81	0.52	0.27	0.17	
25	3.24	25.77	8.74	2.44	357.26	46.84	53.34	43.58	1.67	0.52	0.27	0.17	
26	2.87	122.54	5.74	2.04	215.83	67.58	46.84	21.46	1.59	0.52	0.20	0.17	
27	2.87	46.84	35.26	1.89	215.83	264.20	25.77	15.07	1.45	0.52	0.20	0.17	
28	2.44	9.71	112.48	1.67	88.48	88.48	21.46	93.04	1.32	0.31	0.20	0.17	
29	2.44	5.74	60.45	23.58	64.12	56.85	15.07	215.83	1.32	0.31		0.17	
30	2.44	4.21	56.85	3.71	46.84	40.41	11.74	102.76	1.25	0.39		0.17	
31		3.24		84.01	43.58		16.24		1.25	0.39		0.17	
Total	122.88	531.17	774.91	795.22	2066.59	1421.48	5169.39	927.47	326.07	21.12	8.87	7.12	12172.29 Ton
Mean	4.10	17.13	25.83	25.65	66.66	47.38	166.75	30.92	10.52	0.68	0.32	0.23	
Max	7.82	122.54	112.48	146.71	430.85	264.20	1502.37	215.83	71.41	1.45	0.39	0.27	1502.37
Min	2.44	2.44	1.81	1.67	3.71	5.29	6.33	1.89	1.25	0.31	0.20	0.17	0.17

WATER YEAR 1998

SAKAE KRANG RIVER BASIN

Nam Mae Wong at Ban Pang Makha, Kamphaeng Phet (Ct.5A)

Location	Lat 15-54-10 N., Long. 99-28-45 E., on left bank behind Wat Pang Makha, Amphoe Khanu Woralaksaburi, Kamphaeng Phet.
Drainage Area	938 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1983 - 1988 , 1995 - Cont'd
Actual Measurement	1983 - 1986 , 1995 - Cont'd
Using Rating Curve Water Year	1965 - 1998
Number of observation	117
R - Square	0.7734
Remarks	Continued Sediment Station

RID Computer Center, Processing : 15-AUG-2000 01:22:06.20

LQS/LQS02D/12

Station - Ban Pang Makha, Khanu Woralaksaburi, Kamphaeng Phet, (CT.5A)
Stream - Nam Mae Wong
River - Sakae Krang
River System - Sakae Krang River

Royal Irrigation Department
Thailand
Hydrology Division 151298
1.49162
QS = 1.8349 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	2.12	47.35	7.63	6.36	154.83	8.52	57.43	3.03	2.12	1.32	
2	0.00	0.00	1.70	13.76	9.45	8.52	444.70	7.63	45.37	2.87	2.12	1.19	
3	0.00	0.00	1.97	8.52	4.70	15.55	203.57	7.20	35.30	2.71	1.83	1.17	
4	0.00	0.00	8.98	6.36	4.41	24.35	89.54	77.98	26.57	2.56	1.70	1.15	
5	0.00	0.00	4.70	5.31	2.87	21.15	57.43	533.66	21.15	2.41	1.70	1.12	
6	0.00	0.00	8.98	5.31	2.56	13.18	33.79	140.53	17.12	2.71	1.97	1.10	
7	0.00	0.00	5.01	5.95	3.56	89.54	23.27	64.28	14.35	2.56	1.83	1.08	
8	0.00	0.00	6.77	10.40	5.31	25.45	17.12	51.24	12.61	2.41	1.70	1.05	
9	0.00	0.00	2.41	80.82	3.56	13.18	384.45	24.35	10.94	4.12	1.70	1.03	
10	0.00	0.75	1.83	27.96	3.29	8.52	487.14	19.10	9.45	3.29	1.70	1.01	
11	0.00	0.75	1.97	11.49	3.03	24.35	247.93	14.94	8.98	2.87	1.70	1.01	
12	0.00	0.17	32.30	5.95	2.87	13.18	240.93	12.04	8.52	2.56	1.70	0.99	
13	0.00	0.22	8.98	4.12	2.71	10.40	323.09	10.40	8.07	2.71	1.70	0.97	
14	0.00	45.37	2.56	4.70	2.71	6.36	283.90	8.52	7.20	2.41	1.70	0.94	
15	0.00	5.63	1.97	4.12	2.87	5.31	306.24	8.07	6.36	2.41	1.70	0.92	
16	0.00	2.12	1.70	6.77	3.84	5.63	118.93	7.63	5.95	2.41	1.70	0.90	
17	0.00	1.32	1.70	15.55	12.61	12.04	314.56	6.77	5.95	2.26	1.70	0.90	
18	0.00	1.19	2.26	22.20	12.04	19.10	197.66	6.77	6.36	2.12	1.44	0.88	
19	0.00	1.97	2.56	10.40	20.12	47.35	174.58	6.77	5.95	2.12	1.44	0.86	
20	0.00	1.08	2.56	4.70	169.57	30.83	159.69	5.95	5.95	1.97	1.44	0.84	
21	0.00	1.08	2.26	3.56	221.66	247.93	103.90	5.95	5.63	1.83	1.44	0.81	
22	0.00	0.97	1.97	2.71	103.90	135.87	72.39	9.45	5.31	1.83	1.32	0.81	
23	0.00	3.29	1.83	2.71	57.43	57.43	51.24	126.70	5.01	1.83	1.32	0.79	
24	0.00	1.83	1.70	11.49	413.65	33.79	38.39	118.93	4.70	1.83	1.32	0.77	
25	0.00	2.71	1.70	3.56	118.93	20.12	29.39	72.39	4.70	1.83	1.32	0.75	
26	0.00	131.26	1.70	3.03	69.65	25.45	23.27	43.49	4.12	1.70	1.32	0.75	
27	0.00	13.18	1.70	2.56	75.17	83.69	18.11	27.96	3.56	1.70	1.32	0.73	
28	0.00	3.03	80.82	18.11	35.30	150.01	14.94	21.15	3.29	1.70	1.32	0.71	
29	0.00	2.12	145.24	3.56	14.35	186.00	12.04	64.28	3.29	1.70		0.71	
30	0.00	1.32	93.02	3.03	10.94	164.61	10.94	111.33	3.29	1.70		0.69	
31		1.08		6.36	6.77		8.52		3.03	2.12		0.67	
Total	0.00	222.44	434.97	362.42	1407.46	1505.25	4646.48	1623.98	365.51	72.28	45.27	28.62	10714.68 Ton
Mean	0.00	7.18	14.50	11.69	45.40	50.17	149.89	54.13	11.79	2.33	1.62	0.92	
Max	0.00	131.26	145.24	80.82	413.65	247.93	487.14	533.66	57.43	4.12	2.12	1.32	533.66
Min	0.00	0.00	1.70	2.56	2.56	5.31	8.52	5.95	3.03	1.70	1.32	0.67	0.00

WATER YEAR 1998

SAKAE KRANG RIVER BASIN

Khlong Pho at Ban Hang Rai, Nakhon Sawan (Ct.7)

Location	Lat 15°-38'-23" N., Long. 99°-32'-20" E., on right bank near the gage observer's house, Ban Hang Rai, Amphoe LatbYao, Nakhon Sawan.
Drainage Area	457 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	0.8306
Remarks	Continued Sediment Station

RID Computer Center, Processing : 15-AUG-2000 01:22:15.85

LQS/LQS02D/12

Station - Ban Hang Rai, Lat Yao, Nakhon Sawan, (CT.7)
Stream - Khlong Pho
River - Sakae Krang
River System - Sakae Krang River

Royal Irrigation Department
Thailand
Hydrology Division 151298
1.41890
QS = 9.9930 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.38	0.07	13.25	101.97	26.72	36.26	2658.41	7.02	26.72	3.22	8.07	1.64	
2	0.55	0.07	24.84	67.17	18.61	33.79	489.61	7.02	20.34	3.02	5.78	1.64	
3	0.49	0.07	15.78	42.63	14.50	25.78	151.69	6.39	17.10	2.82	4.61	1.81	
4	0.49	0.07	12.03	46.60	12.64	16.44	80.74	10.56	17.10	2.82	3.84	1.64	
5	0.49	0.07	16.44	60.55	10.14	29.02	46.60	8.88	21.22	2.44	3.63	1.64	
6	0.44	0.07	12.64	62.74	8.47	35.02	30.19	8.07	15.14	2.44	3.02	1.48	
7	0.38	0.07	36.26	46.60	10.14	22.11	21.22	6.64	13.25	2.63	2.82	1.48	
8	0.38	0.07	58.39	35.02	23.01	25.78	16.44	6.39	11.44	2.25	2.44	1.48	
9	0.38	0.68	30.19	1454.34	27.86	20.34	789.11	6.02	10.14	2.25	2.25	1.56	
10	0.38	2.25	19.47	1478.46	19.47	13.87	3319.51	5.19	9.71	2.16	2.16	1.32	
11	0.38	2.07	16.44	666.46	14.50	18.61	2452.96	5.19	7.67	2.16	2.07	1.32	
12	0.38	1.90	125.80	205.76	10.14	30.19	1803.00	4.84	7.67	2.16	2.07	1.48	
13	0.33	1.81	175.30	91.17	8.47	17.10	805.64	4.28	7.28	2.16	1.90	1.32	
14	0.33	1.73	69.42	45.27	9.71	11.44	839.00	4.28	7.02	2.07	2.07	1.32	
15	0.28	29.02	45.27	384.17	9.71	8.88	372.98	4.06	6.39	2.07	1.90	1.32	
16	0.28	15.14	23.01	249.25	11.00	94.73	142.90	3.84	6.02	2.07	2.07	1.32	
17	0.28	12.03	15.78	94.73	10.14	64.94	170.37	3.84	5.78	2.07	1.90	1.24	
18	0.23	8.07	10.56	489.61	9.71	441.58	175.30	4.06	5.78	2.07	1.81	1.24	
19	0.23	45.27	8.07	281.35	194.76	839.00	105.65	4.06	5.42	2.07	1.90	1.32	
20	0.23	20.34	7.28	77.34	60.55	1716.86	62.74	3.84	5.19	1.98	1.81	1.32	
21	0.23	11.44	6.39	41.33	1803.00	2532.52	42.63	3.84	4.84	1.98	1.90	1.32	
22	0.23	9.71	5.78	80.74	554.79	666.46	33.79	4.28	4.61	1.98	1.73	1.32	
23	0.23	41.33	4.84	134.27	170.37	156.46	27.86	10.56	3.84	1.90	1.81	1.98	
24	0.23	17.76	4.28	125.80	541.84	64.94	23.01	11.44	3.84	1.90	1.64	1.56	
25	0.18	11.00	3.84	42.63	262.18	42.63	17.76	11.44	3.63	1.90	1.64	1.48	
26	0.14	16.44	3.42	30.19	236.53	38.77	14.50	10.14	3.42	1.90	1.64	1.48	
27	0.14	105.65	3.63	18.61	199.55	151.69	12.03	8.88	3.22	1.90	1.73	1.40	
28	0.14	42.63	10.14	19.47	77.34	249.25	11.00	10.14	3.22	1.90	1.64	1.32	
29	0.10	27.86	43.95	290.90	36.26	581.43	10.14	33.79	3.22	1.81		1.48	
30	0.10	17.10	105.65	147.27	22.11	156.46	8.47	40.05	3.22	7.28		1.48	
31		13.25		47.95	23.01		8.07		3.22	17.76		1.48	
Total	9.03	455.04	928.14	6960.35	4437.23	8142.35	14743.32	259.03	266.66	89.14	71.85	45.19	36407.34 Ton
Mean	0.30	14.68	30.94	224.53	143.14	271.41	475.59	8.63	8.60	2.88	2.57	1.46	
Max	0.55	105.65	175.30	1478.46	1803.00	2532.52	3319.51	40.05	26.72	17.76	8.07	1.98	3319.51
Min	0.10	0.07	3.42	18.61	8.47	8.88	8.07	3.84	3.22	1.81	1.64	1.24	0.07

WATER YEAR 1998

PASAK RIVER BASIN

Pasak River at Ban Tan Dieo, Phetchabun (S.3)

Location	Lat. 16-46-55 N., Long. 101-14-57 E., on left bank near the bridge of Samakkhichai - Nonthakit road, Amphoe Lomsak, Phetchabun.
Drainage Area	1,047 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 48
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.8061
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:32:04.82 LQS/LQS02D/12

Station - Ban Tan Dieo, Lom Sak, Phetchabun, (S.3)
Stream - Pasak
River - Pasak
River System - Pasak River

Royal Irrigation Department
Thailand
Hydrology Division

QS = 1.60300 6.1132 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.20	1.03	30.04	2827.27	8.97	85.91	1.82	11.21	11.71	0.07	0.04	0.04	
2	0.15	0.94	28.28	1388.01	14.31	198.56	1.52	11.71	10.13	0.05	0.04	0.02	
3	0.11	0.62	18.57	1013.82	41.44	166.24	1.24	11.71	7.97	0.05	0.04	0.02	
4	0.09	0.43	31.85	1168.78	83.27	108.06	7.97	15.68	7.12	0.09	0.04	0.02	
5	0.09	0.29	12.99	1445.01	65.25	105.18	7.54	4.53	7.54	0.11	0.04	0.02	
6	0.07	0.29	224.57	1961.23	50.65	99.53	7.54	21.64	7.54	0.13	0.04	0.02	
7	0.07	11.71	45.54	1742.73	37.49	194.59	7.97	24.87	7.54	0.13	0.04	0.02	
8	0.07	167.60	1709.98	1995.70	75.56	606.49	7.97	17.10	7.54	0.13	0.02	0.02	
9	0.07	181.43	510.17	639.98	285.51	590.01	9.54	10.13	7.54	0.13	0.02	0.02	
10	0.07	124.06	190.28	295.98	639.98	202.94	18.57	7.54	5.73	0.13	0.02	0.02	
11	0.05	132.37	78.10	216.27	4642.30	665.53	62.40	7.12	6.21	0.13	0.02	0.02	
12	0.05	96.74	65.25	194.59	1859.18	691.46	62.40	7.54	6.21	0.13	0.02	0.01	
13	0.05	69.11	54.17	37.49	639.98	264.99	1026.58	7.97	6.21	0.13	0.02	0.01	
14	0.05	1459.59	45.54	24.87	239.97	182.13	541.58	9.54	5.73	0.13	0.02	0.01	
15	0.05	285.51	69.11	15.68	186.37	174.12	198.56	8.97	5.73	0.13	0.02	0.01	
16	0.05	162.53	33.32	181.43	162.53	132.37	154.85	9.54	6.21	0.13	0.02	0.01	
17	0.05	110.96	28.28	62.40	139.93	245.06	128.96	9.54	1.41	0.11	0.02	0.01	
18	20.08	449.50	27.41	43.47	206.98	139.93	139.93	7.54	5.35	0.11	0.02	0.01	
19	10.13	328.24	14.04	28.28	744.42	202.94	367.22	8.97	5.73	0.11	0.02	0.01	
20	8.97	270.27	11.21	21.64	952.22	91.26	39.45	7.54	6.61	0.11	0.02	0.00	
21	7.54	112.71	4.53	8.52	5011.09	45.54	23.23	7.54	3.06	0.05	0.02	0.00	
22	6.61	66.93	1.30	5.73	4494.72	26.56	14.31	10.13	2.08	0.05	0.02	0.00	
23	6.21	33.69	1.30	1.64	1235.94	12.99	14.31	26.56	2.55	0.05	0.02	0.00	
24	4.89	21.64	4.53	1.24	6329.89	23.23	12.99	18.57	3.37	0.05	0.02	0.00	
25	3.37	10.13	5.63	1.03	2273.16	18.57	10.60	11.21	2.55	0.05	0.02	0.00	
26	2.55	43.47	2.01	0.94	565.60	14.31	18.57	10.13	1.64	0.05	0.02	0.00	
27	2.08	41.44	5.07	0.79	280.53	11.71	11.71	9.54	0.23	0.05	0.02	0.00	
28	1.64	33.69	15.27	0.62	194.59	8.97	11.21	9.54	0.18	0.05	0.02	0.00	
29	1.52	31.85	42.25	1.95	150.91	6.61	10.60	9.54	0.15	0.05		0.00	
30	1.41	31.85	36.53	1.82	122.85	3.69	10.60	9.54	0.07	0.05		0.00	
31		30.04		2.08	113.89		11.21		0.07	0.05		0.00	
Total	78.34	4310.66	3347.12	15330.99	31849.48	5319.48	2942.95	342.69	151.71	2.79	0.70	0.32	63677.23 Ton
Mean	2.61	139.05	111.57	494.55	1027.40	177.32	94.93	11.42	4.89	0.09	0.02	0.01	
Max	20.08	1459.59	1709.98	2827.27	6329.89	691.46	1026.58	26.56	11.71	0.13	0.04	0.04	6329.89
Min	0.05	0.29	1.30	0.62	8.97	3.69	1.24	4.53	0.07	0.05	0.02	0.00	0.00

WATER YEAR 1998

PASAK RIVER BASIN

Pasak River at Phetchabun, Phetchabun (S.4B)

Location	Lat. 16-25-12 N., Long. 101-10-13 E., on left bank about 300 meters downstream from Phathana Phak Nua 2 bridge, Amphoe Muang, Phetchabun.
Drainage Area	3,566 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	0.8814
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:32:10.11 LQS/LQS02D/12

Station - Phetchabun, Muang, Phetchabun, (S.4B)
Stream - Pa Sak
River - Pa Sak
River System - Pasak River

Royal Irrigation Department
Thailand
Hydrology Division
1.50570
QS = 5.5442 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.03	0.02	283.80	158.74	5.54	502.53	8.42	10.73	30.46	0.03	0.03	0.03	
2	0.03	0.02	208.99	1152.40	4.34	578.29	13.10	10.73	27.26	0.03	0.03	0.03	
3	0.03	0.02	188.17	1063.38	24.19	862.07	6.40	15.63	24.19	0.03	0.03	0.03	
4	0.03	0.02	149.05	1883.11	104.72	707.56	5.54	18.30	18.30	0.03	0.03	0.03	
5	0.03	0.02	56.26	2174.51	52.31	741.87	4.34	13.10	15.63	0.03	0.03	0.03	
6	0.03	0.02	37.35	2368.37	24.19	728.08	3.17	6.40	15.63	0.03	0.03	0.03	
7	0.03	0.02	149.05	1959.87	18.30	785.96	1.61	5.97	10.73	0.03	0.03	0.02	
8	0.03	0.02	198.63	1216.13	24.19	1098.70	0.10	5.97	6.40	0.03	0.03	0.02	
9	0.03	0.03	535.11	1382.54	15.63	1760.36	0.10	8.42	6.40	0.03	0.03	0.02	
10	0.03	0.03	252.48	993.91	347.00	2174.51	1.34	10.73	6.40	0.03	0.03	0.02	
11	0.03	0.03	80.67	1530.54	1134.41	1772.51	5.54	10.73	6.40	0.03	0.03	0.02	
12	0.03	0.03	30.46	1423.23	2669.39	1724.09	113.12	6.40	5.97	0.03	0.03	0.02	
13	0.03	0.03	8.42	959.78	2438.94	1413.02	219.53	5.97	5.54	0.03	0.03	0.02	
14	0.03	0.03	6.40	586.26	1302.35	942.86	1063.38	5.54	5.54	0.03	0.03	0.02	
15	0.03	0.03	5.13	263.70	808.55	728.08	808.55	8.42	5.13	0.03	0.03	0.02	
16	0.03	0.02	4.73	198.63	728.08	485.56	640.60	10.73	4.73	0.03	0.03	0.02	
17	0.03	0.02	4.73	665.86	640.60	304.39	198.63	13.10	4.34	0.03	0.03	0.02	
18	0.03	0.06	4.34	510.14	608.37	535.11	139.82	15.63	3.52	0.03	0.03	0.02	
19	0.08	0.06	4.34	414.33	1080.99	854.36	168.36	13.10	3.52	0.03	0.03	0.02	
20	0.06	3.89	3.52	535.11	1098.70	942.86	414.33	13.10	3.52	0.03	0.03	0.02	
21	0.04	52.31	3.52	178.17	1784.69	934.44	139.82	10.73	3.52	0.03	0.03	0.02	
22	0.03	33.77	3.89	241.42	3507.11	877.58	104.72	21.24	2.51	0.03	0.03	0.02	
23	0.03	15.63	3.89	48.29	4448.31	778.48	96.54	30.46	2.83	0.03	0.03	0.02	
24	0.03	15.63	3.89	24.19	4067.44	263.70	60.31	64.45	1.04	0.03	0.03	0.02	
25	0.03	5.97	3.52	8.42	5031.63	158.74	37.35	64.45	0.06	0.03	0.03	0.02	
26	0.03	3.89	3.52	5.97	6160.70	139.82	33.77	52.31	0.04	0.03	0.03	0.02	
27	0.03	5.54	3.52	5.54	4346.15	104.72	37.35	37.35	0.04	0.03	0.03	0.02	
28	0.02	60.31	3.89	5.54	1870.71	64.45	24.19	33.77	0.03	0.03	0.03	0.02	
29	0.02	188.17	3.89	5.13	785.96	37.35	18.30	33.77	0.03	0.03		0.02	
30	0.02	104.72	64.45	4.73	640.60	21.24	15.63	33.77	0.03	0.04		0.02	
31		64.45		4.73	584.26		13.10		0.03	0.03		0.02	
Total	0.96	554.81	2309.61	21972.67	46358.36	23023.29	4397.06	591.00	219.77	0.94	0.84	0.68	99429.99 Ton
Mean	0.03	17.90	76.99	708.80	1495.43	767.44	141.84	19.70	7.09	0.03	0.03	0.02	
Max	0.08	188.17	535.11	2368.37	6160.70	2174.51	1063.38	64.45	30.46	0.04	0.03	0.03	6160.70
Min	0.02	0.02	3.52	4.73	4.34	21.24	0.10	5.54	0.03	0.03	0.03	0.02	0.02

WATER YEAR 1998

PASAK RIVER BASIN

Lam Kong at Ban Wang Tha Di, Phetchabun (S.12)

Location	Lat. 15-59-50 N., Long. 101-14-28 E., on left bank at Ban Wang Tha Di, Amphoe Nong Phai, Phetchabun.
Drainage Area	471 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 48
Period of Available Records	1998 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	30
R - Square	0.8583
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:32:14.60 LQS/LQS02D/12

Station - Ban Wang Tha Di, Nong Phai, Phetchabun, (S.12)
Stream - Lam Kong
River - Pasak
River System - Pasak River

Royal Irrigation Department
Thailand
Hydrology Division 210990
1.69960
QS = 5.5041 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.69	1.06	9.52	2037.73	24.72	3638.40	93.98	20.70	13.56	3.93	2.72	1.06	
2	1.47	0.88	9.52	1177.48	13.56	972.59	55.62	18.18	13.56	3.93	2.44	1.06	
3	5.32	0.88	6.88	260.33	11.47	430.47	41.87	16.98	12.50	3.30	2.44	1.06	
4	9.52	0.88	6.08	1500.24	8.60	296.05	37.65	16.98	11.47	3.61	2.72	1.06	
5	3.61	0.71	5.32	3560.16	7.72	138.12	35.61	16.98	10.47	3.61	2.18	1.26	
6	3.61	44.05	4.60	791.32	53.22	164.83	31.67	16.98	9.52	3.61	1.93	1.69	
7	2.44	3.93	4.60	1052.61	20.70	441.79	27.92	15.80	7.72	3.61	1.93	1.47	
8	2.44	22.01	23.35	408.20	12.50	133.22	26.12	15.80	7.72	3.61	1.93	1.06	
9	1.69	4.60	29.77	179.49	650.20	86.01	142.74	14.67	7.72	3.61	1.93	0.71	
10	1.69	2.18	6.88	128.74	1649.96	727.35	81.99	14.67	6.88	3.93	1.69	1.06	
11	1.47	1.69	4.26	106.65	277.95	857.49	60.56	13.56	6.88	3.61	1.69	0.88	
12	1.47	1.47	3.93	55.62	86.01	218.37	365.14	13.56	6.08	3.93	1.69	0.71	
13	1.47	1.26	3.61	44.05	50.86	210.34	807.29	13.56	6.08	3.61	1.47	0.71	
14	1.26	60.56	3.30	31.67	31.67	115.02	194.67	13.56	6.08	3.61	1.47	0.71	
15	1.26	6.08	3.30	46.28	234.79	89.81	106.65	13.56	6.08	3.61	1.26	0.56	
16	1.06	3.00	3.00	55.62	119.63	89.81	81.99	13.56	6.08	3.61	1.26	0.56	
17	1.06	2.18	2.72	46.28	50.86	524.35	63.09	13.56	6.08	3.61	1.26	0.56	
18	1.06	78.32	2.72	27.92	218.37	536.62	78.32	12.50	6.88	3.30	1.26	0.42	
19	1.06	2372.72	2.72	22.01	914.29	549.00	63.09	11.47	6.88	3.00	1.26	0.19	
20	1.47	314.61	3.93	19.42	1451.64	512.20	46.28	11.47	6.08	3.00	1.06	0.19	
21	6.88	93.98	3.93	16.98	972.59	234.79	37.65	13.56	6.08	3.00	1.06	0.30	
22	2.72	14.67	2.72	14.67	386.42	172.10	33.62	27.92	6.88	2.72	1.06	0.30	
23	1.93	9.52	2.44	13.56	277.95	138.12	29.77	18.18	6.88	2.72	1.06	0.30	
24	1.69	6.08	2.18	10.47	1649.96	142.74	29.77	13.56	4.60	2.44	1.06	0.42	
25	1.47	86.01	2.18	9.52	441.79	123.98	27.92	13.56	5.32	2.18	1.06	2.18	
26	1.26	13.56	2.44	11.47	152.88	70.94	26.12	12.50	4.26	2.18	1.06	1.26	
27	1.26	577.28	10.47	9.52	93.98	60.56	26.12	12.50	4.26	2.18	1.06	1.06	
28	1.26	441.79	408.20	8.60	63.09	53.22	24.72	16.98	3.93	2.18	1.06	0.88	
29	1.06	27.92	4429.33	19.42	50.86	46.28	23.35	15.80	3.93	2.44		0.88	
30	1.06	50.86	110.80	16.98	39.74	46.28	22.01	13.56	3.93	2.44		0.71	
31		16.98		46.28	89.81		20.70		4.26	2.72		0.56	
Total	66.71	4261.72	5114.70	11729.29	10107.79	11820.85	2744.00	456.22	218.65	98.84	44.07	25.83	46688.67 Ton
Mean	2.22	137.47	170.49	378.36	326.06	394.03	88.52	15.21	7.05	3.19	1.57	0.83	
Max	9.52	2372.72	4429.33	3560.16	1649.96	3638.40	807.29	27.92	13.56	3.93	2.72	2.18	4429.33
Min	1.06	0.71	2.18	8.60	7.72	46.28	20.70	11.47	3.93	2.18	1.06	0.19	0.19

WATER YEAR 1998

PASAK RIVER BASIN

Lam Sonthi at Ban Tha Yiam, Lop Buri (S.13)

Location	Lat. 15-20-21 N., Long. 101-22-30 E., on left bank near Wat Tha Yiam, Amphoe Chai Badan, Lop Buri.
Drainage Area	359 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1988 - Cont'd
Actual Measurement	1988 - Cont'd
Using Rating Curve Water Year	1988 - 1998
Number of observation	37
R - Square	0.8911
Remarks	Continued Sediment Station

RID Computer Center, Processing : 15-AUG-2000 01:21:48.96

LQS/LQS02D/12

Station - Ban Tha Yiam, K.A. Lam Sonthi, Lob Buri, (S.13)
Stream - Lam Sonthi
River - Pasak
River System - Pasak River

Royal Irrigation Department
Thailand
Hydrology Division 161298
1.62377
QS = 14.8510 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	402.51	8.32	16.08	654.16	391.43	17.34	6.83	0.00	0.00	0.00	
2	0.00	0.00	40.68	5.46	6.83	201.98	147.98	16.08	6.13	0.00	0.00	0.00	
3	0.00	0.00	19.97	14.85	4.82	95.20	54.22	14.85	5.46	0.00	0.00	0.00	
4	913.57	0.00	22.74	9.92	2.70	54.22	37.19	13.66	4.36	0.00	0.00	0.00	
5	35.49	0.00	16.08	37.19	1.99	31.86	28.69	12.52	3.92	0.00	0.00	0.00	
6	11.63	60.29	7.56	31.86	17.34	1520.75	21.34	11.63	3.49	0.00	0.00	0.00	
7	6.83	8.32	2521.43	16.08	14.85	110.93	16.08	10.76	3.09	0.00	0.00	0.00	
8	4.82	22.74	121.56	18.63	12.52	100.68	14.85	9.92	2.70	0.00	0.00	0.00	
9	2.70	8.32	1056.04	58.24	6.83	42.47	182.00	9.11	2.70	0.00	0.00	0.00	
10	1.99	3.09	80.42	22.74	4.82	27.15	150.91	8.32	2.33	0.00	0.00	0.00	
11	1.67	1.67	37.19	14.85	198.71	381.31	775.85	7.56	2.33	0.00	0.00	0.00	
12	1.09	1.37	22.74	10.76	38.92	71.39	7347.70	6.83	2.33	0.00	0.00	0.00	
13	0.76	1.37	16.08	9.11	67.04	35.49	2840.78	6.13	1.99	0.00	0.00	0.00	
14	0.76	141.62	12.52	80.42	30.26	28.69	486.07	5.46	1.99	0.00	0.00	0.00	
15	0.61	19.97	10.76	22.74	14.85	24.18	194.80	4.82	1.67	0.00	0.00	0.00	
16	0.61	37.19	9.11	24.18	11.63	21.34	4568.45	4.36	1.67	0.00	0.00	0.00	
17	0.47	8.32	6.13	17.34	10.76	33.82	526.29	3.92	1.67	0.00	0.00	0.00	
18	0.47	156.83	4.82	10.76	690.67	3609.54	236.56	3.49	1.37	0.00	0.00	0.00	
19	0.47	560.90	3.92	7.56	3174.57	6559.64	133.12	3.09	1.09	0.00	0.00	0.00	
20	14.85	71.39	6.83	5.46	1713.61	1979.54	90.33	2.70	0.92	0.00	0.00	0.00	
21	10.76	25.65	4.82	3.92	815.92	429.40	71.39	9.11	0.76	0.00	0.00	0.00	
22	10.76	12.52	4.36	2.33	1203.70	201.98	62.79	8.32	0.61	0.00	0.00	0.00	
23	4.36	8.32	3.92	1.67	526.29	133.12	50.31	8.32	0.47	0.00	0.00	0.00	
24	1.99	6.13	3.09	1.37	133.12	95.20	40.68	8.32	0.35	0.00	0.00	0.00	
25	0.76	5.46	2.33	1.09	71.39	116.20	33.82	8.32	0.25	0.00	0.00	0.00	
26	0.61	6.13	1.99	0.92	46.51	71.39	27.15	8.32	0.25	0.00	0.00	0.00	
27	0.61	113.55	1.67	0.76	25.65	46.51	25.65	22.74	0.15	0.00	0.00	0.00	
28	0.47	182.00	2.33	0.76	25.65	35.49	24.18	14.85	0.03	0.00	0.00	0.00	
29	0.47	233.07	38.92	4.36	24.18	28.69	22.74	8.32	0.03	0.00		188.36	
30	0.35	30.26	9.92	1.37	21.34	25.65	18.63	6.83	0.03	0.00		9.92	
31		13.66		1.67	17.34		17.34		0.00	0.00		3.92	
Total	1029.93	1740.14	4492.44	446.69	8950.89	16767.97	18639.32	276.00	60.97	0.00	0.00	202.20	52606.55 Ton
Mean	34.33	56.13	149.75	14.41	288.74	558.93	601.27	9.20	1.97	0.00	0.00	6.52	
Max	913.57	560.90	2521.43	80.42	3174.57	6559.64	7347.70	22.74	6.83	0.00	0.00	188.36	7347.70
Min	0.00	0.00	1.67	0.76	1.99	21.34	14.85	2.70	0.00	0.00	0.00	0.00	0.00

WATER YEAR 1998

PASAK RIVER BASIN

Lam Sonthi at Ban Na Som, Lop Buri (S.14)

Location	Lat. 15°13'24" N., Long. 101°16'51" E., on left bank at the bridge on road, Ban Na Som, Tambon Nong Yi To, Amphoe Chai Badan, Lop Buri.
Drainage Area	1,247 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1988 - Cont'd
Actual Measurement	1988 - Cont'd
Using Rating Curve Water Year	1988 - 1998
Number of observation	41
R - Square	0.8732
Remarks	Continued Sediment Station

RID Computer Center, Processing : 15-AUG-2000 01:21:53.37

LQS/LQS02D/12

Station - Ban Na Som, Chai Badan, Lop Buri, (S.14)
Stream - Lam Sonthi
River - Pasak
River System - Pasak River

Royal Irrigation Department
Thailand
Hydrology Division 200698
1.57989
QS = 19.9024 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.52	0.52	578.66	13.99	13.17	4.68	2.23	2.23	20.85	20.85	0.52	0.52	
2	0.52	0.52	226.40	0.52	151.92	166.07	674.53	2.37	12.11	20.85	0.52	0.52	
3	0.52	0.52	46.02	0.44	85.72	90.61	5.84	1.82	16.85	20.85	0.52	0.52	
4	0.52	0.52	59.50	0.44	0.23	31.23	1.44	1.69	47.75	20.85	0.52	0.52	
5	314.71	0.52	4.68	0.37	70.16	92.81	1.44	1.69	145.34	20.85	0.52	0.52	
6	1.33	351.85	294.17	0.37	1862.86	1035.71	1.69	1.69	142.09	20.85	0.52	0.52	
7	0.52	489.32	1204.02	0.37	11.33	1544.31	1.69	1.69	1.44	20.85	0.52	0.52	
8	0.52	2.23	2156.99	0.44	53.50	51.71	1.44	1.69	0.52	20.85	0.52	0.52	
9	0.52	9.83	1274.21	0.44	1.10	14.83	1.69	1.69	1.82	20.85	0.52	0.52	
10	0.52	2.23	503.66	0.44	0.79	11.33	792.65	1.69	2.23	20.85	0.52	0.52	
11	0.52	2.23	72.17	0.44	1262.65	32.73	1973.85	1.69	65.72	20.85	0.52	0.52	
12	0.52	2.23	40.59	0.44	398.02	51.71	4721.58	1.69	7.08	11.33	0.52	0.52	
13	0.52	242.73	30.12	0.18	184.23	280.76	20885.38	1.69	0.89	11.33	0.52	0.52	
14	0.52	1569.23	20.85	0.61	145.34	12.11	17111.61	1.69	0.89	4.68	0.52	0.52	
15	0.52	9.11	20.85	14.83	2.23	238.81	3028.33	1.69	55.78	2.23	0.52	0.52	
16	0.52	118.91	145.34	0.52	1.69	7.74	880.68	1.69	27.60	0.52	0.52	0.52	
17	0.52	16.85	51.71	0.37	1.44	107.60	5176.34	1.69	13.17	0.52	0.52	0.52	
18	0.52	20.85	27.60	0.37	10.57	102.96	666.53	1.69	13.17	0.52	0.52	0.52	
19	0.52	1595.87	105.27	0.37	1481.12	11820.54	1113.19	20.85	20.85	0.52	0.52	0.52	
20	0.52	339.30	16.85	0.37	6177.45	22184.44	125.64	29.03	5.84	0.52	0.52	0.52	
21	0.52	3.62	11.33	1.69	7817.01	9810.40	180.69	53.50	16.85	0.52	0.52	0.52	
22	0.52	44.75	8.42	9.11	11381.05	131.88	47.75	102.96	27.60	0.52	0.52	0.52	
23	0.52	11.33	4.68	7.74	9697.37	431.57	2.23	107.60	13.17	0.52	0.52	0.52	
24	0.52	125.64	2.23	7.74	166.07	439.37	1.82	107.60	11.33	0.52	0.52	0.52	
25	0.52	2.66	0.23	7.74	280.76	633.75	1.82	65.72	11.33	0.52	0.52	0.52	
26	0.52	49.93	0.12	8.42	59.50	460.11	1.69	20.85	11.33	0.52	0.52	0.52	
27	0.52	112.90	0.89	8.42	0.52	518.14	5.84	18.97	20.85	0.52	0.52	0.52	
28	0.52	863.05	0.52	7.08	0.52	8.42	30.12	74.71	20.85	0.52	0.52	0.52	
29	0.52	218.78	0.44	5.84	4.68	3.62	29.03	83.58	20.85	0.52		0.52	
30	0.52	173.67	0.44	1.69	4.68	1.82	31.23	46.02	20.85	0.52		0.52	
31		20.85		2.37	4.68		32.73		20.85	0.52		13.99	
Total	330.60	6402.55	6908.96	104.16	41332.36	50321.78	57532.73	763.16	797.85	267.24	14.56	29.59	164805.55 Ton
Mean	11.02	206.53	230.30	3.36	1333.30	1677.39	1855.89	25.44	25.74	8.62	0.52	0.95	
Max	314.71	1595.87	2156.99	14.83	11381.05	22184.44	20885.38	107.60	145.34	20.85	0.52	13.99	22184.44
Min	0.52	0.52	0.12	0.12	0.23	1.82	1.44	1.69	0.52	0.52	0.52	0.52	0.12

WATER YEAR 1998

PASAK RIVER BASIN

Lam Phaya Klang at Ban Hu sua,Lop Buri (S.31)

Location	Lat. 15-06-05 N., Long.101-24-11 E., on left bank at the bridge of Dan Khun Tod - Chai Badan Highway, A.Chai Badan, Lop Buri.
Drainage Area	381 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1988 - Cont'd
Actual Measurement	1988 - 1989 , 1994 - Cont'd
Using Rating Curve Water Year	1988 - 1998
Number of observation	53
R - Square	0.7718
Remarks	Continued Sediment Station

RID Computer Center, Processing : 24-AUG-2000 00:19:03.29

LQS/LQS02D/12

Station - Ban Pang Hu Sua, Chai Badan, Lop Buri, (S.31)
Stream - Lam Phaya Klang
River - Pasak
River System - Pasak River

Royal Irrigation Department
Thailand
Hydrology Division 140999
1.55972
QS = 36.5516 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.20	3.95	8.75	2.52	215.60	40.62	40.62	46.07	16.48	8.75	3.20	4.74	
2	3.20	3.95	3.95	2.52	139.49	14.39	25.81	30.48	16.48	8.75	3.20	4.74	
3	3.20	3.95	3.20	1.90	35.42	167.13	25.81	25.81	16.48	8.75	3.20	3.95	
4	5.59	3.95	2.52	1.34	63.85	90.63	20.96	23.34	16.48	10.52	3.95	3.95	
5	4.74	3.95	2.52	1.34	14.39	23.34	18.67	23.34	16.48	8.75	3.95	3.20	
6	4.74	3.95	5.59	1.34	7.11	16.48	18.67	23.34	18.67	8.75	3.95	3.95	
7	4.74	3.95	23.34	1.90	3.95	12.40	20.96	20.96	14.39	8.75	3.20	3.95	
8	4.74	3.95	5.59	1.90	2.52	10.52	20.96	20.96	12.40	8.75	3.20	3.20	
9	4.74	3.95	7.11	4.74	2.52	8.75	1687.48	20.96	10.52	5.59	3.20	3.95	
10	4.74	3.95	3.95	3.20	1.90	7.11	422.14	20.96	8.75	4.74	3.20	4.74	
11	4.74	46.07	2.52	3.20	76.82	114.55	1435.38	20.96	8.75	4.74	3.20	5.59	
12	4.74	2164.60	1.90	2.52	76.82	114.55	3078.99	20.96	8.75	3.95	3.20	5.59	
13	4.74	167.13	1.34	3.20	98.65	30.48	6766.94	20.96	7.11	4.74	2.52	7.11	
14	4.74	70.23	7.11	18.67	23.34	98.65	405.79	20.96	7.11	5.59	2.52	4.74	
15	4.74	70.23	167.13	30.48	30.48	25.81	148.82	20.96	7.11	4.74	2.52	5.59	
16	4.74	16.48	14.39	10.52	10.52	14.39	122.37	20.96	7.11	4.74	2.52	4.74	
17	4.74	7.11	10.52	4.74	30.48	167.13	83.63	20.96	8.75	4.74	2.52	5.59	
18	4.74	57.70	5.59	63.85	186.19	176.07	215.60	20.96	8.75	3.95	2.52	4.74	
19	4.74	14.39	3.20	18.67	1656.01	283.66	283.66	20.96	5.59	3.95	2.52	4.74	
20	4.74	7.11	2.52	3.95	2757.87	389.68	114.55	20.96	8.75	3.95	3.95	4.74	
21	4.74	5.59	2.52	1.90	1887.75	106.91	70.23	20.96	8.75	2.52	5.59	3.95	
22	7.11	4.74	2.52	1.34	2199.23	51.77	63.85	23.34	8.75	2.52	4.74	3.95	
23	7.11	3.95	1.90	0.45	247.66	57.70	51.77	25.81	7.11	4.74	3.95	5.59	
24	5.59	3.95	1.90	0.15	83.63	63.85	51.77	23.34	8.75	2.52	3.20	5.59	
25	4.74	3.95	1.34	0.15	51.77	148.82	57.70	23.34	8.75	2.52	3.20	5.59	
26	4.74	3.95	1.34	0.15	35.42	492.69	83.63	18.67	8.75	3.20	2.52	8.75	
27	4.74	236.42	1.90	0.15	23.34	63.85	83.63	18.67	8.75	3.95	2.52	7.11	
28	4.74	30.48	1.90	0.00	18.67	40.62	76.82	18.67	10.52	3.20	3.95	7.11	
29	4.74	16.48	2.52	0.15	14.39	57.70	70.23	16.48	10.52	3.20		114.55	
30	4.74	12.40	2.52	46.07	12.40	35.42	63.85	16.48	10.52	2.52		12.40	
31		12.40		46.07	8.75		57.70		8.75	3.20		3.95	
Total	144.02	2994.86	303.10	279.08	10016.94	2925.67	15688.99	671.58	324.83	161.28	91.91	272.08	33874.34 Ton
Mean	4.80	96.61	10.10	9.00	323.13	97.52	506.10	22.39	10.48	5.20	3.28	8.78	
Max	7.11	2164.60	167.13	63.85	2757.87	492.69	6766.94	46.07	18.67	10.52	5.59	114.55	6766.94
Min	3.20	3.95	1.34	0.00	1.90	7.11	18.67	16.48	5.59	2.52	2.52	3.20	0.00

WATER YEAR 1998

KHONG RIVER BASIN

Loei River at Ban Fak Na, Loei (Kh.58A)

Location	Lat.17°-29'-35" N., Long. 101°-44'-19" E., on left bank at the bridge on road, Ban Fak Na, Amphoe Muang, Loei.
Drainage Area	3,101 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	15
R - Square	0.8840
Remarks	Continued Sediment Station

RID Computer Center, Processing : 21-AUG-2000 01:12:44.32 LQS/LQS02D/12

Station - Ban Fak Na, Muang, Loei, (KH.58A)
Stream - Loei
River - Khong
River System - Khong River

Royal Irrigation Department
Thailand
Hydrology Division

$QS = 1.4021\ QW^{1.72784}$

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.6	0.4	53.2	20566.0	272.2	191.2	71.1	39.0	45.1	2.2	1.3	1.0	
2	0.8	0.4	82.9	18569.0	208.9	711.7	63.7	37.5	37.5	3.7	1.4	0.5	
3	0.8	0.4	49.9	7090.0	113.2	1104.2	69.2	33.3	30.6	3.2	2.2	0.5	
4	0.6	0.4	39.0	8786.3	73.0	1429.6	54.9	31.9	24.2	3.2	2.2	0.5	
5	0.5	0.3	39.0	7090.0	60.1	1389.5	48.2	30.6	24.2	3.7	1.4	0.4	
6	0.5	0.4	46.6	3640.8	48.2	1330.2	42.0	37.5	26.7	4.8	1.8	0.3	
7	0.5	0.4	71.1	1745.5	73.0	1767.5	40.5	39.0	21.8	3.2	2.2	3.7	
8	0.6	1.0	320.7	946.5	185.5	3825.5	37.5	39.0	17.4	3.2	2.7	8.3	
9	0.6	4.1	280.1	847.0	312.4	4245.3	40.5	26.7	15.4	2.7	2.2	4.8	
10	0.6	0.5	87.0	879.7	422.2	1811.9	168.8	30.6	14.4	3.7	2.7	3.2	
11	0.5	0.3	51.5	337.6	1349.9	1616.0	1196.2	30.6	12.5	4.8	2.2	1.3	
12	0.6	0.3	39.0	227.1	1032.8	1658.7	1349.9	27.9	10.7	4.8	2.2	0.9	
13	0.7	0.3	33.3	202.9	698.4	912.8	1215.0	20.7	9.9	5.5	1.4	0.6	
14	0.7	5.5	30.6	137.3	422.2	443.9	1389.5	23.0	8.3	5.5	1.3	0.4	
15	0.6	104.2	27.9	104.2	422.2	320.7	1767.5	23.0	8.3	3.7	1.3	0.4	
16	0.7	34.7	43.5	132.4	685.2	646.2	1050.5	18.5	8.3	1.8	1.1	0.3	
17	0.7	17.4	30.6	234.4	304.2	997.9	814.9	21.8	6.8	1.4	0.8	0.2	
18	0.7	27.9	26.7	163.3	466.0	1594.8	711.7	23.0	7.6	1.4	0.7	0.2	
19	1.4	264.5	21.8	113.2	3178.8	980.6	1970.7	23.0	5.5	1.4	0.7	0.1	
20	2.6	87.0	16.4	74.9	7531.2	752.3	929.6	17.4	6.1	1.1	0.6	0.1	
21	2.3	42.0	13.4	61.9	9273.5	1015.3	390.5	14.4	4.3	0.8	0.7	0.1	
22	2.9	49.9	10.7	51.5	12705.1	711.7	304.2	21.8	3.7	0.8	0.8	0.1	
23	2.1	30.6	8.3	39.0	11628.1	523.3	168.8	108.7	4.3	1.1	0.8	0.1	
24	1.5	19.6	8.3	31.9	10188.4	646.2	122.6	91.1	4.3	1.3	0.8	0.1	
25	1.0	13.4	6.1	26.7	4442.2	783.4	74.9	54.9	3.7	1.4	0.9	0.1	
26	0.8	280.1	5.5	21.8	2183.2	752.3	63.7	48.2	2.2	1.3	1.0	0.1	
27	0.6	71.1	15.4	20.7	1140.6	725.1	56.6	45.1	2.2	3.2	1.0	0.3	
28	0.5	185.5	659.1	18.5	620.8	381.5	43.5	39.0	1.8	3.7	1.1	0.3	
29	0.5	54.9	3054.3	19.6	363.7	174.3	42.0	27.9	2.2	2.2		0.2	
30	0.4	39.0	12559.2	91.1	304.2	117.9	53.2	42.0	3.2	2.2		0.2	
31		30.6		46.6	132.4		45.1		3.7	1.4		0.3	
Total	27.9	1367.1	17731.1	72317.4	70841.8	33561.5	14397.0	1067.1	376.9	84.4	39.5	29.6	211841.3 Ton
Mean	0.9	44.1	591.0	2332.8	2285.2	1118.7	464.4	35.6	12.2	2.7	1.4	1.0	
Max	2.9	280.1	12559.2	20566.0	12705.1	4245.3	1970.7	108.7	45.1	5.5	2.7	8.3	20566.0
Min	0.4	0.3	5.5	18.5	48.2	117.9	37.5	14.4	1.8	0.8	0.6	0.1	0.1

WATER YEAR 1998

KHONG RIVER BASIN

Huai Nam Kam at Ban Dan Muang Kham, Sakon Nakhon (Kh.63)

Location	Lat. 17°-06'-15" N., Long. 104°-21'-26" E., on left bank at the bridge on road, Ban Dan Muang Kham, Amphoe Khok Si Suphan, Sakon Nakhon.
Drainage Area	1,764 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 48
Period of Available Records	1983 - Cont'd
Actual Measurement	1983 - Cont'd
Using Rating Curve Water Year	1983 - 1998
Number of observation	73
R - Square	0.8099
Remarks	Continued Sediment Station

RID Computer Center, Processing : 21-AUG-2000 01:12:50.03 LQS/LQS02D/12

Station - Ban Dan Muang Kham, Khok Sisuphan, Sakon Nakhon, (KH.63)
Stream - Huai Nam Kam
River - Khong
River System - Khong River

Royal Irrigation Department
Thailand
Hydrology Division
0.78392
QS = 7.2265 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.97	0.80	15.47	126.42	33.33	15.47	38.93	28.32	6.07	3.66	2.81	2.36	
2	1.97	0.69	13.22	148.68	32.51	19.03	37.36	28.32	6.94	3.66	2.74	2.28	
3	1.88	0.58	10.45	164.48	32.10	21.26	36.16	28.32	6.65	3.66	2.74	2.51	
4	1.88	0.58	8.88	183.09	31.27	21.26	34.96	12.44	5.16	3.52	2.74	2.44	
5	1.80	0.58	8.61	185.98	32.10	20.88	41.26	10.19	4.52	3.52	2.66	2.36	
6	1.80	0.58	39.32	192.89	31.27	20.11	57.43	9.93	3.93	3.38	2.66	2.28	
7	1.80	0.58	54.23	210.43	31.27	21.26	36.16	10.19	3.93	3.38	2.66	2.36	
8	1.80	0.58	64.69	213.22	30.85	22.38	34.55	9.93	4.84	3.24	2.66	2.44	
9	1.80	0.46	79.34	214.89	31.27	23.50	33.74	9.93	4.06	3.10	2.66	2.51	
10	1.80	0.46	95.17	214.89	31.27	36.96	32.92	7.23	3.80	2.96	2.59	2.44	
11	1.72	0.46	111.12	216.01	30.85	86.28	32.51	5.16	3.80	3.10	2.59	2.44	
12	1.63	0.46	128.37	215.45	31.27	90.96	33.33	4.52	3.52	3.38	2.59	2.44	
13	1.72	0.46	136.60	214.89	31.27	78.46	41.26	4.20	3.10	3.38	2.51	2.44	
14	1.72	0.46	141.62	209.87	31.27	69.05	57.78	4.06	4.06	3.52	2.59	2.36	
15	1.63	0.46	148.16	202.56	30.85	92.23	28.75	4.20	4.06	3.38	2.66	2.28	
16	1.55	0.46	151.26	195.18	30.44	117.74	34.15	4.06	3.80	3.24	2.59	2.28	
17	1.46	0.46	122.00	188.87	30.02	127.88	61.61	4.06	3.80	3.24	2.59	2.28	
18	1.46	2.21	86.71	178.42	29.59	131.28	62.30	4.06	3.80	3.24	2.59	2.28	
19	1.46	6.36	54.59	165.99	29.17	131.77	54.95	4.06	3.66	3.10	2.51	2.28	
20	1.46	6.07	49.53	155.36	17.28	133.70	24.39	3.93	3.52	3.10	2.59	2.28	
21	1.37	6.94	46.94	139.62	17.99	133.22	55.66	3.93	3.52	3.10	2.66	3.80	
22	1.37	11.46	45.45	125.93	18.34	131.77	60.57	4.84	3.52	3.10	2.66	4.52	
23	1.28	19.03	31.69	101.13	16.92	112.99	60.92	4.06	3.52	2.96	2.59	4.84	
24	1.28	17.99	31.69	85.85	15.83	96.42	60.92	4.20	3.52	2.96	2.51	4.52	
25	1.19	10.70	60.92	54.23	15.47	66.48	60.92	4.20	3.52	2.96	2.36	4.52	
26	1.19	6.94	64.35	48.79	13.60	58.13	54.23	3.93	3.52	2.89	2.51	4.20	
27	1.19	8.34	56.37	48.06	13.22	54.95	38.93	3.66	3.52	2.89	2.51	4.20	
28	1.09	5.46	60.92	47.69	12.44	53.52	25.72	4.20	3.52	2.89	2.44	4.20	
29	1.00	5.77	73.57	47.31	12.44	40.49	18.34	4.84	3.66	2.89		4.52	
30	0.90	10.70	79.34	36.16	12.20	39.32	11.71	4.06	3.66	2.81		4.52	
31		17.28		33.74	13.22		27.46		3.52	2.81		4.52	
Total	46.17	144.36	2070.58	4566.08	770.92	2068.75	1289.88	239.03	126.02	99.02	72.97	95.70	11589.48 Ton
Mean	1.54	4.66	69.02	147.29	24.87	68.96	41.61	7.97	4.07	3.19	2.61	3.09	
Max	1.97	19.03	151.26	216.01	33.33	133.70	62.30	28.32	6.94	3.66	2.81	4.84	216.01
Min	0.90	0.46	8.61	33.74	12.20	15.47	11.71	3.66	3.10	2.81	2.36	2.28	0.46

WATER YEAR 1998

KHONG RIVER BASIN

Lam Nam Kam at Ban Nong Rua Thong, Nakhon Phanom (Kh.69A)

Location	Lat.16-57-36 N., Long. 104-28-01 E., on right bank at the bridge on highway, Ban Nong Rua Thong, Amphoe Na Kae, Nakhon Phanom.
Drainage Area	1,932 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	15
R - Square	0.7443
Remarks	Continued Sediment Station

RID Computer Center, Processing : 24-AUG-2000 00:19:11.48 LQS/LQS02D/12

Station - T. Ban Kaeng, A. Na Kae, Nakhon Phanom, (KH.69A)
Stream - Kam
River - Khong
River System - Khong River

Royal Irrigation Department
Thailand
Hydrology Division
1.19288
QS = 3.3643 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.22	197.60	266.39	41.40	17.58	53.71	19.70	0.49	0.17	0.00	0.00	
2	0.00	0.17	117.06	409.53	40.20	19.70	53.71	31.95	0.44	0.17	0.00	0.00	
3	7.23	0.22	42.60	603.41	39.00	29.66	46.26	29.66	0.27	0.17	0.00	0.00	
4	3.36	0.27	52.45	607.59	39.00	41.40	41.40	21.85	0.32	0.22	0.00	0.00	
5	2.73	0.74	3.77	624.37	37.81	29.66	41.40	16.54	0.49	0.12	0.00	0.00	
6	1.54	0.74	73.05	595.06	39.00	29.66	43.82	14.48	0.44	0.22	0.00	0.00	
7	1.26	0.74	286.44	582.57	41.40	35.45	81.04	8.62	0.49	0.49	0.00	0.00	
8	1.26	0.38	213.21	582.57	40.20	46.26	43.82	4.18	0.49	0.32	0.00	0.00	
9	1.83	0.22	181.43	603.41	41.40	48.72	40.20	5.46	0.32	0.22	0.03	0.00	
10	1.54	0.22	197.60	624.37	41.40	96.02	41.40	5.03	0.38	0.17	0.12	0.00	
11	0.74	0.00	224.24	645.44	43.82	170.02	39.00	4.60	0.38	0.00	0.00	0.00	
12	0.74	0.17	227.01	653.90	42.60	266.39	39.00	3.77	0.44	0.00	0.00	0.00	
13	0.74	5.89	309.64	666.62	41.40	260.70	37.81	2.12	0.32	0.03	0.00	0.00	
14	0.74	3.36	324.29	831.51	39.00	192.96	37.81	2.12	0.32	0.03	0.00	0.00	
15	0.74	2.12	347.95	820.95	39.00	156.49	77.03	1.54	0.32	0.22	0.00	0.00	
16	0.49	1.54	365.86	726.50	36.63	221.47	39.00	1.54	0.32	0.38	0.00	0.00	
17	0.74	1.26	303.82	658.13	36.63	303.82	42.60	1.83	0.32	0.32	0.00	0.00	
18	0.74	2.73	199.93	595.06	36.63	330.18	86.44	1.83	0.32	0.32	0.00	0.00	
19	0.74	0.44	85.08	533.05	34.28	353.90	87.80	1.83	5.46	0.32	0.00	0.00	
20	0.99	1.26	65.20	455.28	29.66	402.56	74.37	1.54	6.34	0.12	0.00	0.00	
21	1.54	1.26	63.90	406.04	24.04	378.32	35.45	1.54	6.34	0.00	0.00	0.00	
22	1.26	0.44	62.61	385.22	30.80	362.87	67.80	1.54	5.46	0.00	0.00	0.00	
23	1.26	0.32	58.77	277.82	42.60	344.98	79.70	0.99	4.18	0.00	0.00	0.00	
24	1.83	0.22	54.97	224.24	39.00	309.64	79.70	0.74	3.77	0.00	0.00	0.00	
25	0.74	13.47	60.05	167.75	29.66	213.21	79.70	0.74	3.77	0.00	0.00	0.12	
26	0.49	11.49	143.14	83.73	40.20	121.35	81.04	0.74	2.73	0.00	0.00	0.17	
27	0.44	11.49	138.74	70.42	24.04	91.89	70.42	0.74	2.12	0.00	0.00	0.22	
28	0.17	10.52	123.50	66.50	22.94	79.70	41.40	0.74	0.38	0.00	0.00	0.32	
29	0.07	8.62	160.98	58.77	21.85	77.03	37.81	0.74	0.32	0.00		0.32	
30	0.22	9.56	235.36	58.77	18.64	58.77	19.70	0.74	0.32	0.00		0.44	
31		342.01		46.26	18.64		19.70		0.22	0.00		0.32	
Total	36.17	432.09	4920.25	13931.23	1092.87	5090.36	1660.04	189.44	48.28	4.01	0.15	1.91	27406.80 Ton
Mean	1.21	13.94	164.01	449.39	35.25	169.68	53.55	6.31	1.56	0.13	0.01	0.06	
Max	7.23	342.01	365.86	831.51	43.82	402.56	87.80	31.95	6.34	0.49	0.12	0.44	831.51
Min	0.00	0.00	3.77	46.26	18.64	17.58	19.70	0.74	0.22	0.00	0.00	0.00	0.00

WATER YEAR 1998

KHONG RIVER BASIN

Nam Mae Kham at Ban Mae Kham, Chiang Rai (Kh.72)

Location	Lat. 20-13-03 N., Long. 99-51-38 E., on right bank at the bridge of Mae Chan - Mae Sai Highway, Amphoe Mae Chan, Chiang Rai.
Drainage Area	644 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	0.7223
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:30:00.30 LQS/LQS02D/12

Station - Ban Mae Kham, Mae Chan, Chiang Rai, (KH.72)
Stream - Nam Mae Kham
River - Khong
River System - Khong River

Royal Irrigation Department
Thailand
Hydrology Division 280598
1.41080
QS = 7.6193 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	40.0	25.7	120.5	124.4	149.1	1658.4	239.0	197.3	153.4	90.3	71.3	45.9	
2	32.6	23.2	71.3	312.2	1736.2	1384.1	239.0	191.8	145.0	90.3	66.2	49.9	
3	34.4	41.9	49.9	169.4	594.5	751.3	232.8	388.9	140.9	76.3	61.4	47.9	
4	63.8	43.9	63.8	498.3	430.0	584.6	220.7	535.7	140.9	71.3	47.9	45.9	
5	43.9	43.9	341.1	739.0	388.9	430.0	214.7	277.3	153.4	63.8	41.9	45.9	
6	49.9	43.9	101.3	1449.1	326.6	594.5	226.8	232.8	153.4	63.8	41.9	45.9	
7	59.1	41.9	66.2	341.1	226.8	480.9	214.7	208.8	145.0	63.8	63.8	45.9	
8	52.0	41.9	52.0	158.6	203.2	1870.3	197.3	208.8	132.7	63.8	52.0	43.9	
9	49.9	32.6	52.0	105.0	670.0	2233.7	191.8	208.8	132.7	63.8	52.0	43.9	
10	31.3	29.8	52.0	145.0	291.2	1238.8	191.8	203.2	132.7	71.3	49.9	41.9	
11	29.8	27.1	45.9	220.7	284.1	726.8	191.8	191.8	132.7	76.3	49.9	34.4	
12	28.5	19.5	52.0	158.6	251.4	637.0	186.0	186.0	124.4	73.8	47.9	31.3	
13	27.1	124.4	41.9	175.0	326.6	516.5	220.7	180.6	112.7	73.8	149.1	31.3	
14	25.7	49.9	41.9	128.5	284.1	472.3	430.0	180.6	112.7	73.8	68.6	31.3	
15	24.5	38.1	41.9	140.9	239.0	1036.7	319.5	180.6	112.7	76.3	79.7	29.8	
16	29.8	28.5	40.0	413.4	257.6	1762.4	277.3	175.0	120.5	305.3	79.7	29.8	
17	25.7	25.7	36.2	226.8	208.8	867.5	226.8	175.0	112.7	545.4	73.8	29.8	
18	25.7	36.2	32.6	197.3	226.8	626.1	239.0	191.8	105.0	191.8	56.5	29.8	
19	45.9	32.6	32.6	214.7	312.2	430.0	526.1	186.0	105.0	180.6	54.2	29.8	
20	68.6	45.9	25.7	136.7	604.4	472.3	1071.0	186.0	105.0	158.6	54.2	29.8	
21	45.9	86.8	41.9	128.5	1710.2	438.4	867.5	186.0	105.0	132.7	52.0	29.8	
22	41.9	59.1	79.7	245.2	1341.8	421.7	284.1	257.6	101.3	124.4	52.0	29.8	
23	49.9	32.6	191.8	388.9	647.9	397.0	264.0	245.2	101.3	116.7	52.0	29.8	
24	41.9	32.6	61.4	257.6	1238.8	388.9	239.0	203.2	101.3	94.1	49.9	40.0	
25	71.3	128.5	41.9	149.1	2333.8	333.7	226.8	197.3	97.7	90.3	45.9	36.2	
26	41.9	63.8	25.7	349.0	726.8	319.5	208.8	191.8	97.7	83.3	45.9	34.4	
27	31.3	220.7	25.7	372.8	564.9	284.1	270.3	175.0	94.1	76.3	45.9	34.4	
28	31.3	169.4	124.4	257.6	421.7	291.2	197.3	158.6	94.1	73.8	45.9	32.6	
29	31.3	112.7	333.7	149.1	380.8	270.3	186.0	153.4	94.1	71.3		27.1	
30	31.3	116.7	140.9	132.7	472.3	251.4	186.0	164.1	90.3	71.3		27.1	
31		145.0		175.0	1427.4		203.2		90.3	71.3		29.8	
Total	1206.2	1964.5	2427.9	8660.2	19277.9	22170.4	8989.8	6419.0	3640.7	3479.7	1651.4	1115.1	81002.8 Ton
Mean	40.2	63.4	80.9	279.4	621.9	739.0	290.0	214.0	117.4	112.2	59.0	36.0	
Max	71.3	220.7	341.1	1449.1	2333.8	2233.7	1071.0	535.7	153.4	545.4	149.1	49.9	2333.8
Min	24.5	19.5	25.7	105.0	149.1	251.4	186.0	153.4	90.3	63.8	41.9	27.1	19.5

WATER YEAR 1998

KHONG RIVER BASIN

Nam Mae Chan at Ban Mae Khi, Chiang Rai (Kh.89)

Location	Lat. 20-09-20 N., Long. 90-51-44 E., on left bank at the bridge of Mae Chan - Mae Sai Highway, Amphoe Mae Chan, Chiang Rai.
Drainage Area	255 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	0.8947
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:30:05.51

LQS/LQS02D/12

Station - Ban Mae Khi, A. Mae Chan, Chiang Rai, (KH.89)
Stream - Mae Chan
River - Mae Chan
River System - Khong River

Royal Irrigation Department
Thailand
Hydrology Division 280598
1.71660
QS = 7.1331 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.90	3.59	2.56	188.69	43.58	970.68	20.89	6.30	36.30	1.61	9.62	2.25	
2	0.53	3.59	5.51	165.76	1439.99	1393.16	20.89	7.13	34.15	1.61	9.62	7.13	
3	0.53	2.56	1.88	127.34	261.99	251.61	20.89	158.10	34.15	1.23	9.62	13.50	
4	1.48	2.56	1.88	196.94	165.76	102.00	24.46	241.40	24.46	0.96	6.30	5.51	
5	2.97	1.88	138.13	859.25	221.51	80.05	22.64	116.92	29.80	0.38	3.59	4.45	
6	3.68	1.35	34.15	565.91	41.26	132.69	20.89	84.12	28.04	0.21	4.45	2.88	
7	6.07	1.06	24.46	132.69	51.13	231.37	26.12	60.97	24.46	0.45	2.56	3.23	
8	7.63	0.80	2.88	57.41	97.21	823.37	24.46	53.95	24.46	2.25	3.23	2.88	
9	34.15	0.71	3.59	72.16	417.18	758.69	22.64	53.95	26.12	2.25	2.88	2.56	
10	17.92	1.06	3.59	102.00	102.00	241.40	12.55	48.65	26.12	4.45	3.59	2.56	
11	12.55	0.80	2.88	84.12	92.52	127.34	12.55	48.65	19.38	12.55	4.06	3.23	
12	7.13	0.71	2.56	53.95	45.95	84.12	9.62	48.65	16.33	10.61	3.23	3.23	
13	4.86	1.35	1.61	43.58	45.95	53.95	13.50	48.65	20.89	4.86	9.62	3.59	
14	4.06	12.55	1.61	34.15	221.51	48.65	29.80	43.58	19.38	7.13	4.06	3.23	
15	3.23	7.13	1.61	28.04	138.13	515.21	36.30	41.26	17.92	4.45	2.25	2.56	
16	2.88	13.50	1.23	41.26	138.13	701.22	41.26	45.95	16.33	31.83	2.88	2.88	
17	3.59	12.55	1.88	28.04	57.41	111.85	29.80	45.95	16.33	111.85	2.56	1.23	
18	6.30	13.50	2.56	12.55	80.05	80.05	14.80	45.95	12.55	97.21	2.25	1.06	
19	5.51	16.33	2.56	28.04	380.40	53.95	251.61	43.58	17.92	122.08	2.25	2.25	
20	20.89	16.33	3.59	10.61	305.26	36.30	251.61	38.74	17.92	45.95	1.61	1.61	
21	17.92	13.50	11.49	11.49	5824.30	34.15	38.74	41.26	17.92	11.49	2.88	1.35	
22	16.33	7.88	20.89	111.85	932.91	36.30	13.50	64.61	17.92	2.88	3.59	0.19	
23	16.33	1.88	14.80	122.08	165.76	29.80	6.30	53.95	8.80	2.56	1.35	4.45	
24	14.80	1.88	14.80	72.16	645.65	24.46	11.49	51.13	10.61	4.06	1.23	3.59	
25	12.55	2.88	8.80	80.05	305.26	22.64	11.49	41.26	11.49	3.59	1.06	7.13	
26	10.61	4.86	7.13	132.69	213.36	20.89	12.55	36.30	4.06	3.23	0.96	6.30	
27	4.86	36.30	6.30	283.28	92.52	20.89	11.49	34.15	3.23	2.88	0.96	5.51	
28	4.86	38.74	53.95	102.00	64.61	19.38	11.49	34.15	12.55	2.56	1.06	4.86	
29	4.86	19.38	143.66	60.97	48.65	13.50	12.55	36.30	13.50	11.49		0.11	
30	4.45	13.50	127.34	34.15	84.12	12.55	13.50	36.30	17.92	9.62		0.14	
31		8.80		80.05	729.72		12.55		2.56	9.62		1.61	
Total	254.43	263.51	649.88	3923.26	13453.78	7032.22	1062.93	1711.86	583.57	527.90	103.32	107.06	29673.72 Ton
Mean	8.48	8.50	21.66	126.56	433.99	234.41	34.29	57.06	18.82	17.03	3.69	3.45	
Max	34.15	38.74	143.66	859.25	5824.30	1393.16	251.61	241.40	36.30	122.08	9.62	13.50	5824.30
Min	0.53	0.71	1.23	10.61	41.26	12.55	6.30	6.30	2.56	0.21	0.96	0.11	0.11

WATER YEAR 1998

KHONG RIVER BASIN

Lam Nam Phung at Ban Tong Khop, Sakhon Nakhon (Kh.90)

Location	Lat.17-04-04 N., Long. 104-15-32 E., on right bank at the bridge on highway, Ban Tong Khop, Amphoe Khok Si Suphan, Sakhon Nakhon.
Drainage Area	848 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 48
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	15
R - Square	0.7898
Remarks	Continued Sediment Station

RID Computer Center, Processing : 21-AUG-2000 01:12:59.96 LQS/LQS02D/12

Station - T.Tong Khop, A. Khoksisuphan, Sakon Nakhon, (KH.90)
Stream - Phung
River - Khong
River System - Khong River

Royal Irrigation Department
Thailand
Hydrology Division
1.81578
QS = 1.2260 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.94	27.09	30.77	222.98	22.29	10.89	19.43	2.65	3.25	0.11	0.09	0.04	
2	2.65	27.09	40.89	144.34	15.47	96.63	16.75	2.38	3.25	0.11	0.14	0.04	
3	2.65	27.09	32.69	179.44	14.24	40.89	16.75	2.38	0.89	0.19	0.14	0.05	
4	2.94	25.33	38.77	414.90	11.92	23.79	16.75	2.11	0.58	0.11	0.11	0.07	
5	2.94	27.09	30.77	222.98	14.24	9.90	18.07	2.38	0.48	0.14	0.07	0.09	
6	2.65	27.09	93.33	161.46	65.98	30.77	13.06	1.87	0.32	0.07	0.09	0.07	
7	2.94	27.09	136.29	103.39	45.30	532.44	10.89	1.41	0.40	0.09	0.09	0.09	
8	3.25	27.09	80.65	83.75	25.33	228.08	10.89	0.89	0.40	0.11	0.05	0.09	
9	2.94	27.09	47.69	68.81	40.89	140.20	22.29	0.58	0.25	0.19	0.03	0.09	
10	3.56	27.09	47.69	71.69	52.65	2187.79	15.47	0.40	0.25	0.19	0.03	0.89	
11	3.25	27.09	36.69	50.14	80.65	2645.40	8.96	0.89	0.14	0.14	0.04	0.25	
12	3.25	27.09	32.69	52.65	55.20	458.55	10.89	0.89	0.14	0.11	0.04	0.05	
13	3.56	28.91	32.69	60.48	52.65	174.87	9.90	0.78	0.14	0.14	0.03	0.14	
14	10.89	25.33	27.09	246.57	45.30	128.63	8.05	0.78	0.11	0.14	0.03	0.05	
15	3.25	27.09	28.91	157.10	38.77	86.89	8.05	0.78	0.14	0.09	0.05	0.04	
16	3.25	27.09	27.09	68.81	32.69	117.51	7.19	0.89	0.25	0.19	0.05	0.03	
17	3.25	28.91	27.09	38.77	28.91	80.65	8.05	0.78	0.32	0.11	0.04	0.25	
18	3.25	32.69	32.69	55.20	22.29	74.63	8.05	0.58	0.40	0.11	0.04	0.14	
19	3.25	43.07	30.77	52.65	23.79	60.48	8.96	0.58	0.32	0.11	0.03	0.05	
20	3.56	34.67	32.69	43.07	36.69	68.81	7.19	0.68	0.32	0.11	0.05	0.04	
21	13.06	28.91	32.69	63.21	80.65	57.82	6.38	1.87	0.32	0.07	0.07	0.03	
22	22.29	23.79	32.69	43.07	103.39	38.77	5.61	3.56	0.32	0.09	0.05	0.09	
23	22.29	32.69	36.69	43.07	165.88	32.69	4.88	4.20	0.14	0.07	0.05	0.48	
24	15.47	30.77	36.69	40.89	80.65	25.33	4.20	4.20	0.11	0.11	0.05	1.01	
25	20.84	32.69	57.82	19.43	68.81	20.84	3.25	4.88	0.14	0.11	0.09	0.14	
26	20.84	43.07	106.84	16.75	55.20	19.43	2.94	3.56	0.14	0.09	0.11	0.11	
27	22.29	28.91	68.81	22.29	22.29	55.20	2.38	2.94	0.14	0.11	0.09	0.14	
28	30.77	32.69	77.61	22.29	16.75	28.91	2.11	2.65	0.14	0.11	0.05	0.32	
29	28.91	28.91	184.07	19.43	9.90	20.84	2.38	2.38	0.19	0.07		0.40	
30	28.91	30.77	310.70	20.84	9.90	20.84	2.38	2.94	0.19	0.09		0.25	
31		36.69		16.75	13.06		2.65		0.11	0.09		0.14	
Total	295.89	920.97	1832.55	2827.20	1351.73	7518.47	284.80	57.86	14.29	3.57	1.80	5.67	15114.80 Ton
Mean	9.86	29.71	61.09	91.20	43.60	250.62	9.19	1.93	0.46	0.12	0.06	0.18	
Max	30.77	43.07	310.70	414.90	165.88	2645.40	22.29	4.88	3.25	0.19	0.14	1.01	2645.40
Min	2.65	23.79	27.09	16.75	9.90	9.90	2.11	0.40	0.11	0.07	0.03	0.03	0.03

WATER YEAR 1998

KHONG RIVER BASIN

Huai Bang Sai at Ban Kan Luang Dong, Muk Dahan (Kh.92)

Location	Lat.16-44-06 N., Long. 104-31-23 E., on left bank at the bridge on highway, Ban Kan Luang Dong, Amphoe Dong Luang, Muk Dahan.
Drainage Area	1,118 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 48
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	15
R - Square	0.9547
Remarks	Continued Sediment Station

RID Computer Center, Processing : 21-AUG-2000 01:13:05.39

LQS/LQS02D/12

Station - Huai Bang Sai, A. Dong Luang, Mukdahan, (KH.92)
Stream - Huai Bang Sai
River - Khong
River System - Khong River

Royal Irrigation Department
Thailand
Hydrology Division
1.29124
QS = 4.0317 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.57	0.18	117.04	209.93	132.28	120.05	67.82	9.23	1.65	0.44	0.15	0.06	
2	9.23	0.18	148.39	416.59	141.85	446.46	61.40	8.61	1.65	0.41	0.15	0.06	
3	6.81	0.15	74.39	704.04	145.11	223.35	57.20	8.00	1.23	0.41	0.15	0.06	
4	1.65	0.13	22.83	317.31	59.29	201.71	51.58	7.40	0.78	0.38	0.15	0.06	
5	0.78	0.13	14.12	218.86	51.58	89.16	47.91	6.81	0.85	0.38	0.13	0.06	
6	0.71	0.15	1310.88	138.60	148.39	89.16	46.10	6.81	0.78	0.38	0.13	0.04	
7	0.71	0.13	168.40	123.09	72.18	205.49	42.53	6.23	0.78	0.35	0.13	0.04	
8	1.23	0.13	161.67	145.11	197.94	1333.95	40.76	6.23	0.78	0.35	0.13	5.94	
9	0.85	0.13	65.67	114.05	61.40	332.02	47.91	5.66	0.78	0.32	0.13	8.18	
10	0.57	0.13	31.38	83.96	114.05	4877.42	59.29	5.10	0.71	0.32	0.11	11.29	
11	0.38	0.11	25.56	111.07	120.05	3383.06	55.31	4.56	0.71	0.32	0.11	15.59	
12	0.32	0.11	17.74	91.79	70.00	605.61	61.40	4.56	0.64	0.29	0.11	21.53	
13	0.26	0.13	14.12	89.16	57.20	346.88	42.53	4.56	0.64	0.29	0.11	24.15	
14	0.26	0.13	11.16	302.75	46.10	250.75	35.92	4.03	0.78	0.29	0.11	25.56	
15	0.26	0.13	8.61	297.94	39.02	814.30	32.88	4.03	0.74	0.26	0.11	24.15	
16	0.21	0.13	6.23	123.09	35.92	375.57	28.44	3.52	0.74	0.26	0.11	24.15	
17	0.64	6.81	5.10	83.96	39.02	549.78	34.39	3.52	0.71	0.26	0.08	24.15	
18	0.44	2.54	5.66	67.82	32.88	375.57	47.91	3.02	0.67	0.26	0.08	26.99	
19	0.32	0.71	9.87	53.44	31.38	581.53	51.58	2.54	0.67	0.23	0.08	26.99	
20	0.32	4.56	6.81	47.91	278.84	485.21	28.44	2.08	0.64	0.23	0.08	26.99	
21	0.21	6.23	5.66	40.76	464.61	260.04	24.15	2.08	0.60	0.23	0.08	22.83	
22	0.71	5.66	4.03	35.92	621.78	190.46	21.53	2.08	0.60	0.21	0.08	31.38	
23	0.64	1.65	3.52	31.38	201.71	151.69	18.98	1.23	0.57	0.21	0.08	44.31	
24	0.44	0.71	11.82	29.90	129.20	135.37	17.74	1.23	0.57	0.21	0.08	39.02	
25	0.32	0.78	37.46	29.90	81.39	114.05	15.31	1.23	0.54	0.21	0.06	34.39	
26	0.26	0.57	94.43	40.76	61.40	102.46	12.96	0.85	0.54	0.18	0.06	39.02	
27	0.26	1.65	65.67	29.90	51.58	120.05	11.82	1.23	0.50	0.18	0.06	61.40	
28	0.21	10.51	218.86	24.15	42.53	97.09	11.82	1.23	0.50	0.18	0.06	65.67	
29	0.21	9.87	3340.34	29.90	39.02	83.96	11.16	1.23	0.47	0.18		47.91	
30	0.21	8.61	557.68	25.56	35.92	78.84	10.51	0.85	0.47	0.18		72.18	
31		172.04		32.88	132.28		9.87		0.44	0.15		67.82	
Total	29.99	235.08	6565.10	4091.48	3735.90	17021.04	1107.15	119.74	22.73	8.55	2.90	791.97	33731.63 Ton
Mean	1.00	7.58	218.84	131.98	120.51	567.37	35.71	3.99	0.73	0.28	0.10	25.55	
Max	9.23	172.04	3340.34	704.04	621.78	4877.42	67.82	9.23	1.65	0.44	0.15	72.18	4877.42
Min	0.21	0.11	3.52	24.15	31.38	78.84	9.87	0.85	0.44	0.15	0.06	0.04	0.04

WATER YEAR 1998

CHI RIVER BASIN

Chi River at Wat Tai Kosum, Maha Sarakham (E.1)

Location	Lat. 16-15-02 N., Long. 103-04-25 E., on RIGHt bank at Wat Tai Kosum about 800 meters north-east of Amphoe Kosum Phisai Office, Maha Sarakham.
Drainage Area	29,788 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	15
R - Square	0.7156
Remarks	Continued Sediment Station

RID Computer Center, Processing : 21-AUG-2000 01:12:38.22 LQS/LQS02D/12

Station - Wat Tai Kosum, Kosum Phisai, Maha Sarakham, (E.1)
Stream - Chi
River - Chi
River System - Chi

Royal Irrigation Department
Thailand
Hydrology Division
1.39657
QS = 1.3589 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	32.0	45.7	45.7	58.6	39.7	1500.7	498.6	419.3	47.3	10.8	2.6	39.7	
2	22.2	23.9	99.0	87.6	51.2	1433.1	523.1	292.7	142.6	3.3	3.1	44.2	
3	23.1	26.5	79.4	58.6	32.9	1433.1	435.3	292.7	111.7	3.3	3.3	36.7	
4	16.6	10.8	79.4	118.4	24.8	1235.8	382.6	278.4	121.8	8.8	2.9	192.9	
5	15.1	13.6	74.0	160.7	32.9	1171.9	341.8	227.8	79.4	10.8	2.4	58.6	
6	22.2	11.4	111.7	326.8	115.0	1162.9	287.9	292.7	53.6	10.8	1.4	82.1	
7	32.0	7.5	101.9	498.6	111.7	1300.7	188.6	105.1	68.7	8.8	1.8	139.1	
8	36.7	12.2	48.9	529.3	160.7	1500.7	297.5	176.0	93.2	8.8	2.9	74.0	
9	96.1	8.8	71.3	618.0	157.1	1983.7	214.5	146.2	58.6	8.8	4.6	35.3	
10	82.1	6.9	58.6	631.0	149.8	2353.4	188.6	168.1	32.0	6.3	5.2	79.4	
11	71.3	2.9	58.6	637.5	188.6	2956.8	171.9	168.1	51.2	7.5	4.1	14.3	
12	39.7	2.2	48.9	670.4	205.8	3625.9	498.6	132.1	28.3	8.8	3.3	19.0	
13	32.9	4.6	362.0	730.8	157.1	4153.3	637.5	44.2	27.4	8.8	2.6	12.2	
14	32.9	23.9	58.6	703.7	192.9	3932.6	744.4	283.2	36.7	5.7	2.6	24.8	
15	32.9	30.1	23.9	818.2	292.7	3378.8	785.6	99.0	42.7	5.7	2.9	21.4	
16	42.7	14.3	2.4	724.0	554.2	2340.8	834.6	96.1	35.3	5.7	3.3	13.6	
17	58.6	19.8	3.6	785.6	724.0	1724.4	703.7	164.4	25.7	6.3	4.1	15.1	
18	153.4	28.3	1.3	785.6	585.9	1574.0	703.7	17.4	23.9	8.8	5.7	12.9	
19	128.6	44.2	2.6	598.7	751.2	1199.2	901.1	15.8	32.0	10.8	4.6	14.3	
20	111.7	41.2	1.3	287.9	751.2	1181.0	1144.9	32.9	58.6	15.1	3.3	12.2	
21	201.4	125.2	4.6	414.0	1064.7	867.6	909.5	61.1	30.1	9.4	3.3	25.7	
22	149.8	68.7	10.1	188.6	1553.0	751.2	818.2	149.8	22.2	8.8	3.1	19.8	
23	132.1	23.1	12.2	111.7	1876.4	785.6	859.3	17.4	31.1	8.8	2.6	53.6	
24	118.4	23.9	6.9	90.4	2391.3	764.9	751.2	51.2	32.0	6.9	2.6	53.6	
25	84.8	29.2	6.3	93.2	2537.5	801.8	793.7	115.0	19.8	5.7	2.9	90.4	
26	56.1	21.4	10.1	63.6	2551.2	724.0	683.7	87.6	15.8	5.7	10.1	74.0	
27	45.7	17.4	19.8	51.2	2510.2	818.2	618.0	105.1	8.8	3.6	1.3	58.6	
28	39.7	19.0	22.2	58.6	2240.6	717.2	710.5	32.9	13.6	5.7	1.3	56.1	
29	23.1	31.1	20.6	58.6	2044.1	637.5	573.2	58.6	22.2	5.7		68.7	
30	79.4	33.9	23.9	19.8	1864.6	560.5	457.0	128.6	23.9	5.7		71.3	
31		23.9		30.1	1712.9		341.8		38.2	5.7		66.1	
Total	2013.3	795.6	1469.8	11009.8	27625.9	48571.3	18000.6	4259.5	1428.4	235.4	93.9	1579.7	117083.2 Ton
Mean	67.1	25.7	49.0	355.2	891.2	1619.0	580.7	142.0	46.1	7.6	3.4	51.0	
Max	201.4	125.2	362.0	818.2	2551.2	4153.3	1144.9	419.3	142.6	15.1	10.1	192.9	4153.3
Min	15.1	2.2	1.3	19.8	24.8	560.5	171.9	15.8	8.8	3.3	1.3	12.2	1.3

WATER YEAR 1998

MUN RIVER BASIN

Mun River at Rasi Salai, Si Sa Ket (M.5)

Location	Lat. 15°-20'-16" N., Long. 104°-09'-29" E., on left bank infront of Amphoe Ra Si Salai office, Si Sa Ket.
Drainage Area	44,275 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.7867
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:33:32.41

LQS/LQS02D/12

Station - Rasi Salai, Rasi Salai, Si Sa Ket, (M.5)
Stream - Mun
River - Mun
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 010499
0.95238
QS = 5.2313 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	8.7	7.7	302.4	23.3	41.5	221.2	731.5	839.3	21.4	80.3	55.8	12.0	
2	8.4	7.9	308.9	15.8	43.3	227.0	758.7	907.2	106.2	72.5	54.0	9.6	
3	8.7	7.9	282.8	30.6	39.7	227.0	782.0	928.3	289.3	80.3	52.2	9.4	
4	9.6	8.4	269.7	50.4	36.1	247.2	758.7	928.3	582.8	32.5	46.9	9.6	
5	9.6	8.7	292.6	52.2	32.5	344.5	766.4	941.0	1303.7	25.1	46.9	9.9	
6	8.7	8.9	341.3	52.2	30.6	519.6	754.8	957.9	1066.7	43.3	46.9	21.4	
7	7.7	8.9	308.9	64.6	27.0	719.8	527.5	911.4	402.5	54.0	45.1	9.4	
8	7.9	7.7	276.3	57.5	28.8	712.0	209.7	860.5	77.7	48.7	43.3	10.1	
9	8.9	8.7	250.1	46.9	21.4	708.1	405.7	801.4	90.7	46.9	41.5	9.2	
10	8.2	32.5	244.3	50.4	34.3	692.5	523.6	637.7	539.4	50.4	41.5	9.4	
11	8.4	59.3	215.5	61.1	28.8	708.1	629.9	399.3	1153.6	50.4	39.7	9.9	
12	15.8	64.6	152.1	62.8	27.0	657.3	590.6	241.4	1016.2	39.7	36.1	9.9	
13	30.6	77.7	57.5	61.1	27.0	563.1	574.9	177.2	354.2	41.5	21.4	9.6	
14	41.5	57.5	46.9	64.6	23.3	479.9	586.7	27.0	37.9	41.5	10.1	9.4	
15	27.0	55.8	45.1	90.7	15.8	269.7	602.4	9.4	299.1	25.1	10.1	13.9	
16	48.7	72.5	25.1	129.2	15.8	189.7	653.4	10.1	416.1	8.9	9.6	17.7	
17	19.6	201.0	25.1	218.4	10.1	129.2	723.7	9.4	420.1	15.8	9.4	21.4	
18	9.4	227.0	25.1	416.1	9.9	103.6	723.7	9.2	432.1	10.1	9.4	9.6	
19	9.2	212.6	9.2	495.8	62.8	90.7	715.9	8.7	357.5	9.9	9.2	9.6	
20	10.1	189.7	27.0	507.7	182.2	101.1	750.9	8.9	157.1	12.0	8.9	9.6	
21	8.4	198.0	8.7	551.2	380.0	203.9	766.4	7.9	27.0	15.8	9.9	9.9	
22	8.4	192.2	21.4	436.1	295.9	456.1	805.2	8.9	21.4	25.1	9.6	13.9	
23	8.4	182.2	15.8	203.9	273.0	531.5	750.9	8.4	28.8	15.8	9.6	13.9	
24	8.2	174.7	8.9	126.7	341.3	731.5	758.7	8.7	28.8	21.4	17.7	13.9	
25	8.4	172.2	7.9	82.9	399.3	881.7	754.8	10.1	43.3	19.6	19.6	13.9	
26	8.2	182.2	9.4	69.9	420.1	970.6	766.4	8.4	90.7	15.8	13.9	12.0	
27	7.9	218.4	12.0	41.5	325.1	830.8	758.7	7.9	103.6	15.8	9.4	13.9	
28	7.7	318.6	9.9	36.1	295.9	739.2	750.9	9.2	101.1	15.8	9.4	13.9	
29	7.5	286.1	10.1	41.5	206.8	704.2	835.0	9.4	85.5	15.8		13.9	
30	7.7	344.5	10.1	46.9	209.7	774.2	869.0	8.2	57.5	15.8		9.9	
31		344.5		43.3	221.2		869.0		72.5	54.0		8.9	
Total	387.5	3938.6	3620.1	4231.4	4106.2	14735.0	21455.7	9700.7	9784.5	1019.6	737.1	368.6	74085.0 Ton
Mean	12.9	127.1	120.7	136.5	132.5	491.2	692.1	323.4	315.6	32.9	26.3	11.9	
Max	48.7	344.5	341.3	551.2	420.1	970.6	869.0	957.9	1303.7	80.3	55.8	21.4	1303.7
Min	7.5	7.7	7.9	15.8	9.9	90.7	209.7	7.9	21.4	8.9	8.9	8.9	7.5

WATER YEAR 1998

MUN RIVER BASIN

Huai Samran at Muang, Si Sa Ket (M.9)

Location	Lat. 15-07-00 N., Long. 104-19-20 E., on right bank at the bridge on highway, Amphoe Muang, Si Sa Ket.
Drainage Area	3,026 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	18
R - Square	0.8332
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:33:38.44

LQS/LQS02D/12

Station - Si Sa Ket, A. Muang, Si Sa Ket, (M.9)
Stream - Huai Samran
River - Mun
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 010699
0.93184
QS = 6.0664 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.04	2.34	3.36	2.22	2.40	3.00	23.10	42.61	65.50	4.93	2.46	0.91	
2	2.04	2.22	3.36	2.70	2.28	3.06	22.08	42.12	67.73	4.58	2.46	0.84	
3	2.04	2.16	3.42	2.82	2.16	3.00	22.59	42.12	72.27	4.29	2.46	0.84	
4	2.10	2.16	2.88	3.48	2.28	3.00	21.56	43.59	73.78	4.12	2.46	0.78	
5	2.04	2.16	3.00	5.04	2.76	3.06	21.05	43.59	81.28	4.29	2.46	0.71	
6	2.04	2.10	3.00	4.41	2.34	3.48	19.75	41.14	101.68	3.59	2.46	0.71	
7	2.04	2.16	3.00	3.89	2.28	6.01	19.49	38.18	78.29	3.53	2.46	0.64	
8	1.98	2.16	3.00	3.36	2.40	14.25	9.95	32.71	59.06	3.48	2.46	0.58	
9	1.98	2.22	2.82	3.06	4.58	14.78	9.40	28.70	50.50	3.36	2.46	0.58	
10	1.98	2.22	2.82	3.12	3.12	15.31	9.95	24.89	44.57	3.30	2.46	0.58	
11	1.98	2.22	2.70	3.00	2.94	17.93	14.25	21.31	45.54	3.18	2.34	0.51	
12	1.91	2.22	2.58	3.06	3.12	17.93	16.62	15.57	59.78	3.18	2.22	0.51	
13	1.91	2.16	2.52	3.18	3.06	14.51	16.89	17.41	40.64	3.12	2.10	0.51	
14	1.91	2.22	2.46	4.06	2.94	13.45	23.36	18.45	26.42	3.12	1.98	0.44	
15	1.91	2.16	2.46	3.30	2.82	8.85	25.91	17.41	22.85	3.18	1.91	0.44	
16	1.91	2.16	2.28	2.88	2.94	5.27	26.67	13.98	20.27	3.18	1.79	0.44	
17	1.91	2.16	2.34	2.70	3.36	4.87	34.21	12.38	18.98	3.12	1.73	0.37	
18	1.85	2.16	2.28	2.82	3.00	5.44	64.79	12.11	17.15	3.00	1.60	0.37	
19	1.91	2.04	2.28	4.00	3.06	14.51	144.33	11.03	15.83	3.06	1.54	0.37	
20	1.85	2.16	2.22	4.47	2.88	15.04	102.60	10.49	14.51	2.94	1.48	0.37	
21	1.91	2.22	2.22	5.67	4.06	29.20	110.85	9.67	12.92	2.82	1.42	0.30	
22	2.16	2.04	2.22	5.33	5.50	33.21	107.19	4.81	10.49	2.64	1.29	0.30	
23	2.34	2.16	2.22	4.98	5.61	32.21	92.45	4.58	10.22	2.64	1.23	0.30	
24	2.64	2.10	2.40	4.41	5.56	37.19	82.97	5.67	9.40	2.58	1.16	0.30	
25	2.64	4.29	2.28	3.24	6.35	41.63	75.28	8.30	9.13	2.58	1.10	0.23	
26	2.52	2.82	2.88	2.58	7.19	47.00	70.76	10.76	7.19	2.52	1.04	0.23	
27	2.46	3.59	3.00	2.34	5.95	44.57	63.36	16.36	5.90	2.52	1.04	0.23	
28	2.46	3.48	2.28	2.28	4.87	34.21	56.57	142.09	5.61	2.46	0.97	0.23	
29	2.46	2.88	2.22	2.22	3.94	25.66	51.66	84.64	5.39	2.46		0.23	
30	2.46	3.00	2.22	2.28	3.53	24.38	52.24	59.78	5.27	2.46		0.23	
31		3.06		2.28	3.00		48.75		5.21	2.46		0.23	
Total	63.38	75.20	78.72	105.18	112.28	536.01	1460.63	876.45	1063.36	98.69	52.54	14.31	4536.75 Ton
Mean	2.11	2.43	2.62	3.39	3.62	17.87	47.12	29.22	34.30	3.18	1.88	0.46	
Max	2.64	4.29	3.42	5.67	7.19	47.00	144.33	142.09	101.68	4.93	2.46	0.91	144.33
Min	1.85	2.04	2.22	2.22	2.16	3.00	9.40	4.58	5.21	2.46	0.97	0.23	0.23

WATER YEAR 1998

MUN RIVER BASIN

Lam Takhong at Vaccine Serum office, Nakhon Ratchasima (M.89)

Location	Lat. 14°-41'-46" N., Long. 102°-25'-07" E., on left bank at the bridge infront of Vaccine Serum office, Amphoe Pak Chong, Nakhon Ratchasima.
Drainage Area	665 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1978 - 1991, 1997 - Cont'd
Actual Measurement	1981 - 1991, 1997 - Cont'd
Using Rating Curve Water Year	1981 - 1998
Number of observation	145
R - Square	0.8074
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:33:56.08 LQS/LQS02D/12

Station - Vaccine Serum Office, Pak Chong, Nakhon Ratchasima, (M.89)
Stream - Lam Ta Khong
River - Mun
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 070499
1.89355
QS = 1.1474 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.68	3.49	14.37	26.03	47.57	30.46	23.26	13.67	15.10	7.53	7.01	4.26	
2	4.26	3.13	13.67	20.64	24.63	32.01	20.64	13.67	12.97	7.53	7.53	4.26	
3	4.26	3.13	11.64	32.01	23.26	36.88	19.38	13.67	18.16	7.53	7.53	4.26	
4	4.26	3.13	9.78	21.93	35.22	32.01	15.84	14.37	15.10	7.53	7.01	4.26	
5	4.26	3.13	9.19	16.98	23.26	24.63	15.10	15.10	12.97	7.01	6.50	4.26	
6	5.11	3.13	9.78	26.03	19.38	16.98	13.67	14.37	11.64	7.01	7.01	4.26	
7	7.53	3.49	9.19	21.93	18.16	15.84	12.97	13.67	11.64	7.01	6.50	4.68	
8	6.02	3.87	8.62	38.57	14.37	15.10	14.37	12.30	10.38	7.01	6.02	4.26	
9	5.11	3.87	9.19	36.88	15.84	15.84	588.92	11.64	10.38	6.50	5.55	4.26	
10	5.11	3.87	8.06	57.46	43.87	15.10	172.11	11.64	10.38	6.50	5.55	3.87	
11	4.68	3.87	8.62	40.30	40.30	42.06	205.90	11.00	9.78	6.50	5.55	3.87	
12	4.26	3.49	9.19	24.63	49.48	120.88	237.12	10.38	9.19	6.50	5.55	3.49	
13	4.26	4.68	8.62	16.98	28.95	84.76	341.57	10.38	9.19	6.50	5.11	3.87	
14	3.87	5.55	11.00	15.84	23.26	149.73	149.73	10.38	9.19	7.01	5.11	4.26	
15	3.49	5.11	10.38	15.84	19.38	141.19	66.01	10.38	8.62	7.01	5.11	4.26	
16	3.49	4.68	9.19	24.63	23.26	51.42	57.46	10.38	8.62	6.50	5.11	4.26	
17	3.49	4.68	8.06	18.16	26.03	78.27	47.57	10.38	8.62	6.50	5.11	4.26	
18	3.49	4.26	7.01	14.37	21.93	145.43	40.30	10.38	8.62	6.02	5.11	4.26	
19	3.87	4.68	6.02	12.97	36.88	88.10	72.01	10.38	8.62	6.02	5.11	3.87	
20	3.87	5.11	6.02	11.64	35.22	75.11	72.01	10.38	8.62	6.02	4.68	3.49	
21	4.68	4.68	6.02	11.00	26.03	42.06	40.30	10.38	8.62	6.02	4.68	3.49	
22	8.62	4.26	5.55	9.78	21.93	27.47	32.01	11.00	8.62	6.02	4.68	3.49	
23	6.50	3.87	5.11	9.19	26.03	40.30	27.47	11.00	8.62	6.02	4.68	4.26	
24	5.55	6.02	5.11	8.62	15.84	51.42	23.26	11.64	8.62	5.55	4.68	6.50	
25	5.11	5.55	5.11	8.06	14.37	124.83	20.64	11.64	8.62	5.11	4.68	5.55	
26	4.26	176.76	5.11	8.62	12.97	88.10	18.16	11.00	8.62	5.11	4.68	5.11	
27	3.87	276.17	4.68	7.53	11.64	91.50	16.98	11.64	8.06	5.11	4.68	5.11	
28	3.49	43.87	4.68	8.06	11.64	51.42	15.84	11.64	7.53	5.55	4.68	5.11	
29	3.49	20.64	15.84	8.62	11.64	35.22	15.10	13.67	7.53	6.02		5.11	
30	3.49	15.10	36.88	9.19	10.38	27.47	14.37	13.67	7.53	6.50		5.11	
31		12.30		15.84	38.57		13.67		7.53	7.01		5.11	
Total	138.43	649.57	281.69	598.33	771.29	1791.59	2423.74	355.80	307.69	199.76	155.20	136.47	7809.56 Ton
Mean	4.61	20.95	9.39	19.30	24.88	59.72	78.19	11.86	9.93	6.44	5.54	4.40	
Max	8.62	276.17	36.88	57.46	49.48	149.73	588.92	15.10	18.16	7.53	7.53	6.50	588.92
Min	3.49	3.13	4.68	7.53	10.38	15.10	12.97	10.38	7.53	5.11	4.68	3.49	3.13

WATER YEAR 1998

MUN RIVER BASIN

Huai Ta Thieo at Ban Na Hai,Ubon Ratchathani(M.127)

Location — Lat. 15-38-37 N., Long. 104-55-57 E., on left bank at the bridge on road, Ban Na Hai, Tambon Na Samai, Amphoe Trakan Phutphon, Ubon Ratchathani.

Drainage Area	414 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	21
R - Square	0.9272
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:34:03.63

LQS/LQS02D/12

Station - Ban Na Hai, Trakan Phutphon, Ubon Ratchathani, (M.127)
Stream - Huai Ta Thieo
River - Lam Se Bok
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 040699

QS = 1.9000 QW - 1.69077

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	1.17	5.62	0.92	37.11	18.97	5.62	0.49	0.08	0.00	0.00	
2	0.00	0.00	0.59	164.66	6.13	28.88	15.04	4.66	0.32	0.04	0.00	0.00	
3	0.00	0.00	0.40	631.40	23.26	18.97	12.87	4.21	0.25	0.01	0.00	0.00	
4	0.00	0.00	0.32	701.80	15.04	15.04	10.19	3.77	0.80	0.01	0.00	0.00	
5	0.00	0.00	0.40	499.87	12.87	11.50	9.56	2.96	0.59	0.00	0.00	0.00	
6	0.00	0.00	2.23	288.34	6.66	156.79	8.94	2.23	0.32	0.00	0.00	0.00	
7	0.00	0.00	18.97	189.22	4.66	288.34	8.35	2.59	0.13	0.00	0.00	0.00	
8	0.00	0.00	11.50	99.61	2.59	228.64	9.56	1.90	0.18	0.00	0.00	0.00	
9	0.00	0.00	6.66	63.92	12.17	217.39	10.19	1.59	0.18	0.00	0.00	0.00	
10	0.00	0.00	4.21	34.98	18.97	4620.48	12.17	1.30	0.13	0.00	0.00	0.00	
11	0.00	0.00	1.90	18.16	34.98	19422.72	12.17	1.04	0.13	0.00	0.00	0.00	
12	0.00	0.00	1.04	13.58	648.71	2502.59	13.58	0.80	0.13	0.00	0.00	0.00	
13	0.00	0.00	0.59	21.50	313.78	484.32	14.30	0.92	0.13	0.00	0.00	0.00	
14	0.00	0.00	0.59	1649.26	112.91	340.09	13.58	0.40	0.18	0.00	0.00	0.00	
15	0.00	0.00	0.49	898.79	53.49	149.07	9.56	0.69	0.18	0.00	0.00	0.00	
16	0.00	0.00	0.32	424.14	19.80	93.22	8.35	0.59	0.18	0.00	0.00	0.00	
17	0.00	0.00	0.25	141.51	48.57	48.57	7.77	0.69	0.18	0.00	0.00	0.00	
18	0.00	0.00	0.18	69.42	30.86	28.88	39.30	0.69	0.18	0.00	0.00	0.00	
19	0.00	0.00	0.25	37.11	17.36	21.50	25.08	0.69	0.18	0.00	0.00	0.00	
20	0.00	0.00	0.25	18.97	794.02	23.26	14.30	0.80	0.13	0.00	0.00	0.00	
21	0.00	0.00	0.18	11.50	1010.89	719.87	10.83	1.04	0.13	0.00	0.00	0.00	
22	0.00	0.00	0.18	6.13	1104.41	1593.58	9.56	0.92	0.13	0.00	0.00	0.00	
23	0.00	0.00	0.25	4.21	1566.03	1457.80	9.56	0.59	0.13	0.00	0.00	0.00	
24	0.00	0.00	0.25	2.96	424.14	920.78	7.77	0.59	0.13	0.00	0.00	0.00	
25	0.00	0.00	0.25	1.74	172.69	580.61	7.21	0.69	0.13	0.00	0.00	0.00	
26	0.00	0.00	0.49	1.30	63.92	240.13	5.62	0.69	0.08	0.00	0.00	0.00	
27	0.00	0.00	0.80	0.92	39.30	126.88	5.13	1.90	0.08	0.00	0.00	0.00	
28	0.00	0.00	0.59	0.80	16.57	58.61	4.21	1.59	0.13	0.00	0.00	0.00	
29	0.00	0.00	1.04	0.69	11.50	43.83	4.21	0.92	0.13	0.00		0.00	
30	0.00	0.00	0.92	1.90	9.56	26.95	4.21	0.92	0.08	0.00		0.00	
31		0.00		1.30	32.89		3.36		0.08	0.00		0.00	
Total	0.00	0.00	57.26	6005.31	6629.65	34506.40	345.50	47.99	6.22	0.14	0.00	0.00	47598.46 Ton
Mean	0.00	0.00	1.91	193.72	213.86	1150.21	11.15	1.60	0.20	0.00	0.00	0.00	
Max	0.00	0.00	18.97	1649.26	1566.03	19422.72	39.30	5.62	0.80	0.08	0.00	0.00	19422.72
Min	0.00	0.00	0.18	0.69	0.92	11.50	3.36	0.40	0.08	0.00	0.00	0.00	0.00

WATER YEAR 1998

MUN RIVER BASIN

Huai Khayung at Ban Ta Nuad Hua Saphan, Si Sa Ket. (M.142)

Location	Lat. 14-30-32 N., Long. 104-37-28 E., on left bank at the bridge on road, Ban Ta Nuad Hua Saphan, Amphoe Kantharalak, Si Sa Ket.
Drainage Area	241 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	32
R - Square	0.8116
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:34:14.48 LQS/LQS02D/12

Station - Ban Ta Nuad Hua Sapan, Kantharalak, Si Sa Ket, (M.142)
Stream - Huai Khayung
River - Mun
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 030699
1.22404
QS = 2.2852 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.44	0.52	4.63	1.25	2.04	11.11	35.49	6.81	15.19	1.12	0.74	0.63	
2	0.44	0.52	5.40	1.37	10.81	20.90	22.17	6.54	12.85	1.12	0.74	0.63	
3	0.48	0.50	2.20	2.63	3.88	12.09	15.99	5.80	11.11	1.10	0.74	0.63	
4	0.42	0.50	1.87	3.88	2.97	11.11	12.09	4.63	11.41	1.10	0.74	0.63	
5	0.42	0.86	1.48	2.20	3.69	12.09	10.81	3.69	9.34	1.07	0.74	0.63	
6	0.42	0.65	1.43	4.82	5.21	19.65	9.34	3.15	5.80	1.03	0.74	0.63	
7	0.48	0.72	1.43	2.29	5.60	23.88	8.77	2.80	5.21	1.00	0.72	0.61	
8	0.74	0.86	1.30	1.71	61.85	14.80	14.80	2.45	4.82	1.00	0.72	0.61	
9	0.72	0.72	1.25	1.43	72.24	12.47	22.59	2.20	4.63	1.00	0.72	0.61	
10	0.72	0.68	1.10	1.40	32.28	10.81	33.19	1.95	3.69	1.00	0.72	0.61	
11	0.74	0.65	1.00	1.40	55.27	68.05	21.32	1.87	2.97	1.00	0.72	0.61	
12	0.74	0.65	1.07	1.40	82.20	216.26	32.73	1.71	2.80	1.00	0.72	0.61	
13	0.74	0.63	1.00	3.33	61.34	96.03	60.32	1.63	2.29	0.95	0.72	0.61	
14	0.72	0.61	1.00	4.44	28.24	52.78	46.39	1.48	2.20	0.95	0.72	0.61	
15	0.72	0.61	1.00	3.15	14.80	40.16	35.49	1.43	2.12	0.91	0.72	0.61	
16	0.72	0.72	0.95	2.97	10.81	33.19	25.61	1.43	1.87	0.91	0.72	0.61	
17	1.00	0.81	0.81	1.71	10.22	71.18	22.59	1.40	1.71	0.91	0.72	0.61	
18	0.86	0.86	0.79	1.40	9.63	54.27	80.42	1.32	1.71	0.88	0.70	0.59	
19	0.74	0.86	0.74	1.32	25.61	48.83	89.37	1.32	1.71	0.88	0.70	0.59	
20	0.86	0.86	0.74	1.25	96.03	109.50	51.78	1.40	1.71	0.86	0.70	0.59	
21	0.74	0.81	0.74	1.17	32.28	75.14	35.49	10.52	1.71	0.86	0.70	0.59	
22	0.86	0.81	0.72	1.10	20.07	61.85	27.80	34.11	1.71	0.88	0.68	0.79	
23	0.81	0.81	0.72	0.95	25.61	48.34	22.17	49.32	1.63	0.88	0.68	17.19	
24	1.03	0.86	0.72	0.88	43.49	42.54	18.41	25.17	1.55	0.88	0.65	3.33	
25	0.88	1.87	0.72	0.88	24.74	51.78	15.59	16.39	1.55	0.88	0.65	1.25	
26	0.72	6.00	1.00	0.88	26.92	36.41	11.71	11.41	1.40	0.88	0.65	3.69	
27	0.70	30.92	1.48	1.07	44.94	32.28	9.34	32.28	1.37	0.88	0.65	1.25	
28	0.65	14.80	2.63	1.03	22.59	23.02	8.48	31.37	1.32	0.86	0.63	0.81	
29	0.65	5.80	1.43	1.10	20.48	18.01	7.64	24.31	1.30	0.86		1.10	
30	0.61	3.51	1.30	1.32	13.62	17.19	7.08	18.01	1.25	0.81		0.95	
31		2.20		1.43	10.22		6.27		1.17	0.79		1.20	
Total	20.77	82.18	42.65	57.16	879.68	1345.72	821.24	307.90	121.10	29.25	19.75	44.41	3771.81 Ton
Mean	0.69	2.65	1.42	1.84	28.38	44.86	26.49	10.26	3.91	0.94	0.71	1.43	
Max	1.03	30.92	5.40	4.82	96.03	216.26	89.37	49.32	15.19	1.12	0.74	17.19	216.26
Min	0.42	0.50	0.72	0.88	2.04	10.81	6.27	1.32	1.17	0.79	0.63	0.59	0.42

WATER YEAR 1998

MUN RIVER BASIN

Huai Sang Kot at Ban Nong Udom, Si Sa Ket. (M.143)

Location	Lat. 14°-29'-03" N., Long. 104°-39'-50" E., on left bank at the bridge on road, Ban Nong Udom, Amphoe Kantharalak, Si Sa Ket.
Drainage Area	46 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of Observation	25
R - Square	0.8922
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:34:19.66 LQS/LQS02D/12

Station - Ban Nong Udom, Kantharalak, Si Sa Ket, (M.143)
Stream - Huai Sang Kot
River - Huai Khayung
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 050699
1.12822
QS = 2.0784 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.10	0.14	1.10	0.43	1.06	1.48	2.79	1.23	1.46	0.55	0.49	0.10	
2	0.10	0.14	0.91	0.40	1.23	1.35	1.94	1.17	1.21	0.53	0.43	0.10	
3	0.10	0.14	0.74	0.53	2.51	1.23	1.66	1.08	1.30	0.53	0.30	0.10	
4	0.10	0.12	0.62	0.80	1.41	1.21	1.50	1.02	1.30	0.51	0.28	0.10	
5	0.10	0.38	0.57	0.80	1.17	1.28	1.41	0.97	1.15	0.51	0.26	0.10	
6	0.10	0.49	0.51	0.87	2.70	1.35	1.32	0.95	1.04	0.49	0.26	0.12	
7	0.10	0.45	0.47	0.95	1.98	1.08	1.37	0.91	1.06	0.49	0.26	0.12	
8	0.10	0.42	0.43	0.80	13.24	1.02	4.47	0.89	0.99	0.49	0.26	0.10	
9	0.10	0.38	0.49	0.78	5.16	0.95	6.21	0.87	0.76	0.49	0.26	0.10	
10	0.10	0.34	0.45	0.76	3.93	1.08	3.11	0.84	0.80	0.49	0.24	0.10	
11	0.10	0.32	0.45	0.68	6.32	17.47	6.53	0.82	0.91	0.49	0.24	0.09	
12	0.10	0.28	0.43	0.62	2.89	29.63	4.47	0.80	0.84	0.47	0.23	0.09	
13	0.10	0.26	0.64	8.54	9.09	10.49	10.35	0.78	0.82	0.49	0.23	0.09	
14	0.09	0.23	0.49	4.01	2.84	9.79	8.82	0.76	0.80	0.51	0.23	0.09	
15	0.09	0.21	0.43	1.41	1.94	7.72	4.24	0.72	0.80	0.51	0.21	0.09	
16	0.09	0.21	0.40	0.93	1.62	15.34	3.26	0.70	0.80	0.47	0.21	0.10	
17	0.09	0.19	0.36	0.99	2.46	6.64	2.84	0.82	0.78	0.47	0.19	0.10	
18	0.19	0.19	0.34	0.91	1.52	6.21	19.82	0.68	0.74	0.47	0.19	0.10	
19	0.15	0.19	0.32	0.76	5.90	4.96	12.37	0.66	0.74	0.49	0.17	0.10	
20	0.14	0.19	0.30	0.72	7.72	19.09	5.06	0.93	0.74	0.49	0.17	0.10	
21	0.14	0.21	0.30	0.64	2.99	6.64	3.41	2.03	0.76	0.47	0.15	0.10	
22	1.23	0.19	0.28	0.57	2.13	4.24	2.84	1.46	0.70	0.47	0.15	0.10	
23	0.70	0.19	0.26	0.51	18.37	6.91	2.27	1.85	0.68	0.49	0.14	0.70	
24	0.62	0.17	0.23	0.49	8.27	8.27	1.98	1.19	0.66	0.49	0.14	0.66	
25	0.43	0.45	0.24	0.99	2.31	7.45	1.66	1.06	0.64	0.47	0.12	0.42	
26	0.34	5.48	0.30	0.87	3.19	4.54	1.50	1.04	0.64	0.49	0.12	0.43	
27	0.30	14.46	0.38	0.68	3.93	3.56	1.39	3.78	0.62	0.49	0.12	0.28	
28	0.26	2.36	0.82	0.80	2.36	2.70	1.32	1.66	0.59	0.51	0.12	0.30	
29	0.23	0.93	0.55	0.76	2.55	2.27	1.26	1.39	0.57	0.51		0.28	
30	0.19	0.76	0.49	0.91	1.66	4.01	1.21	1.28	0.57	0.51		0.23	
31		0.84		0.87	1.48		1.19		0.57	0.53		0.34	
Total	6.58	31.31	14.30	34.78	125.93	189.96	123.57	34.34	26.04	15.37	6.17	5.83	614.18 Ton
Mean	0.22	1.01	0.48	1.12	4.06	6.33	3.99	1.14	0.84	0.50	0.22	0.19	
Max	1.23	14.46	1.10	8.54	18.37	29.63	19.82	3.78	1.46	0.55	0.49	0.70	29.63
Min	0.09	0.12	0.23	0.40	1.06	0.95	1.19	0.66	0.57	0.47	0.12	0.09	0.09

WATER YEAR 1998

MUN RIVER BASIN

Huai Hin Lap at Ban Kaeng Hip, Nakhon Ratchasima(M.150)

Location	Lat. 14-45-30 N., Long. 101-31-18 E., on right bank at the bridge on Pak Chong - Nakhon Ratchasima highway between guidepost 184 - 185, Amphoe Pak Chong, Nakhon Ratchasima.
Drainage Area	175 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1996 - 1998
Number of observation	15
R - Square	0.8298
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:34:30.39

LQS/LQS02D/12

Station - Ban Huai Hin Lab, Pak Chong, Nakhonratchasima, (M.150)
Stream - Lam Takhong
River - Mun
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 110699
1.33858
QS = 16.9165 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.96	0.78	1.96	0.31	0.31	6.69	1.96	0.99	4.96	0.78	0.31	0.58	
2	4.96	0.78	1.96	0.31	0.31	8.92	2.23	0.78	4.96	0.78	1.96	0.78	
3	6.69	0.78	0.78	0.39	0.39	10.49	1.96	0.78	8.92	1.96	1.96	0.48	
4	6.69	1.96	0.78	0.48	0.67	10.49	1.70	0.78	5.64	3.38	1.96	0.31	
5	6.69	1.96	0.67	0.48	0.67	12.13	1.70	0.78	10.49	0.48	2.50	0.15	
6	6.69	0.78	0.39	0.31	0.67	1.46	1.46	0.78	6.69	0.48	1.96	0.00	
7	6.69	0.78	0.31	0.31	0.67	0.78	1.96	0.67	6.69	0.48	1.96	0.04	
8	10.49	0.78	1.96	0.31	0.67	0.78	18.06	0.58	6.69	3.38	1.96	0.04	
9	6.69	2.79	1.96	8.16	0.78	0.67	4032.68	0.48	4.96	0.78	1.22	0.04	
10	6.69	3.38	0.58	0.78	0.78	0.48	822.27	0.31	4.96	0.58	0.78	0.00	
11	6.33	5.64	0.67	0.39	0.48	18.06	177.10	0.67	4.31	3.38	0.78	0.04	
12	5.98	8.92	0.48	0.39	0.48	62.98	20.40	0.67	4.31	3.99	0.67	0.31	
13	5.98	26.54	0.48	12.13	0.48	24.03	58.60	0.67	3.99	0.78	0.58	0.31	
14	4.63	5.98	0.39	6.69	0.31	12.13	22.81	0.67	3.38	0.48	0.58	0.31	
15	3.38	5.98	0.31	0.78	3.38	16.92	12.13	0.67	3.38	0.48	0.48	0.31	
16	2.50	4.96	0.31	0.78	0.48	1.96	7.41	0.58	3.38	0.48	0.58	0.31	
17	2.50	5.98	0.23	0.48	4.96	0.78	76.59	0.58	3.38	3.38	0.78	0.78	
18	6.69	50.09	0.23	0.48	0.48	5.98	30.41	0.58	4.96	4.96	0.78	0.58	
19	10.49	18.06	0.48	0.48	1.22	76.59	10.49	0.78	4.63	0.78	0.78	0.31	
20	10.49	6.69	0.39	3.68	5.98	39.94	8.92	3.08	4.63	0.78	0.78	0.31	
21	6.69	5.64	0.31	0.48	16.92	10.49	4.96	4.96	4.63	0.48	1.96	0.31	
22	6.69	4.96	0.15	0.39	16.92	4.63	4.63	4.96	4.63	0.31	1.96	0.04	
23	5.30	4.96	0.15	35.78	16.92	0.78	3.68	4.96	4.63	0.31	1.96	0.00	
24	4.31	3.38	0.15	4.96	4.63	12.13	4.31	5.64	4.63	0.31	1.96	0.31	
25	1.96	11.30	0.15	0.67	0.78	67.44	1.96	5.98	4.63	0.31	1.46	1.96	
26	1.22	21.59	0.15	0.31	3.99	33.07	2.79	4.96	5.64	0.23	0.78	0.31	
27	0.78	20.40	0.09	0.31	0.99	65.20	0.78	4.96	5.64	0.31	0.67	0.31	
28	0.78	6.33	0.00	0.31	0.39	20.40	0.78	5.98	5.64	0.48	0.58	0.31	
29	0.78	3.38	0.31	0.31	0.31	6.69	0.78	6.33	3.38	0.48		0.31	
30	0.78	1.96	0.31	0.23	0.31	2.50	1.22	4.96	3.38	0.48		0.31	
31		2.50		0.23	0.31		1.46		3.38	0.48		0.31	
Total	155.50	240.01	17.09	82.10	86.64	535.59	5338.19	69.57	155.52	36.75	34.69	10.47	6762.12 Ton
Mean	5.18	7.74	0.57	2.65	2.79	17.85	172.20	2.32	5.02	1.19	1.24	0.34	
Max	10.49	50.09	1.96	35.78	16.92	76.59	4032.68	6.33	10.49	4.96	2.50	1.96	4032.68
Min	0.78	0.78	0.00	0.23	0.31	0.48	0.78	0.31	3.38	0.23	0.31	0.00	0.00

WATER YEAR 1998

MUN RIVER BASIN

Huai La-ong at Ban Na Phu, Amnart Charoen(M.155)

Location	Lat. 16-00-16 N., Long. 104-38-37 E., on left bank at the bridge on road, Ban Na Phu, Amphoe Muang, Amnart Charoen.
Drainage Area	221 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 48
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	16
R - Square	0.9401
Remarks	Continued Sediment Station

RID Computer Center, Processing : 23-AUG-2000 00:34:35.10

LQS/LQS02D/12

Station - Ban Na Phue, Muang, Amnat Charoen, (M.155)
Stream - Huai La Ong
River - Lam Se Bai
River System - Mun

Royal Irrigation Department
Thailand
Hydrology Division 100699

QS = 3.4661 QW ^ 1.56290

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.04	0.20	9.45	44.77	4.61	9.45	0.09	0.09	0.02	0.02	
2	0.00	0.00	0.07	10.24	23.04	121.78	3.04	7.94	0.09	0.02	0.01	0.02	
3	0.00	0.00	0.14	207.22	14.60	126.69	2.26	7.23	0.08	0.01	0.01	0.02	
4	0.00	0.00	1.90	179.56	8.69	98.27	2.26	5.86	0.09	0.01	0.02	0.02	
5	0.00	0.00	0.16	475.21	4.02	53.35	1.56	5.22	0.09	0.01	0.02	0.02	
6	0.00	0.00	14.60	173.98	2.64	80.81	1.90	6.53	0.09	0.01	0.02	0.02	
7	0.00	0.00	47.25	89.39	2.64	116.93	1.90	4.61	0.09	0.01	0.01	0.02	
8	0.00	0.00	42.35	39.97	24.89	72.55	1.56	3.04	0.09	0.01	0.01	0.02	
9	0.00	0.00	14.60	17.81	33.14	60.78	3.47	2.26	0.08	0.01	0.01	0.02	
10	0.00	0.00	7.23	7.23	72.55	581.08	13.09	1.90	0.08	0.01	0.01	0.02	
11	0.00	0.00	3.04	4.02	141.85	1020.68	26.78	1.25	0.08	0.01	0.01	0.02	
12	0.00	0.00	2.64	2.26	241.25	224.00	42.35	1.25	0.08	0.01	0.01	0.02	
13	0.00	0.00	0.47	37.64	116.93	102.83	33.14	1.25	0.08	0.01	0.01	0.02	
14	0.00	0.00	0.26	136.73	49.77	49.77	23.04	0.96	0.07	0.01	0.01	0.02	
15	0.00	0.00	0.96	64.62	24.89	28.85	17.81	0.96	0.04	0.01	0.01	0.02	
16	0.00	0.00	0.28	30.97	11.63	4.02	13.09	0.96	0.04	0.01	0.01	0.02	
17	0.00	0.00	0.11	13.09	7.94	13.09	9.45	0.70	0.04	0.01	0.01	0.02	
18	0.00	0.00	0.09	5.86	5.22	8.69	57.02	0.09	0.05	0.01	0.01	0.02	
19	0.00	0.01	0.09	2.64	4.61	8.69	35.37	0.08	0.05	0.01	0.01	0.01	
20	0.00	0.02	0.09	1.90	979.02	8.69	21.24	0.08	0.05	0.01	0.01	0.00	
21	0.00	0.02	0.08	0.70	527.19	14.60	14.60	0.08	0.05	0.01	0.01	0.00	
22	0.00	0.01	0.08	0.28	331.37	19.50	10.24	0.08	0.07	0.01	0.01	0.01	
23	0.00	0.01	0.08	0.28	152.30	17.81	7.94	0.08	0.05	0.01	0.01	0.01	
24	0.01	0.01	0.08	0.70	190.91	57.02	5.86	0.08	0.05	0.01	0.02	0.01	
25	0.01	0.07	0.08	0.70	112.16	49.77	5.86	0.08	0.05	0.02	0.02	0.00	
26	0.01	0.02	0.09	0.28	47.25	28.85	5.86	0.07	0.07	0.02	0.02	0.00	
27	0.01	0.02	0.09	0.08	26.78	21.24	5.86	0.08	0.07	0.02	0.02	0.00	
28	0.00	0.02	0.02	0.08	11.63	13.09	4.61	0.08	0.07	0.02	0.02	0.00	
29	0.00	0.07	0.16	0.08	7.23	7.94	8.69	0.11	0.05	0.04		0.01	
30	0.00	0.02	0.16	0.08	4.61	5.86	21.24	0.11	0.07	0.02		0.01	
31		0.04		0.08	28.85		16.18		0.09	0.02		0.00	
Total	0.04	0.34	137.29	1503.88	3219.05	3062.00	421.88	62.47	2.14	0.49	0.37	0.42	8410.37 Ton
Mean	0.00	0.01	4.58	48.51	103.84	102.07	13.61	2.08	0.07	0.02	0.01	0.01	
Max	0.01	0.07	47.25	475.21	979.02	1020.68	57.02	9.45	0.09	0.09	0.02	0.02	1020.68
Min	0.00	0.00	0.02	0.08	2.64	4.02	1.56	0.07	0.04	0.01	0.01	0.00	0.00

WATER YEAR 1998

THA CHIN RIVER BASIN

Huai Krasieo at Ban Thap Khlai, Uthai Thani (T.7)

Location	Lat. 15-03-06 N., Long. 99-35-18 E., on right bank in the vicinity of Wat Thap Khlai, Amphoe Ban Rai, Uthai Thani.
Drainage Area	607 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	
Remarks	Continued Sediment Station

RID Computer Center, Processing : 15-AUG-2000 01:21:58.73 LQS/LQS02D/12

Station - Ban Thap Khlai, Ban Rai, Uthai Thani, (T.7)
Stream - Huai Krasieo
River - Tha Chin
River System - Tha Chin River

Royal Irrigation Department
Thailand
Hydrology Division 151298
1.72130
QS = 7.7787 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.04	0.00	903.75	124.18	551.59	409.46	12.87	20.18	45.77	0.26	0.02	0.00	
2	0.04	0.00	13.71	17.85	178.33	268.75	15.63	13.71	23.91	0.33	0.00	0.00	
3	0.04	0.00	34.60	10.19	67.21	212.42	11.90	12.87	16.72	0.33	0.00	0.00	
4	0.04	0.00	31.17	6.00	26.54	239.89	6.61	320.27	77.43	0.26	0.02	0.00	
5	0.04	0.00	11.90	6.00	20.18	718.17	4.96	49.78	27.90	0.12	0.02	0.00	
6	0.04	0.00	9.45	7.12	16.72	178.33	4.53	19.00	19.00	0.06	0.01	0.03	
7	0.04	0.00	195.06	4.00	11.11	154.19	3.61	15.63	7.78	0.06	0.01	0.01	
8	0.04	0.00	41.90	27.90	11.90	67.21	2.36	11.90	6.61	0.06	0.00	0.00	
9	0.04	0.00	53.93	15.63	6.61	203.93	72.24	8.60	4.53	0.06	0.00	0.00	
10	0.04	0.00	8.60	10.19	5.53	111.63	1153.25	7.12	3.61	0.06	0.00	0.00	
11	0.04	0.00	4.00	8.60	17.85	41.90	4961.52	6.00	2.78	0.04	0.00	0.00	
12	0.04	0.00	2.78	4.96	5.53	386.48	2184.40	4.96	2.36	0.10	0.00	0.00	
13	0.04	31.17	320.27	2.78	4.00	82.76	1301.69	4.53	2.20	0.10	0.00	0.00	
14	0.04	397.55	15.63	2.20	2.78	26.54	839.91	4.00	1.89	0.12	0.00	0.00	
15	0.04	111.63	8.60	25.21	154.19	20.18	424.37	3.61	1.75	0.04	0.00	0.00	
16	0.04	4.96	14.75	15.63	1335.05	330.51	363.38	2.36	1.61	0.08	0.00	0.00	
17	0.04	1.75	6.00	23.91	99.65	212.42	679.38	2.20	1.61	0.06	0.00	0.00	
18	0.04	1.34	2.36	289.15	20.18	268.75	397.55	2.78	1.47	0.06	0.00	0.00	
19	0.04	470.44	0.87	586.38	14.75	105.57	7450.56	239.89	1.47	0.06	0.00	0.00	
20	0.04	13.71	0.98	77.43	2880.30	424.37	2140.52	93.88	1.34	0.02	0.00	0.00	
21	0.04	3.61	0.98	11.90	2140.52	117.84	798.44	19.00	1.21	0.02	0.00	0.00	
22	0.04	2.04	0.77	19.00	798.44	45.77	397.55	154.19	1.09	0.02	0.00	0.00	
23	0.04	41.90	0.67	14.75	1020.66	23.91	278.87	124.18	0.98	0.02	0.00	0.00	
24	0.04	4.96	0.57	195.06	5536.08	27.90	195.06	58.22	0.87	0.01	0.00	0.00	
25	0.04	2.78	2.20	22.64	8602.64	19.00	138.62	26.54	0.77	0.00	0.00	0.00	
26	0.04	6.00	0.41	11.11	2826.24	34.60	93.88	19.00	0.67	0.00	0.00	0.00	
27	0.04	34.60	5.53	6.61	3218.61	374.86	62.65	12.87	0.57	0.01	0.00	0.00	
28	0.04	4.53	77.43	4.53	641.49	67.21	45.77	14.75	0.49	0.00	0.00	0.00	
29	0.04	1.89	131.53	1507.13	239.89	26.54	31.17	161.75	0.49	0.00		0.00	
30	0.04	1.21	13.71	72.24	131.53	16.72	23.91	124.18	0.41	0.02		0.00	
31		1.34		7757.43	641.49		21.39		0.41	0.03		0.00	
Total	1.20	1137.41	1914.11	10887.71	31227.59	5217.81	24118.55	1557.95	259.70	2.41	0.08	0.04	76324.56 Ton
Mean	0.04	36.69	63.80	351.22	1007.34	173.93	778.02	51.93	8.38	0.08	0.00	0.00	
Max	0.04	470.44	903.75	7757.43	8602.64	718.17	7450.56	320.27	77.43	0.33	0.02	0.03	8602.64
Min	0.04	0.00	0.41	2.20	2.78	16.72	2.36	2.20	0.41	0.00	0.00	0.00	0.00

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

Nakhon Nayok River at Khao Nang Buat, Nakhon Nayok (NY.1B)

Location	Lat. 14-14-45 N., Long. 101-12-38 E., on right bank about 700 meters upstream from Ny.1, Amphoe Muang, Nakhon Nayok.
Drainage Area	519 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	22
R - Square	0.957
Remarks	Continued Sediment Station

RID Computer Center, Processing : 25-JUL-2000 06:21:49.87 LQS/LQS02D/12

Station - Ban Khao Nang Buat, Muang, Nakhon Nayok, (NY.1B)
Stream - Nakhon Nayok
River - Nakhon Nayok
River System - Nakhon Nayok River

Royal Irrigation Department
Thailand
Hydrology Division 060598
1.28235
QS = 1.1341 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.72	0.65	88.13	552.75	227.83	179.08	76.37	56.43	41.30	2.94	1.21	0.72	
2	0.78	0.59	31.02	401.38	237.22	173.11	89.46	67.48	45.35	2.58	1.13	0.72	
3	0.72	0.59	24.55	237.22	290.31	152.07	55.23	68.74	55.23	2.24	1.28	0.47	
4	0.72	0.59	49.49	146.96	173.11	94.82	50.32	35.92	60.07	2.07	1.28	0.72	
5	0.65	0.59	42.91	234.87	138.52	89.46	46.99	52.00	55.23	2.07	1.21	0.65	
6	0.59	0.59	84.17	158.95	270.73	234.87	33.45	63.75	51.16	1.83	1.13	0.59	
7	0.65	0.78	162.41	388.71	278.04	121.99	32.23	63.75	47.82	1.59	0.99	0.59	
8	0.65	0.72	125.26	373.01	426.97	131.86	54.04	54.04	42.91	1.51	0.59	0.59	
9	0.72	0.72	93.48	697.14	501.59	109.11	107.53	52.00	37.33	1.51	0.85	0.59	
10	0.72	0.72	76.37	297.72	462.17	93.48	115.51	52.85	33.45	1.51	0.85	0.59	
11	0.72	0.72	44.53	162.41	607.59	128.55	85.49	54.04	29.22	1.51	0.85	0.59	
12	0.72	0.85	73.81	115.51	297.72	115.51	560.15	51.16	25.13	1.43	0.85	0.59	
13	0.72	1.13	60.07	90.79	355.13	315.94	433.96	48.65	20.62	1.43	0.85	0.59	
14	0.72	1.43	44.53	246.70	329.82	307.67	249.08	46.99	15.80	1.43	0.85	0.59	
15	0.72	1.21	22.85	280.48	205.41	167.63	216.21	42.10	13.38	1.43	0.78	0.72	
16	0.72	1.21	12.26	158.95	152.07	270.73	278.04	38.11	12.63	1.43	0.78	0.72	
17	0.72	0.78	8.70	101.62	128.55	244.32	232.52	36.54	11.89	1.36	0.78	0.65	
18	0.65	0.85	5.65	81.55	120.37	290.31	175.10	38.90	11.17	1.28	0.72	0.72	
19	0.59	0.92	4.44	70.00	120.37	183.08	167.63	43.72	10.45	1.28	0.72	0.78	
20	0.65	2.76	5.24	47.82	93.48	153.78	123.63	48.65	10.45	1.21	0.72	0.78	
21	0.72	3.30	5.86	32.23	75.08	115.51	94.82	48.65	10.09	1.21	0.72	0.78	
22	0.72	2.41	4.64	25.70	88.13	104.37	85.49	45.35	9.74	1.13	0.72	0.78	
23	0.59	1.67	4.84	24.55	68.74	146.96	71.26	44.53	9.05	1.13	0.72	1.83	
24	0.59	1.67	8.70	24.55	82.86	167.63	62.52	45.35	8.03	1.06	0.65	0.85	
25	0.59	1.59	24.55	28.63	81.55	105.94	54.04	45.35	7.36	0.99	0.65	0.72	
26	0.59	7.36	81.55	34.06	77.66	109.11	51.16	43.72	6.71	0.47	0.72	0.72	
27	0.59	25.70	140.20	21.73	48.65	105.94	49.49	42.91	6.07	0.47	0.72	0.72	
28	0.59	29.82	360.81	20.07	50.32	86.81	47.82	42.91	5.24	0.78	0.72	0.72	
29	0.59	30.42	512.46	21.17	112.30	77.66	39.70	42.10	4.64	0.65		0.72	
30	0.72	29.22	527.03	44.53	145.26	63.75	44.53	41.30	3.86	1.13		0.85	
31		85.49		724.17	105.94		56.43		3.49	1.28		0.72	
Total	20.14	237.05	2730.51	5845.93	6353.49	4641.05	3840.20	1457.99	704.87	43.94	24.04	22.37	25921.58 Ton
Mean	0.67	7.65	91.02	188.58	204.95	154.70	123.88	48.60	22.74	1.42	0.86	0.72	
Max	0.78	85.49	527.03	724.17	607.59	315.94	560.15	68.74	60.07	2.94	1.28	1.83	724.17
Min	0.59	0.59	4.44	20.07	48.65	63.75	32.23	35.92	3.49	0.47	0.59	0.47	0.47

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

Khlong Ban Na at Ban Pa Kha, Nakhon Nayok (NY.3)

Location	Lat. 14°-17'-07" N., Long. 101°-04'-26" E., on left bank near Wat Ban Pa Kha, Amphoe Ban Na, Nakhon Nayok.
Drainage Area	203 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	25
R - Square	0.856
Remarks	Continued Sediment Station

RID Computer Center, Processing : 25-JUL-2000 06:21:43.51 LQS/LQS02D/12

Station - Ban Pa Kha, Ban Na, Nakhon Nayok, (NY.3)
Stream - Khlong Ban Na
River - Nakhon Nayok
River System - Nakhon Nayok River

Royal Irrigation Department
Thailand
Hydrology Division 110698
1.03398
QS = 5.5765 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	1.50	19.16	90.51	31.34	15.28	11.12	0.84	0.05	0.00	0.00	
2	0.00	0.00	1.22	15.28	101.84	26.77	13.13	10.18	0.78	0.05	0.00	0.00	
3	0.00	0.00	1.55	83.13	89.37	24.23	13.02	9.36	0.73	0.05	0.00	0.00	
4	0.00	0.00	2.16	85.96	165.12	20.97	12.90	8.60	0.62	0.05	0.00	0.00	
5	0.00	0.00	2.72	61.11	103.75	18.86	12.78	7.84	0.57	0.05	0.00	0.00	
6	0.00	0.00	11.12	72.94	71.81	17.37	12.66	7.20	0.57	0.05	0.00	0.00	
7	0.00	0.00	11.18	85.40	53.21	15.57	12.48	6.62	0.52	0.05	0.00	0.00	
8	0.00	0.00	11.12	176.03	44.66	14.68	12.48	6.10	0.46	0.05	0.00	0.00	
9	0.00	0.00	10.89	165.96	74.07	14.68	12.54	5.58	0.41	0.05	0.00	0.00	
10	0.00	0.00	2.67	108.64	88.24	14.68	12.96	5.12	0.41	0.05	0.00	0.00	
11	0.00	0.00	2.55	96.77	119.85	14.98	45.53	4.71	0.36	0.05	0.00	0.00	
12	0.00	0.00	2.61	78.03	119.14	14.68	42.51	4.31	0.30	0.00	0.00	0.00	
13	0.00	0.00	10.89	55.70	89.37	17.67	54.20	3.97	0.30	0.00	0.00	0.00	
14	0.00	0.00	11.06	45.10	77.46	22.05	149.48	3.63	0.25	0.00	0.00	0.00	
15	0.00	0.10	11.24	74.07	112.14	32.19	143.32	3.35	0.25	0.00	0.00	0.00	
16	0.00	0.46	11.36	83.13	116.34	31.77	105.84	3.06	0.25	0.00	0.00	0.00	
17	0.00	0.46	11.36	65.05	83.13	26.77	83.69	2.78	0.20	0.00	0.00	0.00	
18	0.00	0.46	11.30	48.25	63.36	25.68	63.36	2.55	0.20	0.00	0.00	0.00	
19	0.00	0.36	11.18	36.91	59.99	32.19	51.72	2.33	0.20	0.00	0.00	0.00	
20	0.00	0.36	11.06	28.60	57.19	50.73	51.72	2.16	0.15	0.00	0.00	0.00	
21	0.00	0.46	11.12	24.23	51.72	40.35	47.26	1.99	0.15	0.00	0.00	0.00	
22	0.00	0.46	11.12	20.61	43.37	31.34	39.92	1.83	0.15	0.00	0.00	0.00	
23	0.00	0.46	12.90	17.67	36.91	26.41	33.05	1.66	0.15	0.00	0.00	0.00	
24	0.00	0.46	16.17	15.57	34.33	23.14	27.87	1.55	0.10	0.00	0.00	0.00	
25	0.00	0.46	14.08	13.19	33.91	19.52	24.59	1.39	0.10	0.00	0.00	0.00	
26	0.00	0.52	12.78	13.02	42.51	20.25	21.69	1.28	0.10	0.00	0.00	0.00	
27	0.00	0.41	12.31	12.84	109.34	20.97	19.52	1.17	0.10	0.00	0.00	0.00	
28	0.00	0.68	12.66	12.78	81.43	21.69	16.77	1.06	0.10	0.00	0.00	0.00	
29	0.00	0.95	13.49	12.78	53.21	19.16	14.38	1.00	0.10	0.00		0.00	
30	0.00	1.00	18.56	12.66	41.64	17.07	13.19	0.89	0.05	0.00		0.00	
31		1.11		98.04	34.76		12.13		0.05	0.00		0.00	
Total	0.00	9.17	285.93	1738.61	2343.68	707.76	1191.97	124.39	9.52	0.55	0.00	0.00	6411.58 Ton
Mean	0.00	0.30	9.53	56.08	75.60	23.59	38.45	4.15	0.31	0.02	0.00	0.00	
Max	0.00	1.11	18.56	176.03	165.12	50.73	149.48	11.12	0.84	0.05	0.00	0.00	176.03
Min	0.00	0.00	1.22	12.66	33.91	14.68	12.13	0.89	0.05	0.00	0.00	0.00	0.00

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

Khlong Samo Pun at Prachin Buri, Prachin Buri (NY.4)

Location	Lat. 14-17-23 N., Long. 101-24-16 E., on left bank at the bridge of Chanthaburi-Khao Yai highway, Amphoe Muang, Prachin Buri.
Drainage Area	128 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1986 - Cont'd
Actual Measurement	1986 - Cont'd
Using Rating Curve Water Year	1986 - 1998
Number of observation	174
R - Square	0.735
Remarks	Continued Sediment Station

RID Computer Center, Processing : 25-JUL-2000 06:21:55.23 LQS/LQS02D/12

Station - Haew Narok, Muang, Prachin Buri, (NY.4)
Stream - Khlong Samopun
River - Mae Nam Nakhon Nayok
River System - Nakhon Nayok River

Royal Irrigation Department
Thailand
Hydrology Division 060598
1.67014
QS = 0.4936 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.01	0.00	24.42	208.68	84.87	203.20	20.05	4.31	0.67	0.05	0.01	0.00	
2	0.01	0.00	7.06	197.79	72.27	117.59	15.38	4.67	1.20	0.04	0.01	0.00	
3	0.01	0.00	8.05	90.13	60.49	77.21	11.65	3.96	1.20	0.03	0.01	0.00	
4	0.01	0.00	8.61	48.32	32.99	50.21	9.78	2.99	0.85	0.03	0.01	0.01	
5	0.01	0.00	5.82	67.46	54.05	52.12	8.05	2.59	0.72	0.03	0.02	0.01	
6	0.01	0.00	9.78	37.65	90.13	90.13	6.64	2.04	0.67	0.03	0.02	0.01	
7	0.01	0.00	32.99	140.65	242.74	48.32	7.06	1.87	0.58	0.03	0.02	0.00	
8	0.01	0.00	23.09	161.12	144.66	58.24	9.19	1.70	0.45	0.03	0.01	0.00	
9	0.01	0.00	25.77	192.43	324.12	36.07	25.77	1.60	0.41	0.02	0.01	0.00	
10	0.01	0.00	15.38	79.73	192.43	34.51	24.42	1.49	0.34	0.02	0.01	0.00	
11	0.00	0.00	12.31	46.47	214.21	58.24	37.65	1.29	0.27	0.02	0.01	0.00	
12	0.00	0.00	41.09	31.49	125.09	56.02	173.93	1.10	0.24	0.02	0.01	0.00	
13	0.00	0.00	13.65	22.06	225.45	144.66	74.72	1.02	0.18	0.02	0.01	0.00	
14	0.00	0.00	8.05	67.46	110.27	82.28	48.32	0.93	0.16	0.02	0.01	0.00	
15	0.00	0.00	4.67	113.90	69.85	54.05	58.24	0.85	0.13	0.02	0.01	0.00	
16	0.00	0.00	3.20	46.47	44.65	219.80	101.04	0.76	0.13	0.02	0.01	0.00	
17	0.00	0.00	2.40	31.49	37.65	266.58	69.85	0.76	0.13	0.02	0.01	0.00	
18	0.00	0.01	1.60	27.16	42.85	165.35	60.49	0.85	0.16	0.02	0.01	0.00	
19	0.00	0.01	1.29	19.08	31.49	92.81	48.32	1.39	0.16	0.01	0.01	0.00	
20	0.00	0.01	1.49	15.38	27.16	65.10	32.99	0.93	0.16	0.01	0.01	0.00	
21	0.00	0.01	1.02	11.65	32.99	42.85	22.06	0.85	0.16	0.01	0.01	0.00	
22	0.00	0.01	0.76	9.19	42.85	52.12	19.08	0.72	0.16	0.01	0.01	0.00	
23	0.00	0.01	1.39	7.06	27.16	77.21	14.51	0.72	0.16	0.01	0.01	0.00	
24	0.00	0.01	1.39	6.22	23.09	52.12	12.31	0.67	0.13	0.01	0.00	0.00	
25	0.00	0.01	2.79	5.04	19.08	36.07	10.39	0.67	0.11	0.01	0.00	0.00	
26	0.00	0.27	34.51	7.06	15.38	30.02	8.61	0.62	0.11	0.01	0.00	0.00	
27	0.00	4.31	36.07	4.31	12.97	22.06	7.50	0.58	0.11	0.01	0.00	0.00	
28	0.00	2.79	291.31	3.41	11.65	17.19	6.22	0.54	0.09	0.01	0.00	0.01	
29	0.00	3.41	373.03	5.04	92.81	13.65	5.04	0.54	0.07	0.01		0.01	
30	0.00	5.42	285.05	21.05	65.10	12.31	4.31	0.54	0.06	0.01		0.01	
31		27.16		219.80	42.85		4.31		0.06	0.01		0.01	
Total	0.10	43.44	1278.04	1944.75	2613.35	2328.09	957.88	43.55	10.03	0.60	0.26	0.07	9220.16 Ton
Mean	0.00	1.40	42.60	62.73	84.30	77.60	30.90	1.45	0.32	0.02	0.01	0.00	
Max	0.01	27.16	373.03	219.80	324.12	266.58	173.93	4.67	1.20	0.05	0.02	0.01	373.03
Min	0.00	0.00	0.76	3.41	11.65	12.31	4.31	0.54	0.06	0.01	0.00	0.00	0.00

WATER YEAR 1998

NAKHON NAYOK RIVER BASIN

Khlong Ban Na at Ban Cha Om, Saraburi (NY.6)

Location	Lat. 14-24-34 N., Long. 101-07-30 E., on right bank at the bridge of Ban Cha Om - Ban Kariang Kho Ma road, Tambon Cha Om, Amphoe Kaeng Khoi, Saraburi.
Drainage Area	116 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	22
R - Square	0.870
Remarks	Continued Sediment Station

RID Computer Center, Processing : 25-JUL-2000 06:22:00.06 LQS/LQS02D/12

Station - Ban Cha Om, Keang Khoi, Sara Buri, (NY.6)
Stream - Khlong Ban Na
River - Nakhon Nayok
River System - Nakhon Nayok River

Royal Irrigation Department
Thailand
Hydrology Division 060598
1.13250
QS = 2.3536 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.00	0.00	0.00	4.49	26.07	3.25	2.65	2.04	1.88	1.12	0.13	0.06	
2	0.00	0.00	0.00	46.06	26.07	3.25	2.35	2.19	2.04	0.98	0.04	0.06	
3	0.00	0.00	0.00	11.31	65.43	3.25	2.04	2.19	2.04	0.62	0.30	0.00	
4	0.00	0.00	0.00	6.58	28.48	3.25	2.04	2.19	1.88	0.56	0.42	0.00	
5	0.00	0.00	0.00	27.27	15.23	2.95	1.88	2.19	1.88	0.49	0.30	0.00	
6	0.00	0.00	0.00	16.23	9.51	2.95	1.88	2.35	1.88	0.49	0.36	0.03	
7	0.00	0.00	0.00	60.65	7.16	3.56	1.72	2.35	1.42	0.49	0.42	0.03	
8	0.00	0.00	0.00	30.92	23.68	3.56	1.72	2.19	1.27	0.56	0.36	0.03	
9	0.00	0.00	0.00	16.23	29.70	3.56	2.65	2.19	1.42	0.49	0.42	0.04	
10	0.00	0.00	2.19	21.32	41.79	3.56	6.02	2.19	1.27	0.49	0.08	0.04	
11	0.00	0.00	1.27	7.74	40.37	4.81	2.95	2.19	1.27	0.42	0.10	0.06	
12	0.00	0.00	0.69	7.16	20.29	6.02	59.17	2.19	1.27	0.36	0.15	0.06	
13	0.00	0.00	0.69	5.45	15.23	9.51	78.79	2.19	1.27	0.42	0.15	0.06	
14	0.00	0.00	0.69	29.70	28.48	6.58	54.76	2.19	1.12	0.42	0.15	0.04	
15	0.00	0.00	0.83	22.50	27.27	5.45	34.77	2.19	1.12	0.36	0.15	0.03	
16	0.00	0.00	0.83	11.31	12.28	5.13	21.32	2.19	1.27	0.30	0.15	0.03	
17	0.00	0.00	0.83	7.74	8.32	4.81	12.28	2.35	1.27	0.30	0.17	0.03	
18	0.00	0.00	0.83	4.81	8.91	28.48	9.51	2.35	1.12	0.30	0.13	0.03	
19	0.00	0.00	0.83	3.87	9.51	13.25	13.25	2.35	1.42	0.30	0.12	0.00	
20	0.00	0.00	0.83	3.25	11.31	8.32	8.32	2.19	1.27	0.30	0.12	0.00	
21	0.00	0.00	2.95	2.35	7.74	5.45	6.02	2.19	1.27	0.30	0.12	0.00	
22	0.00	0.00	1.88	2.35	6.02	4.49	4.81	2.19	1.42	0.17	0.12	0.00	
23	0.00	0.00	1.72	2.04	4.81	4.18	3.87	2.35	1.12	0.17	0.10	0.00	
24	0.00	0.00	1.72	2.04	5.13	4.49	3.56	2.65	1.12	0.23	0.08	0.00	
25	0.00	0.00	4.81	1.88	4.49	3.87	3.25	2.65	1.12	0.42	0.08	0.00	
26	0.00	0.00	3.56	2.35	20.29	3.87	2.95	2.04	1.27	0.15	0.08	0.00	
27	0.00	0.00	3.56	1.88	8.91	3.25	2.65	2.04	1.27	0.15	0.08	0.00	
28	0.00	0.00	13.25	1.88	6.58	2.95	2.35	1.88	1.12	0.13	0.08	0.00	
29	0.00	0.00	22.50	1.72	5.13	2.95	2.19	1.88	1.27	0.13		0.00	
30	0.00	0.00	9.51	2.04	3.56	2.35	2.04	1.88	1.27	0.13		0.00	
31		0.00		85.90	3.25		2.04		1.27	0.13		0.00	
Total	0.00	0.00	75.97	451.02	531.00	163.35	355.80	66.20	42.90	11.88	4.96	0.63	1703.71 Ton
Mean	0.00	0.00	2.53	14.55	17.13	5.44	11.48	2.21	1.38	0.38	0.18	0.02	
Max	0.00	0.00	22.50	85.90	65.43	28.48	78.79	2.65	2.04	1.12	0.42	0.06	85.90
Min	0.00	0.00	0.00	1.72	3.25	2.35	1.72	1.88	1.12	0.13	0.04	0.00	0.00

WATER YEAR 1998

EAST COAST - GULF BASIN

Klong Phayat at Ban Chaman, Chanthaburi (Z.14)

Location	Lat. 12-44-25 N., Long. 102-12-39 E., on left bank at the bridge at Klong Phayat near Wat Chaman, Amphoe Makham, Chanthaburi.
Drainage Area	245 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1994 - Cont'd
Actual Measurement	1994 - 1995, 1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	18
R - Square	0.855
Remarks	Continued Sediment Station

RID Computer Center, Processing : 25-JUL-2000 06:22:14.10 LQS/LQS02D/12

Station - Ban Chaman, Makham, Chanthaburi, (Z.14)
Stream - Khlong Phayat
River - Chanthaburi
River System - East Coast-Gulf Basin

Royal Irrigation Department
Thailand
Hydrology Division 060598
1.56014
QS = 1.6850 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.85	2.60	167.13	781.22	145.74	36.34	137.49	37.29	15.34	4.51	4.51	2.85	
2	2.36	2.12	72.22	3054.49	104.60	36.34	115.68	33.53	15.81	4.51	4.51	2.85	
3	2.36	2.60	201.14	443.69	45.85	81.33	48.10	35.39	14.88	3.65	6.10	2.85	
4	2.36	2.85	108.10	203.49	48.10	65.26	84.53	29.91	13.97	2.85	6.43	4.81	
5	2.36	2.85	40.38	97.74	84.53	57.52	76.63	28.16	14.88	2.85	4.81	13.08	
6	2.60	3.11	39.31	46.97	113.77	147.83	68.01	26.44	13.08	2.85	4.51	3.93	
7	2.36	2.85	43.63	70.81	428.23	705.87	72.22	25.60	13.53	3.37	3.65	3.93	
8	3.11	2.85	111.87	125.43	899.29	574.25	175.98	23.13	10.96	3.65	3.93	3.93	
9	2.85	2.85	84.53	189.55	532.16	180.46	279.45	21.54	10.55	3.37	3.11	4.22	
10	2.36	4.81	86.14	86.14	397.91	131.41	198.80	20.75	9.75	5.77	2.85	3.65	
11	2.60	3.65	82.93	57.52	499.32	343.26	311.88	20.24	13.08	4.81	3.11	3.37	
12	1.90	3.93	46.97	61.20	372.05	536.31	135.45	18.72	11.37	4.51	3.11	3.11	
13	2.36	4.51	41.45	57.52	229.94	308.46	254.82	18.72	11.37	5.12	3.11	3.11	
14	2.36	4.51	30.80	171.54	184.99	1403.02	160.61	18.22	10.96	4.22	3.11	3.11	
15	2.36	4.22	37.29	92.71	152.05	379.37	135.45	18.22	10.96	3.65	3.11	2.85	
16	1.90	4.22	26.44	62.54	119.55	595.72	205.84	18.72	11.37	2.85	2.60	2.85	
17	2.85	4.22	20.75	53.92	68.01	386.75	119.55	18.22	10.96	2.60	2.85	3.11	
18	1.90	4.22	20.24	43.63	137.49	582.80	101.15	15.34	9.35	3.37	3.11	3.65	
19	2.85	4.51	20.75	29.03	89.40	285.73	92.71	15.81	3.65	3.93	3.11	2.85	
20	3.11	4.51	19.73	31.70	73.65	325.69	96.05	14.42	7.48	3.65	2.85	2.85	
21	2.85	4.51	18.22	25.60	73.65	301.66	79.75	14.88	7.84	3.93	3.11	3.11	
22	3.11	4.51	38.26	29.03	82.93	220.19	66.63	18.22	6.10	3.37	2.85	3.11	
23	2.85	4.22	44.73	147.83	68.01	234.87	63.89	17.24	6.43	2.85	2.85	3.37	
24	3.11	5.12	81.33	96.05	56.31	239.84	59.96	15.81	6.78	3.37	2.85	4.22	
25	3.11	4.51	29.91	58.73	50.40	227.49	51.56	15.34	6.10	3.37	2.60	4.51	
26	3.11	4.81	43.63	82.93	45.85	203.49	48.10	13.08	6.10	3.37	2.36	3.11	
27	3.37	23.94	175.98	548.85	44.73	229.94	44.73	14.42	6.43	3.11	2.85	3.65	
28	2.85	75.08	61.20	154.17	41.45	276.32	42.53	15.34	6.43	3.11	3.11	4.81	
29	1.69	27.30	89.40	115.68	38.26	173.75	40.38	15.34	4.22	3.37		4.81	
30	2.36	65.26	864.95	106.34	36.34	135.45	39.31	16.28	4.81	6.43		4.51	
31		72.22		46.97	45.85		39.31		4.51	5.44		4.81	
Total	78.17	363.47	2749.41	7173.02	5310.41	9406.72	3446.55	614.32	299.05	117.81	97.06	120.98	29776.98 Ton
Mean	2.61	11.72	91.65	231.39	171.30	313.56	111.18	20.48	9.65	3.80	3.47	3.90	
Max	3.37	75.08	864.95	3054.49	899.29	1403.02	311.88	37.29	15.81	6.43	6.43	13.08	3054.49
Min	1.69	2.12	18.22	25.60	36.34	36.34	39.31	13.08	3.65	2.60	2.36	2.85	1.69

WATER YEAR 1998

EAST COAST - GULF BASIN

Klong Yai at Ban Pak Phraek, Rayong (Z.15)

Location	Lat. 12°-55'-41" N., Long. 101°-19'-30" E., on right bank at Ban Pak Phraek, King Amphoe Pluak Daeng, Rayong.
Drainage Area	244 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1988 - Cont'd
Actual Measurement	1988, 1994 - Cont'd
Using Rating Curve Water Year	1988 - 1998
Number of observation	89
R - Square	0.896
Remarks	Continued Sediment Station

RID Computer Center, Processing : 25-JUL-2000 06:22:20.36

LQS/LQS02D/12

Station - Ban Pak Phraek, A. Pluak Daeng, Rayong, (Z.15)
Stream - Khlong Yai
River - Khlong Yai
River System - East Coast-Gulf Basin

Royal Irrigation Department
Thailand
Hydrology Division

$QS = 7.6064\ QW^{1.35434}$

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.81	0.43	0.98	2.66	3.14	7.10	65.45	6.59	1.63	0.10	0.01	0.00	
2	3.81	0.34	41.34	2.20	1.76	3.30	54.15	5.43	1.36	0.07	0.01	0.00	
3	2.81	0.34	7.61	178.79	1.49	2.66	569.29	8.13	1.36	0.07	0.01	0.00	
4	0.53	0.34	3.98	93.98	2.05	2.66	151.82	10.29	22.13	0.07	0.01	0.00	
5	0.53	0.34	3.30	27.46	1.23	2.20	39.11	5.25	8.65	0.07	0.01	0.00	
6	0.53	0.25	2.20	12.00	0.86	2.20	20.11	4.16	0.98	0.07	0.01	0.00	
7	0.53	0.25	2.20	8.65	0.75	1.63	15.61	3.47	1.49	0.07	0.01	0.00	
8	0.53	0.25	1.76	13.77	0.43	1.10	16.23	3.14	2.20	0.07	0.01	0.00	
9	0.53	0.25	47.38	4.51	0.34	8.65	610.45	2.81	1.76	0.07	0.01	0.00	
10	0.53	0.86	52.78	3.47	0.53	2.97	145.99	2.81	1.36	0.07	0.01	0.00	
11	0.53	22.13	9.19	2.50	91.99	9.19	52.78	2.66	1.36	0.04	0.01	0.00	
12	0.53	5.62	3.98	2.35	17.50	25.46	43.60	2.66	0.86	0.04	0.01	0.00	
13	0.53	3.47	2.66	2.35	18.79	10.29	50.06	1.91	0.86	0.04	0.01	0.00	
14	0.43	5.06	1.91	2.20	46.06	7.10	74.66	1.63	0.75	0.04	0.01	0.00	
15	0.43	54.15	1.10	2.50	36.91	5.06	169.67	1.76	0.75	0.04	0.01	0.00	
16	0.43	1.91	1.10	2.50	7.10	3.98	163.66	1.76	0.75	0.04	0.01	0.00	
17	0.43	1.63	0.04	1.63	4.33	3.47	40.22	1.63	0.64	0.04	0.01	0.00	
18	0.43	1.63	0.00	1.36	5.43	7.10	65.45	2.20	0.53	0.04	0.01	0.00	
19	0.43	1.63	0.00	1.10	262.66	8.13	78.43	10.85	0.53	0.04	0.01	0.00	
20	0.43	1.63	0.00	1.10	523.90	4.51	76.54	2.50	0.43	0.04	0.01	0.00	
21	0.43	1.63	1.76	1.10	80.33	3.98	46.06	2.20	0.34	0.04	0.00	0.00	
22	0.43	1.49	1.49	1.10	34.75	3.47	34.75	1.91	0.43	0.04	0.00	0.00	
23	0.43	1.36	1.23	5.06	22.81	2.97	17.50	8.65	0.34	0.04	0.00	0.00	
24	0.43	1.23	0.98	1.91	13.17	2.97	14.38	3.14	0.25	0.01	0.00	0.00	
25	0.43	0.86	0.75	1.10	9.74	3.14	11.42	2.20	0.25	0.01	0.00	0.00	
26	0.43	0.98	0.17	0.75	6.59	99.99	8.65	1.49	0.25	0.01	0.00	0.00	
27	0.43	0.98	0.00	0.64	5.43	88.06	18.79	1.36	0.17	0.01	0.00	0.00	
28	0.43	1.10	0.86	0.53	5.06	720.60	12.58	1.36	0.10	0.01	0.00	0.00	
29	0.43	1.10	3.14	0.34	4.16	128.86	6.59	1.36	0.10	0.01		0.00	
30	0.43	1.23	18.14	0.53	3.64	38.01	6.10	1.36	0.10	0.01		0.00	
31		1.23		0.53	3.14		5.06		0.10	0.01		0.00	
Total	23.04	115.70	212.03	380.67	1216.07	1210.81	2685.16	106.67	52.81	1.33	0.20	0.00	6004.49 Ton
Mean	0.77	3.73	7.07	12.28	39.23	40.36	86.62	3.56	1.70	0.04	0.01	0.00	
Max	3.81	54.15	52.78	178.79	523.90	720.60	610.45	10.85	22.13	0.10	0.01	0.00	720.60
Min	0.43	0.25	0.00	0.34	0.34	1.10	5.06	1.36	0.10	0.01	0.00	0.00	0.00

WATER YEAR 1998

CHANTHABURI RIVER BASIN

Khlong Hin DAT AT Ban Rong Sen, Chanthaburi (Z.21)

Location	Lat. 12°47'23" N., Long. 101°15'33" E., on left bank at the bridge on highway, Ban Rong Sen, Amphoe Makham, Chanthaburi.
Drainage Area	66 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1994 - Cont'd
Actual Measurement	1994 - Cont'd
Using Rating Curve Water Year	1994 - 1998
Number of observation	70
R - Square	0.831
Remarks	Continued Sediment Station

RID Computer Center, Processing : 25-JUL-2000 06:22:32.11

LQS/LQS02D/12

Station - Ban Rong Sen, A. Makham, Chanthaburi, (Z.21)
Stream - Khlong Hin Dat
River - Khlong Hin Dat
River System - East Coast-Gulf Basin

Royal Irrigation Department
Thailand
Hydrology Division 060598

QS = 1.42402 * 1.8875 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.36	0.59	29.54	317.67	47.84	10.42	16.48	8.47	4.09	1.02	1.25	1.62	
2	4.36	0.53	12.35	328.48	34.22	10.42	18.46	8.47	3.56	0.59	0.91	1.75	
3	4.92	0.59	44.29	56.43	23.47	15.87	15.87	7.72	3.56	0.64	1.62	1.75	
4	5.50	0.53	14.08	53.93	22.73	15.87	14.08	7.36	3.30	1.02	1.50	1.89	
5	3.82	0.53	9.24	30.46	21.28	21.28	12.92	7.36	3.05	1.02	1.25	1.89	
6	2.80	0.70	13.49	22.00	32.32	32.32	12.92	7.36	3.30	0.64	0.91	1.75	
7	2.56	0.91	14.08	27.73	62.81	133.31	15.26	6.72	2.80	0.64	1.02	1.62	
8	1.62	1.14	17.78	31.39	135.51	77.15	30.46	6.72	2.33	0.70	0.81	1.62	
9	1.62	5.80	15.87	49.04	86.56	28.63	35.18	6.41	1.14	0.70	0.81	1.62	
10	1.50	4.36	19.15	25.95	81.82	20.56	35.18	6.10	3.05	0.70	0.91	1.50	
11	1.62	1.62	17.10	17.78	103.65	43.13	24.21	6.10	2.11	0.59	0.91	1.50	
12	1.50	1.62	11.79	14.08	68.07	131.12	61.52	5.80	2.33	1.50	0.91	1.50	
13	1.62	1.89	10.42	13.49	44.29	128.94	45.47	5.50	2.11	0.70	0.81	1.37	
14	1.62	1.75	9.63	21.28	32.32	153.50	29.54	5.21	2.11	0.53	0.81	1.37	
15	1.62	1.62	9.24	15.87	25.95	58.96	40.09	4.64	1.89	0.53	0.91	1.37	
16	1.62	1.75	7.72	12.35	23.47	69.56	29.54	3.30	2.11	0.59	0.91	1.37	
17	1.50	1.75	6.72	11.24	20.56	44.29	20.56	2.80	1.50	0.53	0.91	1.37	
18	1.62	1.62	6.72	10.02	32.32	97.94	17.10	2.56	0.70	0.42	0.81	1.37	
19	1.62	1.62	7.04	9.24	21.28	40.09	17.78	2.56	1.14	0.53	0.81	1.25	
20	2.11	1.62	6.41	8.85	19.85	61.52	17.78	2.56	1.75	0.53	0.70	1.25	
21	2.11	2.80	5.80	8.09	18.46	43.13	14.67	5.21	1.02	0.42	0.70	1.25	
22	2.11	1.89	5.50	8.09	21.28	36.14	12.92	5.50	1.14	0.48	0.70	1.75	
23	1.75	1.89	27.73	19.15	18.46	29.54	12.35	5.21	0.91	0.42	0.81	2.56	
24	1.62	1.75	16.48	13.49	16.48	53.93	11.24	4.36	1.02	0.42	0.70	2.56	
25	1.50	1.62	10.83	10.83	14.67	39.09	10.83	3.82	0.91	0.48	0.70	2.33	
26	1.50	1.89	12.92	30.46	14.08	50.25	10.42	3.82	0.81	0.64	0.64	2.11	
27	1.50	4.09	60.24	103.65	13.49	66.74	10.02	4.09	1.02	0.59	0.64	1.89	
28	1.50	6.10	25.95	25.95	12.92	47.84	9.63	4.36	1.25	0.59	0.64	1.62	
29	1.62	33.27	15.87	19.15	12.92	30.46	9.24	3.82	0.81	1.14		1.62	
30	1.50	19.15	199.65	17.78	12.92	25.08	8.85	4.09	0.81	0.81		1.75	
31		24.21		17.78	12.92		9.24		0.91	1.37		1.75	
Total	66.22	131.20	663.63	1351.70	1108.92	1617.08	629.81	158.00	58.54	21.48	25.01	51.92	5883.51 Ton
Mean	2.21	4.23	22.12	43.60	35.77	53.90	20.32	5.27	1.89	0.69	0.89	1.67	
Max	5.50	33.27	199.65	328.48	135.51	153.50	61.52	8.47	4.09	1.50	1.62	2.56	328.48
Min	1.50	0.53	5.50	8.09	12.92	10.42	8.85	2.56	0.70	0.42	0.64	1.25	0.42

WATER YEAR 1997

MAE KLONG RIVER BASIN

Khwae Noi River at Ban Lum Sum, Kanchanaburi (K.10)

Location	Lat. 14-05-40 N., Long. 99-10-28 E., on left bank about 100 meters upstream from Ban Lum Sum Railway station, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	7,008 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1965 - Cont'd
Actual Measurement	1965 - 1967, 1971 1972, 1974 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	36
R - Square	0.8289
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:20.34

LQS/LQS02D/12

Station - Ban Lum Sum, Sai Yok, Kanchanaburi, (K.10)
Stream - Khwae Noi
River - Mae Klong
River System - Mae Klong

Royal Irrigation Department
Thailand
Hydrology Division 221295
2.00170
QS = 0.0447 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3901.2	6248.3	1044.4	2980.4	1985.5	1007.6	747.7	648.9	321.6	206.3	206.3	280.3	
2	2934.1	3437.8	2267.6	1770.0	693.0	912.8	720.1	374.7	265.6	202.1	693.0	290.4	
3	3927.8	5786.5	3169.0	1448.2	280.3	657.6	1069.2	833.7	251.3	193.7	487.3	901.3	
4	4945.9	6081.3	2124.2	1722.1	924.4	502.4	487.3	1278.7	337.8	197.9	387.9	711.0	
5	5280.4	5786.5	2002.6	415.2	2071.6	775.8	305.8	785.3	219.4	280.3	494.8	766.4	
6	1376.3	4945.9	2568.6	197.9	2397.0	422.1	494.8	598.0	228.3	401.4	557.2	666.4	
7	833.7	5436.1	1818.7	1567.0	1754.0	256.0	1448.2	443.3	140.1	422.1	305.8	631.7	
8	2911.1	3338.8	343.3	3338.8	1770.0	533.4	2588.0	326.9	206.3	394.6	260.8	479.8	
9	2888.2	4116.6	757.0	2397.0	598.0	747.7	2378.3	246.6	228.3	361.6	280.3	573.3	
10	2730.5	4309.8	2341.1	598.0	343.3	901.3	1107.1	525.5	241.9	337.8	465.1	878.5	
11	2980.4	3848.3	2911.1	1069.2	1551.9	959.6	693.0	631.7	197.9	193.7	443.3	833.7	
12	2865.4	4507.5	3145.1	1211.2	1951.5	693.0	666.4	720.1	210.6	374.7	525.5	1019.8	
13	2957.2	4143.9	3289.8	517.8	878.5	766.4	2752.8	640.3	219.4	450.5	361.6	775.8	
14	1081.8	3513.0	2888.2	878.5	2820.1	631.7	2797.6	684.0	158.3	436.2	337.8	479.8	
15	541.2	3691.6	2019.7	1754.0	3462.7	1968.5	1738.0	517.8	162.0	465.1	237.3	472.4	
16	757.0	4651.3	2775.1	1754.0	2957.2	1690.5	1320.1	343.3	140.1	408.3	355.2	747.7	
17	4089.3	5249.5	4062.2	1934.7	823.9	2054.3	1612.7	487.3	143.7	368.1	332.3	747.7	
18	4622.4	4975.9	3954.5	1462.7	2267.6	1786.2	947.8	598.0	123.1	232.8	197.9	947.8	
19	5005.9	4651.3	4365.8	598.0	2957.2	1032.0	517.8	479.8	140.1	348.8	394.6	1069.2	
20	4680.4	5188.1	4536.0	162.0	2842.7	901.3	457.8	533.4	143.7	290.4	640.3	775.8	
21	5851.4	4226.5	2434.6	494.8	2865.4	912.8	720.1	387.9	113.4	326.9	422.1	693.0	
22	4768.1	3241.2	738.4	1376.3	2304.2	1306.2	305.8	422.1	129.8	275.4	549.2	316.3	
23	4680.4	4651.3	2434.6	1770.0	1132.7	1770.0	210.6	265.6	162.0	429.1	675.2	614.8	
24	5249.5	4171.3	3874.7	1597.4	623.2	2322.6	169.7	337.8	150.9	251.3	573.3	533.4	
25	6833.0	2646.7	3241.2	1492.2	1722.1	2141.9	140.1	450.5	197.9	232.8	648.9	510.1	
26	5949.4	3640.1	3193.0	280.3	2588.0	2213.3	110.3	525.5	193.7	408.3	510.1	589.7	
27	5530.6	3614.5	2397.0	92.3	3169.0	1433.6	92.3	457.8	173.6	285.3	684.0	589.7	
28	6417.6	3665.8	1044.4	1007.6	2865.4	631.7	78.6	549.2	123.1	316.3	510.1	374.7	
29	7127.9	3821.9	181.5	2549.2	2752.8	1184.8	73.4	355.2	101.1	348.8		311.0	
30	7691.7	2865.4	1477.4	3145.1	1659.1	640.3	66.0	256.0	197.9	387.9		479.8	
31		1643.6		3027.0	684.0		113.4		206.3	368.1		510.1	
Total	121409.8	132096.3	73400.8	44608.9	57696.3	33757.4	26930.8	15704.9	5829.2	10196.6	12537.2	19571.4	553739.6 Ton
Mean	4047.0	4261.2	2446.7	1439.0	1861.2	1125.2	868.7	523.5	188.0	328.9	447.8	631.3	
Max	7691.7	6248.3	4536.0	3338.8	3462.7	2322.6	2797.6	1278.7	337.8	465.1	693.0	1069.2	7691.7
Min	541.2	1643.6	181.5	92.3	280.3	256.0	66.0	246.6	101.1	193.7	197.9	280.3	66.0

WATER YEAR 1998

MAE KLONG RIVER BASIN

Lam Taphoen at Ban Thung Na Nang Rok, Kanchanaburi (K.12)

Location	Lat. 14°-09'-15" N., Long. 99°-25'-06" E., on left bank about 50 meters downstream from Wat Thung Na Nang Rok, Amphoe Muang, Kanchanaburi.
Drainage Area	2,340 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	28
R - Square	0.9358
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:29.09

LQS/LQS02D/12

Station - Ban Thung Na Nang Rok, Muang, Kanchanaburi, (K.12)
Stream - Lam Taphoen
River - Khwae Yai
River System - Mae Klong

Royal Irrigation Department
Thailand
Hydrology Division 221295
1.33740
QS = 5.9663 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.51	0.20	0.24	0.11	1.41	1.09	465.92	101.13	31.87	5.26	0.56	0.65	
2	0.65	0.24	0.27	0.11	1.30	0.27	484.95	224.35	29.93	5.57	0.56	0.65	
3	0.56	0.20	0.24	0.17	1.52	0.20	227.14	178.81	30.90	5.26	0.65	0.51	
4	0.47	0.20	0.20	0.24	1.41	0.20	154.78	238.41	32.84	5.03	0.79	0.51	
5	0.43	0.24	0.20	0.27	1.41	0.24	213.26	341.76	30.90	3.77	0.69	0.47	
6	0.47	0.24	0.20	0.17	1.52	0.20	291.14	368.37	28.03	2.36	0.65	0.43	
7	0.35	0.24	0.20	0.17	1.19	0.20	677.70	235.58	25.24	2.11	0.65	0.43	
8	0.35	0.27	0.20	0.17	1.30	0.20	425.42	164.29	19.45	1.64	0.98	0.43	
9	0.31	0.27	0.24	0.17	1.30	0.20	315.65	133.93	16.50	1.75	1.09	0.43	
10	0.27	0.39	0.20	0.20	1.75	0.20	247.76	65.52	23.42	1.41	0.60	0.43	
11	0.27	0.35	0.20	0.17	1.30	0.20	294.55	120.47	23.42	0.65	0.56	0.39	
12	0.27	0.20	0.17	0.14	0.98	0.20	425.42	85.18	21.74	0.51	0.51	0.39	
13	0.24	0.79	0.17	0.14	0.60	0.14	981.70	68.46	17.23	0.79	0.56	0.39	
14	0.31	0.56	0.17	0.11	0.60	10.35	1350.82	44.33	15.79	2.11	1.09	0.31	
15	0.31	0.24	0.20	0.14	1.19	8.47	1071.76	28.03	15.08	1.41	1.30	0.27	
16	0.31	0.20	0.17	0.43	1.75	7.61	811.38	26.16	13.68	1.41	1.19	0.27	
17	0.35	0.20	0.14	8.13	2.49	7.87	696.72	30.90	13.68	1.64	1.64	0.31	
18	0.39	0.24	0.11	19.45	3.28	11.00	533.95	32.84	12.32	1.99	5.03	0.24	
19	0.35	0.24	0.11	15.79	2.49	9.72	404.48	59.75	8.47	1.87	2.62	0.24	
20	0.31	0.24	0.17	6.45	1.41	28.03	408.64	46.73	8.47	1.52	2.62	0.24	
21	0.27	0.20	0.14	3.49	0.88	94.67	722.30	39.89	7.87	1.19	2.36	0.24	
22	0.31	0.24	0.17	2.62	1.64	32.84	1179.79	37.84	7.87	1.19	1.19	0.24	
23	0.24	0.24	0.14	2.24	1.30	38.86	1490.77	40.93	7.61	1.41	0.88	0.24	
24	0.24	0.20	0.14	1.52	1.19	94.67	1026.19	40.93	7.87	1.30	0.88	0.31	
25	0.24	0.20	0.14	0.98	1.09	140.80	621.69	47.94	7.87	0.98	0.56	1.09	
26	0.27	0.20	0.08	0.88	0.69	188.85	425.42	85.18	5.81	0.65	0.60	1.19	
27	0.20	0.24	0.11	0.79	0.65	267.56	315.65	62.62	5.26	0.65	0.65	0.88	
28	0.24	0.24	0.11	0.69	0.43	304.84	251.03	51.62	5.57	0.60	0.60	1.52	
29	0.24	0.24	0.14	0.79	0.27	323.06	210.52	52.86	6.13	0.47		2.24	
30	0.20	0.20	0.14	0.79	0.17	364.54	136.21	44.33	5.57	0.51		2.36	
31		0.20		1.41	0.56		109.36		5.81	0.60		1.64	
Total	9.93	8.15	5.11	68.93	39.07	1937.28	16972.07	3099.14	492.20	57.61	32.06	19.94	22741.49 Ton
Mean	0.33	0.26	0.17	2.22	1.26	64.58	547.49	103.30	15.88	1.86	1.15	0.64	
Max	0.65	0.79	0.27	19.45	3.28	364.54	1490.77	368.37	32.84	5.57	5.03	2.36	1490.77
Min	0.20	0.20	0.08	0.11	0.17	0.14	109.36	26.16	5.26	0.47	0.51	0.24	0.08

WATER YEAR 1998

MAE KLONG RIVER BASIN

Lam Phachi at Ban Bo Khem, Ratchaburi (K.17)

Location	Lat. 13°-32'-41" N., Long. 99°-21'-22" E., on left bank opposite to the 'Sai Ngam` frontier police station, Amphoe Suan Phung, Ratchaburi.
Drainage Area	1,355 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1978 - Cont'd
Actual Measurement	1980 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	21
R - Square	0.9568
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:33.33

LQS/LQS02D/12

Station - Ban Bo, Suan Phung, Ratchaburi, (K.17)
Stream - Lam Phachi
River - Khwae Noi
River System - Mae Klong

Royal Irrigation Department
Thailand
Hydrology Division

QS = 1.81180 * 1.6342 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.9	1.0	1.9	0.9	59.9	3.4	720.2	91.1	22.5	2.3	0.7	0.2	
2	2.6	0.5	2.6	1.5	12.0	32.4	2648.9	77.3	20.1	1.9	1.0	0.6	
3	2.3	0.5	1.9	1.0	5.2	36.5	3759.5	147.4	20.1	1.6	1.5	0.2	
4	2.6	1.2	1.6	0.9	3.4	12.0	1834.3	98.4	24.9	1.9	1.2	0.1	
5	2.6	1.2	1.9	1.5	2.6	24.9	954.8	70.7	20.1	1.9	1.4	0.6	
6	3.0	0.7	2.6	1.1	1.9	12.0	594.2	59.9	17.9	1.9	1.5	0.7	
7	3.0	1.1	2.3	1.0	1.5	5.7	1393.0	49.9	15.8	1.5	1.1	1.2	
8	2.6	0.9	1.4	1.0	1.5	4.7	8010.0	45.2	13.8	1.6	1.1	1.0	
9	2.3	1.1	1.0	1.5	1.4	4.7	4173.0	40.7	12.0	1.9	1.1	0.4	
10	2.6	1.6	1.4	0.9	1.1	4.3	3138.6	36.5	12.0	1.5	1.2	0.5	
11	3.4	1.4	1.6	0.6	1.5	3.0	17660.0	28.6	10.2	1.2	1.1	0.4	
12	1.9	0.9	1.1	1.4	1.6	3.4	29135.8	24.9	4.3	1.5	0.6	0.2	
13	1.6	1.6	1.5	1.1	1.4	3.4	10403.8	22.5	7.1	1.1	1.0	0.3	
14	1.9	3.4	1.6	0.9	1.1	4.3	5964.3	20.1	5.7	1.1	1.0	0.2	
15	1.5	5.2	1.2	1.6	1.4	4.7	2211.8	17.9	5.2	1.2	0.6	0.1	
16	1.9	3.8	1.9	1.9	1.4	3.8	1353.6	17.9	5.2	1.6	0.7	0.0	
17	1.6	3.0	2.3	1.1	1.5	3.4	988.4	28.6	5.2	1.0	1.0	0.4	
18	2.3	2.6	1.6	1.0	1.4	3.8	617.2	24.9	5.2	0.7	0.7	0.6	
19	2.6	3.0	1.2	1.4	2.3	4.7	484.8	20.1	5.2	0.9	0.6	0.1	
20	2.3	1.9	1.1	0.7	5.2	12.0	1597.1	15.8	5.2	1.1	0.6	0.0	
21	1.6	2.3	1.2	1.0	12.0	720.2	747.6	15.8	5.2	1.1	0.6	0.0	
22	1.6	2.3	1.0	2.3	12.0	666.7	484.8	15.8	5.2	0.6	0.7	0.2	
23	1.6	2.3	1.0	1.6	7.1	775.4	372.0	36.5	4.7	0.6	0.2	0.2	
24	1.4	1.6	1.4	1.2	4.3	2046.1	307.3	45.2	4.3	1.0	0.9	0.1	
25	1.5	1.4	1.2	1.5	4.3	1353.6	237.1	32.4	4.3	0.6	0.9	0.2	
26	1.5	1.5	0.6	1.6	10.2	3759.5	189.9	22.5	3.8	0.5	0.2	0.4	
27	0.7	1.5	0.3	0.9	8.6	3679.2	157.6	20.1	3.8	1.0	0.1	0.1	
28	0.7	1.5	1.0	1.2	13.8	1732.3	130.1	45.2	3.8	0.9	0.1	0.2	
29	0.9	1.6	0.6	1.2	10.2	1057.4	106.0	45.2	3.4	0.5		0.5	
30	1.1	2.3	0.4	2.3	5.2	617.2	91.1	32.4	3.0	0.9		0.3	
31		1.9		3.4	3.8		106.0		1.9	1.2		0.6	
Total	59.1	56.8	42.4	41.2	200.8	16594.7	100572.8	1249.5	281.1	38.3	23.4	10.6	119170.7 Ton
Mean	2.0	1.8	1.4	1.3	6.5	553.2	3244.3	41.7	9.1	1.2	0.8	0.3	
Max	3.4	5.2	2.6	3.4	59.9	3759.5	29135.8	147.4	24.9	2.3	1.5	1.2	29135.8
Min	0.7	0.5	0.3	0.6	1.1	3.0	91.1	15.8	1.9	0.5	0.1	0.0	0.0

WATER YEAR 1998

MAE KLONG RIVER BASIN

Huai Mae Nam Noi at Ban Sai Yok Noi, Kanchanaburi (K.22B)

Location	Lat. 14°-26'-59" N., Long. 98°-48'-08" E., on right bank about 640 meters upstream from station K.22A, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	320 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.7837
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:37.94

LQS/LQS02D/12

Station - Ban Sai Yok Noi, Sai Yok, Kanchanaburi, (K.22B)
Stream - Huai Mae Nam Noi
River - Khwae Noi
River System - Mae Klong

Royal Irrigation Department
Thailand
Hydrology Division 221295
1.55370
QS = 2.1154 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.80	1.50	7.41	6.65	14.82	12.39	20.11	10.13	5.88	3.22	2.66	1.22	
2	1.50	1.50	9.06	13.58	14.82	11.24	45.05	10.13	5.88	2.66	2.12	1.22	
3	1.50	1.50	5.88	11.24	16.08	13.58	25.23	11.24	5.88	2.66	1.80	0.96	
4	1.50	1.50	5.88	9.06	16.08	20.11	21.52	10.13	5.88	2.66	2.12	0.96	
5	1.80	1.50	5.18	7.41	14.82	14.82	18.73	10.13	5.18	2.66	2.12	2.12	
6	2.12	1.50	5.88	9.06	14.82	13.58	17.39	9.06	5.18	2.66	1.80	1.80	
7	2.66	1.50	6.65	16.08	14.82	13.58	17.39	9.06	5.18	2.66	1.80	0.96	
8	2.66	2.12	5.88	11.24	17.39	14.82	20.11	8.19	5.18	2.12	1.80	0.96	
9	1.80	1.80	5.18	10.13	21.52	12.39	20.11	8.19	5.18	2.12	1.80	0.72	
10	2.12	2.12	5.88	20.11	21.52	21.52	29.14	7.41	4.48	2.12	1.80	0.72	
11	2.66	5.18	5.88	21.52	27.16	17.39	37.57	7.41	4.48	2.12	1.80	0.72	
12	2.66	4.48	6.65	16.08	20.11	93.68	33.26	7.41	4.48	2.12	1.50	0.72	
13	2.66	4.48	5.88	12.39	21.52	45.05	64.49	6.65	4.48	2.12	1.50	0.72	
14	2.12	11.24	5.88	12.39	17.39	54.46	79.62	6.65	3.81	2.12	1.50	0.72	
15	2.12	6.65	5.88	18.73	20.11	31.18	37.57	6.65	3.81	2.12	1.50	0.72	
16	2.12	4.48	5.18	23.34	37.57	23.34	45.05	6.65	3.81	2.12	1.50	0.72	
17	2.12	3.81	4.48	16.08	29.14	20.11	29.14	6.65	3.81	2.12	1.50	0.72	
18	2.12	3.22	4.48	13.58	20.11	54.46	25.23	6.65	3.81	1.80	1.50	0.72	
19	1.80	3.22	6.65	12.39	18.73	37.57	25.23	6.65	3.81	1.80	1.50	0.72	
20	1.80	10.13	5.88	9.06	25.23	42.05	35.39	7.41	3.81	1.80	1.22	0.72	
21	1.80	16.08	5.88	9.06	42.05	42.05	21.52	8.19	3.81	1.80	1.22	0.72	
22	1.80	8.19	5.18	11.24	37.57	37.57	20.11	10.13	3.81	1.80	1.22	0.72	
23	1.80	7.41	5.18	14.82	31.18	45.05	18.73	8.19	3.81	1.80	1.22	0.72	
24	1.80	5.88	4.48	10.13	21.52	54.46	17.39	7.41	3.81	1.80	1.22	2.66	
25	1.80	4.48	5.18	9.06	18.73	57.74	16.08	6.65	3.81	1.50	1.22	2.66	
26	1.80	5.18	5.18	9.06	18.73	61.08	16.08	6.65	3.22	1.50	1.22	1.50	
27	1.80	4.48	5.18	10.13	14.82	37.57	14.82	6.65	3.22	1.50	1.22	1.22	
28	1.50	5.88	5.88	11.24	13.58	29.14	13.58	7.41	3.22	1.80	1.22	1.80	
29	1.50	13.58	7.41	9.06	12.39	23.34	12.39	7.41	3.22	2.66		1.22	
30	1.50	9.06	6.65	9.06	11.24	21.52	12.39	6.65	3.22	12.39		1.22	
31		9.06		17.39	14.82		11.24		3.22	4.48		0.96	
Total	58.74	162.71	175.92	390.37	640.39	976.84	821.66	237.79	132.38	78.81	44.60	34.24	3754.45 Ton
Mean	1.96	5.25	5.86	12.59	20.66	32.56	26.51	7.93	4.27	2.54	1.59	1.10	
Max	2.66	16.08	9.06	23.34	42.05	93.68	79.62	11.24	5.88	12.39	2.66	2.66	93.68
Min	1.50	1.50	4.48	6.65	11.24	11.24	11.24	6.65	3.22	1.50	1.22	0.72	0.72

WATER YEAR 1997

MAE KLONG RIVER BASIN

Huai Mae Nam Lo at Ban Pak Huai Mae Nam Lo, Kanchanaburi (K.30)

Location	Lat. 14°-26'-27" N., Long. 98°-47'-53" E., on left bank about 1 kilometers downstream from station K.22A, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	435 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1997
Number of observation	18
R - Square	0.950
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:42.51 LQS/LQS02D/12

Station - Ban Pak Huai Mae Nam Lo, Sai Yok, Kanchanaburi, (K.30)
Stream - Huai Mae Nam Lo
River - Mae Klong
River System - Mae Klong

Royal Irrigation Department
Thailand
Hydrology Division 221295
1.22460
QS = 2.3424 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.78	0.83	7.76	3.63	10.48	6.46	17.81	6.46	2.87	0.54	0.83	0.29	
2	1.78	0.83	5.21	4.62	7.12	6.46	39.96	6.46	2.49	0.54	0.83	0.29	
3	1.78	0.54	4.62	4.62	5.84	14.46	23.71	6.46	2.49	0.54	0.54	0.17	
4	1.78	0.54	4.01	3.63	4.62	20.68	19.70	6.46	2.49	0.41	0.54	0.17	
5	1.78	0.54	3.63	2.87	4.01	11.24	14.46	5.84	2.49	0.41	0.83	0.07	
6	2.14	0.54	3.23	3.23	4.62	9.10	11.24	5.21	2.14	0.41	0.83	0.07	
7	1.78	1.43	3.63	6.46	3.23	7.12	11.24	4.62	1.78	0.41	0.54	0.00	
8	1.43	0.83	3.23	5.84	3.23	7.12	22.70	4.62	1.43	0.41	0.54	0.00	
9	1.43	0.83	3.23	4.01	12.05	5.84	30.17	4.01	1.43	0.41	0.41	0.00	
10	1.43	2.49	2.87	8.41	9.10	7.76	25.83	4.01	1.43	0.29	0.29	0.00	
11	1.43	5.84	2.87	11.24	9.10	8.41	50.57	3.63	1.43	0.29	0.29	0.00	
12	1.43	7.76	2.87	6.46	7.76	28.98	43.86	3.23	1.43	0.41	0.17	0.00	
13	1.43	23.71	2.87	4.62	8.41	26.86	94.35	3.23	1.43	0.41	0.17	0.00	
14	1.13	13.66	3.63	4.01	7.76	49.22	62.45	2.87	1.13	0.41	0.17	0.00	
15	1.13	6.46	5.21	6.46	4.01	23.71	38.71	2.87	1.13	0.41	0.17	0.00	
16	1.13	3.23	3.63	12.05	4.01	15.30	43.86	2.87	1.13	0.29	0.17	0.00	
17	1.13	2.49	2.87	7.76	5.21	12.83	25.83	3.23	1.13	0.29	0.17	0.00	
18	1.13	2.14	2.14	5.21	7.76	37.47	21.66	3.23	1.13	0.29	0.07	0.00	
19	1.13	2.49	2.49	4.01	5.84	20.68	19.70	3.23	1.13	0.29	0.07	0.00	
20	0.83	5.84	2.49	3.23	13.66	23.71	37.47	3.63	1.13	0.41	0.07	0.00	
21	0.83	14.46	2.49	2.49	36.23	56.22	21.66	3.23	1.13	0.41	0.07	0.00	
22	0.83	7.12	2.87	2.14	15.30	30.17	18.68	3.23	0.83	0.29	0.07	0.00	
23	0.83	6.46	2.87	2.14	17.81	42.54	15.30	3.63	0.83	0.29	0.07	0.00	
24	0.83	4.01	2.14	1.78	11.24	42.54	12.05	3.23	0.83	0.29	0.07	0.00	
25	0.83	5.84	1.78	1.78	7.76	49.22	11.24	2.87	0.83	0.29	0.07	0.00	
26	0.83	4.01	1.78	2.14	5.84	33.78	10.48	2.49	0.83	0.29	0.07	0.00	
27	0.83	4.01	1.78	1.78	13.66	26.86	9.10	2.14	0.83	0.29	0.17	0.00	
28	0.83	3.63	4.01	2.14	7.12	31.36	8.41	3.23	0.83	0.54	0.29	0.00	
29	0.83	4.01	2.87	1.78	4.62	23.71	8.41	3.63	0.54	1.43		0.00	
30	0.83	7.12	3.23	1.43	4.01	17.81	7.76	3.23	0.54	1.43		0.00	
31		8.41		2.87	4.62		7.12		0.54	1.43		0.00	
Total	37.31	152.10	98.31	134.84	266.03	697.62	785.49	117.08	41.80	14.85	8.58	1.06	2355.07 Ton
Mean	1.24	4.91	3.28	4.35	8.58	23.25	25.34	3.90	1.35	0.48	0.31	0.03	
Max	2.14	23.71	7.76	12.05	36.23	56.22	94.35	6.46	2.87	1.43	0.83	0.29	94.35
Min	0.83	0.54	1.78	1.43	3.23	5.84	7.12	2.14	0.54	0.29	0.07	0.00	0.00

WATER YEAR 1998

MAE KLONG RIVER BASIN

Huai Mae Nam Noi at Ban Mae Nam Noi, Kanchanaburi (K.31)

Location	Lat. 14°-26'-21" N., Long. 98°-49'-21" E., on right bank about 2 kilometers downstream from station K.22A, Amphoe Sai Yok, Kanchanaburi.
Drainage Area	777 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1997 - Cont'd
Actual Measurement	1997 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.8454
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:47.87 LQS/LQS02D/12

Station - Ban Mae Nam Noi, Sai Yok, Kanchanaburi, (K.31)
Stream - Huai Mae Nam Noi
River - Khwae Noi
River System - Mae Klong

Royal Irrigation Department
Thailand
Hydrology Division

$QS = 1.1657\ QW^{1.46170}$

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.14	1.27	12.08	7.15	19.66	13.75	31.02	13.75	6.65	3.86	3.14	1.50	
2	2.84	1.27	9.70	14.61	18.55	12.08	64.95	13.75	6.15	3.86	2.55	1.27	
3	2.84	1.27	7.67	14.61	18.55	14.61	42.35	13.75	6.15	3.45	2.55	1.05	
4	2.84	1.27	6.65	11.26	16.39	28.00	31.02	12.90	6.15	3.45	3.45	1.05	
5	3.86	1.50	5.67	10.47	14.61	24.31	26.75	12.08	6.15	3.14	2.55	2.01	
6	3.14	2.27	6.15	10.47	15.49	18.55	23.12	11.26	5.67	3.14	2.27	1.75	
7	2.84	2.01	6.15	15.49	13.75	15.49	23.12	10.47	5.67	3.14	2.01	1.05	
8	2.84	2.01	5.67	14.61	14.61	18.55	35.74	10.47	5.20	2.84	1.75	1.05	
9	2.55	2.01	5.20	11.26	26.75	15.49	58.45	8.94	4.74	2.84	1.75	0.72	
10	2.55	8.20	5.67	16.39	26.75	24.31	48.03	8.94	4.74	2.84	1.75	0.72	
11	2.27	10.47	5.67	25.52	34.15	21.95	78.40	8.20	4.74	2.84	1.50	0.72	
12	2.27	8.94	5.67	19.66	26.75	72.93	70.24	8.20	4.74	2.84	1.50	0.72	
13	2.01	24.31	5.67	12.08	23.12	62.78	164.88	7.67	4.29	2.55	1.50	0.61	
14	2.01	17.46	6.65	12.08	19.66	92.62	156.48	7.67	4.29	2.55	1.50	0.61	
15	2.01	10.47	8.94	15.49	18.55	46.06	72.93	7.67	4.29	2.55	1.27	0.61	
16	2.01	6.15	7.67	24.31	24.31	32.57	75.65	7.67	3.86	2.55	1.27	0.61	
17	1.75	4.29	6.15	19.66	23.12	32.57	50.03	7.67	3.86	2.27	1.27	0.61	
18	1.75	3.45	5.20	12.90	17.46	67.58	39.00	7.67	3.86	2.27	1.27	0.61	
19	1.75	3.86	6.15	12.08	18.55	42.35	37.36	7.67	3.86	2.27	1.27	0.61	
20	1.75	9.70	6.15	8.94	32.57	54.22	58.45	8.20	3.86	2.27	1.05	0.61	
21	1.75	24.31	6.15	8.20	67.58	89.72	40.67	7.67	3.86	2.27	1.05	0.61	
22	1.50	13.75	6.15	9.70	44.06	60.57	31.02	8.94	3.86	2.01	1.05	0.61	
23	1.50	10.47	6.15	12.90	37.36	78.40	28.00	8.94	3.86	2.01	1.05	0.61	
24	1.50	7.15	6.15	9.70	23.12	67.58	23.12	7.67	3.86	2.01	1.05	1.27	
25	1.50	6.15	6.15	8.94	18.55	98.72	21.95	7.15	3.86	1.75	1.05	2.01	
26	1.50	6.65	6.65	8.94	16.39	67.58	19.66	6.65	3.86	1.75	1.05	1.27	
27	1.50	6.65	5.20	8.94	19.66	56.29	18.55	6.65	3.86	1.75	1.05	1.05	
28	1.50	6.15	6.15	9.70	15.49	54.22	16.39	7.67	3.86	1.75	1.75	2.01	
29	1.27	10.47	6.65	8.94	12.90	39.00	15.49	8.20	3.86	3.45		1.05	
30	1.27	10.47	7.15	8.94	12.08	32.57	14.61	7.15	3.86	7.15		0.84	
31		12.90		15.49	13.75		13.75		3.86	4.74		0.84	
Total	63.81	237.30	197.08	399.43	704.29	1355.42	1431.18	271.29	141.38	88.16	46.27	30.66	4966.27 Ton
Mean	2.13	7.65	6.57	12.88	22.72	45.18	46.17	9.04	4.56	2.84	1.65	0.99	
Max	3.86	24.31	12.08	25.52	67.58	98.72	164.88	13.75	6.65	7.15	3.45	2.01	164.88
Min	1.27	1.27	5.20	7.15	12.08	12.08	13.75	6.65	3.86	1.75	1.05	0.61	0.61

WATER YEAR 1998

PHETCHABURI RIVER BASIN

Phetchaburi River at Ban Rai Phaniat, Phetchaburi (B.1A)

Location	Lat. 13-04-22 N., Long. 99-56-37 E., on left bank, next to Muang Thamon Regulator, Ban Rai Phaniat, Amphoe Muang, Phetchaburi.
Drainage Area	4,188 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.9446
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:07.49

LQS/LQS02D/12

Station - Ban Rai Phaniat, A. Muang, Phetchaburi, (B.1A)
Stream - Phetchaburi
River - Phetchaburi
River System - Phetchaburi

Royal Irrigation Department
Thailand
Hydrology Division 221295
1.72170
QS = 1.3724 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	20.5	30.0	72.3	43.1	153.8	16.5	74.8	12.9	21.9	5.5	53.6	39.1	
2	20.5	30.0	96.1	37.2	135.5	16.5	51.4	11.7	31.7	5.5	53.6	43.1	
3	25.0	41.1	122.8	28.3	264.7	16.5	264.7	51.4	25.0	4.8	58.0	43.1	
4	33.5	49.2	153.8	39.1	275.5	15.3	797.5	203.7	31.7	2.0	53.6	43.1	
5	53.6	45.1	171.2	77.4	162.4	16.5	470.6	33.5	72.3	0.7	49.2	43.1	
6	55.8	35.4	189.5	135.5	65.0	17.8	243.6	15.3	35.4	3.0	49.2	43.1	
7	60.3	37.2	175.7	389.7	213.4	37.2	85.2	12.9	35.4	5.5	47.1	47.1	
8	74.8	35.4	184.9	264.7	135.5	55.8	74.8	11.7	37.2	17.8	49.2	41.1	
9	55.8	33.5	175.7	125.9	19.1	58.0	184.9	9.6	35.4	53.6	49.2	39.1	
10	47.1	39.1	166.8	110.6	31.7	60.3	830.4	8.7	33.5	53.6	45.1	37.2	
11	45.1	35.4	162.4	96.1	23.5	67.4	886.6	8.7	33.5	53.6	45.1	37.2	
12	41.1	33.5	162.4	69.8	7.1	69.8	3324.9	8.7	31.7	53.6	47.1	39.1	
13	41.1	33.5	158.1	65.0	5.5	41.1	5578.7	8.7	30.0	58.0	49.2	35.4	
14	39.1	37.2	162.4	58.0	4.2	19.1	3349.7	8.7	31.7	53.6	47.1	35.4	
15	35.4	31.7	184.9	53.6	3.6	15.3	1141.6	9.6	23.5	53.6	49.2	35.4	
16	33.5	30.0	166.8	65.0	9.6	16.5	425.6	10.7	17.8	53.6	45.1	37.2	
17	31.7	26.6	194.2	69.8	28.3	23.5	254.1	12.9	17.8	53.6	43.1	39.1	
18	33.5	26.6	203.7	69.8	33.5	43.1	119.7	14.0	17.8	53.6	41.1	39.1	
19	33.5	30.0	189.5	74.8	23.5	41.1	37.2	16.5	15.3	49.2	39.1	35.4	
20	35.4	30.0	138.7	65.0	17.8	51.4	31.7	16.5	12.9	43.1	45.1	35.4	
21	51.4	19.1	119.7	51.4	12.9	49.2	132.2	16.5	14.0	53.6	45.1	35.4	
22	39.1	15.3	138.7	41.1	12.9	55.8	355.0	16.5	15.3	37.2	45.1	31.7	
23	37.2	14.0	171.2	43.1	21.9	180.3	135.5	14.0	10.7	35.4	43.1	35.4	
24	37.2	28.3	138.7	53.6	45.1	329.2	31.7	15.3	9.6	35.4	43.1	35.4	
25	37.2	72.3	107.6	116.6	129.1	316.7	20.5	19.1	8.7	31.7	43.1	35.4	
26	35.4	85.2	85.2	158.1	275.5	348.5	17.8	17.8	7.1	28.3	41.1	35.4	
27	35.4	122.8	79.9	145.3	145.3	275.5	15.3	16.5	7.1	25.0	41.1	37.2	
28	33.5	142.0	74.8	145.3	51.4	355.0	15.3	14.0	6.3	49.2	41.1	37.2	
29	31.7	135.5	65.0	116.6	25.0	375.7	16.5	14.0	6.3	74.8		45.1	
30	30.0	104.7	69.8	142.0	19.1	316.7	23.5	14.0	5.5	74.8		45.1	
31		87.9		166.8	19.1		14.0		4.8	55.8		43.1	
Total	1184.4	1517.6	4282.5	3118.3	2370.5	3301.3	19005.0	644.1	686.9	1178.7	1301.8	1204.2	39795.3 Ton
Mean	39.5	49.0	142.7	100.6	76.5	110.0	613.1	21.5	22.2	38.0	46.5	38.8	
Max	74.8	142.0	203.7	389.7	275.5	375.7	5578.7	203.7	72.3	74.8	58.0	47.1	5578.7
Min	20.5	14.0	65.0	28.3	3.6	15.3	14.0	8.7	4.8	0.7	39.1	31.7	0.7

WATER YEAR 1998

PHETCHABURI RIVER BASIN

Phetchaburi River at Ban Song Phi Nong, Phetchaburi (B.3)

Location	Lat. 12°-52'-04" N., Long. 99°-40'-40" E., on left bank at Ban Song Phi Nong, Amphoe Kaeng Krachan, Phetchaburi.
Drainage Area	2,244 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	18
R - Square	0.9567
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:11.47 LQS/LQS02D/12

Station - Ban Song Phi Nong, A. Tha Yang, Phetchaburi, (B.3)
Stream - Phetchaburi
River - Phetchaburi
River System - Phetchaburi

Royal Irrigation Department
Thailand
Hydrology Division 221295
0.94740
QS = 3.1488 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	123.78	131.97	69.98	39.15	130.34	69.98	42.64	57.61	4.92	11.49	23.65	22.82	
2	123.78	131.97	67.21	42.64	130.34	69.98	16.13	57.61	4.92	11.49	23.65	22.82	
3	125.41	131.97	69.98	41.48	128.69	69.98	7.22	17.82	4.92	11.49	23.65	22.82	
4	125.41	130.34	71.36	42.64	61.66	69.98	4.33	52.52	4.92	21.16	23.65	22.82	
5	125.41	131.97	68.60	146.66	61.66	69.98	2.64	55.07	4.92	12.76	23.65	22.82	
6	123.78	131.97	30.16	159.53	65.83	67.21	2.40	55.07	4.33	12.76	23.65	22.82	
7	123.78	133.62	44.96	136.88	65.83	67.21	5.50	35.64	4.33	16.13	23.65	22.82	
8	125.41	141.79	43.80	122.15	65.83	69.98	6.07	34.46	4.33	16.13	28.00	22.82	
9	131.97	141.79	51.24	122.15	65.83	69.98	7.22	34.46	4.33	16.13	34.46	21.16	
10	131.97	141.79	51.24	122.15	65.83	69.98	6.07	34.46	4.33	16.13	34.46	21.16	
11	131.97	141.79	51.24	122.15	65.83	8.35	8.35	34.46	3.74	68.60	34.46	21.16	
12	130.34	141.79	51.24	122.15	65.83	2.40	8.35	34.46	3.74	9.56	34.46	21.16	
13	130.34	141.79	49.96	122.15	65.83	40.31	6.65	34.46	3.74	4.92	21.99	31.24	
14	123.78	141.79	49.96	118.86	76.87	69.98	4.92	35.64	3.74	1.38	21.99	34.46	
15	123.78	138.53	51.24	118.86	78.24	69.98	4.92	34.46	3.74	0.52	21.16	35.64	
16	123.78	138.53	51.24	120.50	79.61	125.41	3.15	34.46	12.13	0.49	21.16	34.46	
17	125.41	115.62	51.24	123.78	79.61	125.41	2.64	34.46	12.13	0.49	21.99	34.46	
18	125.41	127.07	51.24	122.15	79.61	127.07	2.64	34.46	11.49	0.42	21.16	21.16	
19	125.41	89.43	41.48	122.15	82.35	128.69	64.44	34.46	12.13	0.42	21.16	21.16	
20	128.69	115.62	51.24	122.15	82.35	74.12	60.27	34.46	12.13	0.36	21.16	21.16	
21	128.69	92.40	51.24	122.15	125.41	32.32	16.13	34.46	12.13	0.36	21.16	21.16	
22	130.34	117.20	47.40	122.15	125.41	78.24	13.39	34.46	12.13	0.36	21.99	21.16	
23	130.34	115.62	48.68	122.15	125.41	12.13	4.92	34.46	12.13	0.36	22.82	22.82	
24	128.69	114.03	47.40	122.15	125.41	7.79	1.63	33.39	19.49	0.32	22.82	22.82	
25	130.34	114.03	41.48	122.15	125.41	11.49	10.21	17.82	22.82	4.92	22.82	22.82	
26	131.97	115.62	41.48	123.78	96.85	2.91	60.27	16.13	13.39	85.09	22.82	29.08	
27	131.97	102.88	41.48	125.41	71.36	53.79	61.66	15.29	18.66	85.09	22.82	37.98	
28	131.97	67.21	49.96	125.41	71.36	6.07	58.88	4.92	12.13	51.24	22.82	37.98	
29	131.97	67.21	48.68	125.41	71.36	2.15	60.27	14.66	19.49	23.65		37.98	
30	133.62	65.83	56.34	128.69	71.36	1.63	58.88	16.98	11.49	22.82		37.98	
31		67.21		128.69	71.36		57.61		11.49	22.82		37.98	
Total	3839.51	3680.38	1542.75	3558.47	2678.67	1674.50	670.40	1003.07	290.31	529.86	683.23	830.70	20981.85 Ton
Mean	127.98	118.72	51.42	114.79	86.41	55.82	21.63	33.44	9.36	17.09	24.40	26.80	
Max	133.62	141.79	71.36	159.53	130.34	128.69	64.44	57.61	22.82	85.09	34.46	37.98	159.53
Min	123.78	65.83	30.16	39.15	61.66	1.63	1.63	4.92	3.74	0.32	21.16	21.16	0.32

WATER YEAR 1998

PHETCHABURI RIVER BASIN

Phetchaburi River at Ban Tha Yang, Phetchaburi (B.10)

Location	Lat. 12-58-24 N., Long. 99-53-10 E., on left bank at the bridge of Ban Tha Yang, Amphoe Tha Yang, Phetchaburi.
Drainage Area	4,111 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.8957
Remarks	Continued Sediment Station

RID Computer Center, Processing : 16-AUG-2000 02:04:16.35

LQS/LQS02D/12

Station - Ban Tha Yang, Tha Yang, Phetchaburi, (B.10)
Stream - Phetchaburi
River - Phetchaburi
River System - Phetchaburi

Royal Irrigation Department
Thailand
Hydrology Division 221295
1.89070
QS = 0.9089 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	30.39	29.50	144.53	50.82	188.46	16.28	50.82	15.62	17.64	10.78	13.71	10.78	
2	34.08	30.39	129.92	49.68	186.34	15.62	68.02	15.62	18.34	10.24	13.71	10.78	
3	38.98	30.39	128.15	76.11	171.85	14.97	1318.11	199.20	16.95	9.71	16.28	10.24	
4	39.99	29.50	133.51	80.31	169.82	16.28	2314.36	140.81	16.95	10.24	17.64	10.24	
5	43.11	30.39	148.30	99.75	107.76	17.64	730.61	16.95	15.62	9.71	15.62	10.78	
6	41.02	31.30	154.03	335.71	84.62	31.30	186.34	17.64	14.97	10.24	14.97	10.78	
7	49.68	29.50	169.82	219.25	319.20	39.99	47.44	16.28	16.28	10.24	14.97	10.78	
8	54.31	29.50	171.85	66.71	133.51	76.11	60.36	15.62	14.97	10.24	14.97	10.24	
9	54.31	31.30	159.87	102.92	17.64	45.25	1239.70	14.97	12.50	13.71	15.62	10.24	
10	50.82	31.30	163.82	124.63	17.64	72.01	2252.54	12.50	12.50	13.10	14.97	10.24	
11	49.68	31.30	157.91	95.09	25.23	57.90	2461.66	11.34	11.91	13.71	14.97	10.24	
12	45.25	35.04	154.03	72.01	18.34	46.34	9568.54	11.91	11.34	13.10	15.62	10.78	
13	45.25	36.98	154.03	64.14	20.52	27.75	8749.36	11.91	11.34	12.50	16.28	11.34	
14	36.98	41.02	159.87	62.86	31.30	21.28	4004.93	12.50	11.91	12.50	16.28	10.78	
15	36.98	44.18	163.82	64.14	33.14	20.52	1713.77	11.91	11.91	13.71	15.62	10.78	
16	32.21	45.25	199.20	60.36	33.14	22.04	495.06	12.50	12.50	14.33	15.62	11.34	
17	35.04	44.18	205.78	64.14	35.04	22.82	182.14	11.91	12.50	13.71	14.33	10.78	
18	36.98	43.11	194.87	64.14	26.06	34.08	62.86	11.34	11.91	12.50	13.71	11.91	
19	35.04	45.25	186.34	68.02	23.61	47.44	35.04	11.34	12.50	11.91	14.33	11.34	
20	36.98	45.25	169.82	60.36	24.41	51.97	36.98	10.78	12.50	11.34	14.33	11.34	
21	36.98	41.02	148.30	62.86	23.61	32.21	199.20	10.24	12.50	10.24	14.97	10.78	
22	34.08	30.39	140.81	64.14	22.82	36.98	1538.22	10.78	11.91	10.24	13.10	10.78	
23	33.14	32.21	133.51	72.01	22.04	369.90	722.60	11.34	11.91	9.71	12.50	11.34	
24	35.04	43.11	109.39	68.02	21.28	495.06	27.75	11.34	11.91	9.71	12.50	11.34	
25	34.08	86.08	69.34	214.71	297.80	944.32	24.41	12.50	12.50	9.71	12.50	11.34	
26	34.08	98.19	68.02	201.38	129.92	829.97	14.33	13.10	11.34	9.19	12.50	11.91	
27	33.14	146.41	64.14	192.72	57.90	637.24	13.71	13.10	11.34	9.19	12.50	11.91	
28	35.04	169.82	68.02	175.93	27.75	1153.59	14.33	13.71	11.34	13.71	11.91	11.34	
29	34.08	144.53	60.36	140.81	24.41	944.32	14.33	14.33	10.78	19.78		11.34	
30	31.30	95.09	51.97	175.93	16.95	129.92	14.97	15.62	11.34	15.62		11.91	
31		60.36		194.87	16.28		14.97		11.91	8.69		11.34	
Total	1168.04	1661.84	4163.33	3444.53	2328.39	6271.10	38177.45	708.71	405.82	363.31	406.03	341.06	59439.61 Ton
Mean	38.93	53.61	138.78	111.11	75.11	209.04	1231.53	23.62	13.09	11.72	14.50	11.00	
Max	54.31	169.82	205.78	335.71	319.20	1153.59	9568.54	199.20	18.34	19.78	17.64	11.91	9568.54
Min	30.39	29.50	51.97	49.68	16.28	14.97	13.71	10.24	10.78	8.69	11.91	10.24	8.69

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Tapi River at Phrasaeng, Surat Thani (X.37A)

Location	Lat. 8-34-03 N., Long. 99-15-15 E., on left bank at Tambon Yan Din Daeng, Amphoe Phrasaeng, Surat Thani.
Drainage Area	5,200 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1990 - Cont'd
Actual Measurement	1990 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	39
R - Square	0.8651
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:13:38.68 LQS/LQS02D/12

Station - Phrasaeng, A. Phrasaeng, Surat Thani, (X.37A)
Stream - Tapi River
River - Tapi
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 160699
1.04330
QS = 3.9225 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	57.9	52.4	205.2	286.7	473.4	1205.3	1356.9	1984.4	1650.0	860.2	401.5	299.3	
2	57.9	59.7	382.3	349.1	473.4	1332.1	1240.0	2033.5	1622.4	810.2	356.2	284.6	
3	54.2	72.6	318.6	448.0	463.2	1435.0	1175.0	2072.7	1574.6	757.6	335.9	274.1	
4	52.4	61.6	214.9	483.6	425.8	1506.4	1253.3	2121.9	1547.3	703.8	358.6	272.0	
5	52.4	54.2	166.8	423.4	380.0	1567.8	1371.8	2121.9	1526.8	659.0	481.1	269.9	
6	48.8	52.4	136.3	442.9	365.7	1574.6	1489.9	2072.7	1520.0	615.8	607.2	265.7	
7	47.0	52.4	117.4	399.1	389.5	1513.2	1664.2	2004.0	1495.4	573.8	618.7	259.5	
8	45.1	52.4	106.2	314.3	483.6	1451.4	1838.9	1919.8	1473.4	532.4	540.7	263.6	
9	45.1	50.6	100.5	269.9	590.5	1391.6	2023.6	1865.9	1456.9	496.6	442.9	259.5	
10	45.1	48.8	91.2	301.4	661.9	1371.8	2203.7	1812.0	1440.5	465.8	382.3	257.6	
11	45.1	47.0	96.8	303.5	650.4	1366.8	2289.0	1763.7	1418.5	442.9	344.6	391.8	
12	45.1	47.0	115.6	244.0	598.8	1356.9	2289.0	1735.2	1386.6	425.8	346.8	576.6	
13	41.5	47.0	123.1	216.8	607.2	1327.2	2267.7	1721.0	1351.9	411.2	507.6	612.9	
14	41.5	37.9	145.8	211.0	670.9	1312.3	2235.7	1699.7	1317.3	394.2	786.9	532.4	
15	45.1	41.5	174.5	209.1	806.8	1327.2	2225.0	1657.1	1297.5	387.1	929.0	438.0	
16	45.1	41.5	209.1	247.9	1016.5	1381.7	2257.0	1595.0	1270.9	499.3	981.4	377.6	
17	45.1	43.3	189.8	370.5	1112.0	1451.4	2267.7	1533.7	1226.8	557.2	1002.4	322.9	
18	45.1	43.3	153.5	384.7	1126.3	1513.2	2267.7	1506.4	1156.1	571.1	995.4	284.6	
19	45.1	43.3	166.8	413.7	1126.3	1588.2	2235.7	1513.2	1072.8	537.9	915.1	272.0	
20	45.1	43.3	174.5	384.7	1122.7	1671.3	2246.3	1500.9	1037.5	481.1	773.9	276.2	
21	48.8	41.5	157.3	320.8	1108.4	1713.9	2257.0	1495.4	1079.9	445.4	644.6	267.8	
22	45.1	41.5	174.5	278.3	1104.9	1706.8	2225.0	1484.4	1076.3	428.3	554.5	251.7	
23	45.1	41.5	191.8	274.1	1104.9	1657.1	2161.2	1484.4	1041.0	403.9	483.6	251.7	
24	47.0	41.5	182.2	322.9	1072.8	1622.4	2072.7	1478.9	1009.5	387.1	428.3	331.6	
25	48.8	41.5	184.1	416.1	1002.4	1622.4	2004.0	1484.4	1020.0	389.5	389.5	440.5	
26	54.2	43.3	199.5	448.0	929.0	1636.0	1964.8	1506.4	1023.5	389.5	361.0	532.4	
27	47.0	45.1	187.9	470.9	894.5	1636.0	1937.8	1533.7	1009.5	389.5	338.1	676.9	
28	45.1	45.1	178.3	540.7	922.0	1601.9	1928.8	1581.4	970.9	368.1	318.6	700.8	
29	45.1	45.1	234.3	546.2	970.9	1533.7	1901.8	1657.1	957.0	351.5		786.9	
30	43.3	45.1	253.7	486.2	988.4	1456.9	1892.8	1671.3	953.5	384.7		898.0	
31		61.6		418.5	1069.2		1910.8		904.8	453.1		995.4	
Total	1419.2	1485.0	5332.5	11227.0	24712.3	44832.5	60454.8	51612.1	38889.1	15573.6	15626.4	12924.5	284089.0 Ton
Mean	47.3	47.9	177.8	362.2	797.2	1494.4	1950.2	1720.4	1254.5	502.4	558.1	416.9	
Max	57.9	72.6	382.3	546.2	1126.3	1713.9	2289.0	2121.9	1650.0	860.2	1002.4	995.4	2289.0
Min	41.5	37.9	91.2	209.1	365.7	1205.3	1175.0	1478.9	904.8	351.5	318.6	251.7	37.9

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Rap Ro at Ban Tha Kham, Chumphon (X.46)

Location Lat. 10°-36'-47" N., Long. 99°-07'-07" E., on left bank about 10 kilometers downstream from X.46A station at Ban Hat Taeng, Amphoe Tha Sae, Chumphon.

Drainage Area	751 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1996 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1997 - 1998
Number of observation	46
R - Square	0.8269
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:13:43.60 LQS/LQS02D/12

Station - Ban Tha Kham, Tha Sae, Chumphon, (X.46)
Stream - Khlong Rop Ro
River - Khlong Rop Ro
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 160699
1.54590
QS = 1.1619 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.5	3.1	10.1	134.7	7.6	15.4	98.5	2489.8	58.9	9.6	5.2	1.7	
2	0.6	12.4	9.1	37.7	8.6	19.5	1254.2	4829.2	58.9	9.1	3.1	1.7	
3	0.4	6.6	12.4	47.9	6.6	348.2	1730.3	2593.0	53.3	8.6	6.6	1.2	
4	0.5	3.8	11.8	37.7	5.4	57.1	1578.7	1470.6	42.7	8.1	33.0	5.7	
5	0.6	2.1	8.1	29.7	7.6	34.2	1377.2	722.8	64.8	7.6	16.7	2.7	
6	0.4	1.2	4.4	14.8	9.6	24.4	739.6	404.2	98.5	7.1	5.7	9.1	
7	0.3	3.6	4.1	10.1	14.8	26.4	556.4	267.1	53.3	6.6	5.2	25.4	
8	0.2	12.4	3.1	10.1	114.5	23.4	1411.7	430.0	37.7	6.2	3.4	3.8	
9	0.2	3.8	3.4	11.8	151.5	17.6	1423.4	10264.5	31.9	5.7	2.9	2.5	
10	0.2	2.7	13.0	9.6	68.8	13.6	1125.6	4639.8	30.8	5.7	2.7	1.3	
11	0.2	2.5	24.4	6.2	35.4	10.7	731.2	1494.4	27.5	5.4	2.3	1.2	
12	0.2	1.7	12.4	5.4	24.4	15.4	1482.5	1023.5	26.4	5.2	2.7	1.0	
13	0.2	1.2	14.8	4.1	27.5	203.9	1411.7	443.1	24.4	5.2	30.8	0.8	
14	0.1	1.2	8.6	3.1	20.4	3277.8	1947.0	272.7	23.4	7.1	55.2	0.8	
15	0.1	3.4	17.6	2.7	22.3	2489.8	1232.2	198.9	20.4	5.7	17.6	0.8	
16	0.1	2.3	17.6	28.6	22.3	1115.3	423.5	165.2	17.6	5.2	10.7	0.8	
17	0.1	2.3	8.1	35.4	19.5	476.5	250.8	773.6	16.7	5.2	7.1	0.6	
18	0.0	2.5	4.1	13.0	44.4	219.2	165.2	1652.7	16.0	4.9	4.9	0.6	
19	0.2	2.7	3.1	89.4	25.4	117.8	121.1	3582.0	15.4	4.1	3.4	0.5	
20	0.4	1.5	2.9	19.5	62.8	108.0	89.4	1377.2	15.4	3.4	2.9	0.5	
21	5.7	1.1	3.6	8.6	47.9	127.8	410.6	469.7	15.4	3.4	3.8	0.4	
22	6.2	0.8	3.6	5.7	66.7	151.5	121.1	295.2	14.2	3.1	5.4	0.4	
23	2.5	2.1	11.2	4.9	131.2	198.9	101.7	198.9	13.0	3.1	3.8	0.3	
24	1.3	1.2	13.0	16.7	463.0	250.8	1400.0	127.8	12.4	3.1	3.1	5.2	
25	1.5	1.0	6.2	28.6	83.5	586.5	1717.3	104.8	16.7	2.9	2.7	3.6	
26	2.7	2.5	4.9	17.6	134.7	1157.0	2220.3	83.5	13.6	3.1	2.5	1.9	
27	1.7	1.7	17.6	24.4	101.7	306.7	601.8	70.8	11.8	3.1	1.7	7.1	
28	1.5	1.2	42.7	14.8	51.5	430.0	534.2	134.7	10.7	2.9	1.5	4.1	
29	20.4	2.3	58.9	11.8	28.6	283.9	234.8	80.6	9.6	3.1		3.6	
30	10.7	0.6	92.4	13.0	21.4	134.7	318.4	77.7	9.6	11.2		111.2	
31		3.1		12.4	16.7		2329.9		9.1	8.6		17.6	
Total	59.7	90.6	447.2	710.0	1846.3	12242.0	29140.3	40738.0	870.1	173.3	246.6	218.1	86782.2 Ton
Mean	2.0	2.9	14.9	22.9	59.6	408.1	940.0	1357.9	28.1	5.6	8.8	7.0	
Max	20.4	12.4	92.4	134.7	463.0	3277.8	2329.9	10264.5	98.5	11.2	55.2	111.2	10264.5
Min	0.0	0.6	2.9	2.7	5.4	10.7	89.4	70.8	9.1	2.9	1.5	0.3	0.0

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Chumphon at Ban Wang Phai, Chumphon (X.53A)

Location	Lat. 10°-30'-20" N., Long. 99°-07'-12" E., on left bank about 9.50 kilometers downstream from X.53 station, Amphoe Muang, Chumphon.
Drainage Area	305 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1996 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	18
R - Square	0.9015
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:13:53.01

LQS/LQS02D/12

Station - Ban Wang Phai, A. Muang, Chumphon, (X.53A)
Stream - Khlong Chumphon
River - Khlong Chumphon
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 160699
1.20400
QS = 2.4203 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.05	1.91	3.72	47.64	17.62	23.18	50.65	321.39	33.65	22.20	9.16	7.19	
2	1.00	1.68	6.74	17.01	14.29	21.22	98.07	270.09	31.16	21.73	7.19	7.44	
3	1.00	1.47	5.21	18.85	9.67	216.47	264.92	196.23	34.65	21.73	10.45	7.44	
4	0.93	1.26	6.53	19.30	9.16	61.36	320.06	174.23	34.15	21.22	57.30	7.19	
5	0.93	1.26	4.36	14.88	8.90	43.42	153.99	112.20	34.65	21.22	28.70	6.98	
6	0.93	2.25	3.72	9.93	9.41	35.15	96.32	89.73	38.71	20.76	14.60	6.98	
7	0.88	2.25	3.32	6.74	41.67	30.67	93.77	64.09	44.61	20.76	11.50	11.50	
8	0.88	2.25	2.83	6.53	38.20	28.70	434.31	378.23	38.20	20.26	10.19	8.40	
9	0.88	2.13	7.19	6.29	47.64	25.68	370.02	1137.87	36.17	18.85	9.41	7.44	
10	0.88	2.13	5.61	5.85	36.67	24.16	211.80	487.07	34.15	19.80	8.65	7.19	
11	0.80	1.91	4.55	5.41	25.20	20.76	114.88	257.38	32.15	19.30	23.18	6.98	
12	0.80	1.91	4.13	4.55	28.70	27.69	111.30	363.20	31.65	18.85	45.81	6.53	
13	0.80	1.91	3.72	4.36	26.20	51.33	253.73	171.17	30.67	18.23	246.44	6.08	
14	0.80	1.79	3.54	3.94	18.56	256.16	229.57	105.09	29.19	9.16	105.98	5.85	
15	0.80	1.79	3.20	3.54	22.20	155.00	119.38	82.52	28.22	8.90	31.16	5.61	
16	0.75	1.58	2.83	3.32	18.23	150.00	80.93	64.80	27.69	8.40	20.26	5.41	
17	0.75	1.47	2.60	3.32	18.85	83.32	69.10	137.14	27.20	8.15	17.01	5.41	
18	0.75	1.47	2.36	3.94	18.56	66.23	60.71	123.00	26.68	7.44	14.60	5.41	
19	0.75	1.36	2.36	4.78	15.80	62.72	51.33	93.77	26.20	7.19	12.85	4.98	
20	0.75	1.36	2.25	4.78	28.70	53.98	42.24	69.82	25.68	6.98	9.93	4.55	
21	1.05	1.26	2.95	4.78	66.23	51.33	50.65	62.72	25.20	6.98	10.19	4.13	
22	1.05	1.26	3.20	4.55	48.85	62.07	47.64	56.66	25.20	6.74	10.98	3.94	
23	1.00	1.26	3.32	4.78	34.15	53.98	66.23	50.65	24.68	6.53	9.67	5.41	
24	1.00	1.26	3.72	5.41	58.00	61.36	266.21	45.81	27.69	6.53	8.65	6.53	
25	1.05	1.15	3.54	6.53	39.88	59.35	236.78	40.49	32.65	6.29	8.15	6.53	
26	1.26	1.15	4.36	10.98	43.42	80.14	379.61	38.20	25.68	6.08	8.15	6.53	
27	1.79	1.15	6.08	9.16	61.36	58.65	180.39	39.88	24.68	5.85	7.90	6.29	
28	2.36	1.26	16.72	17.94	38.20	51.97	120.28	37.69	23.69	6.29	7.65	6.53	
29	2.36	1.79	34.65	17.01	27.69	59.35	77.09	35.66	22.71	6.08		6.53	
30	2.13	7.65	51.97	15.52	23.18	50.65	77.83	34.15	22.20	17.94		12.04	
31		4.78		14.29	21.22		244.02		22.20	11.77		7.19	
Total	32.16	59.11	211.28	305.91	916.41	2026.05	4973.81	5140.93	922.01	408.21	765.71	206.21	15967.80 Ton
Mean	1.07	1.91	7.04	9.87	29.56	67.53	160.45	171.36	29.74	13.17	27.35	6.65	
Max	2.36	7.65	51.97	47.64	66.23	256.16	434.31	1137.87	44.61	22.20	246.44	12.04	1137.87
Min	0.75	1.15	2.25	3.32	8.90	20.76	42.24	34.15	22.20	5.85	7.19	3.94	0.75

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

Khlong Tha Di at Ban Pak Prik, Nakhon Si Thammarat (X.55)

Location	Lat. 08°-23'-53" N., Long. 99°-50'-15" E., on left bank at the bridge on road, Ban Pak Prik, Amphoe Lan Saka, Nakhon Si Thammarat.
Drainage Area	105 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1990 - Cont'd
Actual Measurement	1989 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.8634
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:14:05.45

LQS/LQS02D/12

Station - Ban Pak Prik, Lan Saka, Nakhon Si Thammarat, (X.55)
Stream - Khlong Tha Di
River - Khlong Tha Di
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 160699
1.27880
QS = 2.2719 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	6.92	17.79	17.16	23.43	9.73	20.57	9.14	308.97	44.56	34.54	37.73	21.51	
2	5.87	20.57	11.48	16.48	8.55	21.51	10.30	102.08	32.45	35.60	31.42	20.57	
3	5.44	9.14	12.11	12.11	8.01	15.20	29.37	60.38	31.42	32.45	28.36	23.43	
4	4.82	3.62	8.55	20.57	6.37	10.91	35.60	44.56	30.39	30.39	35.60	21.51	
5	3.82	1.99	6.92	19.63	5.65	10.30	27.36	35.60	98.36	50.19	51.62	19.63	
6	2.87	1.03	5.87	13.93	10.91	10.30	19.63	34.54	196.42	37.73	34.54	19.63	
7	2.33	1.74	5.65	10.30	12.69	19.63	23.43	308.97	232.03	28.36	31.42	18.71	
8	2.33	3.24	5.44	9.73	17.79	13.29	35.60	104.01	154.63	27.36	29.37	17.79	
9	1.60	3.82	17.79	9.14	23.43	26.36	20.57	445.14	82.03	25.38	26.36	20.57	
10	1.74	1.99	9.14	8.55	16.48	31.42	20.57	106.02	57.43	23.43	25.38	28.36	
11	1.99	1.13	16.48	9.14	12.11	19.63	17.16	74.99	48.77	22.46	31.42	24.40	
12	1.87	2.33	10.30	15.20	12.11	15.20	16.48	66.38	108.04	21.51	468.22	20.57	
13	1.74	5.65	12.11	6.37	10.30	13.29	25.38	51.62	567.83	21.51	2546.59	16.48	
14	1.36	4.82	6.92	10.91	8.55	12.69	26.36	40.43	98.36	22.46	562.03	15.82	
15	0.82	1.60	5.87	19.63	8.55	18.71	34.54	33.49	66.38	53.06	212.70	12.11	
16	0.62	15.82	8.01	12.11	6.37	22.46	33.49	32.45	53.06	61.87	110.00	13.93	
17	0.51	7.45	7.45	13.29	10.91	18.71	24.40	37.73	45.95	110.00	92.85	13.29	
18	0.43	4.41	6.92	7.45	14.54	15.20	17.79	33.49	40.43	53.06	80.26	13.29	
19	0.33	5.02	9.14	9.73	17.16	13.93	17.16	34.54	36.66	40.43	61.87	12.69	
20	0.17	12.11	13.29	22.46	41.80	5.87	19.63	28.36	37.73	33.49	50.19	12.69	
21	0.17	6.37	13.29	13.29	19.63	13.93	31.42	33.49	33.49	37.73	37.73	12.69	
22	0.00	11.48	8.01	18.71	14.54	13.93	63.37	27.36	32.45	31.42	35.60	13.29	
23	0.00	31.42	5.65	11.48	12.11	10.30	44.56	25.38	31.42	32.45	34.54	24.40	
24	0.00	15.82	4.41	10.30	10.91	9.14	37.73	25.38	53.06	36.66	33.49	15.20	
25	0.70	10.91	4.01	8.55	7.45	13.29	34.54	34.54	41.80	30.39	32.45	20.57	
26	0.82	9.73	3.82	16.48	6.37	12.69	28.36	27.36	58.90	28.36	30.39	23.43	
27	1.13	8.01	16.48	14.54	5.87	11.48	22.46	23.43	48.77	36.66	29.37	23.43	
28	1.13	6.92	12.69	11.48	7.45	12.11	39.07	24.40	55.96	29.37	24.40	17.79	
29	1.36	6.37	15.82	10.91	5.87	15.20	122.12	23.43	47.35	157.04		21.51	
30	0.70	10.91	20.57	13.29	9.73	10.30	87.40	44.56	39.07	61.87		22.46	
31		39.07		11.48	22.46		255.78		40.43	40.43		18.71	
Total	53.59	282.28	301.35	410.67	384.40	457.55	1230.77	2273.08	2545.63	1287.66	4805.90	580.46	14613.34 Ton
Mean	1.79	9.11	10.04	13.25	12.40	15.25	39.70	75.77	82.12	41.54	171.64	18.72	
Max	6.92	39.07	20.57	23.43	41.80	31.42	255.78	445.14	567.83	157.04	2546.59	28.36	2546.59
Min	0.00	1.03	3.82	6.37	5.65	5.87	9.14	23.43	30.39	21.51	24.40	12.11	0.00

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

Khlong Tha Sae at Tha Sae, Chumphon (X.64)

Location	Lat. 10°-39'-49" N., Long. 99°-10'-17" E., on left bank near the Land Cooperation Office, Amphoe Tha Sae, Chumphon.
Drainage Area	957 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1996 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.7932
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:14:16.62

LQS/LQS02D/12

Station - Tha Sae, A. Tha Sae, Chumphon, (X.64)
Stream - Khlong Tha Sae
River - Khlong Tha Taphao
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 170699
1.28150
QS = 2.9407 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.5	11.0	28.0	39.6	17.4	34.3	181.9	2705.9	186.6	42.2	43.6	16.3	
2	4.9	6.7	22.0	39.6	45.0	53.4	390.8	3443.0	239.7	39.6	30.5	15.2	
3	4.9	6.2	18.5	31.7	29.2	46.3	592.3	2414.3	179.6	38.2	34.3	16.3	
4	9.0	5.4	18.5	62.1	18.5	111.0	485.8	1197.8	152.2	36.9	65.0	14.1	
5	7.1	4.5	17.4	69.5	17.4	86.5	1119.4	910.0	216.2	35.6	50.5	22.0	
6	5.8	4.9	23.1	47.7	15.2	46.3	1069.6	542.0	269.8	34.3	33.0	18.5	
7	5.4	12.0	12.0	31.7	26.7	33.0	503.2	397.4	163.5	34.3	25.5	75.6	
8	4.9	30.5	10.0	23.1	46.3	34.3	581.4	364.5	136.7	31.7	22.0	34.3	
9	4.9	17.4	12.0	19.6	59.1	50.5	1424.4	1796.8	117.7	30.5	18.5	20.8	
10	4.5	12.0	12.0	18.5	56.2	31.7	882.2	2647.0	111.0	31.7	17.4	15.2	
11	4.5	8.1	10.0	16.3	45.0	24.3	886.8	1075.1	102.7	30.5	16.3	13.1	
12	4.1	6.2	11.0	15.2	39.6	24.3	1437.6	606.8	94.5	29.2	15.2	12.0	
13	3.7	6.7	20.8	12.0	31.7	119.4	1943.9	404.1	91.3	30.5	83.4	10.0	
14	3.7	6.2	19.6	10.0	34.3	300.7	1332.7	300.7	88.1	33.0	99.4	8.1	
15	3.7	5.8	23.1	7.1	25.5	303.8	900.7	251.6	83.4	34.3	65.0	8.1	
16	3.3	5.4	24.3	59.1	45.0	275.9	465.1	257.7	78.7	33.0	50.5	7.1	
17	3.3	9.0	16.3	78.7	72.5	203.2	294.4	2208.9	72.5	30.5	39.6	6.7	
18	2.9	22.0	10.0	33.0	62.1	116.0	210.4	3639.9	71.0	29.2	34.3	6.7	
19	2.9	36.9	7.1	22.0	40.9	83.4	170.4	3779.2	69.5	25.5	28.0	6.2	
20	2.9	20.8	6.7	31.7	29.2	107.7	150.0	2739.7	71.0	24.3	23.1	5.8	
21	2.9	15.2	5.8	18.5	23.1	81.8	294.4	1020.3	72.5	23.1	29.2	5.4	
22	8.1	10.0	5.4	12.0	24.3	92.9	186.6	910.0	68.0	20.8	39.6	4.9	
23	7.1	11.0	9.0	9.0	51.9	266.8	147.7	701.9	65.0	20.8	40.9	5.4	
24	5.8	28.0	8.1	8.1	114.3	468.5	952.0	447.9	63.5	19.6	31.7	9.0	
25	4.9	25.5	6.7	7.1	107.7	724.0	2377.3	345.1	63.5	18.5	28.0	13.1	
26	6.2	11.0	6.7	11.0	81.8	877.6	2007.6	279.0	59.1	18.5	23.1	11.0	
27	5.8	12.0	10.0	11.0	72.5	603.2	952.0	233.8	54.8	17.4	20.8	14.1	
28	4.9	9.0	18.5	13.1	63.5	961.4	542.0	319.5	51.9	17.4	18.5	13.1	
29	16.3	12.0	33.0	12.0	39.6	465.1	348.3	266.8	49.1	18.5		14.1	
30	17.4	38.2	35.6	8.1	26.7	242.7	390.8	210.4	46.3	33.0		503.2	
31		51.9		26.7	28.0		1950.9		43.6	63.5		106.0	
Total	170.3	461.5	461.2	804.8	1390.2	6870.0	25172.6	36417.1	3233.0	926.1	1026.9	1031.4	77965.1 Ton
Mean	5.7	14.9	15.4	26.0	44.8	229.0	812.0	1213.9	104.3	29.9	36.7	33.3	
Max	17.4	51.9	35.6	78.7	114.3	961.4	2377.3	3779.2	269.8	63.5	99.4	503.2	3779.2
Min	2.9	4.5	5.4	7.1	15.2	24.3	147.7	210.4	43.6	17.4	15.2	4.9	2.9

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

Khlong Ban Tan at Ban Wang Kong, Nakhon Si Thammarat (X.70)

Location	Lat.08-25-35 N., Long. 99-51-53 E.,on left bank upstream side of the bridge, Ban Wang Kong, Amphoe Muang, Nakhon Si Thammarat.
Drainage Area	39 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1990 - Cont'd
Actual Measurement	1989 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	25
R - Square	0.8863
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:14:22.12

LQS/LQS02D/12

Station - Ban Wang Kong, Muang, Nakhon Si Thammarat, (X.70)
Stream - Khlong Ban Tan
River - Khlong Ban Tan
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 170699
1.26750
QS = 3.6134 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.47	0.38	0.99	0.66	0.38	2.13	0.85	131.76	62.27	12.43	10.38	4.75	
2	0.44	0.53	0.79	0.79	0.38	1.58	0.85	48.19	9.53	14.97	8.98	4.55	
3	0.44	0.72	0.59	0.66	0.35	1.13	2.55	27.79	6.56	12.43	5.74	4.55	
4	0.41	0.33	0.53	1.58	0.35	0.92	2.30	23.97	6.35	8.98	16.73	3.80	
5	0.41	0.33	0.47	2.22	0.35	0.79	2.13	9.53	66.05	32.15	20.28	3.43	
6	0.41	0.33	0.41	1.13	0.33	1.89	1.65	8.98	78.28	13.33	11.84	3.52	
7	0.41	0.30	0.41	0.79	0.33	2.72	1.65	162.08	109.30	8.98	10.10	3.34	
8	0.38	0.47	0.41	0.66	0.33	2.30	6.35	68.00	62.85	7.61	8.42	3.43	
9	0.38	0.41	0.79	0.66	0.47	1.97	2.05	182.15	31.72	7.61	6.56	3.25	
10	0.38	0.41	0.99	0.53	0.41	5.54	2.64	44.89	21.74	6.56	6.35	7.61	
11	0.38	0.38	0.92	0.53	0.38	3.52	2.30	38.90	26.67	5.54	5.54	7.61	
12	0.35	0.35	0.66	0.47	0.79	2.13	1.97	23.22	110.99	5.14	167.20	4.94	
13	0.35	0.59	0.66	0.47	0.44	2.30	5.34	15.35	550.07	4.75	578.53	3.80	
14	0.33	0.44	0.59	0.44	0.41	1.43	7.88	11.54	140.62	32.15	167.20	5.14	
15	0.33	0.53	1.65	0.44	0.38	2.30	6.56	7.61	106.77	41.64	70.57	3.25	
16	0.33	1.13	0.85	0.53	0.47	1.89	7.19	8.98	83.67	28.99	45.44	3.16	
17	0.33	1.35	0.47	0.72	0.53	1.65	3.61	6.35	73.75	63.53	31.72	2.64	
18	0.22	0.66	0.44	0.53	0.44	1.35	2.55	5.54	59.11	25.48	23.97	3.16	
19	0.20	0.47	0.41	0.47	0.47	2.05	2.38	4.75	59.11	18.52	22.14	2.90	
20	0.20	1.13	0.38	1.43	2.30	1.35	2.05	3.61	22.14	18.52	17.04	2.72	
21	0.20	0.66	0.38	0.72	0.53	1.43	7.61	6.56	10.38	16.03	14.97	2.38	
22	0.22	0.47	0.35	0.66	0.47	1.50	14.97	6.35	8.98	10.38	11.54	3.07	
23	0.22	10.10	0.35	0.59	0.59	1.28	11.25	4.17	16.03	10.38	10.10	6.14	
24	0.30	1.35	0.33	0.53	0.59	0.72	7.61	3.61	16.35	11.84	8.98	3.52	
25	0.30	0.99	0.33	0.44	0.47	1.65	7.19	6.56	10.67	10.38	7.40	7.19	
26	0.47	0.79	0.33	0.41	0.47	2.30	9.25	8.42	17.81	8.98	6.35	6.56	
27	0.35	0.72	0.72	0.41	0.47	1.50	6.56	5.54	13.99	13.33	5.54	7.61	
28	0.33	0.66	0.47	0.38	0.72	1.73	9.53	6.76	16.73	10.10	5.14	5.14	
29	0.33	0.59	0.44	0.38	0.53	1.28	63.53	6.56	19.56	36.65		4.55	
30	0.41	0.79	0.53	0.41	0.66	1.06	77.06	24.38	13.33	16.35		4.17	
31		1.35		0.38	1.43		105.92		13.33	12.73		3.43	
Total	10.28	29.71	17.64	21.02	17.22	55.39	385.33	912.10	1844.71	526.46	1304.75	135.31	5259.92 Ton
Mean	0.34	0.96	0.59	0.68	0.56	1.85	12.43	30.40	59.51	16.98	46.60	4.36	
Max	0.47	10.10	1.65	2.22	2.30	5.54	105.92	182.15	550.07	63.53	578.53	7.61	578.53
Min	0.20	0.30	0.33	0.38	0.33	0.72	0.85	3.61	6.35	4.75	5.14	2.38	0.20

WATER YEAR 1998

SOUTHERN PENNINSULA EAST COAST

Khlong Tam at Ban Khuan Lang(3), Songkhla (X.71)

Location	Lat.06°-59'-55" N., Long. 100°-25'-58" E.,on left bank downstream side of the bridge of Phet Kasem Highway at Khuan Lang(3), Amphoe Hat Yai, Songkhla.
Drainage Area	127 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.9251
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:14:27.63 LQS/LQS02D/12

Station - Ban Khuan Lang, Hat Yai, Songkhla, (X.71)
Stream - Khlong Tam
River - Khlong U Taphao
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 180699
0.97440
QS = 5.8713 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	1.16	1.16	1.16	1.16	1.16	1.76	1.40	38.50	20.45	152.00	45.78	4.44	
2	1.16	1.16	1.16	1.16	1.16	1.28	1.22	133.17	18.01	153.16	65.68	5.76	
3	1.16	1.16	1.16	1.16	1.22	1.40	1.22	324.43	17.74	93.89	40.41	5.13	
4	1.16	1.16	1.16	1.16	1.22	1.22	1.82	289.58	24.32	46.70	26.63	4.09	
5	1.16	1.16	1.16	1.16	1.22	1.22	3.34	156.57	48.54	34.69	24.32	3.22	
6	1.16	1.16	1.16	1.16	1.16	2.17	13.22	90.70	102.92	27.02	22.00	6.33	
7	1.16	1.16	1.16	1.16	1.16	1.93	27.79	71.96	109.29	20.45	17.13	28.56	
8	1.16	1.16	1.16	1.16	1.16	1.76	10.41	98.15	124.41	15.23	14.34	18.96	
9	1.16	1.16	1.16	1.16	1.16	3.51	9.28	73.89	172.98	10.97	13.50	25.86	
10	1.16	1.16	1.16	1.16	1.16	2.58	13.22	40.79	119.45	10.69	12.38	14.95	
11	1.16	1.16	1.16	1.16	1.16	1.46	14.06	35.07	61.33	9.56	11.25	28.56	
12	1.16	1.16	1.16	1.16	1.16	1.28	11.54	28.94	35.45	9.00	30.47	52.65	
13	1.16	1.16	1.16	1.16	1.22	1.22	10.97	16.18	22.39	7.35	38.50	27.02	
14	1.16	1.16	1.16	1.16	1.22	1.46	25.09	13.22	16.46	6.16	51.74	22.78	
15	1.16	1.16	1.16	1.16	1.22	1.46	32.39	12.38	13.78	6.73	54.49	14.34	
16	1.16	1.16	1.16	23.94	1.22	2.17	30.09	11.54	13.78	5.13	30.86	8.15	
17	1.16	1.16	1.16	8.15	1.28	3.40	12.66	19.24	11.25	5.93	18.63	6.96	
18	1.16	1.16	1.16	2.58	1.99	3.92	8.15	31.62	14.34	7.13	13.78	5.93	
19	1.16	1.16	1.16	4.09	1.99	3.16	6.73	26.25	13.22	7.13	11.82	4.95	
20	1.16	1.16	1.16	3.40	1.28	2.76	4.55	18.63	13.50	12.38	9.56	5.13	
21	1.16	1.16	1.16	3.16	1.22	2.81	9.85	16.79	13.78	10.41	8.55	9.28	
22	1.16	1.16	1.16	2.46	1.40	1.93	9.85	12.10	12.94	30.47	7.35	12.66	
23	1.16	1.16	1.16	2.11	1.28	1.40	30.09	8.72	11.54	98.68	6.73	20.45	
24	1.16	1.16	1.16	2.11	1.28	1.58	21.23	24.32	10.69	404.82	6.33	41.17	
25	1.16	1.16	1.16	1.46	1.22	1.40	15.57	61.33	9.00	456.64	5.13	153.16	
26	1.16	1.16	1.16	1.22	1.40	1.28	44.37	43.45	7.52	317.22	4.26	175.49	
27	1.16	1.16	1.16	1.22	2.29	1.76	62.78	33.92	8.55	125.84	4.26	99.21	
28	1.16	1.16	1.16	1.22	2.76	1.93	58.59	22.78	27.02	60.90	4.09	46.22	
29	1.16	1.16	1.22	1.16	2.93	1.64	70.03	20.84	54.49	46.22		35.45	
30	1.16	1.16	1.16	1.16	2.11	1.93	56.75	17.13	47.14	54.06		27.02	
31		1.16		1.16	1.99		38.12		81.10	45.78		24.71	
Total	34.80	35.96	34.86	78.00	45.40	58.78	656.38	1792.19	1257.38	2292.34	599.97	938.59	7824.65 Ton
Mean	1.16	1.16	1.16	2.52	1.46	1.96	21.17	59.74	40.56	73.95	21.43	30.28	
Max	1.16	1.16	1.22	23.94	2.93	3.92	70.03	324.43	172.98	456.64	65.68	175.49	456.64
Min	1.16	1.16	1.16	1.16	1.16	1.22	1.22	8.72	7.52	5.13	4.09	3.22	1.16

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Tan Yong Mat at Rangae, Narathiwat (X.73)

Location	Lat. 6°17'44" N., Long. 101°44'04" E., on right bank about 20 meters upstream from the bridge on highway, Amphoe Rangae, Narathiwat.
Drainage Area	336 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 48
Period of Available Records	1990 - Cont'd
Actual Measurement	1989 - Cont'd
Using Rating Curve Water Year	1989 - 1998
Number of observation	87
R - Square	0.7374
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:14:32.84

LQS/LQS02D/12

Station - Rangae, A. Rangae, Narathiwat, (X.73)
Stream - Khlong Tan Yong
River - Ya Kang
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 180699
1.25240
QS = 1.5019 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	5.70	2.39	3.18	4.38	7.99	102.33	63.86	46.23	35.34	860.53	116.62	63.86	
2	5.45	2.23	3.87	4.03	14.16	190.28	59.01	42.95	32.17	781.33	99.70	93.60	
3	5.21	2.23	4.03	4.19	28.04	173.61	43.62	85.88	28.55	519.63	86.73	70.86	
4	4.97	2.23	4.38	7.73	47.55	175.82	42.33	78.30	28.04	405.51	99.70	59.01	
5	5.21	2.23	6.19	6.45	25.52	139.09	36.41	110.32	42.33	301.73	182.47	54.90	
6	4.73	2.09	8.79	9.06	17.80	103.22	33.74	107.65	113.01	224.55	131.26	56.93	
7	4.54	2.09	9.06	21.11	12.41	224.55	34.80	91.88	372.26	181.34	98.82	64.58	
8	4.38	2.09	17.33	17.33	16.87	192.53	29.57	112.11	531.88	150.76	84.19	94.47	
9	4.38	2.09	19.20	57.64	12.41	101.45	29.06	99.70	513.53	130.34	74.15	68.42	
10	4.19	2.09	9.61	39.76	11.13	76.64	27.53	77.47	399.13	118.43	67.61	58.34	
11	4.03	2.09	7.21	29.57	9.61	74.98	51.51	65.99	194.78	106.76	100.58	49.52	
12	3.87	2.09	6.45	18.73	11.98	61.11	119.34	88.44	192.53	97.08	413.55	46.87	
13	3.87	2.39	8.26	13.72	27.02	61.11	79.14	64.58	158.27	85.03	1087.05	47.55	
14	3.69	2.39	8.52	11.13	61.79	54.90	80.81	50.86	126.65	83.34	631.11	42.33	
15	3.51	2.39	7.21	9.33	34.80	41.00	91.88	47.55	116.62	83.34	647.04	38.57	
16	3.51	2.23	11.13	8.52	23.05	37.48	60.40	47.55	123.90	99.70	496.82	36.41	
17	3.36	2.09	9.61	6.95	21.11	36.41	45.56	42.95	111.22	123.90	312.72	35.34	
18	3.18	2.71	9.88	7.21	24.52	32.69	41.00	37.48	105.87	184.70	198.20	32.69	
19	3.18	3.18	11.56	7.99	23.05	38.57	35.87	34.27	107.65	172.49	159.38	30.61	
20	3.03	2.88	9.06	8.79	29.06	91.88	31.12	39.76	100.58	174.69	134.98	31.65	
21	3.03	2.71	8.52	7.99	44.25	171.41	29.06	47.55	94.47	146.48	119.34	52.89	
22	3.03	2.54	7.73	7.47	51.51	288.10	33.74	36.41	77.47	124.81	108.54	54.90	
23	2.88	2.54	6.70	13.28	113.01	315.48	29.57	32.17	76.64	143.32	101.45	42.33	
24	2.88	2.39	5.70	19.67	81.65	142.24	26.02	30.09	91.88	318.25	93.60	43.62	
25	2.71	2.88	4.97	14.61	51.51	140.12	50.86	27.53	91.88	386.48	84.19	47.55	
26	2.71	3.87	4.54	11.56	38.02	160.49	86.73	33.74	189.13	273.26	80.81	59.72	
27	2.71	4.03	4.38	16.42	31.12	139.09	63.18	38.57	282.68	220.68	74.15	113.01	
28	2.54	3.87	4.19	11.98	36.94	103.22	53.55	52.20	562.75	167.02	66.80	132.19	
29	2.54	3.51	4.38	9.61	77.47	79.97	50.86	59.01	838.80	150.76		73.33	
30	2.39	3.36	4.19	8.52	70.05	83.34	56.93	41.66	670.24	131.26		60.40	
31		3.51		8.52	65.99		46.87		525.75	116.62		47.55	
Total	111.41	81.41	229.83	423.25	1121.39	3633.11	1563.93	1770.85	6936.00	7064.12	5951.56	1804.00	30690.86 Ton
Mean	3.71	2.63	7.66	13.65	36.17	121.10	50.45	59.03	223.74	227.87	212.56	58.19	
Max	5.70	4.03	19.20	57.64	113.01	315.48	119.34	112.11	838.80	860.53	1087.05	132.19	1087.05
Min	2.39	2.09	3.18	4.03	7.99	32.69	26.02	27.53	28.04	83.34	66.80	30.61	2.09

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Takhian at Ban Rim Khlong, Surat Thani (X.103)

Location	Lat. 9°25'31" N., Long. 99°09'44" E., on right bank at Ban Rim Khlong, Amphoe Chaiya, Surat Thani.
Drainage Area	180 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1984 - Cont'd
Actual Measurement	1984 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.9254
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:14:45.74 LQS/LQS02D/12

Station - Ban Rim Khlong, Chaiya, Surat Thani, (X.103)
Stream - Khlong Takhian
River - Khlong Takhian
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 180699
1.10300
QS = 2.7991 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.91	0.63	1.98	3.68	2.98	8.10	32.37	120.78	33.53	19.83	14.78	13.92	
2	0.63	0.63	2.34	3.49	2.98	7.45	30.82	118.68	31.59	20.16	13.34	13.34	
3	0.53	0.58	2.25	4.38	2.71	29.28	33.53	100.50	30.04	18.83	12.20	12.20	
4	0.63	0.58	2.16	3.49	2.71	38.63	52.97	88.24	28.89	21.17	13.06	11.64	
5	1.02	0.58	2.16	6.34	2.52	25.84	57.66	81.91	37.84	18.50	13.92	11.08	
6	0.63	0.58	2.25	5.98	2.43	26.60	54.23	93.62	72.69	16.85	13.34	10.59	
7	0.63	0.53	2.61	11.64	2.43	22.18	89.43	241.78	72.19	15.65	11.92	10.13	
8	0.58	0.53	3.83	7.89	2.52	17.84	103.74	314.81	55.94	15.07	11.08	9.68	
9	0.58	0.53	3.99	6.98	3.14	16.52	76.97	278.92	62.43	13.92	9.68	9.44	
10	0.58	0.53	2.80	6.98	1.89	14.49	59.79	220.10	62.43	13.34	9.44	8.99	
11	0.74	0.53	2.43	8.34	1.71	13.92	70.69	145.84	50.42	12.77	10.80	8.78	
12	0.74	0.53	2.43	6.15	2.25	12.49	79.17	141.03	54.68	12.49	17.51	8.10	
13	0.74	0.53	2.16	7.45	5.98	11.36	73.70	147.45	73.20	12.20	83.01	7.89	
14	0.74	0.53	2.16	2.25	5.42	10.59	83.56	111.69	86.45	14.49	101.15	7.89	
15	0.74	0.69	5.62	4.18	1.02	13.06	70.19	88.84	65.20	42.19	64.21	7.45	
16	0.74	1.36	4.38	4.54	1.89	17.51	62.43	77.52	54.68	48.72	44.58	6.58	
17	0.74	1.45	5.25	4.18	2.43	18.83	54.23	71.19	49.57	44.18	35.87	5.98	
18	0.74	1.10	5.81	3.83	2.61	18.17	44.58	81.91	45.38	41.00	30.82	5.81	
19	0.74	1.02	5.62	4.38	2.71	20.83	38.63	79.17	41.40	32.37	27.36	5.81	
20	0.69	1.53	5.62	3.68	2.80	26.60	35.09	65.70	38.63	26.98	23.94	5.42	
21	0.69	1.53	3.68	3.99	2.52	39.81	33.14	56.80	35.87	23.57	22.51	5.09	
22	0.69	1.71	1.71	6.98	2.71	53.78	84.11	56.80	32.75	21.17	20.83	4.70	
23	0.69	1.89	5.98	6.58	3.14	52.52	162.81	57.66	30.04	19.83	18.50	4.38	
24	0.69	1.80	3.83	2.71	8.34	45.79	176.40	54.23	28.89	18.50	18.50	4.38	
25	0.69	1.80	2.34	1.45	8.78	63.25	135.61	65.70	28.12	17.51	17.51	3.99	
26	0.69	2.16	2.61	2.43	6.98	58.52	143.43	50.42	28.12	16.52	16.85	6.15	
27	0.69	1.98	2.16	2.98	5.62	53.78	116.57	43.79	26.22	15.94	15.65	9.68	
28	0.63	2.16	2.16	2.98	4.70	51.27	88.24	39.42	24.32	15.07	14.49	9.89	
29	0.63	1.80	2.16	2.98	5.98	47.87	82.46	37.05	23.57	14.20		9.23	
30	0.63	1.98	2.80	2.80	5.98	37.84	78.62	35.48	21.50	13.63		7.22	
31		1.98		3.14	5.62		87.64		20.83	14.78		6.15	
Total	20.79	35.76	97.28	148.85	115.50	874.72	2392.81	3167.03	1347.41	651.43	706.85	251.58	9810.01 Ton
Mean	0.69	1.15	3.24	4.80	3.73	29.16	77.19	105.57	43.46	21.01	25.24	8.12	
Max	1.02	2.16	5.98	11.64	8.78	63.25	176.40	314.81	86.45	48.72	101.15	13.92	314.81
Min	0.53	0.53	1.71	1.45	1.02	7.45	30.82	35.48	20.83	12.20	9.44	3.99	0.53

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Tha Krachai at Ban Samo Thong, Surat Thani (X.104)

Location	Lat. 9°-34'-47" N., Long. 99°-08'-14" E., on left bank at Ban Samo Thong, Amphoe Tha Chana, Surat Thani.
Drainage Area	354 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1984 - Cont'd
Actual Measurement	1984 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.9563
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:14:50.95

LQS/LQS02D/12

Station - Ban Samo Thong, Tha Chana, Surat Thani, (X.104)
Stream - Khlong Tha Krachai
River - Khlong Tha Krachai
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 180699
1.40870
QS = 2.7347 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.5	0.5	4.4	5.3	6.3	12.3	134.4	668.9	96.0	51.2	53.3	48.5	
2	0.5	0.5	4.8	6.8	6.8	51.2	165.2	676.5	84.1	51.2	51.2	49.8	
3	0.5	0.5	5.3	10.5	7.3	142.5	238.7	190.0	84.1	44.6	51.2	49.8	
4	0.5	0.5	8.0	31.0	7.3	91.1	506.9	242.7	72.6	44.6	51.2	48.5	
5	0.5	0.5	11.4	66.0	6.8	77.1	389.3	746.1	84.1	44.6	51.2	48.5	
6	0.5	0.5	9.7	49.8	6.3	79.4	1975.6	1859.6	103.3	44.6	70.4	48.5	
7	0.8	0.5	8.8	37.0	5.3	55.3	2160.1	3281.6	131.7	44.6	72.6	51.2	
8	0.8	0.3	7.3	28.7	6.8	59.5	891.0	4376.9	175.7	44.6	72.6	53.3	
9	0.8	0.3	6.8	34.5	14.1	43.3	422.4	3482.2	204.7	38.2	61.6	49.8	
10	0.8	0.3	6.8	23.1	13.2	38.2	319.5	2160.1	137.1	26.4	43.3	48.5	
11	0.8	0.1	5.8	16.9	12.3	35.7	314.3	1387.2	123.8	32.1	40.7	44.6	
12	0.5	0.1	5.3	15.0	7.3	29.8	793.6	684.1	126.4	38.2	168.6	44.6	
13	0.5	0.1	4.8	9.7	11.4	22.0	1000.2	495.4	126.4	38.2	530.2	44.6	
14	0.5	0.0	4.8	8.8	6.8	16.9	777.6	274.4	154.8	38.2	907.6	45.9	
15	0.5	0.0	6.8	11.4	6.8	51.2	601.9	204.7	148.0	40.7	411.4	45.9	
16	0.5	0.0	6.8	10.5	6.3	139.8	427.9	182.8	129.1	941.0	91.1	45.9	
17	0.5	0.0	6.3	8.8	5.8	121.2	282.5	134.4	154.8	932.6	43.3	45.9	
18	0.8	0.1	5.8	7.3	6.3	84.1	204.7	121.2	139.8	518.5	42.0	48.5	
19	0.8	0.1	5.3	9.7	5.8	53.3	142.5	175.7	131.7	483.9	42.0	48.5	
20	0.8	0.1	4.8	10.5	6.8	55.3	290.7	142.5	121.2	461.3	42.0	48.5	
21	0.8	0.0	4.4	10.5	8.0	142.5	406.0	110.9	116.0	506.9	42.0	48.5	
22	0.8	3.5	4.4	10.5	11.4	208.5	595.8	63.8	108.3	394.9	40.7	48.5	
23	0.8	4.0	4.0	10.5	18.9	219.6	2666.9	31.0	96.0	142.5	40.7	48.5	
24	0.5	4.8	3.5	7.3	26.4	351.3	1504.8	15.0	66.0	118.5	43.3	48.5	
25	0.5	5.8	2.4	7.3	26.4	536.1	714.9	21.0	59.5	108.3	47.2	48.5	
26	0.5	5.8	2.0	10.5	16.0	258.4	601.9	142.5	59.5	100.9	48.5	48.5	
27	0.5	5.8	1.7	9.7	11.4	340.6	714.9	131.7	53.3	70.4	44.6	48.5	
28	0.5	5.3	2.0	8.8	16.0	400.4	746.1	121.2	51.2	66.0	40.7	48.5	
29	0.5	4.0	2.0	7.3	15.0	186.5	601.9	103.3	51.2	59.5		44.6	
30	0.5	4.4	1.3	6.3	12.3	129.1	512.7	84.1	51.2	51.2		26.4	
31		4.4		5.3	9.7		707.2		51.2	86.4		21.0	
Total	18.3	52.8	157.5	495.3	327.3	4032.2	21812.1	22311.5	3292.8	5664.8	3245.2	1439.3	62849.1 Ton
Mean	0.6	1.7	5.3	16.0	10.6	134.4	703.6	743.7	106.2	182.7	115.9	46.4	
Max	0.8	5.8	11.4	66.0	26.4	536.1	2666.9	4376.9	204.7	941.0	907.6	53.3	4376.9
Min	0.5	0.0	1.3	5.3	5.3	12.3	134.4	15.0	51.2	26.4	40.7	21.0	0.0

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Bang Kaeo at Ban Khuan In No Mo, Phatthalung (X.109)

Location	Lat. 07°-20'-36" N., Long. 100°-03'-33" E., on left bank at Ban Khuan In Nomo, Amphoe Ta Mot, Phatthalung.
Drainage Area	133 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	27
R - Square	0.9088
Remarks	Continued Sediment Station

RID Computer Center, Processing : 24-AUG-2000 00:19:17.08 LQS/LQS02D/12

Station - Ban Khuan In No Mo, Khao Chai Son, Phatthalung, (X.109)
Stream - Khlong Bang Kaeo
River - Khlong Tha Madua
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 180699
1.14030
QS = 3.2949 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	3.11	1.74	2.74	0.80	0.80	6.07	2.74	37.41	18.78	384.69	191.46	27.65	
2	3.45	1.09	2.41	0.80	1.09	7.22	2.74	128.21	29.27	194.56	111.84	25.52	
3	3.11	0.80	2.09	1.74	0.80	5.31	3.45	43.86	26.58	140.07	61.98	23.50	
4	3.11	1.39	1.39	0.80	0.80	3.83	8.01	31.44	20.18	113.00	54.91	22.54	
5	3.11	0.80	1.09	0.50	0.80	3.11	10.49	24.99	106.06	73.75	106.06	21.59	
6	3.11	0.80	2.09	0.50	4.56	3.83	10.49	21.12	205.45	60.20	61.98	54.91	
7	2.74	1.09	1.39	0.50	1.39	3.45	15.10	20.65	603.67	48.95	49.69	27.12	
8	2.74	0.80	1.74	0.50	1.09	4.21	8.43	35.29	508.35	40.98	43.13	22.54	
9	2.74	0.80	1.39	0.80	0.80	9.62	7.22	24.46	177.58	34.74	37.41	20.65	
10	2.74	0.80	0.80	0.50	0.50	7.64	10.05	32.54	90.10	31.44	32.54	19.71	
11	2.74	0.80	0.80	0.21	4.91	4.56	7.22	39.54	54.91	29.81	30.90	19.24	
12	2.41	0.80	0.80	0.21	3.83	3.45	9.62	41.69	48.95	26.58	853.91	19.71	
13	2.41	0.80	0.50	0.21	2.41	3.83	12.55	25.52	40.26	24.99	546.59	23.50	
14	2.09	0.80	0.50	0.21	2.09	4.91	16.01	20.65	32.54	23.02	941.54	19.71	
15	2.09	0.80	0.80	7.64	7.22	6.85	24.99	16.47	28.73	22.07	288.47	17.85	
16	1.74	2.41	0.80	1.74	8.81	10.49	16.47	22.54	35.29	29.81	137.69	16.93	
17	1.74	1.39	0.80	2.41	5.31	10.88	12.55	30.35	95.76	23.98	98.04	16.47	
18	1.39	0.80	0.50	4.91	1.09	10.49	10.49	21.59	60.20	31.99	77.01	15.55	
19	1.39	0.80	0.50	2.09	4.21	6.07	9.62	19.24	46.76	53.17	64.68	15.55	
20	1.39	4.56	0.50	1.74	22.54	6.07	8.81	14.65	58.43	134.13	54.91	15.10	
21	1.39	1.74	13.79	1.09	7.22	6.07	16.01	13.39	43.86	123.51	48.22	14.65	
22	1.09	1.09	6.07	0.30	4.21	4.91	21.12	10.05	71.61	63.76	43.86	14.65	
23	1.09	4.21	1.74	0.80	2.09	4.91	15.10	12.94	48.22	224.30	40.26	20.18	
24	1.09	1.74	1.39	0.80	6.07	4.91	23.98	90.10	90.10	833.09	36.70	19.24	
25	0.80	1.39	1.09	0.50	3.83	4.21	12.94	67.34	63.76	288.47	35.29	15.55	
26	0.80	1.74	1.74	2.09	1.39	4.21	19.24	38.12	82.40	144.85	33.63	20.18	
27	0.80	1.74	1.39	1.74	1.74	4.56	12.94	24.99	113.00	87.84	32.54	23.98	
28	1.09	1.39	1.09	0.80	1.09	3.83	16.47	18.78	211.71	82.40	30.35	16.47	
29	0.80	1.09	1.74	0.50	14.24	3.11	17.85	24.99	171.46	138.88		14.65	
30	1.74	1.74	1.09	1.09	6.07	2.74	25.52	20.18	276.00	224.30		17.39	
31		4.56		0.50	11.71		34.18		364.51	103.76		15.10	
Total	60.04	46.50	54.76	39.52	134.71	165.35	422.40	973.09	3824.48	3837.09	4145.59	637.38	14340.91 Ton
Mean	2.00	1.50	1.83	1.27	4.35	5.51	13.63	32.44	123.37	123.78	148.06	20.56	
Max	3.45	4.56	13.79	7.64	22.54	10.88	34.18	128.21	603.67	833.09	941.54	54.91	941.54
Min	0.80	0.80	0.50	0.21	0.50	2.74	2.74	10.05	18.78	22.07	30.35	14.65	0.21

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Waeng at Waeng, Narathiwat (X.121)

Location	Lat. 5°-55'-26" N., Long. 101°-53'-14" E., on right bank at the bridge of Sungai Kolok - Malasia Highway, Amphoe Waeng, Narathiwat.
Drainage Area	43 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1986 - Cont'd
Actual Measurement	1985 - cont'd
Using Rating Curve Water Year	1998
Number of observation	18
R - Square	0.7359
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:16.02 LQS/LQS02D/12

Station - Waeng, Waeng, Narathiwat, (X.121)
Stream - Khlong Waeng
River - Kolok
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 180699
0.85360
QS = 4.6628 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	2.22	1.52	2.62	4.50	8.21	18.23	10.75	9.39	10.58	68.52	34.50	14.83	
2	2.09	1.52	26.42	4.02	8.64	14.61	9.77	9.98	9.60	48.25	30.25	12.69	
3	1.81	1.52	7.81	5.56	10.58	11.30	9.03	11.50	8.82	43.65	22.13	8.21	
4	1.81	1.52	8.03	4.14	8.03	10.37	8.21	9.39	9.03	74.01	21.03	9.60	
5	1.81	1.52	10.92	5.79	7.04	9.39	7.81	8.64	22.13	23.47	30.65	10.16	
6	1.81	1.52	5.99	9.21	6.18	9.60	7.44	9.98	48.25	21.58	17.66	14.21	
7	1.81	1.43	4.70	6.40	6.18	17.66	7.04	10.16	64.48	18.51	20.48	16.29	
8	1.81	1.43	6.63	10.37	5.37	11.30	7.63	10.75	60.61	16.29	15.90	14.41	
9	1.67	1.43	4.50	21.58	5.14	11.30	6.63	9.60	31.43	15.26	14.21	10.92	
10	1.67	1.43	3.90	10.58	7.04	9.77	6.63	14.41	21.86	14.83	13.32	9.98	
11	1.67	1.43	3.52	8.64	5.14	8.21	13.12	14.41	17.95	13.78	14.61	9.39	
12	1.67	3.77	3.40	7.44	7.63	9.03	9.60	10.75	15.90	12.25	63.03	9.03	
13	1.67	2.36	4.14	6.40	11.13	9.39	9.03	9.77	14.83	11.88	34.87	8.43	
14	1.67	2.09	3.65	5.79	11.88	8.43	8.21	9.03	13.98	11.30	96.31	8.03	
15	1.67	2.36	5.99	9.03	9.03	7.44	9.60	8.43	14.61	10.75	54.24	7.63	
16	1.67	2.09	4.14	6.18	7.81	6.82	8.82	9.60	20.75	12.89	28.36	7.22	
17	1.67	1.57	6.40	9.21	10.92	6.40	7.63	8.21	16.29	15.48	23.47	7.04	
18	1.57	1.57	7.81	7.04	9.98	5.99	7.22	7.81	14.41	17.38	19.92	7.04	
19	1.57	1.57	5.37	11.88	8.64	6.82	6.82	8.21	12.69	19.08	17.95	6.63	
20	1.57	1.52	5.37	8.43	7.81	12.45	5.99	7.63	15.03	17.38	16.29	7.44	
21	1.57	3.52	7.22	7.63	11.67	16.29	5.56	8.43	12.25	13.98	15.26	10.75	
22	1.57	3.40	5.56	6.40	11.67	16.52	5.37	8.03	14.41	12.69	14.61	9.39	
23	1.57	14.61	4.70	32.97	11.30	15.48	5.37	8.64	12.45	49.66	13.98	10.75	
24	2.36	5.56	9.21	17.66	9.39	12.89	5.37	8.03	10.92	71.02	12.89	13.98	
25	1.57	3.77	9.98	17.38	8.21	41.42	6.63	9.39	26.75	35.99	11.67	10.75	
26	1.57	3.40	7.22	11.67	7.63	19.36	15.90	16.52	36.39	46.38	12.25	11.88	
27	1.57	3.65	5.79	11.50	6.82	15.26	14.61	11.50	55.70	24.13	11.13	18.23	
28	1.52	3.14	4.94	10.16	7.22	12.45	10.58	14.41	56.69	19.92	10.75	11.67	
29	1.52	3.40	5.14	9.03	6.82	11.13	10.37	10.37	70.52	17.09		20.75	
30	1.52	2.89	4.26	7.81	6.82	13.55	9.77	12.25	50.56	16.29		12.45	
31		2.62		7.44	6.63		9.98		92.32	59.63		10.37	
Total	51.25	85.13	195.33	301.84	256.56	378.86	266.49	305.22	882.19	853.32	691.72	340.15	4608.06 Ton
Mean	1.71	2.75	6.51	9.74	8.28	12.63	8.60	10.17	28.46	27.53	24.70	10.97	
Max	2.36	14.61	26.42	32.97	11.88	41.42	15.90	16.52	92.32	74.01	96.31	20.75	96.31
Min	1.52	1.43	2.62	4.02	5.14	5.99	5.37	7.63	8.82	10.75	10.75	6.63	1.43

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

Khlong Palian at Ban Lam Khlaeng(2), Trang (X.139)

Location	Lat. 7°-19'-08" N., Long. 99°-49'-03" E., on right bank at Ban Lam Khlaeng(2), Amphoe Palian, Trang.
Drainage Area	153 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 49
Period of Available Records	1986 - Cont'd
Actual Measurement	1986 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	27
R - Square	0.8846
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:22.47

LQS/LQS02D/12

Station - Ban Lam Khlaeng, Palian, Trang, (X.139)
Stream - Khlong Palian
River - Khlong Palian
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 180699
1.47560
QS = 1.1410 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.98	1.87	2.94	3.17	18.23	106.85	24.81	59.38	77.44	70.84	33.71	20.49	
2	0.98	3.17	2.50	5.43	13.63	82.87	21.70	89.86	257.60	59.38	37.80	19.31	
3	0.98	1.31	1.68	3.43	11.27	54.63	26.10	63.27	146.90	52.77	30.06	18.77	
4	0.82	0.98	1.87	2.72	8.40	42.89	28.06	53.70	80.14	49.10	30.74	18.23	
5	0.98	0.98	4.83	2.50	11.73	36.97	55.57	49.10	103.52	44.64	31.43	17.70	
6	0.82	0.82	3.43	2.50	18.23	36.14	507.38	46.41	115.09	41.17	29.39	21.09	
7	0.82	0.67	2.28	2.08	18.23	33.71	178.01	43.76	507.38	39.47	27.40	21.09	
8	0.82	0.67	3.70	2.50	14.61	36.97	87.06	42.03	188.40	36.14	25.45	18.23	
9	0.82	0.67	2.28	2.94	12.67	32.12	76.13	38.63	137.73	34.51	24.81	16.65	
10	0.82	0.67	2.28	2.08	9.92	29.39	77.44	42.03	101.94	32.91	23.55	16.13	
11	0.82	0.54	1.87	1.68	8.40	29.39	61.32	44.64	85.63	30.74	22.93	17.17	
12	0.98	0.54	1.68	1.31	12.67	26.74	52.77	36.14	74.76	29.39	94.09	17.17	
13	0.98	0.54	1.68	1.31	9.92	35.33	52.77	33.71	65.25	28.72	42.03	18.23	
14	0.98	0.82	2.72	2.50	8.05	61.32	125.29	31.43	59.38	27.40	100.30	16.65	
15	0.98	1.68	2.28	17.17	9.92	67.24	226.19	30.74	55.57	26.74	43.76	15.62	
16	0.98	0.82	1.87	6.06	36.14	161.97	128.75	143.21	51.84	25.45	36.14	15.11	
17	0.98	0.82	1.68	10.81	53.70	180.07	192.60	145.05	49.10	25.45	32.91	14.61	
18	0.82	0.67	2.50	16.65	31.43	161.97	88.42	94.09	46.41	29.39	30.74	14.12	
19	0.82	0.54	1.68	18.77	20.49	81.53	65.25	69.51	43.76	34.51	28.72	14.61	
20	0.82	1.87	9.48	11.27	91.24	69.51	56.51	61.32	61.32	30.06	27.40	15.11	
21	0.82	1.14	12.19	9.12	45.52	62.29	137.73	58.42	48.20	33.71	26.10	14.12	
22	0.98	0.67	7.71	11.73	23.55	59.38	173.91	56.51	48.20	29.39	25.45	14.12	
23	0.82	1.31	7.71	8.40	25.45	54.63	81.53	54.63	59.38	113.39	24.81	15.62	
24	0.98	1.49	5.74	9.92	34.51	46.41	65.25	273.10	50.92	198.97	22.93	17.17	
25	0.98	1.49	4.54	9.92	42.03	41.17	87.06	294.22	42.89	65.25	22.31	35.33	
26	1.14	2.72	3.98	21.09	45.52	36.97	87.06	116.74	46.41	49.10	21.09	26.10	
27	1.14	2.08	3.43	32.12	52.77	34.51	89.86	100.30	63.27	43.76	20.49	19.90	
28	0.82	1.31	4.26	14.12	33.71	30.74	101.94	110.07	78.82	37.80	20.49	17.70	
29	0.82	1.14	4.54	15.62	58.42	28.72	82.87	84.28	64.26	36.14		18.77	
30	1.31	1.14	3.43	16.13	101.94	28.06	68.25	70.84	55.57	36.97		20.49	
31		6.06		12.19	115.09		61.32		59.38	32.91		17.70	
Total	27.81	41.20	112.76	277.24	997.39	1790.49	3168.91	2437.12	2926.46	1426.17	937.03	563.11	14705.69 Ton
Mean	0.93	1.33	3.76	8.94	32.17	59.68	102.22	81.24	94.40	46.01	33.47	18.16	
Max	1.31	6.06	12.19	32.12	115.09	180.07	507.38	294.22	507.38	198.97	100.30	35.33	507.38
Min	0.82	0.54	1.68	1.31	8.05	26.74	21.70	30.74	42.89	25.45	20.49	14.12	0.54

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

Khlong Klai at Ban Thai Na, Nakhon Si Thammarat (X.149)

Location	Lat. 08°-43'-48" N., Long. 99°-44'-52" E., on left bank at Ban Thai Na, Amphoe Tha Sa La, Nakhon Si Thammarat.
Drainage Area	469 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	27
R - Square	0.8375
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:28.01 LQS/LQS02D/12

Station - Ban Thai Na, Tha Sala, Nakhon Si Thummarat_, (X.149)
Stream - Khlong Klai
River - Khlong Klai
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 210699
1.25310
QS = 2.2593 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	14.88	34.48	32.52	30.59	18.70	177.22	42.50	1149.49	172.11	151.98	127.57	161.98	
2	13.64	30.59	23.13	26.81	17.40	132.38	42.50	739.29	151.98	147.03	113.66	156.97	
3	13.64	13.64	24.96	18.70	14.88	110.23	64.74	462.69	147.03	132.38	106.83	177.22	
4	13.64	12.43	21.33	18.70	16.13	59.49	83.64	350.45	120.57	120.57	151.98	151.98	
5	12.43	10.09	16.13	57.30	17.40	48.74	61.69	197.95	237.11	117.10	589.45	137.23	
6	12.43	10.09	32.52	23.13	18.70	40.46	50.85	187.53	462.69	110.23	237.11	142.11	
7	12.43	8.95	18.70	17.40	16.13	93.44	93.44	2031.18	555.68	103.45	177.22	151.98	
8	12.43	11.25	14.88	24.96	17.40	90.15	358.31	1749.08	399.74	96.75	147.03	127.57	
9	12.43	12.43	17.40	20.01	20.01	106.83	93.44	1684.23	266.45	90.15	124.06	120.57	
10	12.43	10.09	16.13	18.70	17.40	90.15	124.06	790.70	197.95	86.88	117.10	304.06	
11	11.25	8.95	13.64	14.88	16.13	70.93	137.23	565.16	197.95	83.64	106.83	167.03	
12	11.25	8.95	13.64	13.64	18.70	61.69	156.97	613.94	915.50	80.42	3296.92	142.11	
13	11.25	10.09	12.43	14.88	17.40	64.74	296.46	426.49	872.87	77.23	12171.96	142.11	
14	10.09	10.09	12.43	14.88	23.13	50.85	259.05	311.70	527.43	281.37	4072.24	117.10	
15	8.95	20.01	13.64	18.70	110.23	46.64	127.57	219.14	390.90	358.31	1362.55	106.83	
16	8.95	36.45	13.64	14.88	80.42	64.74	374.14	192.73	319.37	626.26	915.50	100.09	
17	8.95	16.13	12.43	18.70	52.98	52.98	147.03	182.36	219.14	536.81	688.59	96.75	
18	8.95	18.70	12.43	14.88	44.56	55.13	103.45	273.89	187.53	334.84	546.23	93.44	
19	8.95	14.88	13.64	28.69	52.98	77.23	90.15	208.49	161.98	197.95	453.58	103.45	
20	8.95	12.43	13.64	28.69	74.07	55.13	74.07	156.97	304.06	161.98	366.21	100.09	
21	12.43	44.56	13.64	16.13	42.50	59.49	64.74	137.23	161.98	137.23	327.09	93.44	
22	10.09	16.13	18.70	93.44	32.52	52.98	93.44	192.73	167.03	124.06	296.46	110.23	
23	7.84	14.88	14.88	55.13	28.69	55.13	113.66	167.03	156.97	117.10	266.45	156.97	
24	7.84	13.64	14.88	36.45	30.59	46.64	83.64	147.03	192.73	124.06	237.11	100.09	
25	20.01	12.43	13.64	21.33	26.81	96.75	80.42	187.53	167.03	110.23	219.14	103.45	
26	12.43	12.43	12.43	26.81	23.13	64.74	156.97	137.23	342.63	103.45	203.21	113.66	
27	10.09	11.25	16.13	20.01	23.13	61.69	86.88	113.66	334.84	100.09	177.22	142.11	
28	8.95	10.09	18.70	17.40	38.45	64.74	471.83	137.23	281.37	93.44	172.11	106.83	
29	12.43	14.88	30.59	18.70	34.48	64.74	688.59	127.57	273.89	816.67		113.66	
30	20.01	16.13	24.96	20.01	40.46	48.74	688.59	244.38	192.73	208.49		113.66	
31		93.44		20.01	80.42		2204.85		172.11	151.98		93.44	
Total	350.04	570.58	527.81	784.54	1065.93	2164.79	7514.90	14085.08	9251.35	5982.13	27771.41	4048.21	74116.78 Ton
Mean	11.67	18.41	17.59	25.31	34.38	72.16	242.42	469.50	298.43	192.97	991.84	130.59	
Max	20.01	93.44	32.52	93.44	110.23	177.22	2204.85	2031.18	915.50	816.67	12171.96	304.06	12171.96
Min	7.84	8.95	12.43	13.64	14.88	40.46	42.50	113.66	120.57	77.23	106.83	93.44	7.84

WATER YEAR 1998

SOUTHERN PENINSULA WEST COAST

Khlong Langu at Ban Wang Pa Khian, Satun (X.150)

Location	Lat. 06°-56'-30" N., Long. 99°-52'-33" E., on right bank at Ban Wang Pa Khian, Amphoe Langu, Satun.
Drainage Area	552 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	30
R - Square	0.8223
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:33.38 LQS/LQS02D/12

Station - Ban Wang Pa Khian, Langu, Satun, (X.150)
Stream - Khlong Langu
River - Khlong Langu
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 210699
1.27480
QS = 2.2710 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	11.50	8.98	13.30	13.72	72.43	175.33	31.86	315.00	211.15	169.95	95.09	26.94	
2	11.50	19.35	20.93	12.83	68.06	256.58	27.63	854.62	312.74	164.68	79.09	26.25	
3	11.50	19.86	27.63	17.27	36.22	115.74	26.94	789.57	299.24	114.12	63.75	26.25	
4	11.09	11.96	16.24	15.19	26.25	72.43	36.96	267.05	180.89	99.19	60.56	25.56	
5	10.69	10.24	11.96	11.96	22.58	52.52	294.77	182.75	175.33	79.09	84.35	24.88	
6	10.69	9.81	29.03	11.09	23.10	50.59	968.45	145.69	360.95	70.24	64.82	24.21	
7	10.24	8.98	15.71	9.81	36.22	43.03	2322.01	123.91	328.64	62.69	54.46	27.63	
8	10.24	8.21	11.50	9.41	46.78	49.63	1444.66	110.90	650.67	55.44	48.67	26.25	
9	10.24	8.21	12.37	9.41	34.03	99.19	230.56	93.74	413.53	49.63	43.96	26.25	
10	9.81	8.21	11.50	9.41	27.63	62.69	145.69	85.68	281.86	45.83	40.27	24.88	
11	9.81	7.79	10.69	8.98	26.94	49.63	120.63	117.37	195.89	44.90	39.35	27.63	
12	9.41	7.38	9.41	8.59	36.96	36.22	107.70	79.09	161.19	43.03	61.62	31.15	
13	9.41	7.38	9.81	8.21	29.03	65.90	109.30	84.35	155.99	41.18	88.35	61.62	
14	10.24	8.59	13.72	9.41	31.15	195.89	537.11	80.40	114.12	39.35	106.10	31.86	
15	9.81	9.81	11.96	72.43	26.94	418.87	1281.44	62.69	97.82	36.96	62.69	26.25	
16	9.81	14.71	11.96	31.86	358.62	337.81	1304.17	308.22	87.01	36.22	48.67	23.10	
17	9.41	10.24	10.69	34.03	294.77	542.76	448.51	1575.46	83.03	39.35	43.96	22.01	
18	9.41	8.59	18.81	60.56	154.26	554.28	342.41	664.03	76.85	39.35	40.27	20.42	
19	9.41	8.59	13.72	68.06	93.74	216.94	264.95	789.57	69.15	50.59	38.45	20.42	
20	8.98	10.24	11.09	85.68	277.61	123.91	180.89	283.99	80.40	75.74	36.22	20.93	
21	8.59	14.71	11.50	33.30	215.00	101.95	155.99	205.40	87.01	60.56	34.03	19.86	
22	8.59	10.69	16.73	65.90	73.53	92.38	1317.85	145.69	75.74	62.69	31.86	18.81	
23	9.41	11.09	12.37	31.86	49.63	88.35	817.58	142.29	65.90	65.90	31.15	20.42	
24	9.81	14.71	13.30	29.73	374.99	63.75	222.76	660.68	64.82	825.62	30.44	192.12	
25	11.96	11.50	24.88	36.22	87.01	58.46	173.48	506.27	62.69	985.57	30.44	130.53	
26	13.30	12.37	39.35	54.46	215.00	85.68	317.26	384.42	56.42	248.34	29.03	79.09	
27	15.71	12.37	16.24	51.55	240.41	55.44	159.45	473.08	80.40	145.69	27.63	42.10	
28	12.37	11.09	15.71	31.86	292.54	43.03	330.93	342.41	132.20	103.33	27.63	29.73	
29	10.69	9.81	15.19	37.70	93.74	36.22	250.34	367.96	149.10	88.35		43.03	
30	9.41	10.24	15.71	60.56	308.22	33.30	240.41	218.87	201.59	92.38		60.56	
31		11.09		37.70	199.68		213.08		184.61	76.85		48.67	
Total	313.04	336.80	473.01	978.75	3873.07	4178.50	14425.77	10461.15	5496.93	4112.81	1442.91	1229.41	47322.15 Ton
Mean	10.43	10.86	15.77	31.57	124.94	139.28	465.35	348.71	177.32	132.67	51.53	39.66	
Max	15.71	19.86	39.35	85.68	374.99	554.28	2322.01	1575.46	650.67	985.57	106.10	192.12	2322.01
Min	8.59	7.38	9.41	8.21	22.58	33.30	26.94	62.69	56.42	36.22	27.63	18.81	7.38

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Tha Taphao at Ban Wang Khrok, Chumphon (X.158)

Location: Lat. 10°35'34" N., Long. 99°08'42" E., on right bank at the bridge on Chumphon - Prachuap Khiri Khan Highway, Amphoe Tha Sae, Chumphon.

Drainage Area	1,819 sq.km.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1996 - Cont'd
Actual Measurement	1996 - Cont'd
Using Rating Curve Water Year	1996 - 1998
Number of observation	76
R - Square	0.9054
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:38.64 LQS/LQS02D/12

Station - Ban Wang Khrok, Tha Sae, Chumphin, (X.158)
Stream - Khlong Tha Taphao
River - Khlong Tha Taphao
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 210699
1.37480
QS = 1.9467 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	5.5	23.9	68.3	187.2	51.2	79.1	456.9	5189.2	342.8	76.9	72.6	42.0	
2	5.9	22.1	55.9	105.5	62.0	94.9	1354.0	7447.9	376.1	72.6	64.1	40.5	
3	6.3	27.9	55.9	99.6	55.9	376.1	2457.6	5999.6	326.4	70.4	49.6	39.1	
4	6.3	23.9	51.2	114.5	48.1	230.3	2097.8	3268.8	273.6	68.3	162.6	48.1	
5	6.3	11.5	45.0	120.6	42.0	174.8	2472.6	2231.8	337.3	68.3	123.8	52.7	
6	5.9	10.8	43.5	85.8	49.6	111.5	2356.0	1363.6	647.5	66.2	74.7	62.0	
7	5.2	13.8	34.8	66.2	60.0	92.6	1402.0	966.5	398.7	64.1	60.0	149.4	
8	5.2	55.9	26.6	55.9	174.8	90.3	2123.0	1055.5	248.2	60.0	55.9	68.3	
9	4.8	34.8	25.7	57.9	234.7	99.6	3200.1	6956.5	217.1	60.0	49.6	45.0	
10	4.5	23.9	36.2	54.3	166.7	76.9	2517.8	7870.2	195.7	57.9	48.1	43.5	
11	4.1	13.8	49.6	48.1	111.5	66.2	1997.9	3373.7	170.7	60.0	46.5	34.8	
12	3.8	11.5	43.5	43.5	88.0	68.3	3080.9	2356.0	159.2	57.9	45.0	32.0	
13	3.4	11.5	51.2	34.8	88.0	310.3	3690.3	1259.3	146.1	57.9	117.6	29.3	
14	3.1	11.5	54.3	30.6	76.9	2608.8	3540.3	871.9	142.8	60.0	268.5	25.7	
15	2.8	14.6	62.0	26.6	76.9	2085.2	2608.8	654.7	133.3	60.0	136.4	23.0	
16	2.5	15.3	62.0	74.7	85.8	1527.4	1222.7	576.9	123.8	60.0	102.5	25.7	
17	2.3	11.5	42.0	146.1	108.5	887.5	802.7	2442.6	117.6	57.9	83.5	22.1	
18	2.2	27.9	33.4	76.9	123.8	488.6	563.1	5213.3	108.5	55.9	66.2	21.2	
19	2.2	43.5	27.9	114.5	99.6	305.0	445.1	6700.1	108.5	52.7	62.0	20.3	
20	2.2	32.0	23.9	79.1	127.0	284.0	370.5	5165.0	105.5	49.6	55.9	20.3	
21	2.0	20.3	21.2	55.9	102.5	294.4	895.3	2286.8	108.5	48.1	55.9	16.2	
22	27.9	16.2	18.6	45.0	117.6	326.4	508.6	1670.8	108.5	48.1	57.9	15.3	
23	17.8	12.2	29.3	37.6	162.6	698.2	398.7	1297.0	99.6	46.5	68.3	17.0	
24	10.8	25.7	42.0	34.8	501.9	950.6	2110.4	848.6	92.6	43.5	60.0	34.8	
25	9.2	20.3	29.3	79.1	289.2	1802.1	4241.3	647.5	105.5	43.5	62.0	42.0	
26	14.6	17.0	26.6	60.0	284.0	2231.8	4416.3	522.1	94.9	43.5	52.7	37.6	
27	9.2	17.0	42.0	68.3	243.7	1146.7	2231.8	433.4	90.3	43.5	48.1	39.1	
28	9.6	13.8	74.7	57.9	162.6	1647.2	1442.4	570.0	88.0	43.5	43.5	49.6	
29	33.4	16.2	79.1	52.7	111.5	1088.4	887.5	528.9	83.5	42.0		46.5	
30	46.5	76.9	111.5	49.6	85.8	612.0	825.6	421.7	81.3	62.0		903.1	
31		92.6		55.9	76.9		3429.0		79.1	64.1		225.9	
Total	265.5	769.8	1367.2	2219.2	4069.3	20855.2	60147.0	80189.9	5711.2	1764.9	2193.5	2272.1	181824.8 Ton
Mean	8.9	24.8	45.6	71.6	131.3	695.2	1940.2	2673.0	184.2	56.9	78.3	73.3	
Max	46.5	92.6	111.5	187.2	501.9	2608.8	4416.3	7870.2	647.5	76.9	268.5	903.1	7870.2
Min	2.0	10.8	18.6	26.6	42.0	66.2	370.5	421.7	79.1	42.0	43.5	15.3	2.0

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Chandi at Ban Chandi Nua, Nakhon Si Thammarat (X.163)

Location	Lat. 8°-20'-34" N., Long. 99°-37'-12" E., on left bank at the bridge on road near Wat Manao Wan, Amphoe Chawang, Nakhon Si Thammarat.
Drainage Area	97 sq.k.m.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1991 - Cont'd
Actual Measurement	1989 - Cont'd
Using Rating Curve Water Year	1991 - 1998
Number of observation	104
R - Square	0.7787
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:43.92

LQS/LQS02D/12

Station - Ban Chandi Nua, Chawang, Nakhon Si Thammarat, (X.163)
Stream - Khlong Chandi
River - Tapi
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 210699
1.80080
QS = 0.9730 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.97	0.39	5.44	49.86	3.39	9.77	13.06	187.31	79.85	32.36	20.82	26.31	
2	0.80	0.80	3.09	7.46	2.27	7.99	11.03	101.82	85.02	30.79	19.54	26.31	
3	0.65	0.51	3.70	7.99	2.02	8.58	67.62	72.43	82.48	27.77	18.29	26.31	
4	0.65	0.39	2.53	5.44	1.78	6.42	56.19	65.32	77.38	26.31	27.77	23.49	
5	0.65	0.39	2.27	7.99	1.78	5.44	49.86	58.44	154.54	26.31	24.88	19.54	
6	0.65	0.23	2.27	2.80	3.70	6.42	62.95	51.90	205.12	23.49	19.54	18.29	
7	0.51	0.23	2.27	2.27	4.02	11.03	62.95	154.54	303.86	20.82	18.29	29.26	
8	0.51	0.11	1.78	3.09	3.09	15.19	62.95	72.43	166.24	20.82	18.29	18.29	
9	0.51	0.39	1.16	6.42	7.46	13.06	51.90	178.68	108.28	19.54	17.53	18.29	
10	0.51	0.30	2.53	3.09	2.80	11.65	56.19	82.48	85.02	18.29	15.91	49.86	
11	0.51	0.30	3.39	2.27	5.44	7.46	51.90	67.62	60.62	18.29	42.46	30.79	
12	0.51	0.23	3.39	4.02	2.27	8.58	46.09	58.44	135.89	16.71	376.77	27.77	
13	0.51	0.30	4.71	0.97	1.35	12.35	33.96	56.19	135.89	15.91	762.50	24.88	
14	0.51	0.30	2.27	0.80	5.44	14.49	37.26	51.90	77.38	17.53	285.19	22.14	
15	0.51	0.30	2.27	9.77	18.29	27.77	108.28	42.46	65.32	24.88	128.72	19.54	
16	0.39	0.30	2.27	3.39	7.99	23.49	74.82	62.95	58.44	85.02	82.48	18.29	
17	0.39	0.80	1.16	2.27	4.71	22.14	54.08	162.30	54.08	82.48	67.62	16.71	
18	0.39	1.16	0.97	1.16	5.07	17.53	46.09	158.40	49.86	37.26	56.19	16.71	
19	0.39	1.16	0.97	0.97	5.94	13.74	42.46	158.40	47.96	30.79	49.86	16.71	
20	0.39	0.51	3.39	5.44	27.77	14.49	49.86	79.85	56.19	26.31	49.86	15.91	
21	0.39	5.07	3.09	2.27	14.49	51.90	166.24	67.62	40.69	27.77	42.46	15.91	
22	0.39	0.51	2.53	5.94	14.49	35.59	101.82	54.08	38.96	26.31	40.69	15.91	
23	0.39	0.51	2.27	2.27	6.91	22.14	72.43	51.90	37.26	27.77	40.69	20.82	
24	0.80	0.80	1.35	4.02	5.07	15.19	51.90	49.86	37.26	26.31	37.26	18.29	
25	1.16	0.80	1.35	2.53	3.39	15.19	47.96	51.90	42.46	20.82	35.59	20.82	
26	0.97	0.80	0.97	5.07	4.02	16.71	46.09	49.86	56.19	19.54	30.79	35.59	
27	0.65	0.65	5.94	5.94	3.70	15.91	37.26	44.26	51.90	24.88	29.26	23.49	
28	0.39	0.65	2.53	3.09	4.02	13.74	101.82	40.69	49.86	18.29	29.26	20.82	
29	0.30	0.80	2.53	2.53	2.80	27.77	196.13	38.96	40.69	51.90		33.96	
30	0.39	1.35	3.39	3.70	11.03	15.19	108.28	174.43	35.59	30.79		26.31	
31		23.49		3.39	10.36		240.03		33.96	24.88		22.14	
Total	16.74	44.53	77.78	168.22	196.86	486.92	2209.46	2547.42	2554.24	900.94	2388.51	719.46	12311.08 Ton
Mean	0.56	1.44	2.59	5.43	6.35	16.23	71.27	84.91	82.39	29.06	85.30	23.21	
Max	1.16	23.49	5.94	49.86	27.77	51.90	240.03	187.31	303.86	85.02	762.50	49.86	762.50
Min	0.30	0.11	0.97	0.80	1.35	5.44	11.03	38.96	33.96	15.91	15.91	15.91	0.11

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Ai Khieo at Ban Ai Khieo, Nakhon Si Thammarat (X.165)

Location	Lat. 08°-33'-47" N., Long. 99°-48'-59" E., on right bank at Ban Ai Khieo, Amphoe Phrom Khiri, Nakhon Si Thammarat.
Drainage Area	25 sq.k.m.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.9520
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:52.79

LQS/LQS02D/12

Station - Ban Ai Khieo, Phrom Khiri, Nakhon Si Thammarat, (X.165)
Stream - Khlong Ai Khieo
River - Khlong Maying
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 210699
1.26030
QS = 2.9719 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	0.79	0.39	2.97	1.40	0.52	3.51	0.79	92.03	15.25	7.66	7.34	4.62	
2	0.79	0.27	2.79	1.40	1.24	4.62	0.65	18.13	14.78	6.41	6.72	4.91	
3	0.79	0.27	2.60	1.09	2.60	2.79	7.98	14.78	12.47	7.03	6.41	5.21	
4	0.65	0.27	2.24	4.34	2.24	2.60	4.91	12.92	12.92	6.41	7.03	4.91	
5	0.65	0.16	2.07	2.79	2.07	2.42	2.79	10.68	11.12	35.71	11.57	4.62	
6	0.52	0.16	1.90	2.60	1.73	3.51	2.60	14.78	23.74	72.05	8.96	4.34	
7	0.52	0.16	1.73	2.42	1.40	2.97	2.24	137.36	92.03	72.05	7.03	4.34	
8	0.52	0.52	2.79	2.07	0.94	2.60	2.79	44.22	20.17	23.74	6.72	3.78	
9	0.39	0.52	2.79	1.73	0.79	2.42	4.91	35.71	15.72	6.72	6.41	3.51	
10	0.39	0.39	2.24	1.40	0.65	4.34	4.06	31.14	22.31	6.72	6.10	5.50	
11	0.39	0.27	2.79	0.00	0.52	2.79	2.79	23.05	12.92	5.80	7.98	4.34	
12	0.39	0.27	0.65	0.65	0.39	1.40	5.50	20.17	85.09	4.06	169.31	4.06	
13	0.27	0.16	2.07	0.52	2.24	1.09	7.98	12.92	173.81	23.74	496.22	2.97	
14	0.27	1.73	1.73	0.39	2.60	2.60	7.03	10.25	50.80	93.79	78.26	2.07	
15	0.27	0.65	1.40	0.16	2.24	2.97	6.41	7.03	27.36	32.67	40.98	1.90	
16	0.16	2.79	0.79	1.56	1.90	4.06	6.10	4.06	23.74	38.87	26.65	1.73	
17	0.16	0.52	0.79	3.24	1.56	4.91	5.50	3.78	21.63	32.67	20.17	1.56	
18	0.16	2.60	0.52	2.79	2.60	4.91	5.21	3.51	15.72	17.16	14.78	1.56	
19	0.16	2.42	0.94	2.42	4.91	3.24	5.21	56.45	13.84	15.72	13.84	1.40	
20	0.07	2.79	2.79	2.07	4.06	4.62	4.91	2.97	12.47	12.47	12.47	0.94	
21	0.07	0.79	2.07	1.73	2.60	2.79	5.50	4.91	9.81	10.25	9.38	2.42	
22	0.07	2.24	1.56	1.40	2.07	3.24	6.41	4.91	7.98	12.02	8.96	2.42	
23	2.97	2.97	1.09	0.79	3.78	3.24	7.66	4.34	7.98	29.63	8.63	2.79	
24	2.60	0.52	0.65	0.65	2.60	4.91	6.41	7.03	32.67	10.68	7.98	3.78	
25	2.42	0.52	0.52	0.52	0.79	4.62	7.34	7.03	10.68	8.63	7.66	2.79	
26	0.79	0.65	0.27	0.27	0.65	2.60	4.91	2.79	14.78	34.71	6.72	4.34	
27	0.79	1.90	0.94	0.27	0.52	2.07	4.62	5.21	14.78	7.34	6.41	2.60	
28	0.52	2.60	0.52	0.16	0.27	1.56	3.24	4.06	19.51	7.34	6.10	1.73	
29	0.52	0.94	0.39	0.07	2.60	1.09	15.25	3.78	16.20	18.13		2.42	
30	0.39	3.51	1.24	0.65	4.06	0.94	17.16	27.36	12.47	10.68		2.97	
31		6.10		0.52	1.73		95.55		9.81	8.63		2.79	
Total	19.45	40.05	47.84	42.07	58.87	91.43	264.41	627.36	834.56	679.49	1016.79	99.32	3821.64 Ton
Mean	0.65	1.29	1.59	1.36	1.90	3.05	8.53	20.91	26.92	21.92	36.31	3.20	
Max	2.97	6.10	2.97	4.34	4.91	4.91	95.55	137.36	173.81	93.79	496.22	5.50	496.22
Min	0.07	0.16	0.27	0.00	0.27	0.94	0.65	2.79	7.98	4.06	6.10	0.94	0.00

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong Sao Thong at Ban Sao Thong, Nakhon Si Thammarat (X.167)

Location	Lat. 08-16-44 N., Long. 99-54-31 E., on right bank at the bridge, Ban Sao Thong, Amphoe Ron Phibun, Nakhon Si Thammarat.
Drainage Area	268 sq.k.m.
Method of Sampling	Depth Integrating
Instrument Used	US.DH - 59
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.8751
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:15:57.93

LQS/LQS02D/12

Station - Ban Sao Thong, Ron Phibun, Nakhon Si Thammarat, (X.167)
Stream - Khlong Sao Thong
River - Khlong Cha Mao
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 210699
1.22090
QS = 2.3977 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	4.06	11.07	4.65	11.61	0.51	37.79	0.88	398.54	87.58	57.78	81.01	27.61	
2	3.77	12.16	8.95	25.57	0.42	28.98	0.51	254.91	41.58	55.60	54.52	25.57	
3	3.49	17.27	10.00	22.90	0.42	22.24	0.88	114.64	34.11	45.49	44.50	25.57	
4	3.49	13.27	7.77	25.57	0.98	17.27	10.53	68.89	26.25	36.88	49.41	23.57	
5	3.49	8.95	6.81	40.65	0.88	12.16	16.11	58.88	79.73	71.16	70.02	23.57	
6	3.49	7.45	6.81	7.77	0.88	10.00	11.07	51.39	373.00	47.44	45.49	21.59	
7	4.35	7.77	6.17	1.39	1.72	14.39	10.00	174.85	334.41	35.97	36.88	41.58	
8	4.06	5.25	4.95	1.18	1.29	19.05	26.93	243.04	356.21	29.67	32.46	30.37	
9	3.77	3.49	4.06	1.18	0.88	29.67	21.59	370.15	151.74	26.93	28.98	30.37	
10	3.77	4.35	4.65	0.88	0.69	29.67	24.23	319.03	103.66	24.90	25.57	42.57	
11	3.77	5.25	4.65	3.77	0.98	19.05	22.24	128.64	74.58	23.57	44.50	40.65	
12	3.77	5.25	4.06	1.50	2.28	13.83	23.57	107.73	105.05	22.90	401.49	25.57	
13	3.49	4.65	3.21	0.34	1.94	16.11	32.46	74.58	410.38	20.29	623.59	22.90	
14	3.21	4.06	2.40	0.24	2.17	16.69	29.67	57.78	326.71	21.59	626.95	20.94	
15	7.77	3.77	2.40	1.61	2.05	21.59	41.58	47.44	143.41	107.73	542.06	18.45	
16	10.00	4.06	8.95	22.24	5.86	22.90	58.88	57.78	88.93	57.78	266.88	16.11	
17	11.07	6.49	12.16	17.86	6.49	23.57	34.11	62.18	71.16	163.66	207.69	8.95	
18	11.07	5.25	13.83	14.39	4.65	24.23	25.57	47.44	57.78	96.87	114.64	12.16	
19	8.10	4.35	13.83	6.17	5.86	16.11	23.57	46.44	48.40	57.78	91.58	12.71	
20	7.12	6.49	13.27	2.28	16.11	12.16	22.90	36.88	45.49	43.51	75.89	8.95	
21	6.17	8.10	14.39	1.50	27.61	9.47	118.78	33.17	47.44	43.51	64.41	14.39	
22	5.55	6.49	17.27	4.95	16.11	10.00	96.87	32.46	53.44	43.51	54.52	11.61	
23	6.17	22.24	14.39	3.77	9.47	12.16	90.23	26.25	40.65	78.41	47.44	10.53	
24	6.17	14.39	11.61	1.39	18.45	9.47	63.29	28.98	48.40	128.64	44.50	10.53	
25	7.45	9.47	12.71	0.51	7.45	4.35	49.41	28.29	45.49	62.18	38.76	20.94	
26	8.95	6.81	11.07	0.42	5.25	2.17	46.44	25.57	111.88	45.49	34.11	79.73	
27	7.77	6.81	11.61	0.32	4.95	1.50	29.67	23.57	117.42	42.57	32.46	55.60	
28	6.81	4.35	10.53	0.34	9.47	1.08	39.68	22.24	291.17	34.11	29.67	28.29	
29	5.55	3.21	6.17	0.34	6.17	0.98	105.05	20.29	123.00	361.79		32.46	
30	13.83	3.49	5.25	0.34	4.06	2.28	133.53	50.37	79.73	301.25		22.90	
31		4.35		0.51	40.65		234.43		63.29	103.66		20.29	
Total	181.53	230.36	258.58	223.49	206.70	460.92	1444.66	3012.40	3982.07	2292.62	3809.98	787.03	16890.34 Ton
Mean	6.05	7.43	8.62	7.21	6.67	15.36	46.60	100.41	128.45	73.96	136.07	25.39	
Max	13.83	22.24	17.27	40.65	40.65	37.79	234.43	398.54	410.38	361.79	626.95	79.73	626.95
Min	3.21	3.21	2.40	0.24	0.42	0.98	0.51	20.29	26.25	20.29	25.57	8.95	0.24

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Khlong U Taphao at Ban Khlong Ngae, Songkhla (X.173)

Location	Lat. 06°47'44" N., Long. 100°26'46" E., on right bank at the bridge on Hat Yai - Sadao Highway, Ban Pang La, Amphoe Hat Yai, Songkhla.
Drainage Area	982 sq.k.m.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	24
R - Square	0.8144
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:16:10.59 LQS/LQS02D/12

Station - Ban Khlong Ngae, A.Hat Yai, Songkhla, (X.173)
Stream - Khlong U-Taphao
River - Khlong U-Taphao
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 210699
0.84550
QS = 10.7660 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	7.67	11.40	10.49	12.29	18.44	71.65	25.32	377.32	182.86	365.41	189.62	27.72	
2	7.67	24.54	10.03	12.74	30.00	63.45	23.36	560.29	179.44	368.37	280.49	32.69	
3	7.48	20.57	9.85	25.71	42.76	50.49	20.97	745.47	240.98	286.35	184.22	30.90	
4	7.28	13.70	9.57	16.10	37.17	36.23	19.10	536.01	356.40	249.31	119.31	27.26	
5	6.99	11.22	9.38	21.37	24.93	38.11	66.66	419.90	333.69	206.99	136.69	25.32	
6	6.99	17.03	10.31	34.03	18.19	54.98	122.24	380.27	319.64	175.35	138.97	70.56	
7	6.99	13.70	9.85	26.87	16.69	38.11	184.22	356.40	294.13	137.26	103.33	73.26	
8	6.99	12.12	10.31	24.54	17.03	69.46	178.79	350.39	426.65	114.25	81.89	62.00	
9	6.99	9.85	13.44	17.36	26.10	159.52	122.24	311.20	470.03	96.61	69.46	65.55	
10	7.48	8.44	21.77	15.51	24.54	225.98	78.17	288.30	395.07	87.20	62.00	63.98	
11	7.28	8.63	26.87	12.74	16.69	319.64	77.09	290.24	305.53	79.75	57.47	61.01	
12	6.79	8.44	19.35	10.49	21.37	266.73	91.40	256.82	247.92	73.83	58.48	153.94	
13	6.49	12.56	12.74	10.49	62.46	209.01	165.73	228.38	210.01	68.35	63.98	280.49	
14	6.19	7.67	10.95	10.31	113.66	174.69	232.59	236.79	183.51	64.44	67.77	247.92	
15	5.99	8.16	10.95	36.66	142.39	130.37	214.03	231.19	157.41	60.48	57.00	219.02	
16	5.99	10.77	10.49	45.08	118.14	101.77	198.37	203.70	134.40	57.47	51.79	189.62	
17	7.67	20.97	11.40	34.03	109.74	91.96	179.44	214.03	123.41	54.98	47.80	133.25	
18	7.67	11.67	10.31	40.91	112.53	94.04	168.54	249.31	122.24	57.47	44.10	82.95	
19	6.99	10.31	12.12	51.31	81.38	96.12	178.79	276.57	108.01	61.01	40.41	60.01	
20	6.19	25.71	24.54	36.66	60.48	81.89	151.42	260.79	116.43	53.56	38.55	53.56	
21	5.79	37.17	14.65	48.70	64.44	63.45	139.54	228.38	149.74	51.31	36.23	93.49	
22	6.49	32.69	18.77	53.56	70.56	53.56	186.27	203.70	136.12	50.49	34.47	141.25	
23	7.96	23.76	14.65	35.79	61.47	50.01	209.01	186.92	119.90	97.65	32.25	97.16	
24	9.38	17.36	11.67	20.97	175.35	39.48	274.61	258.81	115.37	456.76	31.80	180.15	
25	17.61	14.65	10.03	15.85	189.62	36.23	211.02	368.37	99.71	365.41	30.00	328.10	
26	35.79	11.22	14.65	16.69	151.98	37.61	203.01	268.70	86.70	211.02	28.63	250.69	
27	33.58	13.18	30.00	16.10	143.52	34.47	208.00	253.45	91.96	142.95	27.26	258.81	
28	15.51	12.74	30.90	15.85	149.74	30.90	202.37	266.73	134.40	99.71	26.87	260.79	
29	10.31	11.40	19.10	14.05	104.36	28.63	205.67	220.02	206.99	198.37		314.00	
30	12.74	10.95	13.70	12.56	87.76	26.87	218.03	193.66	380.27	165.07		339.28	
31		10.77		13.18	78.67		250.69		268.70	103.82		296.96	
Total	294.94	463.35	442.84	758.50	2372.16	2775.41	4806.69	9222.11	6697.62	4661.00	2140.84	4521.69	39157.16 Ton
Mean	9.83	14.95	14.76	24.47	76.52	92.51	155.05	307.40	216.05	150.35	76.46	145.86	
Max	35.79	37.17	30.90	53.56	189.62	319.64	274.61	745.47	470.03	456.76	280.49	339.28	745.47
Min	5.79	7.67	9.38	10.31	16.69	26.87	19.10	186.92	86.70	50.49	26.87	25.32	5.79

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Sai Buri River at Ban Talat Phatthana, Narathiwat (X.184)

Location	Lat. 06°-13'-32" N., Long. 101°-30'-00" E., on right bank at the bridge, Ban Thalat Phatthana, Amphoe Si Sakhon, Narathiwat.
Drainage Area	1,167 sq.k.m.
Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.7864
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:16:15.97

LQS/LQS02D/12

Station - Ban Talat Phatthana, Narathiwat,, (X.184)
Stream - Sai Buri
River - Sai Buri
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 220699
1.57460
QS = 0.3267 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	43.7	14.3	13.0	33.1	183.8	305.2	258.5	534.0	494.4	9379.3	1544.1	739.3	
2	38.9	13.0	25.2	33.1	111.0	775.8	237.7	558.3	939.0	5332.9	1359.5	642.2	
3	36.5	11.9	161.0	56.6	383.4	356.6	212.6	879.5	1131.8	3866.4	812.9	471.2	
4	36.5	10.8	207.7	53.9	143.6	390.2	202.8	542.1	1178.5	2661.4	850.7	425.9	
5	34.8	9.7	253.3	73.6	95.8	337.0	198.0	558.3	676.9	1926.2	1347.1	418.5	
6	31.5	9.7	122.8	198.0	73.6	599.7	193.2	574.8	2126.0	1298.1	803.6	650.8	
7	28.3	9.7	99.5	114.9	76.6	730.2	174.6	502.2	2605.9	1322.5	712.3	898.8	
8	26.7	9.7	425.9	526.0	64.9	383.4	165.5	518.0	4371.2	1012.4	633.6	550.2	
9	25.2	9.7	122.8	299.0	53.9	311.5	161.0	494.4	2388.2	959.7	566.5	433.3	
10	23.7	9.7	67.7	161.0	59.3	397.0	202.8	550.2	1385.9	841.2	542.1	463.5	
11	22.3	14.3	48.7	99.5	139.3	242.9	583.0	1109.7	1109.7	766.6	625.1	330.5	
12	20.8	18.1	82.7	79.6	227.5	217.5	418.5	510.1	1249.7	650.8	9978.6	337.0	
13	19.4	20.8	48.7	89.0	324.1	232.6	583.0	411.2	831.8	625.1	2370.4	330.5	
14	18.1	19.4	73.6	64.9	455.9	183.8	650.8	369.9	712.3	625.1	6917.4	280.6	
15	16.8	29.9	122.8	59.3	183.8	174.6	403.9	324.1	712.3	550.2	1500.4	193.2	
16	16.8	18.1	222.5	59.3	126.9	152.2	280.6	350.0	812.9	721.2	1633.0	156.6	
17	15.5	23.7	139.3	62.1	274.6	143.6	237.7	317.8	757.4	1044.5	1414.2	198.0	
18	14.3	15.5	156.6	64.9	237.7	139.3	242.9	286.7	748.3	1334.8	1249.7	217.5	
19	14.3	9.7	76.6	89.0	237.7	227.5	202.8	232.6	668.2	1400.1	991.2	232.6	
20	13.0	9.7	62.1	103.3	198.0	292.8	188.5	263.9	822.3	1334.8	869.9	463.5	
21	13.0	9.7	51.3	89.0	403.9	757.4	170.0	258.5	566.5	860.3	785.0	433.3	
22	13.0	20.8	76.6	111.0	253.3	1213.9	212.6	253.3	812.9	841.2	676.9	248.0	
23	15.5	19.4	46.2	280.6	448.3	471.2	179.2	232.6	650.8	1298.1	650.8	550.2	
24	28.3	73.6	36.5	156.6	253.3	418.5	179.2	518.0	502.2	5892.7	599.7	440.8	
25	26.7	59.3	41.2	152.2	183.8	1414.2	418.5	299.0	558.3	2496.2	625.1	253.3	
26	18.1	28.3	33.1	122.8	147.9	625.1	785.0	822.3	1500.4	1974.1	775.8	274.6	
27	16.8	26.7	29.9	107.1	135.1	502.2	448.3	343.5	3507.1	1310.3	650.8	898.8	
28	14.3	46.2	26.7	79.6	258.5	337.0	390.2	676.9	10746.5	1098.8	566.5	376.6	
29	11.9	34.8	67.7	62.1	242.9	286.7	363.2	369.9	5526.5	1055.3		566.5	
30	14.3	26.7	73.6	59.3	193.2	317.8	274.6	486.6	3752.8	1310.3		403.9	
31		31.5		53.9	343.5		286.7		9084.7	1155.1		390.2	
Total	669.0	664.4	3015.3	3594.3	6515.1	12937.4	9505.9	14148.4	62931.4	56945.7	42052.9	13269.9	226249.7 Ton
Mean	22.3	21.4	100.5	115.9	210.2	431.2	306.6	471.6	2030.0	1837.0	1501.9	428.1	
Max	43.7	73.6	425.9	526.0	455.9	1414.2	785.0	1109.7	10746.5	9379.3	9978.6	898.8	10746.5
Min	11.9	9.7	13.0	33.1	53.9	139.3	161.0	232.6	494.4	550.2	542.1	156.6	9.7

WATER YEAR 1998

SOUTHERN PENINSULA EAST COAST

Tapi River at Ban Ton Pho, Nakhon Si Thammarat (X.195)

Location — Lat. 08°-30′-24″ N., Long. 99°-30′-39″ E., on right bank at the bridge, Ban Na Khliang, Amphoe Chawang, Nakhon Si Thammarat.

Drainage Area — sq.k.m.

Method of Sampling	Depth Integrating
Instrument Used	US.D - 49
Period of Available Records	1998 - Cont'd
Actual Measurement	1998 - Cont'd
Using Rating Curve Water Year	1998
Number of observation	23
R - Square	0.7864
Remarks	Continued Sediment Station

RID Computer Center, Processing : 4-JUL-2000 10:16:22.10 LQS/LQS02D/12

Station - Ban Ton Pho, Chawang, Nakhon Si Thammarat, (X.195)
Stream - Tapi
River - Tapi
River System - Peninsular East Coast

Royal Irrigation Department
Thailand
Hydrology Division 230699
1.07200
QS = 5.7861 QW

Water Year - 1998

Suspended Sediment, in Tons per Day, Water Year April 1, 1998 to March 31, 1999

Date	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Annual
1	15.1	25.0	75.6	135.3	170.5	202.6	264.2	755.6	404.0	229.8	104.3	106.7	
2	15.1	26.1	39.5	89.9	161.7	206.0	271.1	622.3	331.6	212.8	99.5	104.3	
3	15.1	22.8	46.6	68.3	152.8	195.9	291.8	508.0	233.3	199.2	94.7	109.1	
4	14.5	16.8	32.8	78.0	173.5	189.1	298.8	441.2	199.2	182.4	121.2	97.1	
5	14.5	15.7	28.3	152.8	179.4	179.4	312.7	391.8	229.8	185.7	195.9	92.3	
6	13.9	14.5	30.5	85.1	182.4	185.7	319.7	371.7	395.9	164.6	129.5	89.9	
7	13.9	13.3	29.4	62.8	192.5	176.4	319.7	655.5	351.6	152.8	109.1	97.1	
8	13.9	13.3	28.3	59.2	185.7	167.6	339.6	672.1	335.6	144.0	97.1	89.9	
9	13.3	12.7	35.0	55.6	202.6	179.4	428.8	878.9	264.2	138.2	89.9	85.1	
10	13.3	12.7	38.4	53.8	185.7	152.8	445.4	683.2	233.3	132.4	82.7	347.6	
11	13.3	12.7	30.5	52.0	173.5	144.0	445.4	513.0	216.2	123.7	78.0	189.1	
12	12.7	12.1	35.0	52.0	167.6	179.4	404.0	449.6	437.1	118.8	298.8	141.1	
13	12.7	13.3	31.6	44.8	152.8	167.6	339.6	408.1	478.7	113.9	1306.1	123.7	
14	12.1	13.3	29.4	39.5	118.8	167.6	312.7	367.7	428.8	129.5	1285.5	104.3	
15	12.1	12.7	28.3	44.8	109.1	164.6	298.8	339.6	316.2	412.3	583.7	92.3	
16	11.5	14.5	27.2	82.7	192.5	167.6	513.0	355.6	264.2	264.2	395.9	85.1	
17	11.5	15.1	26.1	92.3	170.5	176.4	513.0	395.9	226.4	302.3	309.2	78.0	
18	11.5	15.7	25.0	73.8	182.4	179.4	492.9	395.9	212.8	219.6	257.3	89.9	
19	11.5	15.1	26.1	70.1	199.2	189.1	170.5	482.9	192.5	185.7	226.4	87.5	
20	11.5	14.5	26.1	57.4	622.3	182.4	164.6	371.7	288.4	161.7	202.6	85.1	
21	10.9	14.5	31.6	48.4	223.0	176.4	161.7	351.6	219.6	149.9	182.4	82.7	
22	10.9	17.4	37.2	72.0	216.2	206.0	158.7	363.6	206.0	138.2	164.6	75.6	
23	10.9	16.8	48.4	94.7	219.6	199.2	155.8	327.6	179.4	135.3	152.8	219.6	
24	11.5	15.1	37.2	99.5	216.2	206.0	152.8	305.7	206.0	152.8	141.1	147.0	
25	15.1	15.7	33.9	141.1	219.6	209.4	164.6	309.2	185.7	132.4	132.4	144.0	
26	17.4	16.2	32.8	179.4	223.0	216.2	170.5	291.8	302.3	123.7	126.6	170.5	
27	16.8	15.7	80.4	182.4	118.8	223.0	176.4	291.8	250.4	123.7	123.7	212.8	
28	14.5	15.1	78.0	132.4	123.7	226.4	209.4	395.9	316.2	109.1	118.8	158.7	
29	14.5	17.4	85.1	123.7	126.6	219.6	638.8	305.7	316.2	121.2		253.8	
30	14.5	17.4	85.1	161.7	126.6	195.9	705.4	533.1	274.5	123.7		216.2	
31		35.0		167.6	243.5		750.1		260.7	109.1		164.6	
Total	400.0	508.2	1219.4	2853.1	5932.3	5631.1	10390.5	13536.3	8756.8	5192.7	7209.8	4140.7	65770.9 Ton
Mean	13.3	16.4	40.6	92.0	191.4	187.7	335.2	451.2	282.5	167.5	257.5	133.6	
Max	17.4	35.0	85.1	182.4	622.3	226.4	750.1	878.9	478.7	412.3	1306.1	347.6	1306.1
Min	10.9	12.1	25.0	39.5	109.1	144.0	152.8	291.8	179.4	109.1	78.0	75.6	10.9