

**Part B**

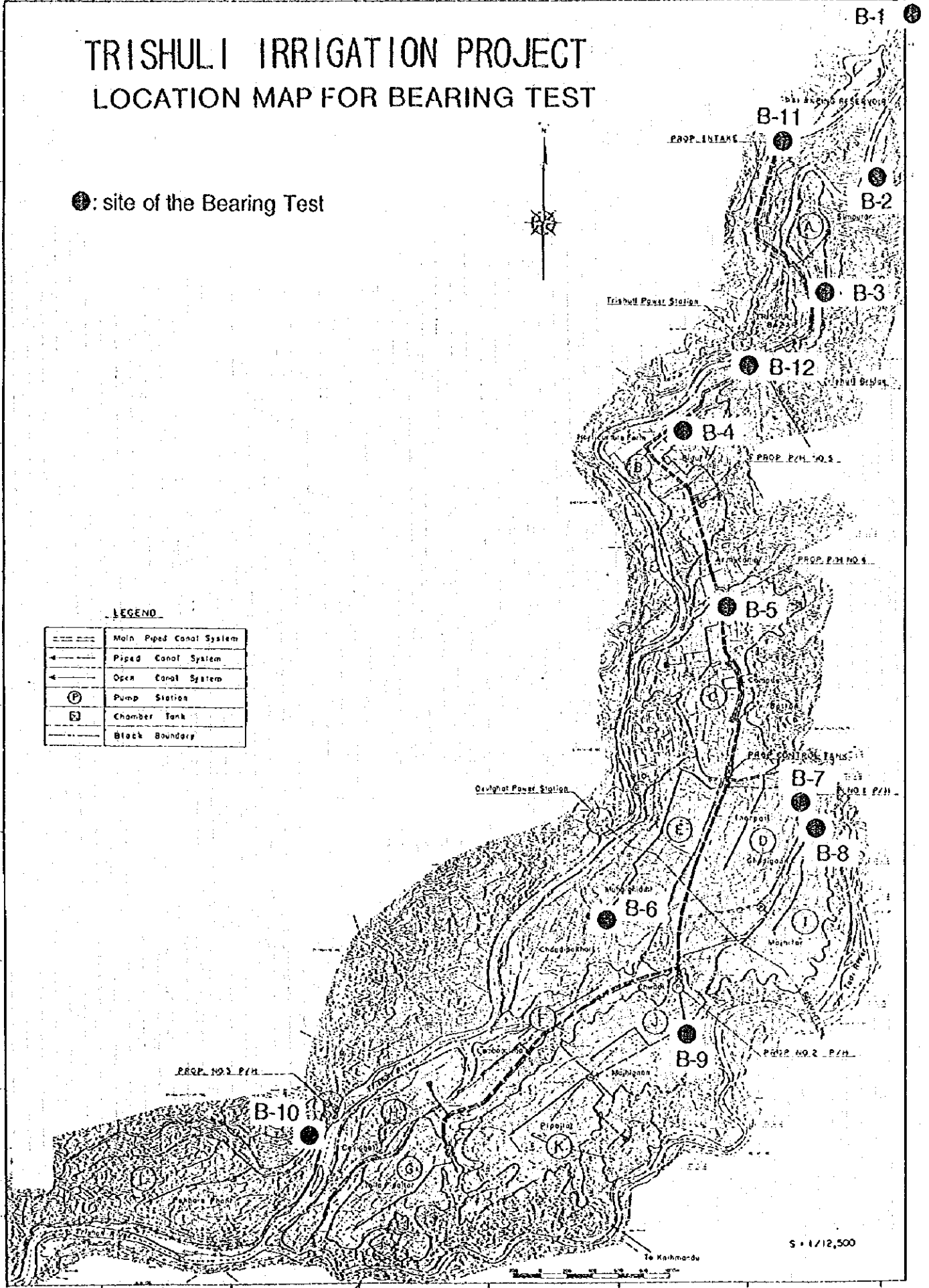
**Appendix 5.5 Irrigation and Drainage**

# TRISHULI IRRIGATION PROJECT LOCATION MAP FOR BEARING TEST

●: site of the Bearing Test

**LEGEND**

	Main Piped Canal System
	Piped Canal System
	Open Canal System
	Pump Station
	Chamber Tank
	Block Boundary

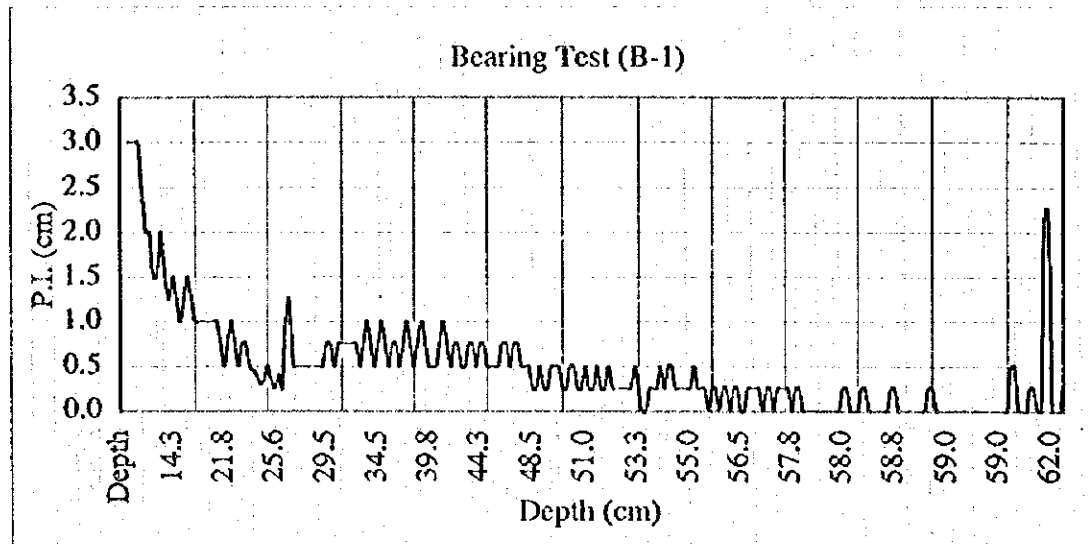


App. 5.5-1 Result of Bearing Test (1/12)

No.	Name of Area	Date
B-1	Original-Intake (Aqueduct No.2)	Jan.21,1997

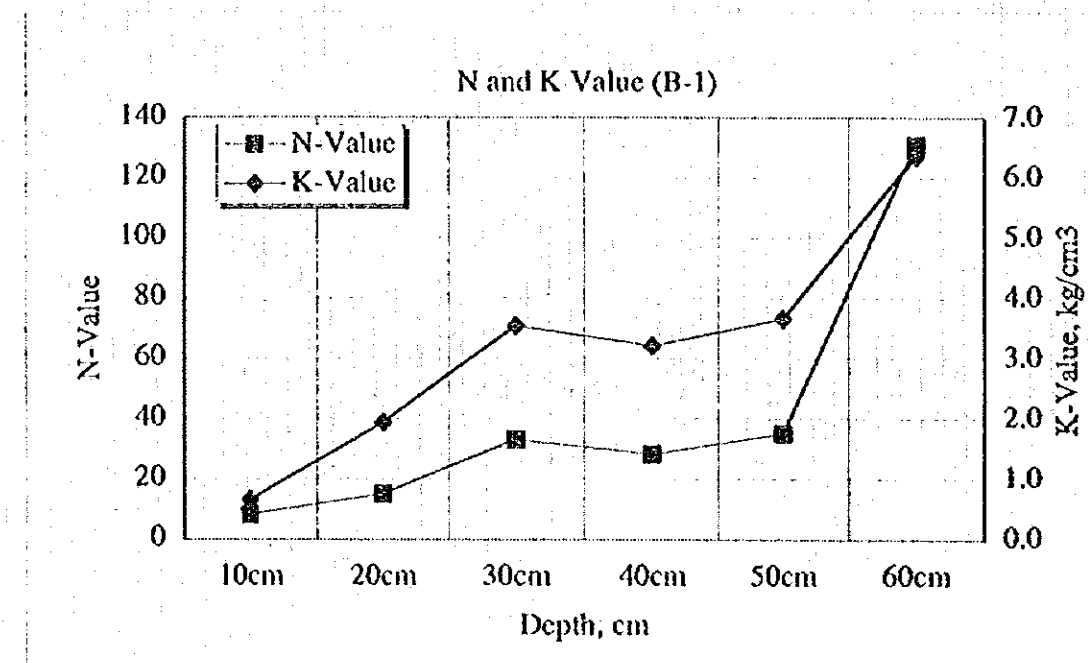
<Condition of Geology/Topography>

- 1) Soil of the area is of sandy to silty in nature, silt and clay is dominant.
- 2) At a depth of 60 cm redish grey soil is observed. This is comparatively compacted.
- 3) At the road side, phyllite out crop is present which is moderately weathered, jointed and has formed steep slope



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	8	15	33	28	35	131			
K-Value	0.645	1.928	3.537	3.202	3.657	6.351			



<Formula>

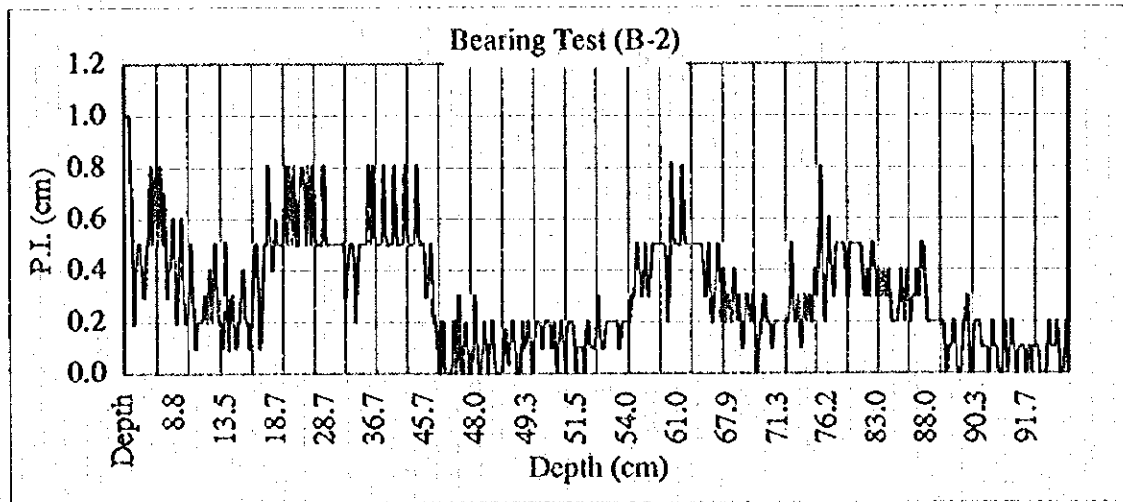
$P.I.(cm) = (n+1) - (n-1)$ 
Elasticity(kg/cm<sup>2</sup>) :  $E = 1 / (0.116 \times P.I. - 0.00174)$   
Bearing Capacity Factor(kg/cm<sup>2</sup>) :  $K = 4.7 \log_{10} N - 3.6$

App. 5.5-1 Result of Bearing Test (2/12)

No.	Name of Area	Date
B-2	Lower Gerkhutar in front of Fish farm, left bank of Trishuli R, (Proposed tunnel site)	Jan.29,1997

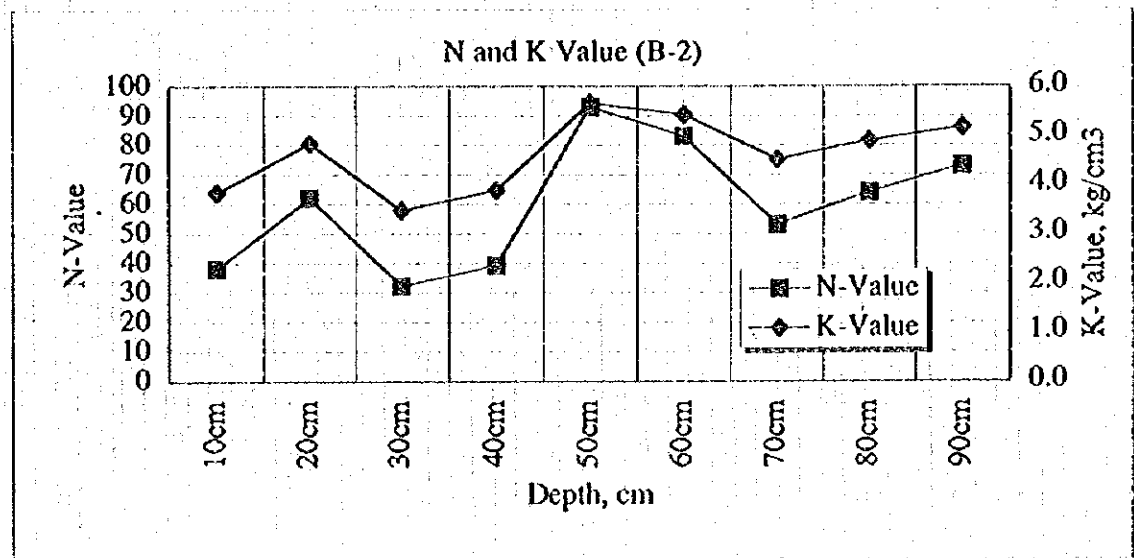
<Condition of Geology/Topography>

- 1) Alluvial deposit with gravel mixed soil (Cobbles, pebbles, boulders).
- 2) Grey in colour
- 3) Medium compacted soil with occasional encounter of coarse gravels.
- 4) Terraced cultivated land with moderate to steep slope.



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	38	62	32	39	93	83	53	64	73
K-Value	3.825	4.824	3.474	3.878	5.652	5.420	4.504	4.889	5.158



Formula>

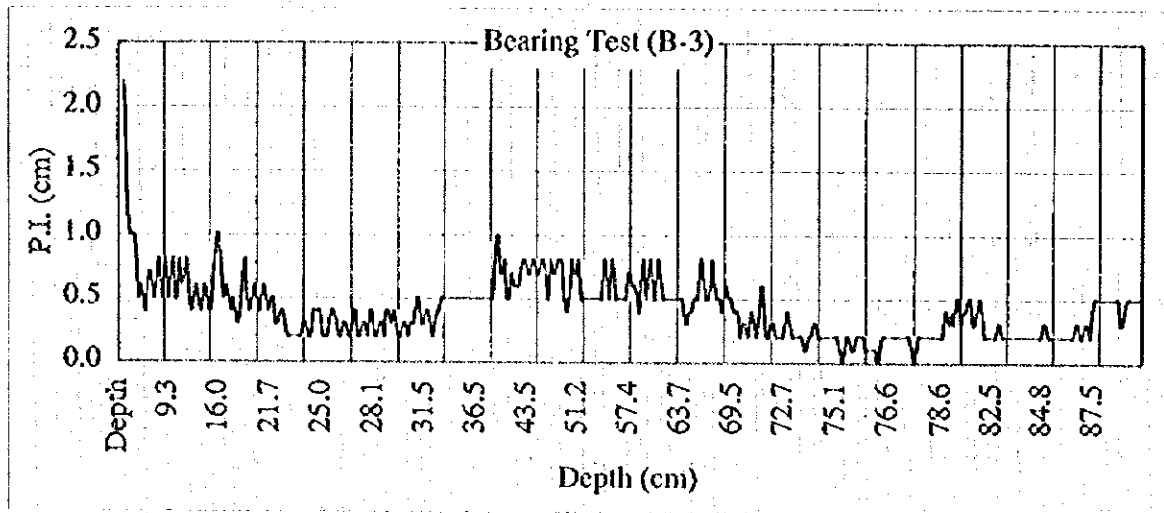
$P.I.(cm) = (n+1) - (n-1)$ 
Elasticity(kg/cm<sup>2</sup>):  $E = 1 / (0.116 \times P.I. - 0.00174)$   
Bearing Capacity Factor(kg/cm<sup>2</sup>):  $K = 4.7 \log_{10} N - 3.6$

App. 5.5-1 Result of Bearing Test (3/12)

No.	Name of Area	Date
B-3	Simutar, on the left bank of Trishuli River in front of School.	Jan.23,1997

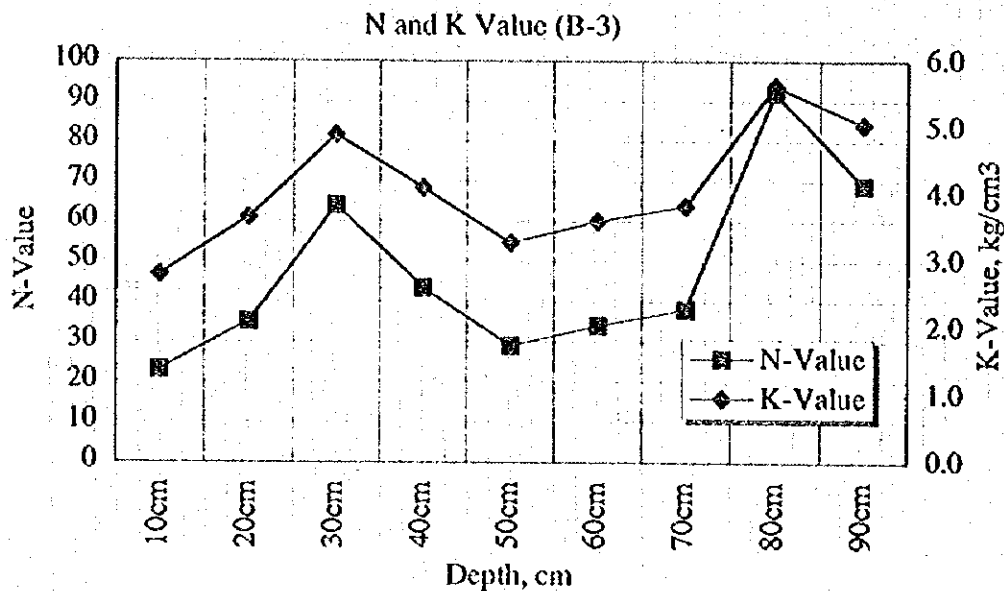
<Condition of Geology/Topography>

- 1)Sandy to silty clay upto 20 cm below ground level, grey in color and loose
- 2)Below 20 cm moderately compacted, grey in color and sandy soil.
- 3) Terraced cultivated land with steep slope nearby.
- 4) Soil profile contains coarse boulders, cobbles, pebbles and sand near the river bank.



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	23	35	64	43	29	34	38	92	69
K-Value	2.800	3.657	4.889	4.096	3.273	3.598	3.825	5.630	5.043



<Formula>

$P.I.(cm) = (n+1) - (n-1)$

Elasticity(kg/cm<sup>2</sup>) :  $E = 1/(0.116 \times P.I. - 0.00174)$

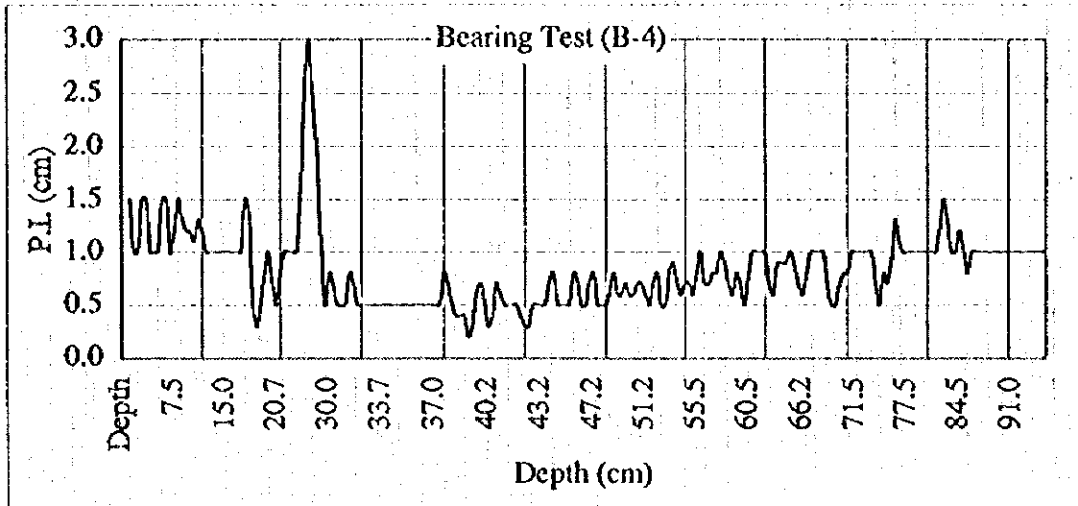
Bearing Capacity Factor(kg/cm<sup>2</sup>) :  $K = 4.7 \log_{10} N - 3.6$

App. 5.5-1 Result of Bearing Test (4/12)

No.	Name of Area	Date
B-4	Bidur Near AIC Building	Jan.24, 1997

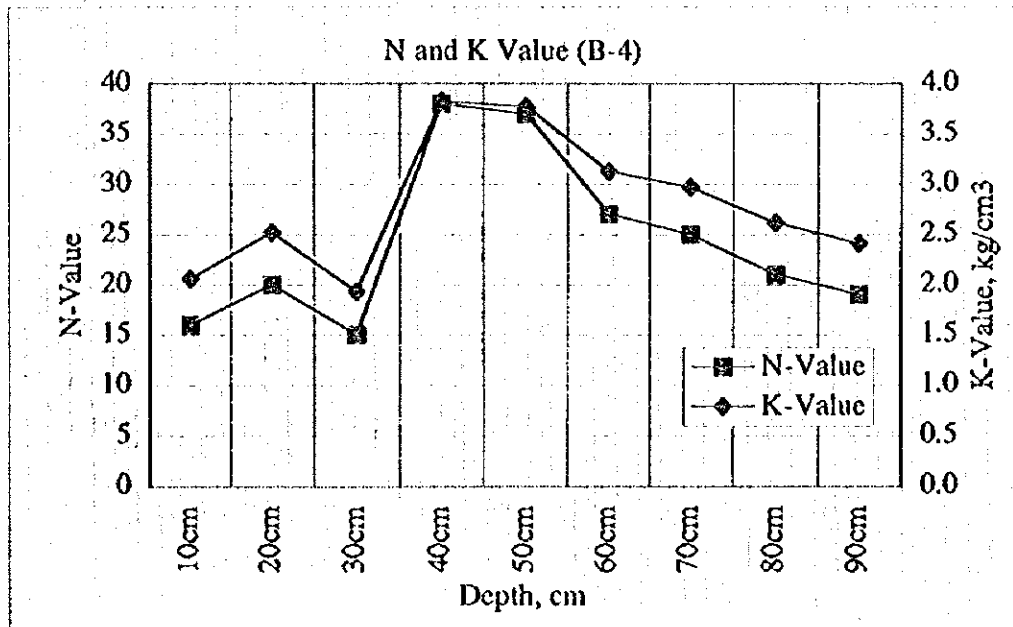
<Condition of Geology/Topography>

- 1) Red soil (Laterite) with clay silt
- 2) Cultivated land
- 3) Loosely compacted soil
- 4) Plain land



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	16	20	15	38	37	27	25	21	19
K-Value	2.059	2.515	1.928	3.825	3.771	3.127	2.970	2.614	2.410



<Formula>

P.I.(cm) = (n+1) - (n-1)      Elasticity(kg/cm<sup>3</sup>) : E = 1/(0.116 x P.I. - 0.00174)

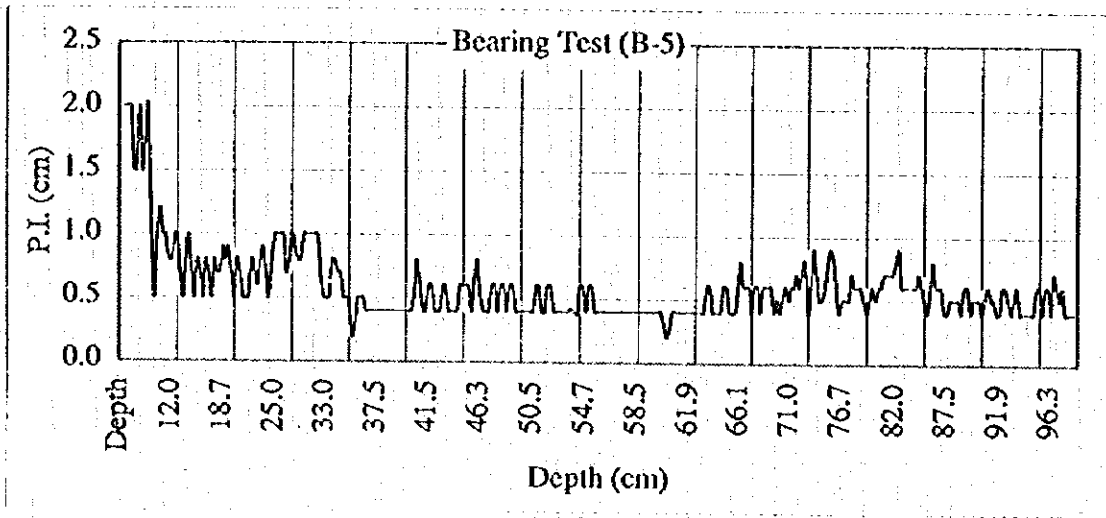
Bearing Capacity Factor(kg/cm<sup>2</sup>) : K = 4.7 log<sub>10</sub> N - 3.6

App. 5.5-1 Result of Bearing Test (5/12)

No. B-5	Name of Area Inside fruit garden, left bank of a tributary, near army camp	Date Jan.23, 1997
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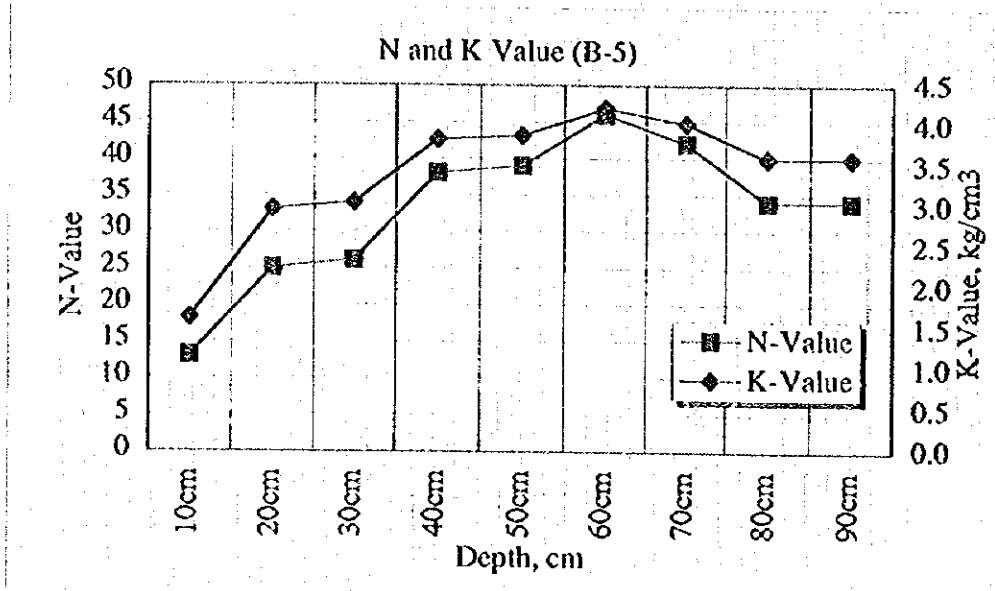
<Condition of Geology/Topography>

- 1) Grey soil with clay silt
- 2) Cultivated loose soil at top
- 3) Moderately compacted
- 4) Plain land



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	13	25	26	38	39	46	42	34	34
K-Value	1.636	2.970	3.050	3.825	3.878	4.215	4.029	3.598	3.598



<Formula>

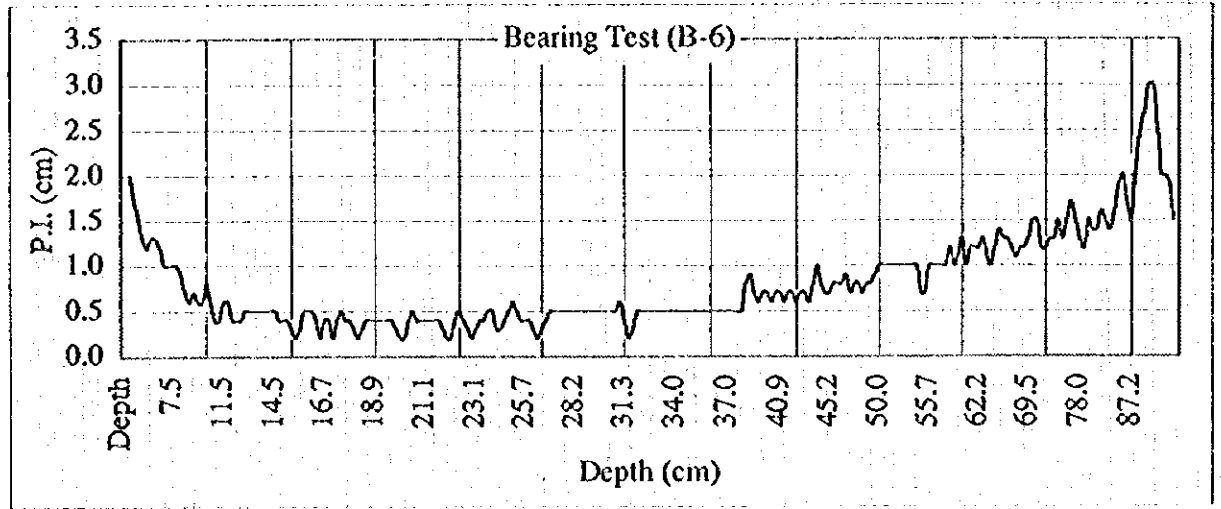
$P.I.(cm) = (n+1) - (n-1)$       Elasticity(kg/cm²) :  $E = 1 / (0.116 \times P.I. - 0.00174)$   
 Bearing Capacity Factor(kg/cm²) :  $K = 4.7 \log_{10} N - 3.6$

App.5.5-1 Result of Bearing Test (6/12)

No.	Name of Area	Date
B-6	Maharanidih	Jan.24, 1997

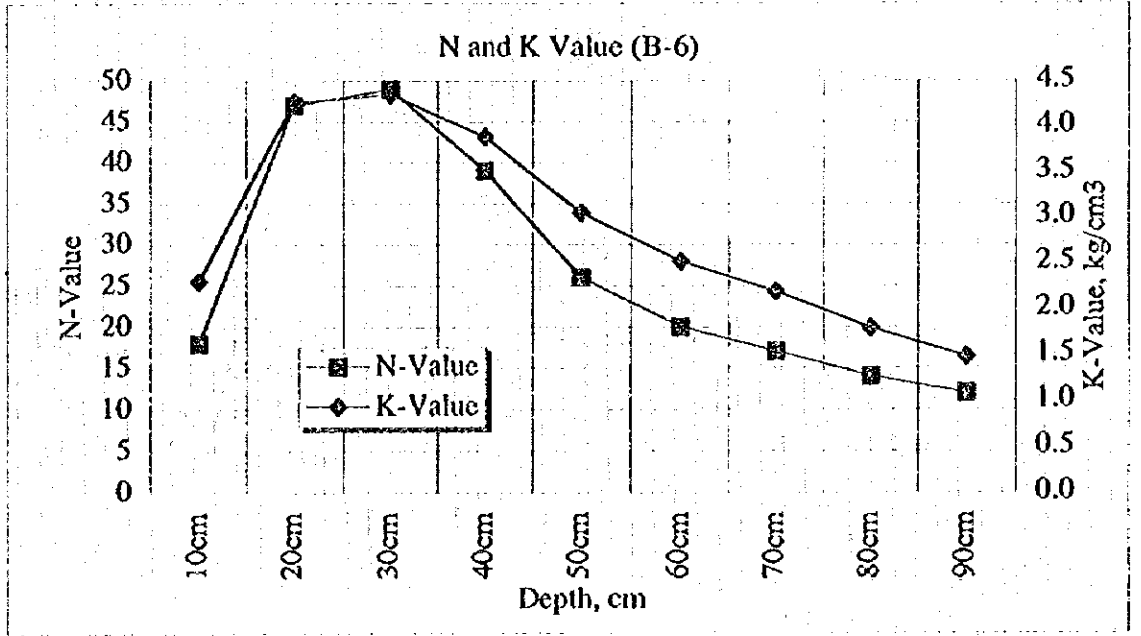
<Condition of Geology/Topography>

- 1) Red soil on the surface, dry area, fine clay silt, no gravel found.
- 2) Moderately compacted
- 3) Plain cultivated field
- 4) Sandy layer suspected at a depth of 90 cm below.



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	18	47	49	39	26	20	17	14	12
K-Value	2.300	4.259	4.344	3.878	3.050	2.515	2.183	1.787	1.472



<Formula>

$P.I.(cm) = (n+1) - (n-1)$ 
Elasticity(kg/cm<sup>2</sup>) :  $E = 1 / (0.116 \times P.I. - 0.00174)$   
Bearing Capacity Factor(kg/cm<sup>2</sup>) :  $K = 4.7 \log_{10} N - 3.6$

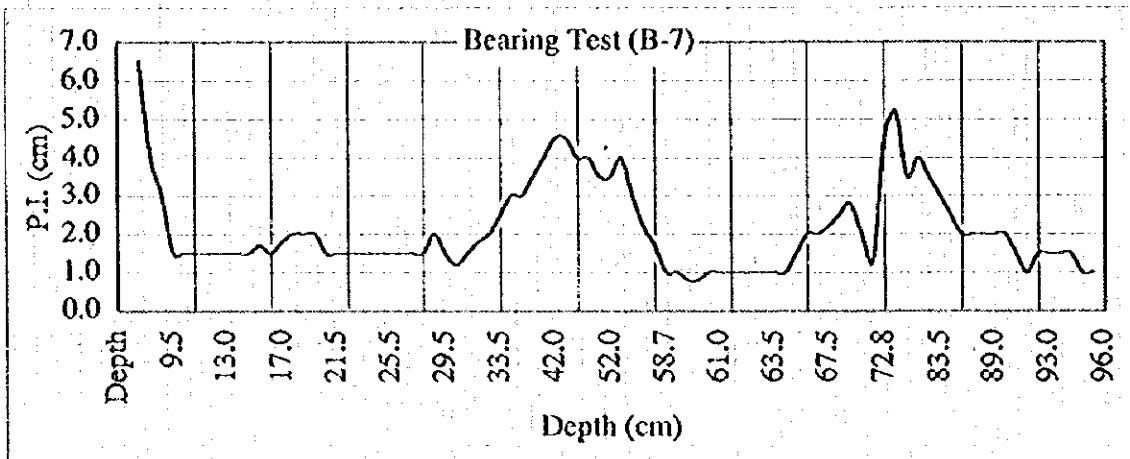


App. 5.5-1 Result of Bearing Testr (7/12)

No. B-7	Name of Area Ghadigaon, Majhitar (Proposed P/H No.1)	Date Jan.24, 1997
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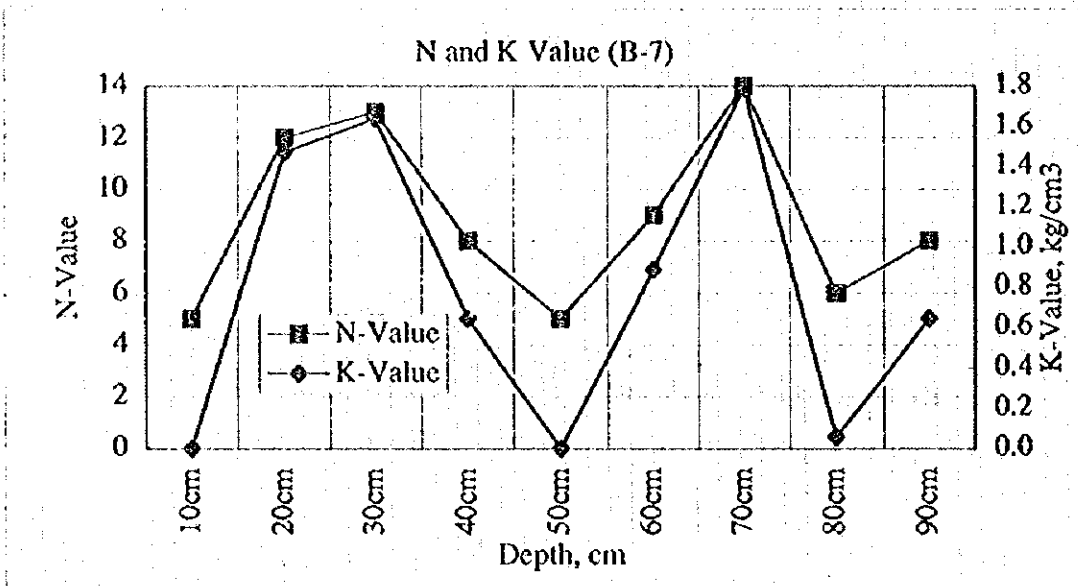
<Condition of Geology/Topography>

- 1) Red soil at moist condition, mustard plant field, top soil 25 cm thick
- 2) Loosely compacted moist soil
- 3) Nearby the site a stream is present.
- 4) sandy soil below the top soil.
- 5) Negative K value shows the inability of instrument to measure the bearing capacity of very loose soil.



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	5	12	13	8	5	9	14	6	8
K-Value	0.000	1.472	1.636	0.645	0.000	0.885	1.787	0.057	0.645



Formula>

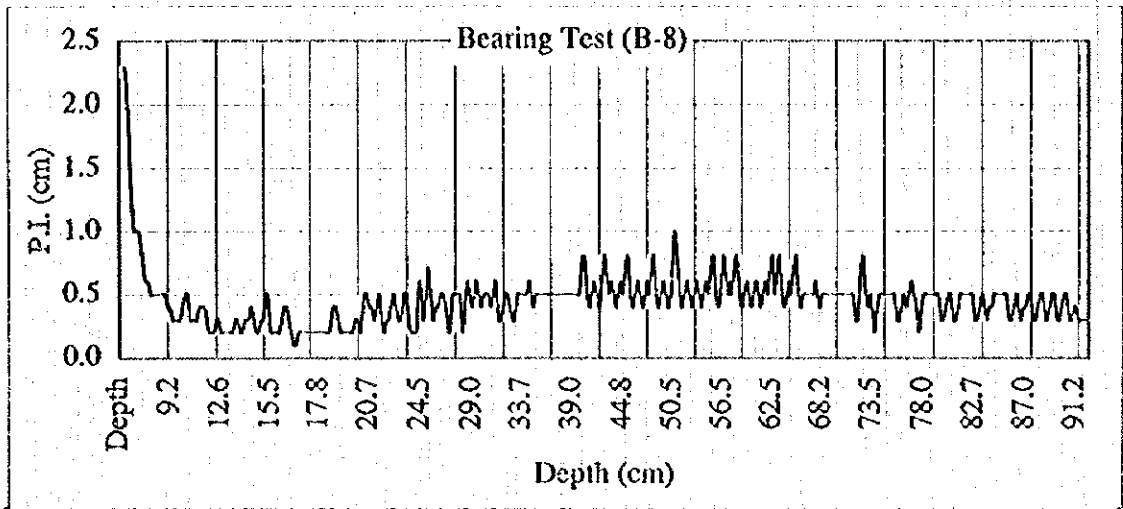
$P.I.(cm) = (n+1) - (n-1)$       Elasticity(kg/cm<sup>3</sup>) :  $E = 1/(0.116 \times P.I. - 0.00174)$   
 Bearing Capacity Factor(kg/cm<sup>3</sup>) :  $K = 4.7 \log_{10} N - 3.6$

App. 5.5-1 Result of Bearing Test (8/12)

No.	Name of Area.	Date
B-8	Majhitar (At proposed chamber tank) Right bank of Tadi River	Jan.24, 1997

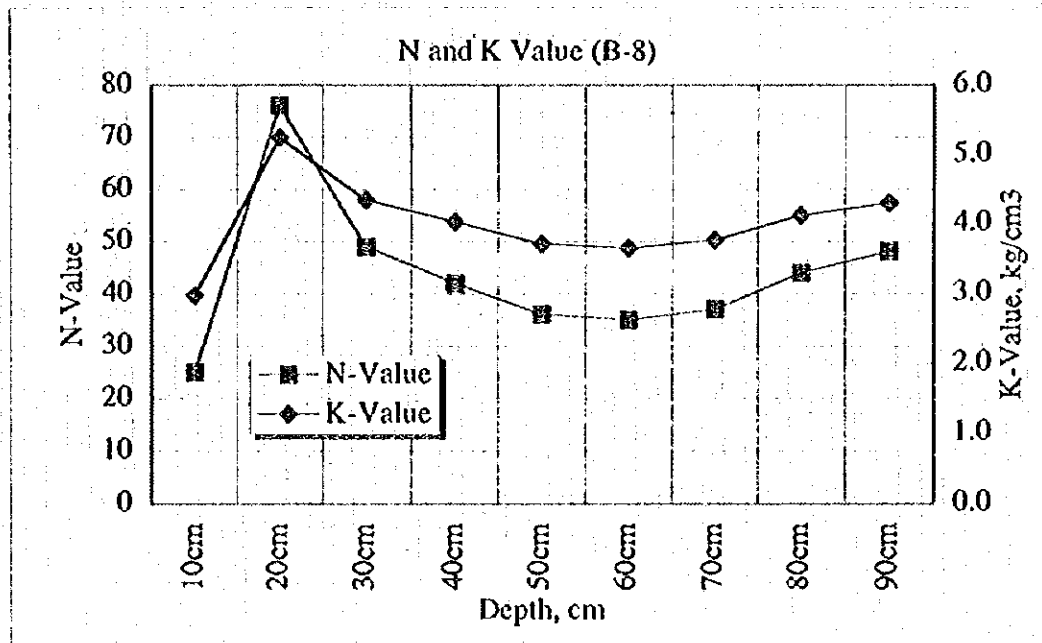
<Condition of Geology/Topography>

- 1) Red claye silt top soil, and sandy soil below apparent thickness 3 m from the local slide:
- 2) Cultivated land
- 3) Loosely compacted soil
- 4) Plain land



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	25	76	49	42	36	35	37	44	48
K-Value	2.970	5.240	4.344	4.029	3.715	3.657	3.771	4.124	4.302



Formula>

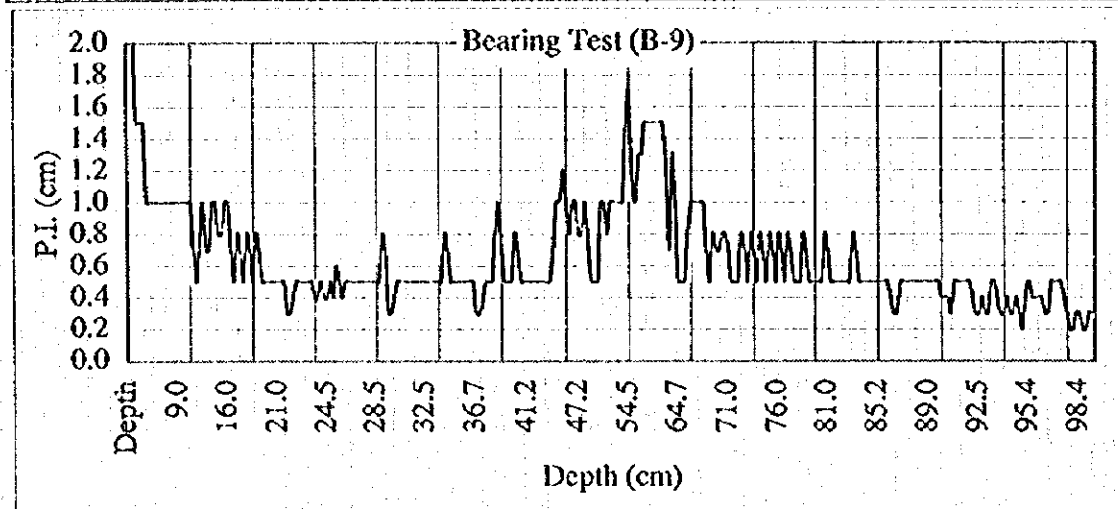
$P.I.(cm) = (n+1) - (n-1)$       Elasticity(kg/cm<sup>2</sup>) :  $E = 1 / (0.116 \times P.I. - 0.00174)$   
 Bearing Capacity Factor(kg/cm<sup>2</sup>) :  $K = 4.7 \log_{10} N - 3.6$

App. 5.5-1 Result of Bearing Test (9/12)

No.	Name of Area	Date
B-9	Pipaltar, Right bank of Tadi River	Jan.24, 1997

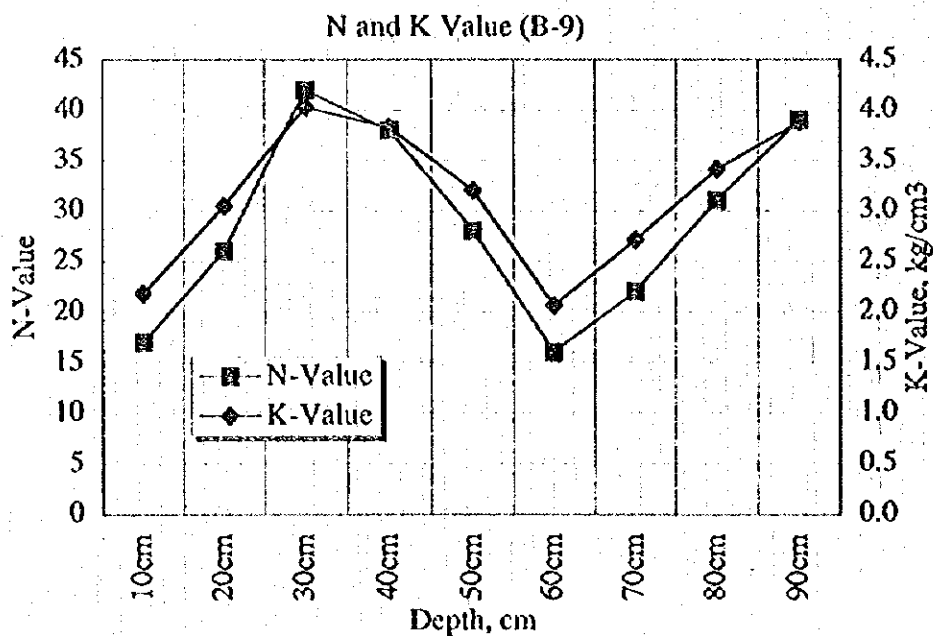
<Condition of Geology/Topography>

- 1) Red soil (Laterite) with clay silt
- 2) Cultivated land
- 3) Loosely compacted soil
- 4) Plain land
- 5) Many slides and gully erosions at the right bank of Tadi River.



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	17	26	42	38	28	16	22	31	39
K-Value	2.183	3.050	4.029	3.825	3.202	2.059	2.709	3.409	3.878



<Formula>

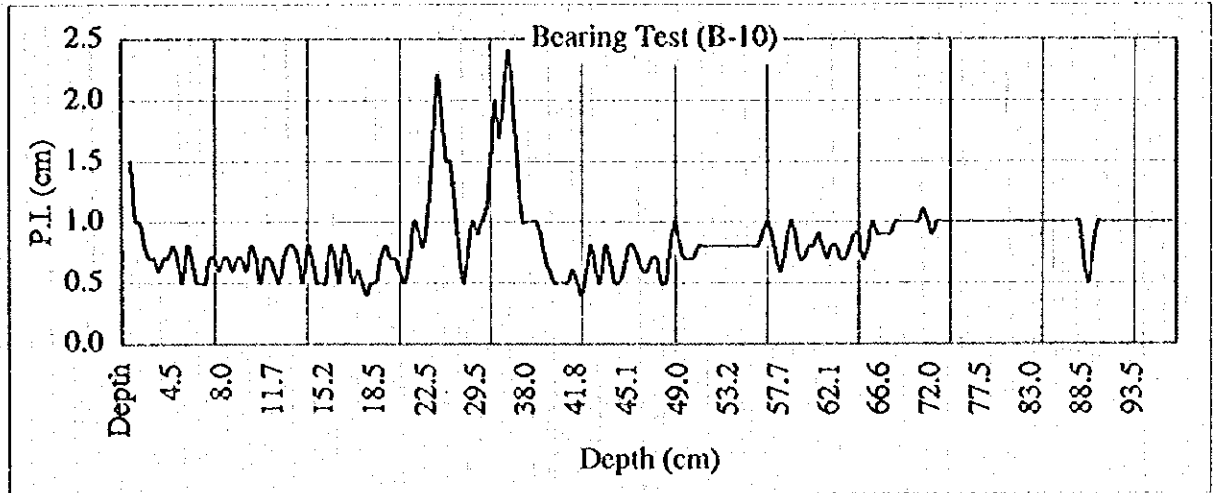
$P.I.(cm) = (n+1) - (n-1)$       Elasticity(kg/cm<sup>3</sup>):  $E = 1 / (0.116 \times P.I. - 0.00174)$   
 Bearing Capacity Factor(kg/cm<sup>3</sup>):  $K = 4.7 \log_{10} N - 3.6$

App. 5.5-1 Result of Bearing Test (10/12)

No. B-10	Name of Area Pokhare Phant, Khadga Bhanjyang V.D.C. (Proposed Chamber Tank Site)	Date Jan.25, 1997
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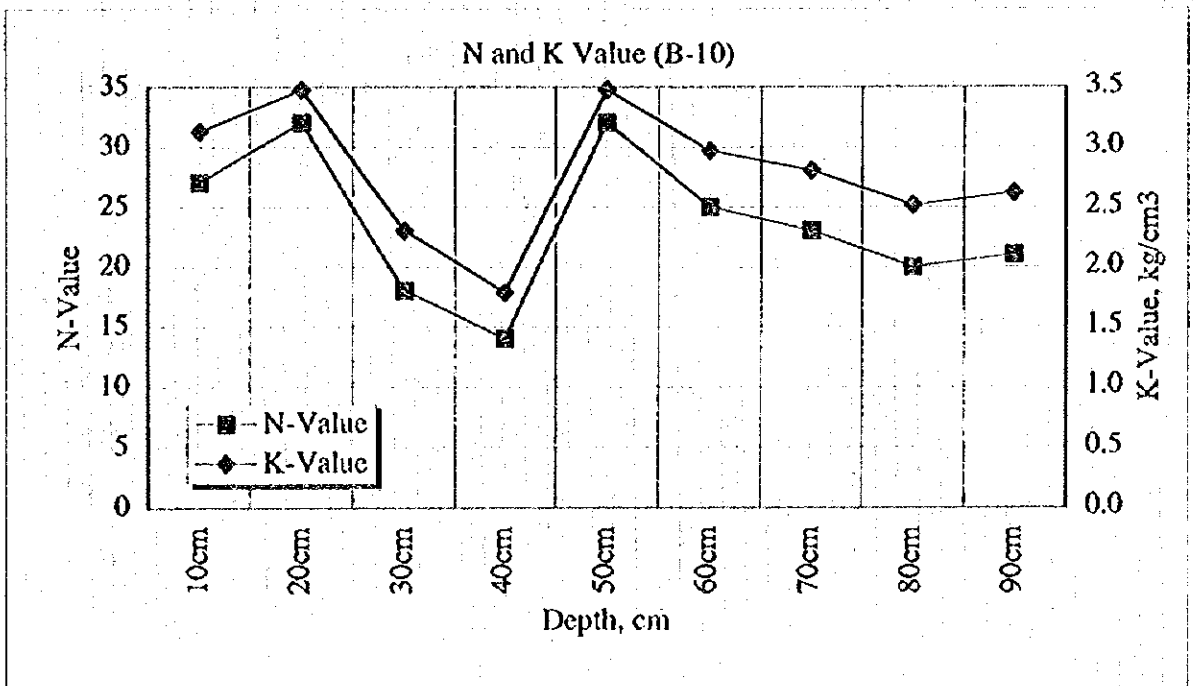
<Condition of Geology/Topography>

- 1) Red soil (Laterite) with clay silt
- 2) Cultivated Plain land at the site, but steep slope towards river.
- 3) Slate, Phyllite outcrop is present along the bank of Trishuli river below.
- 4) Proposed chamber tank about 100m above the river.



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	27	32	18	14	32	25	23	20	21
K-Value	3.127	3.474	2.300	1.787	3.474	2.970	2.800	2.515	2.614



<Formula>

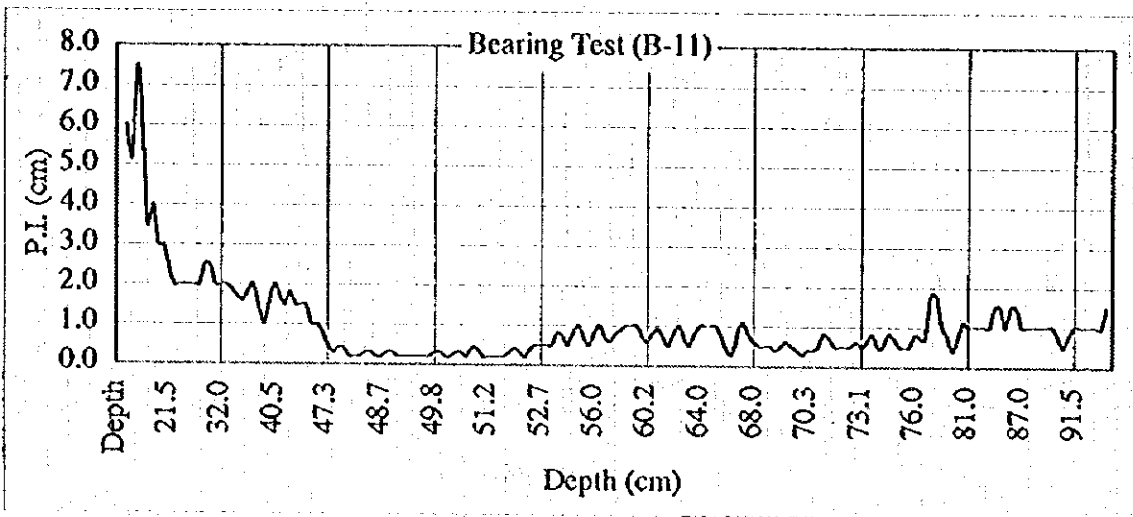
$P.I.(cm) = (n+1) - (n-1)$ 
Elasticity(kg/cm³) :  $E = 1 / (0.116 \times P.I. - 0.00174)$   
Bearing Capacity Factor(kg/cm³) :  $K = 4.7 \log_{10} N - 3.6$

App. 5.5-1 Result of Bearing Test (11/12)

No. B-11	Name of Area NEA Balancing Reservoir Trishuli Hydropower (Proposed Inlake)	Date Jan.23, 1997
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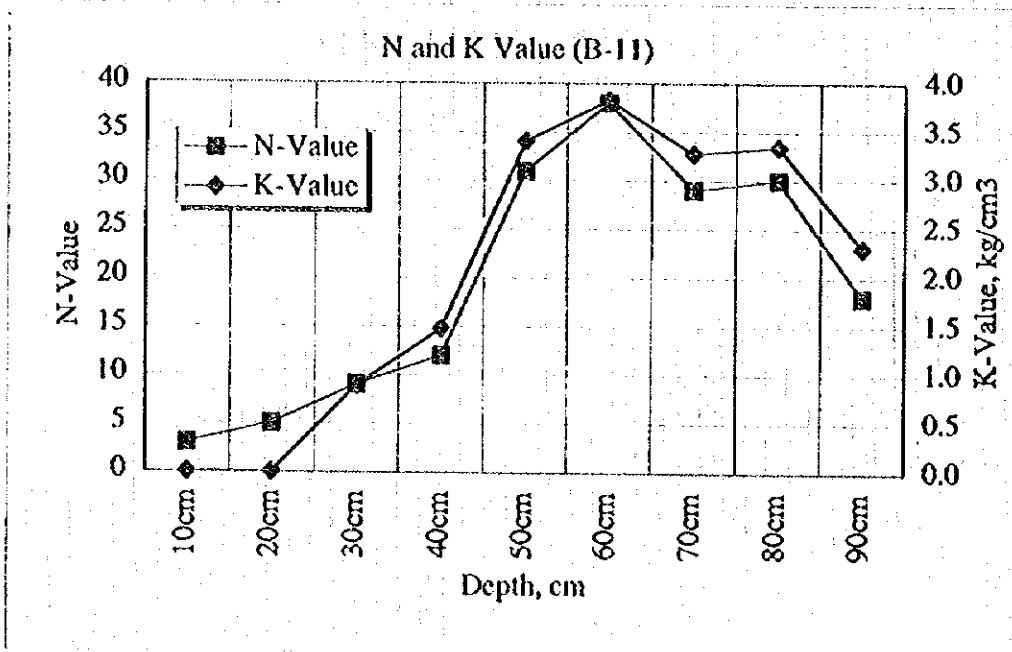
<Condition of Geology/Topography>

- 1) Marshy land bank of reservoir.
- 2) Fine silt and clay deposit due to reservoir.



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	3	5	9	12	31	38	29	30	18
K-Value	0.000	0.000	0.885	1.472	3.409	3.825	3.273	3.342	2.300



Formula>

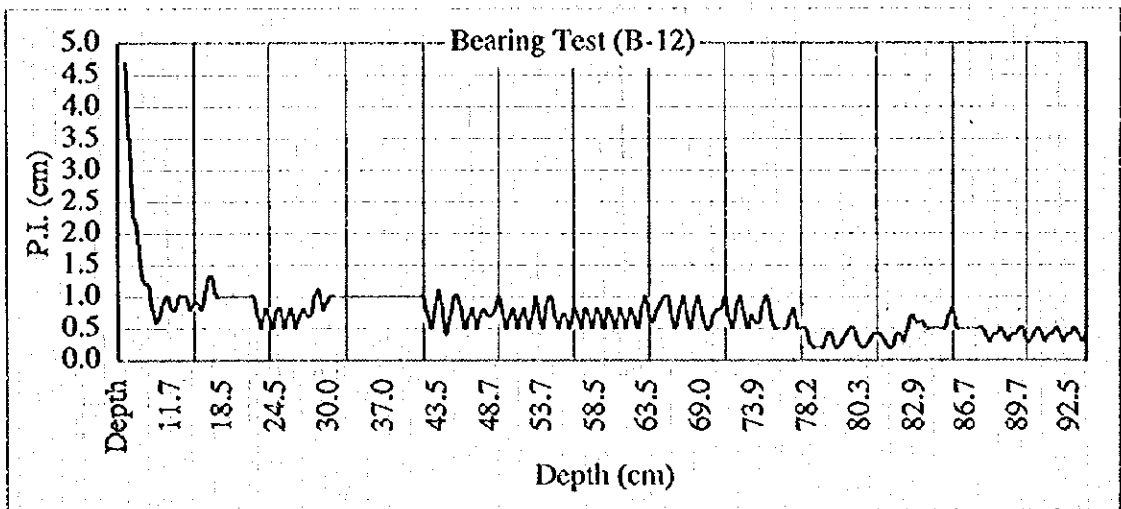
$P.L.(cm) = (n+1) - (n-1)$ 
Elasticity(kg/cm<sup>3</sup>):  $E = 1/(0.116 \times P.L. - 0.00174)$   
Bearing Capacity Factor(kg/cm<sup>3</sup>):  $K = 4.7 \log_{10} N - 3.6$

App.5.5-1 Result of Bearing Test (12/12)

No.	Name of Area	Date
B-12	Dhunge, Left bank of Trishuli R. At proposed pier position.(D/S of Trishuli Bridge)	Jan.23, 1997

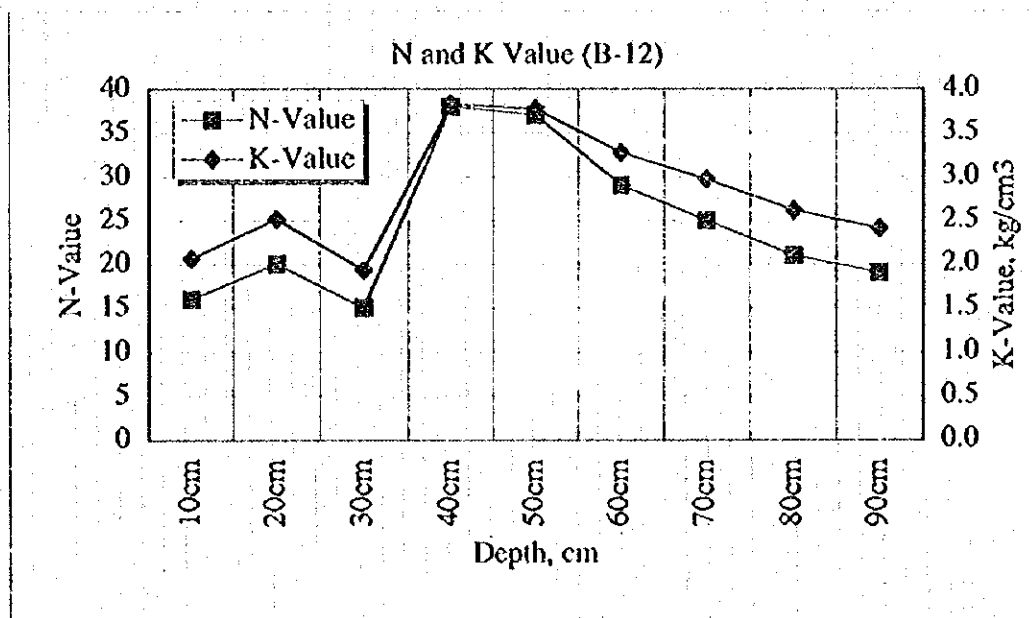
<Condition of Geology/Topography>

- 1) Location of proposed pier foundation.
- 2) Cultivated land
- 3) Clayey silt, grey in colour, loosely compacted.
- 4) Plain land



<N/K-Value>

	10cm	20cm	30cm	40cm	50cm	60cm	70cm	80cm	90cm
N-Value	16	20	15	38	37	29	25	21	19
K-Value	2.059	2.515	1.928	3.825	3.771	3.273	2.970	2.614	2.410



Formula>

$P.I.(cm) = (n+1) - (n-1)$       Elasticity(kg/cm<sup>2</sup>) :  $E = 1 / (0.116 \times P.I. - 0.00174)$   
 Bearing Capacity Factor(kg/cm<sup>2</sup>) :  $K = 4.7 \log_{10} N - 3.6$

## App. 5.5-2

**Comparative Study for  
Selection of the Pipe Materials (D=1000mm) on Main Canal**

Pipe Materials	Certifugal Reinforced Concrete Pipe (RCC)	Ductile Cast Iron Pipe (DCIP)	Steel Pipe (SP)	Fiberglass Reinforced Plastic Mortar Pipe (FRPM)
Intensity / Endurance	Weak with giving a impact. Not suitable with high water pressure.	No problem, except with acid soil.	No problem.	Slightly weak with giving a impact .
Assess	C	B	A	B
Constructing	Weight : 760 kg/m Due to heavy weight, there is difficulty to transport and construct.	Weight : 400 kg/m Due to heavy weight, there is difficulty to transport and construct.	Weight : 220 kg/m No problem.	Weight : 140 kg/m No problem.
Assess	C	C	A	B
Economical (Market price in Tokyo)	30,200 yen/m	64,000 yen/m	49,000 yen/m	44,500 yen/m
Assess	A	C	B	B
Procuring	Possible to procure in Nepal	To procure from foreign countries	To procure from foreign countries	To procure from few developed foreign countries
Assess	A	B	B	C
Synthetic Assessment	C	C	A	B

A: Suitable, B: Possible, C: not suitable

DIAM - HYDROLOGY SECTION

174/1033

Station no.: 447  
 River: Trisuli  
 Location: Saptarathi  
 Instruments: Staff Gauge  
 Recorder  
 Data by  
 Sed. Sawler

Latitude (deg min sec): 27 55 23  
 Longitude (deg min sec): 85 11 00  
 Elevation (meters): 500  
 Drainage area (sq. km.): 4100  
 Start of record: 01/01/67  
 End of record:

SEDIMENT TRANSPORT (in tons per day)  
 YEAR 1977

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	...	39.6	...	99.2	139	2720	27400	117000	14900	...	358	357
2	79.9	...	113	163	199	2920	24400	38700	10700	5590	407	257
3	...	107	...	159	166	1750	37000	22900	10500	3390	465	224
4	520	...	99.0	135	219	1620	28400	46400	41500	2170	475	148
5	...	179	...	211	336	339	50600	84000	12700	2010	536	250
6	105	...	51.6	246	336	391	17400	49000	12000	2670	405	305
7	...	32.9	...	1520	236	753	35200	56600	16500	1160	438	170
8	103	...	192	144	155	2740	71700	52700	7720	1010	517	155
9	...	99.5	...	267	157	1430	64200	24300	8430	3270	334	144
10	402	...	198	275	314	2440	107000	13100	14300	1370	199	226
11	...	97.2	...	308	316	1700	39300	13900	26100	1020	373	185
12	53.1	58.3	226	1150	408	1320	49100	11600	30200	326	509	255
13	...	...	...	294	155	1230	27200	23600	9030	1000	268	244
14	41.6	58.3	94.7	233	536	1130	62300	149000	15700	955	354	193
15	...	...	103	276	648	11800	21500	28100	6970	710	276	169
16	149	77.9	69.9	214	991	4170	30900	34400	5620	804	310	211
17	...	...	198	124	444	1570	33600	19900	4040	551	205	166
18	84.6	129	387	164	322	1600	37100	13100	3760	507	190	200
19	...	...	84.7	152	452	4290	68700	11000	3600	840	251	177
20	106	192	98.3	231	814	9230	63100	12500	3480	483	280	512
21	...	...	123	174	1050	13200	39200	9050	4540	834	129	192
22	67.3	138	60.4	159	1370	13000	34100	19100	...	508	300	157
23	...	...	102	226	435	20700	92700	52400	4770	797	...	157
24	43.3	218	108	258	383	13100	53600	26900	3140	616	239	143
25	...	...	73.7	174	389	11400	43000	62900	6180	561	346	143
26	52.3	164	144	156	347	10600	23400	80400	2670	...	193	150
27	...	...	138	275	987	19600	92900	31300	3600	432	266	504
28	73.9	149	106	752	4560	20000	161000	21500	2730	374	241	311
29	...	...	58.3	1720	3020	10400	57400	34700	2200	384	268	93.3
30	66.1	...	173	414	4250	23700	121000	19400	2080	1580	174	152
31	...	...	1100	...	5350	...	92000	16000	...	425	...	94.7
Mean	103	119	171	366	966	7049	54000	41100	10000	1300	326	211
Max.	402	218	1100	1720	5360	23700	161000	149000	41600	5590	536	512
Min.	38.1	39.6	51.6	99.2	155	391	21500	9060	2080	374	129	93.3
No. of obs.	15	15	24	30	31	30	31	31	29	29	29	31
Tons/sq km	0.77	0.81	1.29	2.67	7.27	51.4	107	310	73.0	9.73	2.38	1.59
OR	0.00	0.00	0.00	0.00	0.00	0.03	0.23	0.17	0.04	0.01	0.00	0.00

	MEAN		MAXIMUM		MINIMUM	
	SED. TR. (t/d)	DISCH. (cumec)	SED. TR. (t/d)	DISCH. (cumec)	SED. TR. (t/d)	DISCH. (cumec)
Mean daily 1977	9780	161000	730	28 July 77	38.1	49.0
Observed 1977						12 Jan. 77

DIAM - HYDROLOGY SECTION

174/1033

Station no.: 447  
 River: Trisuli  
 Location: Saptarathi  
 Instruments: Staff Gauge

Latitude (deg min sec): 27 58 08  
 Longitude (deg min sec): 85 11 00  
 Elevation (meters): 500  
 Drainage area (sq. km.): 4100



## 447. Trisuli at Betrawati

INSTRUMENTS: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

LATITUDE (deg min sec): 27 58 08  
LONGITUDE (deg min sec): 85 11 00  
ELEVATION (meters): 600  
DRAINAGE AREA (sq. km.): 4110

SUMMARY OF MONTHLY AND YEARLY SEDIMENT TRANSPORT (TONS/DAY)  
CALENDAR YEAR 1978

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Mean	144	119	149	360	7080	20300	18100	20500	7370	26200	512	288	3500
Max. daily	297	228	627	970	14000	63000	54500	122000	28300	326000	1000	537	326000
Min. daily	51.4	39.6	54.4	85.5	539	4040	3620	3020	1490	1020	200	132	39.6
No. of obs.	30	28	31	29	31	21	31	31	30	17	22	21	322

## EXTREMES AND AVERAGE SEDIMENT TRANSPORT

	Sediment Transport (tons/day)	Discharge (cumec)	Date
For 1978:	Observed maximum instantaneous		

## 447. Trisuli at Betrawati

INSTRUMENTS: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

LATITUDE (deg min sec): 27 58 08  
LONGITUDE (deg min sec): 85 11 00  
ELEVATION (meters): 600  
DRAINAGE AREA (sq. km.): 4110

SUMMARY OF MONTHLY AND YEARLY SEDIMENT TRANSPORT (TONS/DAY)  
CALENDAR YEAR 1979

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year
Mean	125	150	765	772	1680	13500	61500	26700	7170	2060	492	251	9710
Max. daily	394	234	13700	3980	5010	37500	456000	127000	41200	36800	8270	486	486000
Min. daily	54.1	83.9	45.2	53.6	167	263	1170	4320	783	332	53.6	118	45.2
No. of obs.	20	29	30	29	28	30	31	31	29	31	30	31	340

Station No : 447  
 River : Trisuli  
 Station Name : Betrawati

MINIMUM MONTHLY AND YEARLY DISCHARGES (m<sup>3</sup>/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1985	32.0	31.3	37.1	38.0	42.5	72.8	373	343	221	118	76.7	60.2	31.3
1986	52.0	50.9	50.9	52.00	63.8	81.0	432	436	247	125	79.5	59.0	50.9
1987	49.9	47.8	44.6	49.0	53.0	112	216	-	-	90.8	67.0	54.0	-
1988	48.0	45.6	47.2	55.0	61.0	94.8	256	400	158	87.2	83.0	54.0	45.6
1989	50.0	44.8	44.0	51.0	58.0	102	235	232	220	80.0	54.0	-	-
1990	-	35.1	33.7	33.7	50.0	158	472	488	273	102	60.0	42.4	-
1991	35.8	31.0	30.5	31.5	47.2	84.8	291	564	-	-	-	38.6	-
1992	31.5	26.5	26.5	27.0	35.1	54.0	146	456	210	86.0	49.0	36.5	26.5
1993	31.0	28.0	24.5	26.0	59.0	110	262	468	288	92.0	45.6	35.1	24.5

Station No : 447  
 River : Trisuli  
 Station Name : Betrawati

MAXIMUM MONTHLY AND YEARLY DISCHARGES (m<sup>3</sup>/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1985	40.7	40.7	40.7	72.8	85.5	423	667	596	656	525	116	75.4	667
1986	60.2	57.8	57.8	82.5	93.0	832	922	856	970	247	123	81.0	970
1987	61.4	53.0	60.2	90.0	99.0	270	580	-	-	180	89.6	67.0	-
1988	55.0	53.0	54.0	62.0	190	324	655	758	548	148	86.0	69.2	758
1989	82.4	53.0	55.0	63.0	324	512	512	592	440	214	78.8	-	-
1990	-	41.6	45.6	67.0	152	552	1330	1200	737	266	99.0	59.0	-
1991	44.0	35.1	40.8	55.0	158	352	744	1050	-	-	-	51.0	-
1992	37.9	34.4	31.5	43.2	61.0	285	600	1360	630	229	86.0	50.0	1360
1993	37.2	32.5	29.5	72.8	116	320	832	1850	645	276	90.8	51.0	1850

Station No : 447  
 River : Trisuli  
 Station Name : Betrawati

MEAN MONTHLY AND YEARLY DISCHARGES (m<sup>3</sup>/s)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1985	35.6	33.8	49.9	46.3	54.6	156	486	432	369	200	91.7	69.1	169
1986	55.1	54.5	53.9	64.6	77.1	319	694	595	454	169	96.4	67.9	226
1987	54.2	50.1	48.8	56.7	69.9	177	396	-	-	116	78.7	61.8	-
1988	52.2	48.5	49.3	59.7	86.3	178	488	566	260	109	71.8	58.8	170
1989	53.8	47.5	48.4	57.2	105	188	356	441	282	120	65.1	-	-
1990	-	37.1	36.1	47.9	91.2	315	815	650	452	167	77.1	49.1	-
1991	38.5	32.5	32.5	38.0	86.4	210	448	802	-	-	-	45.1	-
1992	35.4	29.1	28.6	34.6	43.1	122	325	709	410	140	66.5	41.8	166
1993	33.2	30.5	27.2	38.2	84.5	192	446	728	422	166	67.7	42.1	191

"Hydrological review of project  
 stream flow summary  
 1993" { Road, 2012  
 June, 1995

Station No : 447  
 River : Trisuli  
 Station Name : Betrawati

EXTREME DISCHARGES (m3/s)

MAXIMUM INSTANTANEOUS

Date	Discharge
Aug. 04, 1985	2000
Jul. 22, 1986	1030
Aug. 11, 1987	1060
Aug. 01, 1988	856
Jun. 08, 1989	600
Jul. 18, 1990	1520
Aug. 20, 1991	1520
Aug. 10, 1992	2020

MINIMUM INSTANTANEOUS

Date	Discharge
Feb. 15, 1985	30.5
Mar. 04, 1986	49.9
Mar. 10, 1987	43.6
Feb. 25, 1988	45.6
Mar. 14, 1989	43.2
Mar. 13, 1990	32.5
Feb. 27, 1992	26.5
Mar. 20, 1992	24.0

Station name: Batrawali  
 River: Trisuli  
 Station no.: 447

Date: 10 Dec. 1996

7821

MEAN MONTHLY AND YEARLY DISCHARGES [in cumec]

Year:	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1977	48.1	46.5	49.8	54.9	77.8	192	591	609	360	164	94.0	61.7	197
1978	45.6	44.1	45.4	57.4	151	335	520	625	332	215	108	70.1	214
1979	51.3	43.5	43.9	52.4	91.9	185	468	504	289	137	83.0	55.6	167
1980	43.5	40.2	40.8	59.4	80.6	276	663	678	390	162	91.2	59.9	216
1981	42.8	36.4	37.2	59.0	85.0	290	714	619	369	149	87.1	56.0	212
1982	43.2	39.8	56.0	74.6	81.4	212	407	596	393	120	77.5	54.1	181
1983	49.1	34.8	36.3	38.5	69.9	161	377	506	438	200	54.9	60.4	172
1984	46.6	33.4	34.2	34.5	107	298	619	517	417	117	69.5	48.9	196
1985	35.6	33.8	41.9	46.3	54.6	156	496	432	369	200	91.7	69.1	169
1986	55.1	54.5	53.9	64.6	77.1	319	694	555	454	169	96.4	67.9	226
1988	52.2	48.5	43.3	59.7	86.3	178	469	566	260	109	71.8	58.8	170
1989	53.8	47.5	43.4	57.2	105	186	356	441	262	120	65.1	49.7	152
1990	41.5	37.1	35.9	47.9	91.2	315	815	628	452	167	77.1	49.1	231
1992	34.5	29.1	28.6	34.6	43.1	172	325	709	410	140	66.5	41.8	166
1993	33.2	30.5	27.2	38.2	64.5	192	446	728	422	156	67.7	42.1	191
Average:	44.5	40.0	41.9	51.3	85.7	228	531	584	375	155	82.8	56.2	191

MAXIMUM MONTHLY AND YEARLY DISCHARGES [in cumec]

Year:	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1977	52.2	51.4	58.0	77.6	155	432	772	820	505	262	125	73.8	820
1978	52.2	49.0	55.0	86.7	249	620	652	918	424	540	141	85.4	918
1979	59.0	52.2	45.8	82.8	123	104	1040	790	468	194	77.4	74.6	1040
1980	49.9	44.5	43.4	105	110	667	1049	1080	575	265	110	70.4	1080
1981	50.0	39.0	40.1	73.2	127	678	862	784	760	218	116	66.2	862
1982	45.7	45.6	74.6	80.8	129	364	662	838	667	167	93.8	60.8	838
1983	47.8	37.2	39.0	52.4	169	490	520	662	601	355	123	89.8	662
1984	57.2	35.4	37.2	44.5	221	382	808	820	748	138	81.0	61.4	820
1985	49.7	40.7	45.7	72.8	85.5	423	667	516	656	525	116	75.4	667
1986	69.2	57.8	57.8	82.5	93.0	832	922	856	970	247	123	81.0	970
1988	55.0	53.0	54.0	62.0	190	324	655	758	503	148	86.0	69.2	758
1989	82.4	53.0	55.0	63.0	324	512	512	592	449	214	78.8	54.0	592
1990	45.6	41.6	45.6	67.0	152	552	1330	840	737	266	99.0	59.0	1330
1992	37.9	34.4	31.5	43.2	61.0	285	600	1360	630	229	86.0	50.0	1360
1993	37.2	32.5	29.5	72.8	116	320	632	1950	645	276	90.8	51.0	1950
Extreme:	82.4	57.8	74.6	105	324	832	1330	1950	970	540	141	95.4	1950

MINIMUM MONTHLY AND YEARLY DISCHARGES [in cumec]

Year:	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Year
1977	44.3	43.6	45.8	49.0	55.0	109	440	436	245	117	77.6	52.2	43.6
1978	42.9	40.8	42.9	42.9	65.4	170	376	364	225	141	82.8	59.0	40.8
1979	44.3	41.5	41.5	42.9	72.6	93.1	195	307	157	92.2	70.4	46.9	41.5
1980	41.2	38.1	36.3	42.3	62.0	99.2	405	247	261	110	71.8	48.9	36.3
1981	38.1	33.6	33.6	35.4	59.6	97.4	500	463	188	118	67.6	46.7	33.6
1982	49.1	37.2	44.5	67.6	69.0	133	167	477	167	92.0	62.0	46.7	37.2
1983	35.4	32.7	24.5	34.5	43.4	85.6	244	382	275	110	76.9	43.7	32.7
1984	33.6	31.8	31.8	30.9	33.6	156	409	347	199	82.5	61.4	40.7	30.9
1985	32.0	31.3	37.1	38.0	42.5	72.8	373	343	221	118	76.7	69.2	31.3
1986	52.0	50.9	50.9	52.0	63.8	81.0	432	426	247	125	79.5	53.0	50.9
1988	49.0	45.6	47.2	55.0	61.0	94.8	256	429	158	87.2	63.0	54.0	45.6
1989	50.0	44.8	44.0	51.0	53.0	102	235	332	220	80.0	54.0	45.6	44.8
1990	37.9	35.1	33.7	33.7	50.0	158	472	498	273	107	60.0	42.4	33.7
1992	31.5	26.5	26.5	27.0	35.1	54.0	146	456	210	86.0	49.0	36.5	26.5
1993	31.0	28.0	24.5	26.0	59.0	110	262	468	288	92.0	45.6	35.1	24.5
Extreme:	31.0	26.5	24.5	26.0	33.6	54.0	146	267	158	80.0	45.6	35.1	24.5

BMG NEPAL  
DHM - HYDROLOGY SECTION

Date: 10 Dec. 1996

Station no.: 447  
River: Trisuli  
Location: Betrawali  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude [deg min sec]: 27 58 08  
Longitude [deg min sec]: 85 11 00  
Elevation [meters]: 600  
Drainage area [sq. km.]: 4110  
Start of record: 01/04/77  
End of record:

\*EPA DAILY DISCHARGES (cumec)  
YEAR 1977

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	52.2	45.8	50.6	52.2	59.0	143	440	808	440	252	115	73.8
2	51.4	45.0	50.6	53.0	59.0	127	440	730	445	262	113	73.8
3	51.4	44.3	49.8	54.0	55.0	135	490	820	445	248	117	72.6
4	51.4	45.8	49.8	53.0	55.0	125	555	730	408	242	125	70.2
5	51.4	45.0	49.8	49.8	59.0	109	580	706	372	242	117	67.8
6	50.6	43.6	49.8	62.0	62.0	113	515	580	396	216	109	67.8
7	49.8	43.6	49.8	63.0	57.0	109	595	585	436	207	105	65.4
8	49.8	43.6	50.6	53.0	56.0	125	570	555	408	189	105	64.2
9	50.6	44.3	52.2	49.8	55.0	129	590	520	392	167	102	64.2
10	50.6	45.0	50.2	52.2	62.0	131	620	455	424	173	99.9	65.4
11	49.8	45.0	51.4	54.0	66.6	131	640	440	475	173	98.2	64.2
12	49.0	45.0	51.4	54.0	63.0	131	570	455	505	168	96.5	64.2
13	47.4	45.0	49.8	54.0	64.2	129	550	436	432	157	91.4	64.2
14	48.2	45.0	49.8	54.0	77.6	119	530	796	436	157	93.1	62.0
15	48.2	46.6	49.8	55.0	75.0	137	465	530	372	155	91.4	61.0
16	46.6	47.4	50.6	50.6	80.2	121	520	630	350	155	89.7	61.0
17	46.6	47.4	49.8	51.4	71.4	117	540	550	339	145	88.0	60.0
18	46.6	46.6	49.8	51.4	66.6	123	605	490	343	143	88.0	58.0
19	47.4	47.4	49.0	49.0	72.6	151	652	490	329	135	88.0	57.0
20	47.4	47.4	47.4	51.4	84.1	248	670	485	315	133	85.4	57.0
21	45.8	45.8	45.8	53.0	86.7	259	646	460	304	127	82.8	56.0
22	45.8	44.3	46.6	49.8	84.1	262	585	545	301	125	82.8	55.0
23	46.6	46.6	47.4	51.4	78.9	283	580	736	294	123	84.1	55.0
24	46.6	51.4	49.8	51.4	73.8	297	640	590	287	123	81.5	55.0
25	48.2	51.4	47.4	53.0	70.2	301	620	620	220	123	80.2	55.0
26	46.6	51.4	49.8	53.0	95.4	257	645	502	269	103	75.9	56.0
27	43.6	51.4	49.8	59.0	91.4	305	640	718	262	119	75.9	67.8
28	43.6	50.6	47.4	70.2	105	385	730	550	245	117	77.6	59.0
29	44.3	49.8	49.8	77.6	123	391	658	754	245	115	77.6	54.0
30	45.0	51.4	62.0	147	100	400	754	575	245	115	77.6	53.0
31	43.6	55.0	135	135	135	770	505	305	117	117	52.2	
Year	48.1	46.5	49.8	54.9	77.8	190	591	609	360	164	94.0	61.7
Max.	50.0	51.4	56.0	77.6	155	737	770	820	501	260	105	73.8
Min.	44.3	43.6	45.8	49.0	55.0	109	440	436	245	117	77.6	50.0
EP	31.4	27.4	30.4	34.6	36.7	101	385	397	277	107	59.3	40.2
Dis/sq km	11.7	12.3	12.1	10.4	28.9	46.8	14	145	87.6	35.8	22.9	15.0

	MEAN (DISCH [cumec])	MAXIMUM (DISCH [cumec])	GAUGE HT. (m)	DATE	MINIMUM (DISCH [cumec])	GAUGE HT. (m)	DATE
Mean daily 1977	48.1	50.0	0.00	25 Aug. 77	42.0	0.68	6 Feb. 77
Instantaneous 1977		106.7	2.84	27 July 77	42.2	0.68	6 Feb. 77
Instantaneous 1967-1977		228.1	4.92	27 June 73	27.7	0.51	3 Apr. 73
Average discharge for 3 years	48.1						

HMS NEPAL  
DHM - HYDROLOGY SECTION

Date: 10 Dec. 1996

Station no.: 447  
River: Trisuli  
Location: Betrawali  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sec. Sampler

Latitude [deg min sec]: 27 58 08  
Longitude [deg min sec]: 85 11 00  
Elevation [meters]: 600  
Drainage area [sq. km.]: 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES [cusec]  
YEAR 1978

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sec.	Oct.	Nov.	Dec.
1	52.2	42.2	45.8	43.6	85.4	235	525	869	360	219	141	84.1
2	51.4	41.5	45.8	42.9	86.7	189	520	802	350	192	137	85.4
3	52.2	41.5	45.0	44.3	88.0	170	490	808	360	176	131	82.8
4	51.4	40.8	45.0	43.6	98.2	181	470	806	353	165	125	82.8
5	50.6	42.2	44.3	44.3	94.8	216	460	848	364	201	121	81.5
6	49.8	42.2	43.6	45.0	113	235	470	848	343	540	117	81.5
7	49.0	41.5	42.9	44.3	102	252	470	796	355	510	117	81.5
8	48.2	44.3	42.9	45.0	103	287	525	890	339	372	117	78.9
9	46.2	42.2	43.6	47.4	107	294	485	820	357	318	117	73.6
10	48.2	42.2	45.0	51.4	125	301	412	766	368	283	115	72.6
11	46.6	42.2	45.8	51.4	109	259	465	848	424	252	115	72.6
12	46.6	42.2	55.0	56.0	107	192	470	918	408	248	115	72.6
13	47.4	42.2	45.8	66.6	117	192	420	876	388	248	111	72.6
14	47.4	42.2	45.0	59.0	135	229	376	712	392	235	107	71.4
15	46.6	42.2	44.3	64.2	151	204	400	550	388	216	105	69.0
16	45.8	46.6	44.3	67.8	155	269	640	485	380	195	103	69.0
17	45.8	47.4	45.0	76.3	176	276	555	470	325	179	103	67.6
18	45.0	49.0	52.2	86.7	210	360	525	510	294	163	102	66.6
19	44.3	47.4	49.0	64.2	248	322	455	432	372	155	102	66.6
20	44.3	46.6	47.4	62.0	219	350	495	428	350	153	102	65.4
21	44.3	45.8	45.8	55.0	216	416	500	408	301	145	99.9	64.2
22	45.8	45.8	44.3	52.2	179	400	490	505	304	141	98.2	64.2
23	45.0	45.0	43.6	53.0	147	416	590	495	297	161	96.5	64.2
24	44.3	45.0	45.0	55.0	149	455	605	490	283	155	96.5	61.0
25	43.6	45.8	44.3	66.6	181	400	650	510	259	152	94.8	63.0
26	43.6	45.8	42.9	60.0	220	410	600	505	248	153	94.8	60.0
27	43.6	45.8	42.9	57.0	220	590	550	410	240	153	93.1	60.0
28	42.9	45.8	44.3	64.2	192	525	650	495	255	149	93.1	59.0
29	43.6		43.6	69.0	150	495	620	484	248	147	85.4	60.0
30	42.9		45.8	60.0	145	325	585	388	225	141	80.8	55.0
31	42.9		45.8		207		644	364		140		59.0
Year	46.4	44.3	45.4	57.4	151	375	520	625	332	215	108	70.1
Max.	52.2	49.0	55.0	86.7	245	400	650	918	424	540	141	85.4
Min.	42.9	40.8	42.9	42.9	85.4	170	376	364	225	141	80.8	59.0
ME	50.3	25.5	29.6	36.1	98.5	201	335	437	209	140	85.1	45.7
1/cu km	11.3	10.7	11.3	14.0	36.7	81.4	12.7	150	80.7	52.3	28.3	17.6

	MEAN DISCH. [cusec]	MAXIMUM DISCH. [cusec]	GAUGE Ht. [ft.]	DATE	MINIMUM DISCH. [cusec]	GAUGE Ht. [ft.]	DATE
Mean daily 1978	214	918	3.14	12 Aug 78	40.8	0.64	4 Feb. 78
Instantaneous 1978		1040	3.20	12 Aug. 78	45.1	0.62	4 Feb. 78
Instantaneous 1967-1978		2265	4.50	17 June 73	27.7	0.61	2 Apr. 70
Average discharge for 12 years	187						



HMG NEPAL  
DHM - HYDROLOGY SECTION

Date: 10 Dec. 1996

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable way  
Sed. Sampler

Latitude [deg min sec]: 27 58 08  
Longitude [deg min sec]: 85 11 00  
Elevation [meters]: 600  
Drainage area [sq. km.]: 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumec)  
YEAR 1979

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	59.0	43.6	41.5	42.9	85.4	53.1	505	662	427	172	97.4	74.6
2	58.0	43.6	41.5	43.6	86.7	102	525	640	454	162	95.6	67.6
3	58.0	43.6	42.2	44.3	96.5	98.2	396	623	468	174	95.6	66.2
4	58.0	42.9	42.9	44.3	85.4	98.2	315	540	436	182	95.6	64.8
5	57.0	43.6	44.3	45.0	91.4	94.8	266	405	409	172	95.6	62.0
6	56.0	42.9	45.0	45.0	86.7	96.5	242	307	373	167	93.8	60.8
7	55.0	43.6	45.8	46.6	94.8	98.2	195	311	351	159	90.4	59.6
8	54.0	43.6	44.3	47.4	94.8	102	311	327	347	152	90.4	59.6
9	54.0	52.2	44.3	48.2	91.4	125	364	307	355	167	87.2	58.4
10	53.0	45.8	44.3	50.6	88.0	173	280	414	378	164	88.8	57.2
11	53.0	45.0	43.6	52.2	88.0	266	311	505	369	194	85.6	57.2
12	54.0	43.6	44.3	51.4	84.1	232	360	565	323	167	85.6	56.0
13	53.0	42.9	45.0	50.6	88.0	262	364	369	287	147	84.0	56.0
14	53.0	42.9	45.0	48.2	96.5	283	376	612	268	140	84.0	54.8
15	53.0	42.9	45.0	49.8	111	235	372	596	254	136	82.4	53.6
16	52.2	42.9	44.3	49.8	123	133	404	459	258	131	79.2	53.6
17	51.4	42.9	43.6	48.2	115	103	408	520	240	123	77.6	53.6
18	51.4	43.6	43.6	49.8	115	117	495	545	230	118	77.6	51.2
19	48.2	42.9	43.6	49.8	107	151	575	515	221	116	77.6	52.4
20	48.2	42.9	43.6	52.2	102	147	445	790	211	118	79.2	52.4
21	47.4	43.6	43.6	51.4	96.5	189	436	673	194	116	79.2	51.2
22	47.4	42.9	42.9	53.0	94.8	157	535	555	188	114	77.6	51.2
23	47.4	42.9	43.6	55.0	86.7	308	530	570	174	112	76.0	50.0
24	46.6	42.9	43.6	57.0	82.8	176	1040	481	177	110	73.2	50.0
25	45.8	42.2	44.3	59.0	81.5	157	545	540	177	106	73.2	50.0
26	45.8	42.2	44.3	61.0	78.9	269	520	530	177	108	71.6	48.9
27	46.6	42.2	43.0	62.0	77.6	357	580	525	167	103	73.2	48.9
28	46.6	41.5	43.6	61.0	75.0	322	662	468	162	105	73.2	50.0
29	48.2	43.6	43.6	82.8	70.6	204	820	449	159	102	70.4	56.0
30	45.0	43.6	43.6	69.0	84.1	404	623	427	164	101	79.2	51.2
31	44.3	43.6	43.6		88.0		688	442		99.2		51.2
Mean	51.7	43.5	43.9	52.4	91.9	185	465	594	280	137	83.0	55.6
Max.	59.0	52.2	45.8	82.8	123	404	1040	790	468	194	97.4	74.6
Min.	44.3	41.5	41.5	42.9	72.6	93.1	195	307	159	99.2	70.4	48.9
mm	33.4	25.6	28.4	33.0	59.9	117	308	328	176	89.0	52.3	36.2
l/c/sq km	12.8	10.6	10.7	12.7	22.4	43.1	114	120	68.1	33.2	20.2	13.5

	MEAN DISCH. (cumec)	MAXIMUM DISCH. (cumec)	GAUGE HT. (m.)	DATE	MINIMUM DISCH. (cumec)	GAUGE HT. (m.)	DATE
Yearly daily 1979	167	1040	1.32	24 July 79	41.5	0.65	2 Mar. 79
Instantaneous 1979		1060	1.24	24 July 79	40.8	0.64	2 Mar. 79
Instantaneous 1967-1970		2280	4.90	17 June 73	27.7	0.61	3 Apr. 70
Average discharge for 11 years	160						

HMG, NEPAL  
DHM - HYDROLOGY SECTION

Date: 10 Dec. 1996

Station no.: 447  
River: Trisuli  
Location: Betrawali  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude [deg min sec]: 27 58 08  
Longitude [deg min sec]: 85 11 00  
Elevation [meters]: 600  
Drainage area [sq. km.]: 4110  
Start of record: 01/04/77  
End of record:

MEAN DAILY DISCHARGES [cumec]  
YEAR 1980

Day	Jan.	Feb.	Mar	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	48.9	41.2	36.1	42.3	62.0	99.2	405	988	472	265	110	70.4
2	48.9	41.2	38.1	42.3	77.6	103	623	1080	565	254	110	69.0
3	47.8	44.5	36.3	42.3	80.8	125	570	1070	450	237	106	69.0
4	46.7	42.3	36.3	44.5	97.4	162	540	922	418	227	106	69.0
5	45.6	42.3	36.3	42.3	110	138	486	856	510	208	105	67.6
6	44.5	41.2	36.3	44.5	87.2	131	766	814	575	202	103	66.2
7	44.5	41.2	36.3	46.7	95.6	145	651	778	450	191	99.2	64.8
8	44.5	40.1	36.3	45.9	90.4	261	695	910	432	188	97.4	63.4
9	44.5	40.1	43.4	48.9	80.8	667	500	994	463	185	97.4	63.4
10	44.5	40.1	43.4	48.9	73.2	463	590	964	490	182	95.6	62.0
11	43.4	40.1	42.3	46.7	73.2	194	689	742	445	177	95.6	62.0
12	43.4	40.1	42.3	47.8	66.2	234	535	754	418	174	93.8	62.0
13	43.4	41.2	41.2	50.0	64.8	196	580	754	427	167	92.0	59.6
14	42.3	41.2	41.2	51.2	74.6	199	540	695	391	159	90.4	59.6
15	43.4	41.2	41.2	53.6	74.6	177	570	724	364	154	90.4	58.4
16	42.3	40.1	41.2	54.8	74.6	194	748	530	378	149	90.4	58.4
17	42.3	40.1	42.3	48.9	71.8	234	678	490	364	147	88.8	57.2
18	42.3	39.0	42.3	46.7	69.0	218	684	335	418	145	90.4	57.2
19	41.2	39.0	41.2	60.8	71.8	254	730	247	355	143	88.8	57.2
20	41.2	39.0	42.3	67.6	76.0	240	623	258	355	138	87.2	57.2
21	42.3	39.0	43.4	87.2	80.8	303	796	287	347	131	87.2	56.0
22	42.3	39.0	43.4	105	92.0	268	601	500	315	131	87.2	56.0
23	42.3	39.0	42.3	105	85.6	299	629	766	311	129	84.0	54.8
24	42.3	40.1	42.3	74.6	88.8	282	722	742	307	132	82.4	54.8
25	42.3	39.0	42.3	73.2	93.8	327	706	766	289	127	80.8	52.4
26	42.3	39.0	42.3	77.4	93.8	405	844	784	291	123	79.2	52.0
27	42.3	39.0	42.3	71.8	76.0	565	575	472	279	118	77.6	50.0
28	42.3	39.0	42.3	74.6	74.6	581	622	545	265	114	75.2	50.0
29	42.3	39.0	42.3	71.8	71.0	420	784	486	283	114	74.6	50.0
30	41.2		42.3	62.0	76.0	351	584	351	261	110	71.8	48.0
31	41.2		41.2		82.0		1040	418		110		48.0
Mean	43.5	40.2	40.8	59.4	80.6	276	603	678	390	162	91.2	55.5
Max.	48.9	44.5	43.4	105	110	667	1040	1080	575	265	110	70.4
Min.	41.0	39.1	36.3	42.3	62.0	99.0	405	247	261	110	71.8	48.0
Evap	28.4	24.5	28.0	37.5	50.5	174	422	442	246	106	57.5	36.4
Dis/co eff	11.0	5.79	9.91	16.5	19.1	67.1	161	165	94.9	39.5	22.2	14.3

	MEAN		MAXIMUM		MINIMUM	
	DISCH. [cumec]	GAUGE Ht. [m.]	DISCH. [cumec]	GAUGE Ht. [m.]	DISCH. [cumec]	GAUGE Ht. [m.]
Mean daily 1980	216	3.32	1080	3.35	36.3	0.67
Instantaneous 1980			1100	3.35	35.4	0.66
Instantaneous 1967-1980			2280	4.91	27.7	0.81
Average discharge for 14 years	164					

KMG NEPAL  
OHM - HYDROLOGY SECTION

Date: 10 Dec. 1996

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumec)  
YEAR 1981

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	48.9	38.1	38.1	42.3	70.4	97.4	678	736	441	214	116	66.2
2	50.0	37.2	38.1	27.2	63.4	138	700	724	454	218	116	64.8
3	48.9	37.2	38.1	39.0	67.6	154	736	760	436	199	114	62.0
4	48.9	37.2	38.1	39.0	79.2	147	730	645	405	169	110	63.4
5	47.8	37.2	39.0	37.2	90.4	157	736	570	459	147	108	62.0
6	47.8	37.2	39.0	35.4	90.4	164	575	623	472	147	103	62.0
7	47.8	37.2	40.1	36.3	77.6	182	510	634	550	145	93.8	62.0
8	46.7	36.3	39.0	38.1	74.6	191	634	596	575	143	92.0	60.8
9	44.5	34.5	39.0	39.0	74.6	177	500	525	612	143	92.0	60.8
10	43.4	37.2	38.1	39.0	76.0	167	570	463	760	143	90.4	59.6
11	43.4	35.4	37.2	43.4	77.6	172	618	481	515	140	90.4	59.6
12	43.4	35.4	37.2	45.6	64.8	167	656	565	436	138	88.8	58.4
13	43.4	36.3	37.2	48.9	59.6	174	820	684	387	140	88.8	58.4
14	42.3	36.3	36.3	51.2	73.2	185	772	684	369	133	88.8	57.2
15	41.2	35.4	37.2	62.0	95.6	234	742	712	364	133	88.8	56.0
16	41.2	35.4	38.1	66.2	108	272	742	651	335	133	85.6	56.0
17	41.2	34.5	37.2	73.2	79.2	244	796	634	315	131	85.6	56.0
18	41.2	34.5	37.2	70.4	82.4	295	724	601	299	131	84.0	54.8
19	42.3	34.5	38.1	51.2	101	254	754	684	287	129	80.8	54.8
20	40.1	34.5	39.0	52.4	112	268	645	612	261	129	77.6	53.6
21	40.1	33.6	39.0	52.4	116	311	736	590	227	129	77.6	52.4
22	40.1	35.4	37.2	57.2	97.4	311	856	784	194	127	74.6	52.4
23	38.1	38.1	35.4	60.8	82.4	303	766	766	188	125	74.6	50.0
24	38.1	39.0	34.5	56.0	73.2	403	820	640	208	125	71.8	51.2
25	40.1	38.1	34.5	53.6	64.8	459	712	525	230	123	73.2	50.0
26	40.1	38.1	34.5	50.0	84.0	570	678	540	208	123	71.8	50.0
27	38.1	38.1	34.5	47.8	120	634	808	560	224	121	70.4	48.8
28	38.1	38.1	34.5	45.6	138	560	748	550	258	121	69.0	48.8
29	38.1	34.5	37.2	57.2	90.4	175	784	625	364	121	67.6	47.8
30	40.1	34.5	37.2	67.6	77.6	160	704	575	251	118	67.6	47.8
31	40.1	37.2	37.2	65.6	85.6	160	640	488	218	118	65.6	46.7
Year	42.6	36.4	37.2	50.4	85.0	290	714	619	369	140	87.1	56.0
Max.	50.0	39.0	40.1	70.4	138	272	820	784	760	218	116	66.2
Min.	38.1	33.6	37.2	27.2	59.6	97.4	500	463	188	118	87.6	46.7
7-yr	27.4	21.4	24.2	20.5	35.4	180	448	404	238	91.8	54.9	36.8
1976-80	30.4	1.86	9.08	10.1	20.7	70.7	174	151	89.9	34.2	21.2	12.1

	MINIMUM		MAXIMUM		MINIMUM	
	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)
near daily obs.	22.0	0.97	80.0	2.97	33.4	0.64
Instantaneous obs.	1.50	0.57	150	2.57	21.5	0.60
Instantaneous 1-hr obs.	1.50	0.57	150	2.57	21.5	0.60

HMG NEPAL  
DHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Trisuli  
Location: Belrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cuhec)  
YEAR 1982

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	46.7	42.3	47.8	76.0	80.8	140	167	575	555	167	92.0	60.8
2	45.6	41.2	48.9	80.8	82.4	188	188	520	472	164	90.4	60.8
3	45.6	41.2	47.8	71.8	82.4	182	218	486	450	157	90.4	59.6
4	45.6	40.1	46.7	67.6	80.8	182	299	520	486	157	90.4	59.6
5	45.6	40.1	46.7	67.6	80.8	208	373	596	445	154	88.8	59.6
6	44.5	40.1	45.6	69.0	77.6	218	279	520	441	152	88.8	59.6
7	45.6	40.1	44.5	69.0	76.0	268	218	505	495	147	87.2	57.2
8	44.5	39.0	44.5	70.4	74.6	211	254	565	436	143	85.6	57.2
9	44.5	39.0	45.6	70.4	74.6	247	227	550	427	143	93.8	57.2
10	44.5	38.1	45.6	71.8	76.0	251	237	515	409	138	88.8	56.0
11	43.4	38.1	44.5	73.2	76.0	234	251	596	459	136	84.0	56.0
12	43.4	38.1	44.5	74.6	74.6	214	224	545	510	129	82.4	56.0
13	44.5	38.1	45.6	74.6	76.0	244	211	535	467	125	82.4	56.0
14	43.4	37.2	45.6	71.8	74.6	261	418	510	510	121	79.2	54.8
15	43.4	38.1	44.5	69.0	73.2	287	405	530	468	116	77.6	54.8
16	42.3	39.0	45.6	69.0	71.8	364	436	477	427	114	77.6	53.6
17	42.3	38.1	47.8	74.6	71.8	339	436	560	405	112	76.0	53.6
18	42.3	38.1	63.4	76.0	71.8	244	445	560	387	108	74.6	53.6
19	42.3	37.2	64.8	76.0	70.4	194	500	590	423	106	73.2	53.6
20	41.2	37.2	64.8	77.6	70.4	179	405	585	373	105	71.8	52.4
21	42.3	37.2	66.2	77.6	69.0	169	505	662	339	103	70.4	52.4
22	41.2	39.0	66.2	77.6	69.0	174	515	754	360	101	69.0	52.4
23	41.2	40.1	67.6	77.6	69.0	205	580	612	331	97.4	66.2	51.2
24	41.2	41.2	69.0	79.2	70.4	240	585	695	295	93.8	64.8	50.0
25	40.1	43.4	69.0	79.2	74.6	205	596	640	265	92.0	64.8	48.9
26	41.2	43.4	69.0	79.2	80.8	152	550	706	234	92.0	63.4	48.9
27	42.3	44.5	70.4	79.2	92.0	138	580	772	199	92.0	63.4	48.9
28	42.3	45.6	70.4	79.2	101	147	682	838	182	92.0	63.4	48.9
29	42.3		69.0	79.2	118	133	634	695	177	92.0	62.0	48.9
30	41.2		70.4	79.2	129	145	590	623	167	92.0	62.0	46.7
31	42.3		74.6		127		640	629		92.0		46.7
Mean	43.2	39.8	56.0	74.6	81.4	212	407	596	393	120	77.5	54.1
Max.	46.7	45.6	74.6	80.8	129	364	682	838	667	167	93.8	60.8
Min.	40.1	37.2	44.5	67.6	69.0	133	167	477	167	92.0	62.0	46.7
mm	28.1	23.4	36.5	47.0	53.1	134	265	388	248	78.4	48.9	35.2
l/s/sq km	10.5	9.69	13.6	18.2	19.8	51.6	99.1	145	95.6	29.3	18.9	13.2

	MEAN		MAXIMUM		MINIMUM	
	DISCH. (cuhec)	GAUGE HI. (m.)	DISCH. (cuhec)	GAUGE HI. (m.)	DISCH. (cuhec)	GAUGE HI. (m.)
Mean daily 1982	181	2.93	838	3.19	37.2	0.68
Instantaneous 1982		28 Aug. 82	994	3.19	36.3	0.67
Instantaneous 1967-1982		17 June 73	2280	4.93	27.7	0.81
Average discharge for 16 years	186					

KMG NEPAL  
DHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cusec)  
YEAR 1983

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	46.7	35.4	36.3	34.5	43.4	118	400	423	535	279	123	80.8
2	47.8	34.5	36.3	38.1	43.4	125	409	423	520	258	121	79.2
3	44.5	33.6	35.4	37.2	43.4	152	405	382	477	283	114	77.6
4	44.5	33.6	35.4	35.4	48.9	162	454	387	540	261	112	70.4
5	44.5	33.6	34.5	35.4	52.4	174	343	391	505	230	110	69.0
6	43.4	33.6	34.5	38.1	43.4	149	283	454	520	208	118	66.2
7	43.4	33.6	34.5	37.2	51.2	152	272	414	601	202	116	64.8
8	43.4	33.6	36.3	37.2	48.9	143	251	418	590	196	110	63.4
9	42.3	32.7	37.2	34.5	50.0	138	254	436	520	230	106	63.4
10	41.2	32.7	37.2	35.4	58.4	105	307	477	468	258	103	62.0
11	41.2	32.7	38.1	38.1	52.4	90.4	254	454	409	335	101	60.8
12	41.2	32.7	37.2	36.3	60.8	90.4	244	560	360	355	97.4	59.6
13	41.2	34.5	37.2	39.0	54.8	85.6	261	651	347	331	95.6	59.6
14	40.1	36.3	37.2	37.2	69.8	95.6	287	618	355	261	92.0	58.4
15	40.1	36.3	37.2	35.4	101	101	283	565	360	268	92.0	59.6
16	38.1	36.3	39.0	35.4	73.2	105	272	580	373	218	90.4	58.4
17	39.0	35.4	37.2	35.4	71.8	121	472	623	441	221	90.4	58.4
18	39.0	35.4	36.3	35.4	71.8	123	303	662	382	191 E	88.8	58.4
19	39.1	35.4	37.2	37.2	71.8	121	396	607	550	154 E	85.6	57.2
20	38.1	35.4	37.2	36.3	82.4	136	436	545	545	136	84.0	57.2
21	37.2	35.4	35.4	35.4	80.8	167	463	486	441	125	82.4	54.8
22	37.2	36.3	36.3	35.4	87.2	167	490	472	387	121	79.2	52.4
23	38.1	37.2	35.4	39.0	108	172	445	535	414	118	76.0	52.4
24	36.3	36.3	35.4	40.1	88.8	174	463	515	481	114	77.6	53.6
25	35.4	35.4	36.3	44.5	79.2	154	387	525	405	112	77.6	50.0
26	36.3	35.4	37.2	42.3	74.6	152	481	490	387	110	80.8	48.9
27	36.3	35.4	36.3	46.7	76.0	275	520	500	355	116	82.4	51.2
28	37.2	35.4	35.4	47.8	82.4	373	515	454	315	118	79.2	53.6
29	37.2		35.4	43.4	99.2	400	468	515	295	136	60.8	56.0
30	36.3		35.4	52.4	105	315	441	585	275	131	79.2	57.2
31	36.3		35.4		101		427	550		125		57.2
Mean	40.1	34.8	36.3	38.5	69.9	161	377	506	438	200	94.9	60.4
Max.	47.8	37.2	39.0	52.4	108	400	520	662	601	355	123	80.8
Min.	35.4	32.7	34.5	34.5	43.4	85.6	244	382	275	110	76.0	48.9
mm	26.1	20.5	23.7	24.3	45.5	102	246	330	276	130	59.8	39.3
l/s/sq km	9.75	8.46	8.83	9.37	17.0	39.2	91.7	123	107	48.7	23.1	14.7

	MEAN		MAXIMUM		MINIMUM	
	DISCH. (cusec)	GAUGE HT. (m.)	DISCH. (cusec)	GAUGE HT. (m.)	DISCH. (cusec)	GAUGE HT. (m.)
Mean daily 1983	172	2.63	662	2.98	32.7	0.63
Instantaneous 1983		2.98	868	4.93	30.9	0.61
Instantaneous 1967-1983		4.93	2280		27.7	0.81
Average discharge for 17 years	185					

Quality code: (E-estimated, I-ice conditions, D-doubtful)

HMG NEPAL  
DIHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Irisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude [deg min sec]: 27 58 08  
Longitude [deg min sec]: 85 11 00  
Elevation [meters]: 600  
Drainage area [sq. km.]: 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumec)  
YEAR 1984

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	57.2	33.6	32.7	34.5	37.2	196	441	820	596	188	81.0	61.4
2	57.2	32.7	32.7	33.6	33.6	211	441	656	570	177	79.5	59.0
3	57.2	32.7	31.8	33.6	37.2	247	596	540	510	169	79.5	55.4
4	57.2	32.7	32.7	32.7	42.3	244	612	490	607	159	79.5	53.0
5	56.0	32.7	33.6	32.7	51.2	323	575	463	596	154	78.0	53.0
6	54.8	32.7	33.6	31.8	56.0	369	651	423	689	147	76.7	52.0
7	53.6	31.8	33.6	31.8	59.6	364	700	396	736	143	76.7	52.0
8	53.6	32.7	33.6	31.8	63.4	377	808	405	748	133	75.4	50.9
9	52.4	31.8	32.7	32.7	60.8	299	678	347	550	136	76.7	50.9
10	51.2	31.8	32.7	31.8	48.9	258	596	445	535	131	75.4	50.9
11	50.0	32.7	35.4	30.9	52.4	295	712	500	481	127	74.1	49.9
12	50.0	33.6	35.4	30.9	57.2	331	640	445	481	125	74.1	49.9
13	48.9	34.5	35.4	30.9	66.2	244	490	450	477	118	72.8	49.9
14	47.8	34.5	35.4	31.8	80.8	268	441	409	423	116	71.5	48.8
15	46.7	34.5	34.5	33.6	97.4	295	409	427	373	114	70.2	48.8
16	43.4	34.5	35.4	35.4	108	323	463	432	364	114	67.6	48.8
17	43.4	34.5	35.4	35.4	123	258	607	490	347	112	66.3	47.8
18	46.7	34.5	37.2	36.3	129	251	712	570	351	108	65.0	47.8
19	46.7	34.5	34.5	37.2	108	221	535	629	343	103	63.8	47.8
20	45.6	34.5	33.6	36.3	123	299	555	500	315	102	62.6	46.7
21	45.6	34.5	32.7	38.1	133	295	575	463	287	94.7	62.6	46.7
22	44.5	35.4	32.7	36.3	143	347	651	450	272	94.7	62.6	46.7
23	43.4	32.7	32.7	33.6	140	307	607	418	254	91.5	61.4	46.7
24	43.4	33.6	34.5	31.8	152	351	712	481	244	88.5	62.6	46.7
25	40.1	32.7	34.5	32.7	159	364	662	520	234	87.0	61.4	45.7
26	37.2	33.6	35.4	32.7	185	343	754	607	258	85.5	61.4	45.7
27	34.5	32.7	35.4	43.4	196	319	706	585	244	84.0	61.4	44.6
28	34.5	32.7	35.4	39.0	221	378	669	596	230	84.0	61.4	43.6
29	34.5	32.7	34.5	44.5	199	244	748	706	214	85.5	61.4	42.5
30	33.6		36.3	37.2	177	382	673	718	199	84.0	61.4	42.5
31	33.6		35.4		172		760	640		82.5		40.7
Mean	46.6	33.4	34.2	34.5	107	298	619	517	417	117	69.5	48.9
Max.	57.2	35.4	37.2	44.5	221	382	808	820	748	188	81.0	61.4
Min.	33.6	31.8	31.8	30.9	33.6	196	409	347	199	82.5	61.4	40.7
mm	30.4	20.4	22.3	21.8	69.6	188	403	337	263	76.5	43.8	31.9
l/s/sq km	11.3	8.12	8.33	8.39	26.0	72.6	151	126	102	28.5	16.9	11.9

	MEAN		MAXIMUM		MINIMUM	
	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)
Mean daily 1984	196	2.90	820	3.41	30.9	0.61
Instantaneous 1984			1140	3.41	30.0	0.60
Instantaneous 1967-1984			2280	4.93	27.7	0.81
Average discharge for 18 years	186					

**IMG NEPAL**  
**DIHM - HYDROLOGY SECTION**

Date: 15 Jan. 1995

Station no.: 447  
River: Irisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude [deg min sec]: 27 58 08  
Longitude [deg min sec]: 85 11 00  
Elevation [meters]: 600  
Drainage area [sq. km.]: 4110  
Start of record: 01/04/67  
End of record:

**MEAN DAILY DISCHARGES [cusec]**  
**YEAR 1985**

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	40.7	32.0	40.7	40.7	45.7	85.5	373	382	580	202	116	75.4
2	40.7	31.3	41.6	40.7	46.7	82.5	405	364	472	185	116	74.1
3	38.9	31.3	41.6	41.6	45.7	76.7	607	343	500	177	110	74.1
4	38.9	31.3	41.6	39.8	45.7	72.8	565	409	505	167	108	74.1
5	38.9	31.3	40.7	38.9	44.6	85.5	555	373	515	167	108	72.8
6	38.9	32.0	41.6	38.9	43.6	102	468	355	400	157	105	74.1
7	38.0	32.0	41.6	38.9	43.6	110	667	347	331	154	103	74.1
8	38.0	31.3	40.7	38.0	42.5	94.7	515	378	303	145	103	72.8
9	37.1	31.3	37.1	38.9	46.7	96.4	445	378	299	162	99.8	72.8
10	36.2	31.3	42.5	42.5	48.8	75.4	463	391	315	311	96.4	72.8
11	36.2	31.3	43.6	42.5	48.8	79.5	409	400	400	214	94.7	72.8
12	36.2	31.3	44.6	45.7	48.8	85.5	432	409	382	191	93.0	72.8
13	35.3	31.3	45.7	48.8	48.8	91.5	560	343	319	179	91.5	71.5
14	35.3	31.3	44.6	47.8	52.0	125	490	355	378	162	90.0	72.8
15	35.3	31.3	44.6	42.5	56.6	143	463	459	343	149	90.0	70.2
16	35.3	32.0	44.6	41.6	53.0	133	463	382	560	143	91.5	67.6
17	35.3	32.8	42.5	40.7	53.0	140	477	396	656	347	90.0	68.9
18	34.4	32.8	41.6	42.5	45.7	154	495	414	468	525	85.5	67.6
19	35.3	33.5	39.8	44.6	47.8	149	432	520	378	495	82.5	67.6
20	34.4	34.4	39.8	47.8	50.9	152	463	520	327	287	82.5	67.6
21	34.4	36.2	39.8	53.0	57.8	167	486	450	311	224	82.5	65.0
22	34.4	37.1	41.6	66.3	49.9	185	520	525	295	194	81.0	65.0
23	34.4	38.0	43.6	72.8	47.8	224	500	596	319	177	81.0	63.8
24	34.4	38.9	41.6	62.6	50.9	268	490	525	275	164	81.0	63.8
25	32.8	38.9	40.7	57.8	61.4	251	472	432	268	154	79.5	62.6
26	32.8	39.8	39.8	49.9	72.8	275	481	391	247	145	79.5	63.8
27	32.8	39.8	39.8	46.7	85.5	423	495	445	227	138	78.0	71.5
28	32.0	40.7	41.6	45.7	82.5	339	481	490	224	133	78.0	65.0
29	32.0		43.6	45.7	72.8	188	486	550	258	127	76.7	62.6
30	32.0		43.6	44.6	72.8	240	468	570	221	123	76.7	61.4
31	32.0		41.6		79.5		450	500		118		60.2
Mean	35.6	33.8	41.9	46.3	54.6	156	486	432	369	200	91.7	69.1
Max.	40.7	40.7	45.7	72.8	85.5	423	667	596	656	525	116	75.4
Min.	32.0	31.3	37.1	38.0	42.5	72.8	373	343	221	118	76.7	60.2
mm	23.2	19.9	27.3	29.2	35.6	98.6	317	281	233	131	57.8	45.0
l/s/sq km	8.66	8.22	10.2	11.3	13.3	38.0	118	105	89.8	48.8	22.3	16.8

	MEAN		MAXIMUM		MINIMUM	
	DISCH. [cusec]	GAUGE HT. [m.]	DISCH. [cusec]	GAUGE HT. [m.]	DISCH. [cusec]	GAUGE HT. [m.]
Mean daily 1985	169	2.64	667	2.64	31.3	0.57
Instantaneous 1985		4.60	2000	4.60	30.5	0.56
Instantaneous 1967-1985		4.93	2280	4.93	27.7	0.81
Average discharge for 19 years	185					

HMG NEPAL  
DHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 09  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumec)  
YEAR 1986

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	60.2	52.0	52.0	53.0	63.8	81.0	634	712	477	247	123	81.0
2	59.0	50.9	52.0	52.0	72.8	87.0	505	689	454	237	123	79.5
3	57.8	53.0	54.2	52.0	79.5	87.0	520	673	495	230	112	79.5
4	56.6	56.6	50.9	52.0	82.5	93.0	459	618	535	224	108	75.4
5	55.4	52.0	53.0	52.0	72.8	105	450	570	495	218	107	74.1
6	55.4	55.4	50.9	53.0	68.9	118	432	515	490	208	105	72.8
7	54.2	56.6	53.0	54.2	66.3	138	468	510	500	208	105	72.8
8	53.0	55.4	52.0	54.2	68.9	143	515	515	495	202	103	71.5
9	52.0	56.6	53.0	54.2	79.5	136	545	481	500	199	103	70.2
10	53.0	55.4	56.6	56.6	84.0	147	555	515	545	191	102	70.2
11	54.2	54.2	57.8	60.2	82.5	179	565	436	575	182	99.8	68.9
12	54.2	56.6	54.2	62.6	79.5	196	520	634	618	177	99.8	68.9
13	55.4	56.6	55.4	70.2	79.5	268	515	673	629	172	98.1	68.9
14	57.8	55.4	56.6	79.5	81.0	221	736	601	970	164	96.4	68.9
15	56.6	57.8	56.6	82.5	93.0	237	790	525	684	159	96.4	67.6
16	56.6	55.4	56.6	81.0	84.0	272	892	570	560	154	94.7	65.0
17	55.4	55.4	56.6	78.0	84.0	275	904	742	472	147	93.0	65.0
18	56.6	55.4	55.4	68.9	72.8	400	862	736	396	167	93.0	65.0
19	55.4	55.4	55.4	68.9	75.4	427	880	796	373	162	91.5	70.2
20	55.4	55.4	55.4	68.9	75.4	445	814	856	355	154	91.5	68.9
21	54.2	54.2	55.4	68.9	74.1	418	922	808	387	145	91.5	65.0
22	54.2	53.0	52.0	72.8	76.7	427	898	700	369	138	88.5	63.8
23	55.4	52.0	52.0	81.0	76.7	441	790	596	275	133	87.0	65.0
24	55.4	54.2	52.0	71.5	74.1	481	832	585	355	133	84.0	63.8
25	54.2	53.0	52.0	68.9	75.4	427	922	520	291	131	84.0	62.6
26	55.4	52.0	53.0	68.9	78.0	445	796	595	279	131	85.5	61.4
27	54.2	53.0	53.0	65.0	75.4	832	880	520	272	129	84.0	61.4
28	54.2	52.0	52.0	65.0	79.5	629	673	510	265	127	82.5	60.2
29	54.2		53.0	62.6	75.4	808	689	459	265	127	82.5	60.2
30	52.0		54.2	60.2	79.5	601	748	441	247	125	79.5	59.0
31	52.0		54.2		79.5		808	436		125		59.0
Mean	55.1	54.5	53.9	64.6	77.1	319	694	595	454	169	96.4	67.9
Max.	60.2	57.8	57.8	82.5	93.0	832	922	856	970	247	123	81.0
Min.	52.0	50.9	50.9	52.0	63.8	81.0	432	436	247	125	79.5	59.0
mm	35.9	32.1	35.1	40.8	50.3	201	452	388	286	110	60.8	44.3
l/s/sq km	13.4	13.2	13.1	15.7	18.8	77.5	169	145	110	41.2	23.5	16.5

	MEAN		MAXIMUM		MINIMUM	
	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)
Mean daily 1986	226	3.15	970	4.93	50.9	0.78
Instantaneous 1986						
Instantaneous 1967-1986			2280	4.93		
Average discharge for 20 years	187					



RMS NEPAL  
DHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cuhec)  
YEAR 1987

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	59.0	59.9	...	...	53.0	...	...	...	...	148	89.6	67.0
2	59.0	50.9	...	...	55.0	...	...	...	...	146	88.4	67.0
3	59.0	52.0	...	...	58.0	...	...	...	...	142	87.2	67.0
4	60.2	53.0	...	...	64.0	...	...	...	...	138	86.0	66.0
5	61.4	52.0	...	...	61.0	...	...	...	...	126	84.8	66.0
6	57.8	50.9	...	...	60.0	...	...	...	...	119	82.4	65.0
7	57.8	50.9	...	...	57.0	...	...	...	...	117	83.6	64.0
8	56.6	50.9	...	...	56.0	...	...	...	...	116	82.4	64.0
9	55.4	50.9	...	...	57.0	...	...	...	...	113	82.4	63.0
10	55.4	50.9	...	...	58.0	...	...	...	...	110	86.0	62.0
11	55.4	49.9	...	...	58.0	...	...	...	...	110	84.8	63.0
12	55.4	50.9	...	...	57.0	...	...	...	...	109	83.6	63.0
13	54.2	...	...	...	61.0	...	...	...	...	107	82.4	64.0
14	52.0	...	...	49.0	62.0	...	...	...	...	107	80.0	63.0
15	50.9	...	...	50.0	...	...	...	...	...	105	80.0	63.0
16	49.9	...	...	50.0	...	...	...	...	...	105	78.8	63.0
17	52.0	...	...	49.0	...	...	...	...	218	100	78.8	63.0
18	54.2	...	...	50.0	...	...	...	...	212	99.0	78.8	62.0
19	53.0	...	...	50.0	...	...	...	...	206	116	77.6	62.0
20	53.0	...	...	51.0	...	...	...	...	196	180	77.6	61.0
21	52.0	...	...	53.0	...	...	...	...	182	134	74.0	61.0
22	52.0	...	...	54.0	...	...	...	...	206	124	74.0	61.0
23	53.0	...	...	53.0	...	...	...	...	202	119	74.0	60.0
24	52.0	...	...	53.0	...	...	...	...	198	116	72.8	60.0
25	52.0	...	...	53.0	...	...	...	...	194	110	72.8	59.0
26	50.9	...	...	53.0	...	...	...	...	182	109	68.0	58.0
27	50.9	...	...	52.0	...	...	...	...	172	105	69.2	58.0
28	52.0	...	...	53.0	...	...	...	...	166	100	67.0	56.0
29	52.0	...	...	53.0	...	...	...	...	158	97.6	67.0	55.0
30	50.9	...	...	54.0	...	...	...	...	152	93.4	68.0	55.0
31	52.0	...	...	...	...	...	...	...	...	90.8	...	54.0
Mean	54.2	...	...	...	...	...	...	...	...	116	78.7	61.8
Max.	61.4	...	...	...	...	...	...	...	...	180	89.6	67.0
Min.	49.9	...	...	...	...	...	...	...	...	90.8	67.0	54.0
mm	35.3	...	...	...	...	...	...	...	...	75.9	49.7	40.3
l/s/sq km	13.2	...	...	...	...	...	...	...	...	28.3	19.2	15.0

	MEAN DISCH. (cuhec)	MAXIMUM DISCH. (cuhec)	GAUGE HT. (m.)	DATE	MINIMUM DISCH. (cuhec)	GAUGE HT. (m.)	DATE
Mean daily 1987	Missing data						
Instantaneous 1987	Missing data						

KMS NEPAL  
DIHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Trisuli  
Location: Batrawali  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumec)  
YEAR 1988

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	54.0	50.0	47.2	55.0	61.0	126	262	758	364	148	84.8	63.0
2	54.0	49.0	47.2	56.0	64.0	107	256	564	340	146	84.8	62.0
3	54.0	48.0	47.2	56.0	65.0	106	270	452	396	144	84.8	63.0
4	54.0	48.0	48.0	57.0	69.2	113	384	480	336	140	86.0	63.0
5	54.0	49.0	48.0	58.0	70.4	114	528	552	388	148	82.4	63.0
6	54.0	48.0	49.0	58.0	65.0	94.8	572	456	336	124	78.8	63.0
7	55.0	48.0	49.0	58.0	64.0	96.2	380	635	368	119	75.2	62.0
8	55.0	47.2	50.0	59.0	68.0	100	336	548	508	114	76.4	61.0
9	55.0	52.0	50.0	60.0	68.0	117	412	600	324	114	76.4	61.0
10	55.0	49.0	50.0	62.0	78.8	124	452	620	294	112	74.0	61.0
11	54.0	49.0	49.0	62.0	71.6	148	396	600	266	109	72.8	61.0
12	54.0	49.0	48.0	62.0	80.0	160	552	600	254	109	72.8	60.0
13	53.0	53.0	49.0	62.0	77.6	180	516	584	244	106	71.6	60.0
14	53.0	50.0	49.0	62.0	74.0	176	456	552	232	103	70.4	60.0
15	53.0	50.0	49.0	60.0	78.8	168	404	592	232	102	70.4	59.0
16	53.0	50.0	50.0	61.0	74.0	176	512	612	200	100	69.2	56.0
17	52.0	49.0	48.0	61.0	78.8	297	484	544	229	106	69.2	57.0
18	52.0	49.0	48.0	59.0	84.8	190	620	576	254	112	69.2	57.0
19	52.0	49.0	47.2	61.0	84.8	188	524	580	210	112	68.0	56.0
20	51.0	49.0	47.2	60.0	87.2	172	476	600	202	96.2	68.0	56.0
21	51.0	49.0	47.2	62.0	89.6	235	544	572	204	94.8	67.0	55.0
22	51.0	48.0	49.0	62.0	100	196	540	635	204	94.8	67.0	54.0
23	49.0	47.2	49.0	62.0	97.6	196	580	700	194	94.8	66.0	54.0
24	48.0	47.2	50.0	61.0	93.4	324	536	596	182	96.2	66.0	54.0
25	50.0	46.4	50.0	61.0	90.8	250	604	580	176	94.8	66.0	54.0
26	50.0	45.6	51.0	59.0	102	241	568	548	176	93.4	65.0	69.2
27	49.0	45.6	51.0	59.0	102	235	580	564	186	90.8	64.0	57.0
28	49.0	46.4	52.0	58.0	190	235	572	512	170	88.4	63.0	57.0
29	50.0	47.2	52.0	59.0	114	235	655	488	168	89.6	63.0	55.0
30	50.0		53.0	60.0	117	238	552	452	158	87.2	63.0	55.0
31	50.0		54.0		113		592	400		87.2		55.0
Mean	52.2	48.5	49.3	59.7	86.3	178	488	566	260	109	71.8	58.8
Max.	55.0	53.0	54.0	62.0	190	324	655	758	508	148	86.0	69.2
Min.	48.0	45.6	47.2	55.0	61.0	94.8	256	400	158	87.2	63.0	54.0
mm	34.0	29.6	32.1	37.7	56.2	112	318	369	164	71.0	45.3	38.3
l/s/sq km	12.7	11.8	12.0	14.5	21.0	43.3	119	138	63.2	26.5	17.5	14.3

	MEAN		MAXIMUM		MINIMUM	
	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)	DISCH. (cumec)	GAUGE HT. (m.)
Mean daily 1988	170	3.24	758	1 Aug. 88	45.6	0.77
Instantaneous 1988						27 Feb. 88

KMG NEPAL  
DHM - HYDROLOGY SECTION

Date: 15 Jan, 1995

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumec)  
YEAR 1989

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	54.0	52.0	49.0	51.0	61.0	112	380	524	344	212	78.8	54.0
2	53.0	51.0	48.0	53.0	58.0	102	291	468	356	214	77.6	54.0
3	53.0	51.0	48.0	52.0	71.6	103	294	332	300	180	75.2	53.0
4	52.0	50.0	47.2	51.0	77.6	120	264	332	320	172	74.0	52.0
5	52.0	53.0	48.0	53.0	78.8	107	235	376	304	166	72.8	52.0
6	52.0	50.0	48.0	53.0	77.6	114	400	468	340	150	71.6	51.0
7	52.0	49.0	47.2	57.0	80.0	114	384	492	328	146	70.4	51.0
8	82.4	48.0	46.4	60.0	83.6	106	420	436	440	138	69.2	52.0
9	63.0	48.0	46.4	63.0	92.0	110	468	544	282	132	69.2	51.0
10	56.0	48.0	45.6	63.0	97.6	116	352	564	260	120	68.0	50.0
11	54.0	47.2	45.6	56.0	96.2	122	352	592	258	122	68.0	49.0
12	56.0	46.4	45.6	54.0	89.6	130	352	524	266	130	67.0	49.0
13	54.0	46.4	46.4	56.0	81.2	124	344	436	279	116	65.0	49.0
14	53.0	46.4	44.8	58.0	80.0	144	360	396	285	114	64.0	48.0
15	53.0	46.4	47.2	62.0	69.2	174	436	412	285	110	65.0	47.2
16	53.0	45.6	44.8	59.0	76.4	170	424	464	247	109	65.0	46.4
17	53.0	44.8	44.0	59.0	87.2	140	340	472	244	107	64.0	65.0
18	52.0	45.6	45.6	57.0	90.8	260	348	432	250	105	62.0	47.2
19	52.0	47.2	48.0	59.0	103	162	408	436	235	103	62.0	...
20	52.0	45.6	49.0	58.0	109	218	344	512	256	99.0	60.0	...
21	51.0	45.6	49.0	60.0	105	232	308	440	308	94.8	61.0	...
22	51.0	45.6	52.0	59.0	103	218	320	468	260	93.4	61.0	...
23	52.0	44.8	55.0	60.0	132	184	312	460	247	89.6	60.0	...
24	52.0	44.8	53.0	59.0	146	186	276	392	258	89.6	60.0	...
25	52.0	46.4	54.0	60.0	126	235	279	420	324	89.6	60.0	...
26	52.0	46.4	53.0	62.0	324	226	266	428	260	88.4	57.0	...
27	51.0	46.4	51.0	57.0	74.0	400	285	400	244	87.2	57.0	...
28	51.0	48.0	52.0	54.0	238	304	279	348	220	84.8	57.0	...
29	50.0		50.0	57.0	124	512	480	348	223	82.4	57.0	...
30	51.0		48.0	55.0	116	384	512	348	232	81.2	54.0	...
31	53.0		48.0		103		512	420		80.0		...
Mean	53.8	47.5	46.4	57.2	105	188	356	441	282	120	65.1	...
Max.	82.4	53.0	55.0	63.0	324	512	512	592	440	214	78.8	...
Min.	50.0	44.8	44.0	51.0	58.0	102	235	332	220	80.0	54.0	...
mm	35.1	28.0	31.5	36.1	68.3	118	232	288	178	77.9	41.1	...
l/s/sq km	13.1	11.6	11.8	13.9	25.5	45.7	86.5	107	68.6	29.1	15.8	...

Mean daily 1989  
Instantaneous 1989

MEAN DISCH. (cumec)    MAXIMUM DISCH. (cumec)    GAUGE HT. (m.)    DATE    MINIMUM DISCH. (cumec)    GAUGE HT. (m.)    DATE

HMG NEPAL  
DHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude [deg min sec]: 27 58 08  
Longitude [deg min sec]: 85 11 00  
Elevation [meters]: 600  
Drainage area [sq. km.]: 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumec)  
YEAR 1990

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	...	37.9	35.1	35.8	50.0	158	500	793	480	266	99.0	59.0
2	...	38.6	35.1	34.4	51.0	176	472	1200	448	247	96.2	59.0
3	...	37.9	35.1	35.1	52.0	210	520	528	468	244	92.0	58.0
4	...	37.9	33.7	34.4	51.0	218	488	500	452	238	93.4	58.0
5	...	37.9	34.4	33.7	53.0	229	524	512	592	232	92.0	57.0
6	...	37.2	33.7	34.4	51.0	216	516	600	604	220	92.0	57.0
7	...	37.9	33.7	37.9	53.0	200	718	580	737	214	89.6	54.0
8	...	37.2	37.2	35.8	52.0	170	1060	508	512	216	86.0	54.0
9	...	37.9	37.2	37.9	54.0	178	840	840	452	214	84.8	53.0
10	...	36.5	34.4	39.3	68.0	180	970	824	532	198	86.0	53.0
11	...	38.6	36.5	47.2	76.4	186	660	694	600	184	84.8	51.0
12	...	37.2	37.2	54.0	96.2	174	620	786	612	188	82.4	51.0
13	...	41.6	33.7	54.0	92.0	190	620	682	552	178	80.0	50.0
14	40.0	38.6	33.7	53.0	103	182	1240	700	500	208	78.8	49.0
15	40.0	37.2	35.1	41.6	112	194	925	765	520	170	77.6	48.0
16	40.0	37.2	35.1	46.4	130	238	934	718	456	158	78.8	47.2
17	40.0	35.8	35.1	47.2	134	297	864	688	444	156	76.4	46.4
18	42.4	36.5	37.2	47.2	152	400	1330	635	392	146	72.8	45.6
19	40.0	36.5	38.6	54.0	107	480	970	670	424	138	69.2	44.8
20	40.0	36.5	37.9	59.0	130	540	952	620	380	132	71.6	44.0
21	40.0	36.5	37.2	60.0	124	532	730	592	428	122	69.2	44.0
22	40.0	36.5	45.6	55.0	99.0	532	786	645	384	120	68.0	44.0
23	40.0	35.8	39.3	62.0	89.6	552	1090	580	348	119	66.0	44.8
24	39.3	35.8	38.6	64.0	88.4	492	925	588	316	119	62.0	44.8
25	39.3	35.8	37.9	59.0	90.8	492	943	532	404	116	62.0	44.8
26	40.0	35.8	36.5	55.0	105	452	848	504	336	112	61.0	44.0
27	39.3	35.1	35.8	54.0	102	320	925	737	332	106	61.0	44.0
28	39.3	35.8	34.4	54.0	105	356	786	536	316	105	60.0	43.2
29	38.6		34.4	53.0	134	404	800	588	279	103	60.0	43.2
30	38.6		34.4	51.0	109	500	907	516	273	102	60.0	42.4
31	37.9		36.5		114		808	488		102		44.0
Mean	...	37.1	36.1	47.9	91.2	315	815	650	452	167	77.1	49.1
Max.	...	41.6	45.6	67.0	152	552	1330	1200	737	266	99.0	59.0
Min.	...	35.1	33.7	33.7	50.0	158	472	488	273	102	60.0	42.4
mm	...	21.9	23.6	30.2	59.4	199	531	424	285	109	48.6	32.0
l/s/sq km	...	9.03	8.75	11.7	22.2	76.6	198	158	110	40.6	18.8	11.9

	MEAN		MAXIMUM		MINIMUM	
	DISCH. [cumec]	GAUGE HT. [m.]	DISCH. [cumec]	GAUGE HT. [m.]	DISCH. [cumec]	GAUGE HT. [m.]
Mean daily 1990						
Instantaneous 1990	Missing data					

HMS NEPAL  
DHM - HYDROLOGY SECTION

Date: 15 Jan. 1995

Station no.: 447  
River: Irisuli  
Location: Belrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/01/67  
End of record:

MEAN DAILY DISCHARGES [cusec]  
YEAR 1991

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	44.0	35.1	31.0	42.4	75.2	112	364	616	864	...	...	51.0
2	44.0	34.4	31.0	37.9	71.6	84.8	360	786	840	...	...	51.0
3	43.2	35.1	30.5	40.8	56.0	96.2	348	856	635	...	...	50.0
4	42.4	34.4	31.0	40.0	47.2	107	388	889	592	...	...	49.0
5	42.4	33.0	31.5	40.8	51.0	134	408	718	592	...	...	49.0
6	41.6	33.0	31.5	37.9	54.0	139	620	751	718	...	...	50.0
7	41.6	33.0	33.0	35.8	66.0	210	572	772	620	...	...	49.0
8	40.8	33.0	33.0	33.7	75.2	158	448	840	808	...	...	48.0
9	40.0	33.0	32.5	34.4	78.8	158	560	840	864	...	...	48.0
10	38.6	33.0	32.0	37.2	75.2	200	360	961	700	...	...	48.0
11	38.6	32.5	32.0	33.7	67.0	220	372	786	688	...	...	46.4
12	39.3	32.5	32.0	33.0	60.0	204	336	730	572	...	...	46.4
13	37.9	32.0	31.5	32.5	54.0	168	324	712	520	...	...	45.6
14	37.2	32.0	31.0	31.5	55.0	266	291	786	476	...	...	45.6
15	37.2	32.0	30.5	31.5	68.0	235	372	880	488	...	...	44.8
16	36.5	32.0	31.0	32.5	64.0	266	344	997	500	...	...	44.0
17	38.6	32.0	31.0	33.7	83.6	226	436	772	...	...	63.0	44.0
18	37.2	31.5	31.0	33.7	84.8	136	612	997	...	...	62.0	43.2
19	36.5	31.0	31.0	36.5	81.2	285	700	988	...	...	62.0	43.2
20	37.2	31.0	32.0	35.1	77.6	226	744	1050	...	...	62.0	43.2
21	37.2	31.5	32.0	36.5	92.0	200	737	848	...	...	60.0	43.2
22	37.2	31.5	33.7	36.5	106	223	520	694	...	...	61.0	43.2
23	36.5	31.5	33.7	37.2	103	250	460	580	...	...	58.0	42.4
24	36.5	31.5	32.5	38.6	82.4	279	520	684	...	...	57.0	43.2
25	36.5	32.5	32.0	37.9	96.2	276	540	730	...	...	57.0	43.2
26	35.8	32.0	32.5	38.6	150	258	492	564	...	...	57.0	42.4
27	35.8	32.0	32.5	41.6	176	244	556	800	...	...	57.0	43.2
28	36.5	31.5	33.7	51.0	136	256	552	872	...	...	57.0	40.0
29	35.8	35.8	35.8	53.0	148	336	588	800	...	...	55.0	39.3
30	35.8	39.3	39.3	55.0	158	352	580	952	...	...	52.0	39.3
31	35.8	40.8	40.8	134	134	134	592	765	...	...	...	38.6
Mean	38.5	32.5	32.5	38.0	66.4	210	488	802	...	...	...	45.1
Max.	44.0	35.1	40.8	55.0	158	352	744	1050	...	...	...	51.0
Min.	35.8	31.0	30.5	31.5	47.2	84.8	291	564	...	...	...	38.6
mm	25.1	19.1	21.2	24.0	56.3	133	318	522	...	...	...	29.4
l/s/sq km	9.37	7.90	7.92	9.25	21.0	51.1	119	195	...	...	...	11.0

	MEAN			MAXIMUM			MINIMUM		
	DISCH. [cusec]	DISCH. [cusec]	GAUGE HT. [m.]	DISCH. [cusec]	DISCH. [cusec]	GAUGE HT. [m.]	DISCH. [cusec]	DISCH. [cusec]	GAUGE HT. [m.]
Mean daily 1991	Missing data								
Instantaneous 1991	Missing data								

016 N161  
G.M. - HYDROLOGY SECTION

Date: 10 Dec. 1970

Station no.: 447  
River: Trisuli  
Location: Betrawati  
Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Latitude (deg min sec): 27 58 08  
Longitude (deg min sec): 85 11 00  
Elevation (meters): 600  
Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cuhec)  
YEAR 1992

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	37.2	31.0	29.5	27.0	35.8	54.0	172	856	625	229	86.0	50.6
2	36.5	31.0	29.5	27.0	37.2	59.0	164	660	572	210	83.6	50.0
3	36.5	31.0	28.5	27.0	39.3	62.0	162	772	540	208	82.4	48.0
4	35.8	30.5	30.0	28.5	42.4	68.0	146	765	512	196	82.4	47.2
5	36.5	30.5	29.5	28.0	37.2	68.0	160	612	590	188	81.2	47.2
6	37.2	30.5	29.0	29.5	35.1	76.4	172	560	568	166	78.8	46.4
7	35.8	34.4	29.0	28.5	36.5	72.8	166	572	520	160	77.6	45.6
8	37.2	30.5	29.5	31.0	36.5	69.2	180	552	488	158	76.4	46.4
9	36.5	30.0	29.5	36.5	38.6	62.0	184	552	630	158	76.4	44.8
10	35.8	29.5	29.0	40.0	36.5	67.0	241	592	536	154	72.8	44.0
11	36.5	29.5	28.0	40.0	38.6	59.0	218	588	464	156	72.8	43.2
12	35.1	29.5	28.0	38.6	40.0	61.0	238	540	532	176	70.4	42.4
13	35.8	29.5	28.5	42.4	42.4	74.0	266	456	580	152	70.4	42.4
14	35.1	29.0	28.5	42.4	55.0	82.4	241	488	556	142	69.2	40.8
15	34.4	29.5	28.5	41.6	43.2	93.4	220	572	488	132	69.2	41.6
16	34.4	29.0	28.5	37.9	44.0	99.0	214	548	440	142	64.0	40.8
17	33.0	28.0	28.0	33.7	54.0	130	241	576	400	130	63.0	40.8
18	33.0	28.0	28.0	37.2	45.6	178	308	620	364	146	63.0	40.8
19	33.0	28.0	28.0	32.0	40.8	184	273	592	316	130	61.0	40.0
20	32.5	28.0	28.0	32.0	41.6	194	500	600	285	120	62.0	40.0
21	33.0	27.5	28.0	38.6	38.6	285	504	793	264	114	59.0	39.3
22	37.9	27.0	28.0	43.2	35.8	196	524	1040	258	112	58.0	39.3
23	33.0	27.0	26.5	37.2	35.8	186	484	1180	250	106	63.0	37.9
24	32.0	28.0	27.0	31.5	35.8	200	500	1360	210	105	51.0	37.9
25	31.5	27.0	28.0	32.5	41.6	186	600	1080	229	100	49.0	37.2
26	32.5	28.0	28.5	33.7	44.0	178	492	848	220	99.0	52.0	37.2
27	32.0	26.5	28.0	34.4	56.0	150	480	848	216	93.4	50.0	36.5
28	32.0	26.5	30.5	32.0	51.0	146	460	751	235	90.8	50.0	36.5
29	31.5	28.5	31.5	33.0	58.0	140	460	758	266	88.4	51.0	36.5
30	31.5	28.5	28.5	40.8	61.0	166	500	612	232	88.4	50.0	36.5
31	34.4		27.5		58.0		600	650		86.0		37.2
Mean	34.5	29.1	28.6	34.6	43.1	200	325	709	410	140	66.5	41.5
Max.	37.9	34.4	31.5	43.2	61.0	285	600	1360	630	209	86.0	50.0
Min.	31.5	26.5	26.5	27.0	35.1	54.0	140	456	210	86.0	49.0	36.5
mm	22.5	17.7	18.7	21.8	28.1	76.7	212	462	258	91.2	42.0	27.0
lts/sq km	8.39	7.07	6.97	8.40	10.5	29.4	75.0	172	99.7	34.0	16.7	10.2

	MEAN DISCH. (cuhec)	MAXIMUM DISCH. (cuhec)	GAUGE HT. (m.)	DATE	MINIMUM DISCH. (cuhec)	GAUGE HT. (m.)	DATE
Mean daily 1992	166	1360	3.93	24 Aug. 92	26.5	0.47	23 Mar. 91
Instantaneous 1992		1300	4.10	24 Aug. 92	26.5	0.47	27 Feb. 91

Discharge measurements of: Karnali River at Chisapani

Station No. 280

No	Date	Made by	Width m	Area sq.m	Mean Gauge		Disch. cu.mec	Rating ...		Rating no	Rat. no	Current meter	Remarks
					Vel. m/s	ht. m		Shift %	Perc diff.				
251	04/01/88	JAS	107.5	818.2	0.51	3.24	315.1		-11	354.0	5		
252	22/03/88	BAL	109.0	868.5	0.46	3.32	300.6		-22	383.0	5		
253	18/04/88	BAL	111.0	876.5	0.79	3.78	532.5		-8	580.0	5		
254	18/04/88	JAS	110.0	876.5	0.33	3.78	560.7		-3	590.0	5		
255	25/05/88	ARBR	116.0	691.1	1.32	4.25	912.8		11	820.0	5		
256	27/06/88	JAS	115.0	828.8	1.97	5.35	1548.6		-5	1650.0	5		
257	09/09/88	ARBR	122.0	969.9	2.04	6.32	1978.2		-26	2624.0	5		
258	06/11/88	AR3	111.0	864.4	0.74	3.99	642.5		0	640.0	5		
259	06/12/88	JAS	111.0	807.5	0.49	3.49	393.2		-13	451.0	5		
260	23/03/89	BAA	111.0	724.8	0.49	3.28	357.0		-3	368.0	5		
261	16/04/89	BAA	108.0	696.9	0.51	3.32	357.9		-7	383.0	5		
262	12/05/89	BAL	110.7	758.8	0.51	3.64	455.0		-11	513.0	5		
263	17/05/89	BAL	110.9	830.0	0.77	4.00	635.6		-8	690.0	5		
264	22/05/89	BAL	112.7	950.8	1.07	4.61	1018.0		-2	1036.0	5		
265	01/06/89	BAL	110.0	913.4	0.96	4.36	875.0		-1	886.0	5		
266	03/06/89	BAL	110.0	903.5	0.97	4.18	788.2		1	780.0	5		
267	06/06/89	BAL	110.0	929.1	1.00	4.44	926.0		-1	934.0	5		
268	09/06/89	R A L	110.0	871.6	0.84	4.15	736.1		-4	765.0	5		
269	11/06/89	R A L	110.0	954.4	1.13	4.70	1125.0		3	1090.0	5		
270	15/06/89	R A L	113.1	1024.1	1.21	4.98	1240.4		-4	1294.0	5		
271	18/06/89	R A L	111.3	958.5	0.95	4.55	913.7		-9	1000.0	5		
272	24/06/89	J A S	110.3	828.5	1.19	4.65	987.3		-7	1060.0	5		
273	04/07/89	J A S	113.7	879.0	1.30	4.95	1145.2		-10	1270.0	5		
274	20/04/89	B A R	112.0	733.5	1.34	4.08	982.6		35	730.0	5		
275	12/04/91	AMAR	111.0	732.0	0.70	3.66	514.7		-1	522.0	5		
276	03/06/91	NBR	114.5	805.1	1.09	4.44	881.3		-6	934.0	5		
277	17/06/91	NBR	115.0	1025.5	2.01	5.35	2057.6		-4	2145.0	5		
278	27/06/91												
279	14/07/91		119.0	990.5	1.71	5.61	1698.0		-11	1900.0	5		
280	24/07/91	PBY	119.0	1257.1	2.59	6.84	3252.0		-2	3322.0	5		
281	06/08/91	VBJ	119.5	1276.0	3.15	7.38	4021.0		-1	4042.0	5		
282	31/10/91	ARC	108.0	789.8	0.86	4.05	676.0		-5	715.0	5		
283	10/07/92	VBJ	110.0	768.5	1.12	4.64	862.0		-18	1054.0	5		
284	15/07/92	VBJ	113.0	933.3	1.76	5.61	1643.0		-14	1900.0	5		
285	24/07/92	VBJ	118.0	1176.0	2.50	6.85	2943.0		-12	3335.0	5		
286	28/07/92	VBJ	118.0	1115.0	2.17	6.37	2417.1		-12	2744.0	5		
287	30/07/92	PA	118.0	1101.0	2.08	6.51	2295.0		-21	2912.0	5		
288	05/08/92	PA	118.0	1118.0	2.92	7.41	3268.0		-20	4084.0	5		
289	14/08/92	NBR	118.0	1108.9	2.35	6.58	2605.0		-13	2956.0	5		
290	18/08/92	NBR	122.0	1261.1	3.12	7.73	3939.0		-15	4620.0	5		Y
291	09/09/92	ARYAL	116.0	1112.4	2.56	6.85	2847.0		-15	3335.0	5		
292	18/09/92	ARYAL	119.0	1074.0	2.60	6.74	2795.0		-12	3192.0	5		
293	18/09/92	NBR	120.0	1204.0	2.74	7.22	3299.0		-14	3818.0	5		
294	27/09/92	ARYAL	114.0	958.8	1.55	5.41	1487.0		-13	1700.0	5		
295	02/10/92	ARYAL	113.0	889.0	1.43	5.13	1269.0		-14	1420.0	5		Y
296	02/11/92	ARC	109.0	768.9	0.76	3.90	585.0		-9	640.0	5		
297	21/04/93	VBJ	111.0	754.3	0.71	3.86	531.9		-14	620.0	5		
298	03/06/93	BBC	110.5	835.5	1.15	4.65	953.6		-10	1066.0	5		
299	04/06/93	BBC	112.5	854.1	1.12	4.69	955.3		-12	1084.0	5		
300	08/06/93	BBC	113.5										

Instruments: Staff Gauge  
Recorder  
Cable Way  
Sed. Sampler

Drainage area (sq. km.): 4110  
Start of record: 01/04/67  
End of record:

MEAN DAILY DISCHARGES (cumeq)  
YEAR 1993

Day	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1	36.5	30.5	28.5	26.5	74.0	126	380	635	482	276	99.8	48.0
2	37.2	30.5	28.5	26.5	96.2	134	352	1160	428	276	89.6	51.0
3	34.4	30.5	27.5	26.0	106	110	264	682	480	256	87.2	48.0
4	35.1	30.5	28.0	27.0	107	122	276	872	492	235	86.0	48.0
5	34.4	30.0	27.0	27.5	116	130	262	961	630	235	84.8	47.2
6	34.4	30.0	27.5	28.0	113	128	264	986	645	223	82.4	48.0
7	36.5	30.5	27.0	29.5	93.4	142	262	779	468	216	81.2	47.2
8	35.8	31.0	27.0	28.5	116	142	316	808	448	206	78.8	47.2
9	33.7	32.0	27.5	34.4	97.6	140	344	970	468	202	76.4	45.6
10	34.4	32.5	27.5	29.0	78.8	114	416	1850	464	196	75.2	44.8
11	35.1	32.0	27.0	31.5	78.8	122	392	779	460	192	74.0	44.0
12	35.8	32.5	27.0	29.5	66.0	150	420	682	424	184	72.8	44.0
13	34.4	32.0	27.0	32.0	62.0	170	356	635	368	176	72.8	43.2
14	33.0	31.0	27.5	31.5	59.0	180	556	612	404	172	71.6	42.4
15	32.5	31.0	27.5	33.7	59.0	170	528	635	372	164	72.8	42.4
16	32.5	32.0	27.5	35.8	67.0	188	536	645	368	160	71.6	42.4
17	33.0	32.0	27.5	39.3	83.6	208	630	730	396	158	70.4	40.8
18	32.5	32.0	27.5	37.2	93.4	216	480	620	344	154	69.2	40.8
19	32.0	32.0	26.5	34.4	71.6	254	492	744	308	144	67.0	40.8
20	31.5	30.5	24.5	39.3	63.0	200	444	665	316	140	64.0	40.8
21	31.0	29.0	25.5	37.2	59.0	186	396	712	288	128	62.0	39.3
22	31.0	28.5	25.5	40.0	62.0	198	452	620	372	119	53.0	38.6
23	31.0	28.0	29.0	60.0	63.0	223	372	572	380	117	49.0	37.9
24	31.0	28.5	26.5	50.0	87.2	304	380	556	416	116	47.2	37.9
25	31.5	28.5	26.5	46.4	86.0	312	480	682	620	113	47.2	37.9
26	31.0	29.0	29.5	44.8	92.0	258	472	552	428	109	47.2	36.5
27	31.5	29.0	25.5	45.6	107	320	472	468	376	103	47.2	36.5
28	31.5	28.5	28.0	58.0	82.4	273	832	520	360	100	46.4	36.5
29	31.5		28.0	72.8	84.8	294	712	472	324	99.0	46.4	35.8
30	31.0		27.5	65.0	96.2	260	718	468	294	94.8	45.6	35.8
31	31.5		27.0		97.6		572	468		92.0		35.1
Y	33.2	30.5	27.2	38.2	84.5	192	446	728	422	166	67.7	42.1
Max.	37.2	32.5	29.5	72.8	116	320	632	1850	645	276	90.8	51.0
Min.	31.0	28.0	24.5	26.0	59.0	110	262	468	288	92.0	45.6	35.1
EP	21.6	18.0	17.7	24.1	55.1	121	291	474	266	108	42.7	27.4
1/s/sq km	8.07	7.42	6.62	9.30	20.6	46.8	109	177	103	40.5	16.5	10.2

	MEAN DISCH. (cumeq)	MAXIMUM DISCH. (cumeq)	GAUGE HT. (m.)	DATE	MINIMUM DISCH. (cumeq)	GAUGE HT. (m.)	DATE
Mean daily 1993	191	1950	4.38	10 Aug. 93	24.5	0.43	20 Mar. 93
Instantaneous 1993		2020	4.56	10 Aug. 93	24.0	0.42	20 Mar. 93



## Discharge measurements of: Karnali River at Chisapani

Station No. 290

No	Date	Made by	Width	Area	Mean	Gauge	Disch.	Rating ...		Rating	Rat.	Current	Remarks
								Shift	Perc				
					vel.	ht.		adj.	diff.		no	no	
			m	sq. m	m/s	m	cusec	m	%	cusec			
301	08/10/93	ARC	118.0	923.0	1.54	5.13	1424.0		0	1420.0	5		No. 229-248(Letter fr. Dhangadi)
302	13/01/94	KBB	109.0	615.4	0.56	3.41	341.6						
303	07/03/94		108.0	606.8	0.47	2.23	287.3						

Accordingly, it is recommended that DHM data be used for hydrologic design on the Trishuli - Devighat Hydropower Upgrading Project.

## 2.4 LONG TERM FLOW CHARACTERISTICS

The long term flow characteristics of prime interest in the evaluation of energy output at a hydroelectric plant are :

- mean annual flow
- mean monthly flows
- daily flow duration curve

### 2.4.1 Mean Annual and Mean Monthly Flows

Mean monthly and mean annual flows for Trishuli river at Betrawati were estimated from a nineteen year period of record from DHM as shown in Table 2.3.

TABLE 2.1  
MEAN MONTHLY AND YEARLY DISCHARGES - FOR TRISHULI RIVER AT BETRAWATI

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
1967	47.4	38.8	35.6	41.2	63.7	137.0	429.0	510.0	326.0	199.0	66.9	40.2	156.9
1968	37.7	32.1	31.8	38.7	64.9	220.0	406.0	479.0	201.0	170.0	75.8	51.0	164.8
1969	40.5	35.5	33.2	38.1	62.3	133.0	398.0	451.0	335.0	126.0	67.7	47.4	148.3
1970	36.7	31.9	29.9	40.5	65.1	162.0	460.0	512.0	290.0	152.0	83.6	57.9	162.1
1971	45.8	30.6	36.0	46.5	65.1	340.0	440.0	549.0	328.0	154.0	81.5	54.0	183.3
1972	42.9	37.3	38.9	42.9	101.0	163.0	431.0	473.0	283.0	186.0	62.5	43.0	152.8
1973	37.3	36.8	40.2	68.4	96.6	366.0	510.0	663.0	525.0	280.0	180.0	65.7	233.7
1974	58.0	39.7	36.2	53.0	82.2	280.0	546.0	640.0	396.0	186.0	86.4	60.6	199.6
1975	51.2	46.2	44.2	68.2	91.6	264.0	540.0	561.0	516.0	222.0	110.0	69.0	216.3
1976	49.3	41.9	48.3	46.6	85.2	287.0	367.0	407.0	372.0	165.0	99.0	65.5	169.4
1977	40.1	46.5	49.8	54.9	77.0	192.0	591.0	689.0	368.0	164.0	94.0	61.7	197.2
1978	46.6	44.1	45.4	57.4	151.0	335.0	520.0	625.0	332.0	215.0	100.0	70.1	213.9
1979	51.3	43.5	43.9	52.4	91.9	105.0	460.0	584.0	200.0	137.0	83.0	55.6	167.5
1980	43.5	48.2	48.0	59.4	80.6	276.0	663.0	670.0	39.8	162.0	91.0	50.9	216.4
1981	42.5	36.4	37.2	50.0	85.0	290.0	714.0	619.0	369.0	140.0	87.1	56.0	212.1
1982	43.0	39.0	56.0	74.6	81.4	212.0	407.0	596.0	393.0	120.0	77.5	54.1	180.6
1983	40.1	34.0	36.3	30.5	69.9	161.0	377.0	506.0	430.0	200.0	94.9	60.4	172.4
1984	46.6	33.4	34.2	34.5	107.0	270.0	619.0	517.0	417.0	117.0	69.5	46.9	196.8
1985	35.6	33.0	41.9	46.3	54.6	156.0	406.0	432.0	369.0	200.0	91.7	67.1	169.1
AVG	44.0	38.4	39.6	49.3	83.0	226.6	490.7	540.4	360.0	165.4	85.0	57.8	184.9
STD	15.05	4.46	6.43	18.76	21.92	73.58	96.10	74.30	71.86	45.31	13.69	9.00	25.26
CV2	11.47	11.66	16.25	28.00	26.41	32.07	19.20	13.56	19.31	27.39	15.95	13.03	13.67
MAX	51.3	46.5	56.0	74.6	151.0	366.0	714.0	670.0	525.0	280.0	110.0	70.1	233.7
MIN	35.6	31.9	29.9	34.5	50.6	133.0	167.0	132.0	200.0	106.0	62.5	43.0	148.3

600  
 700  
 800  
 900  
 1000  
 1100  
 1200  
 1300  
 1400  
 1500  
 1600  
 1700  
 1800  
 1900  
 2000

1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका

क्र.सं.	विवरण	मिति	प्रमाण	विवरण	मिति	प्रमाण	विवरण	मिति	प्रमाण
1	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
2	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
3	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
4	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
5	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
6	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
7	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
8	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
9	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52
10	1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52	1951-52

1951-52

1951-52 बरफको इलाका नाममा हुने सही विवरण उपरोक्त तालिका

# CLIMATOLOGICAL RECORDS

OF  
NEPAL

1987-1990

DEPARTMENT OF HYDROLOGY AND METEOROLOGY  
KATHIMANDU, NEPAL  
ASHADH 2052  
JUNE 1995

LOCATION : NUHAKOT  
 INDEX NO. : 1004  
 DISTRICT : NUHAKOT

1987

LAT. 1 27' 34" N  
 LONG. 1 09' 10" E  
 ELEV. : 1003 m. AMSL

Month	AIR TEMPERATURE °C						RELATIVE HUMIDITY %		VAPOUR PRESSURE mb		PRECIPITATION mm								
	Mean		Absolute extreme		Number of days		Observed at		Maximum in 24 hrs. & Date		Total			Maximum					
	Max.	Min.	Max. Daily	Max. Date	Min. Date	Max. ≥30°	Min. ≤0°	08:45 NST	17:45 NST	25:00 NST	1.0 to 2.0	2.0 to 5.0	5.0 to 10.0	10.0 to 25.0	25.0 to 50.0	50.0 to 100.0			
JAN	20.7 <sup>a</sup>	8.6	14.7 <sup>a</sup>	23.6 31 <sup>a</sup>	6.0 1	0	0	86	81	12.3	13.9	2	1 / 17	2	2	0	0	0	
FEB	23.8	10.9 <sup>a</sup>	17.3 <sup>a</sup>	27.6 19	7.8 4 <sup>a</sup>	0	0	80	71	13.4	14.5	29	20 / 4	3	2	1	0	0	
MAR	26.3	13.8	20.0	31.3 31	9.9 1	6	0	83	71	17.9	17.1	11	4 / 17	3	3	0	0	0	
APR	30.3	17.7	24.0	32.3 5	15.6 13	25	0	79	71	21.8	21.6	78	44 / 23	7	5	1	1	0	
MAY	31.8	20.1	26.0	35.3 31	13.0 4	24	0	76	72 <sup>a</sup>	24.5	25.6 <sup>a</sup>	30	7 / 4	8	8	0	0	0	
JUN	32.1	22.2	27.2	34.0 18	19.5 1	29	0	81	75	26.5	27.2	337	138 / 30	15	6	5	3	0	
JUL	31.8	21.3 <sup>a</sup>	26.6 <sup>a</sup>	33.5 2	15.0 20 <sup>a</sup>	31	0	91	88	27.5	27.6	692	74 / 8	27	13	2	6	6	
AUG	31.8	21.7	26.8	33.5 9	20.0 13	20	0	90	84	27.3	26.6	484	72 / 24	23	8	8	5	2	
SEP		21.3			12.5 30		0	89	84	26.6	26.5 <sup>a</sup>	276	55 / 23	16	8	3	3	2	
OCT		17.3 <sup>a</sup>			12.5 9 <sup>a</sup>		0	87	85	21.8	23.1	142	87 / 20	4	2	0	1	1	
NOV		13.8			11.5 27		0	85	85	17.2	18.7	17	17 / 22	1	0	1	0	0	
DEC		10.8			9.0 23		0	88	87	13.9	15.9	17	17 / 13	1	0	1	0	0	
YEAR		16.6			6.0 JAN		0	85	80	20.9	21.5	2114	138/ JUN	110	57	22	19	11	1

Missing number of days : a=1; j=10

LAT.: 27° 48' N  
 LONG.: 85° 15' E  
 ELEV.: 2064 m. AMSL

LOCATION : KAKAN;  
 INDEX NO. : 1007  
 DISTRICT : NUWAKOT

1987

Month	AIR TEMPERATURE °C										RELATIVE HUMIDITY %			VAPOUR PRESSURE mb			PRECIPITATION mm					
	Mean		Absolute extreme		Number of days		Observed at			Maximum			Total in 24 hrs.		Number of rainy days		Number of rainy days					
	Max.	Min.	Max.	Min.	Max.	Min.	08:45	17:45	08:45	17:45	Max.	Date	Total	Max.	Date	≥ 1.0	≥ 10.0	≥ 25.0	≥ 50.0			
	Min.	Daily	Date	Date	≥ 30°	≤ 0°	NST	NST	NST	NST	8.2	7.7	8.2	7	4 / 12	2	2	0	0	0		
JAN	14.6	1.7	17.2	-1.5	0	4	75	73	7.7	8.2	7	4 / 12	7	4 / 12	2	2	0	0	0	0		
FEB	15.7	3.1	20.0	-2.2	0	2	72	73	8.2	8.8	42	20 / 4	42	20 / 4	5	3	2	0	0	0		
MAR	17.9	6.2	22.9	1.3	0	0	76	74	11.1	11.1	75	18 / 13	75	18 / 13	9	5	4	0	0	0		
APR	22.3	9.7	25.5	7.3	0	0	70	69	13.7	13.2	32	13 / 27	32	13 / 27	5	3	2	0	0	0		
MAY	23.2	13.0	27.3	6.0	0	0	76	76	16.8	16.5	154	27 / 4	154	27 / 4	12	6	4	2	0	0		
JUN	23.2	16.3	25.3	14.6	0	0	89	89	20.0	20.7	293	62 / 30	293	62 / 30	18	8	5	3	2	0		
JUL	22.2	16.6	25.4	15.4	0	0	93	95	20.7	21.3	839	76 / 25	839	76 / 25	27	5	8	8	6	0		
AUG	22.2	15.8	26.3	14.5	0	0	93	95	20.4	20.8	389	47 / 2	389	47 / 2	23	6	11	6	0	0		
SEP	22.1	14.5	25.0	12.3	0	0	91	93	19.3	19.8	321	68 / 4	321	68 / 4	18	11	2	3	2	0		
OCT	21.2	10.7	23.5	9.0	0	0	83	87	14.9	15.7	147	88 / 20	147	88 / 20	6	3	1	1	1	0		
NOV	18.6	7.3	20.7	4.5	0	0	83	81	11.4	11.7	0	0 / 0	0	0 / 0	0	0	0	0	0	0		
DEC	17.0	5.2	22.0	2.0	0	0	70	75	9.0	9.7	24	24 / 13	24	24 / 13	1	0	1	0	0	0		
YEAR	20.0	10.0	27.3	2.2	0	6	81	82	14.4	14.8	2322	88 / OCT	2322	88 / OCT	126	52	40	23	11	0		

2.21019 Number of days 1.0 to 1.9 mm

LAT.: 27° 55' N  
 LONG.: 85° 10' E  
 ELEV.: 1003 m. amsl

1988

LOCATION : NUMAKOT  
 INDEX NO. : 1004  
 DISTRICT : NUMAKOT

Month	AIR TEMPERATURE °C						RELATIVE HUMIDITY %			VAPOUR PRESSURE mb		PRECIPITATION mm					
	Mean		Absolute extreme		Number of days		Observed at		Observed at		Maximum in 24 hrs.		Number of rainy days				
	Max.	Min.	Max.	Min.	Max.	Min.	08:45	17:45	08:45	17:45	&	Date	≥	to	to	to	
	Daily	Daily	Date	Date	≥30°	≥50°	NST	NST	NST	NST			1.0	10.0	25.0	50.0	
JAN	10.0		7.3	27	0	0	85	76	12.7	13.7	0	0 / 0	0	0	0	0	0
FEB	11.9		9.8	1	0	0	81	73	13.9	16.1	11	7 / 14	2	2	0	0	0
MAR	14.5		10.2	20	0	0	85	73	18.0	18.9	27	19 / 20	3	2	1	0	0
APR	18.8		14.8	2	0	0	79	73	22.4	25.4	26	12 / 18	4	3	1	0	0
MAY	21.0	26.6 <sub>v</sub>	15.5	15	9	9	78	70	25.2	25.8	97	30 / 19	9	6	1	2	0
JUN	21.1	25.6 <sub>a</sub>	16.5	5	16	16	85	76	25.9	25.9	322	45 / 24	15	5	4	6	0
JUL	21.8	26.0	15.6	7	23	23	90	85	27.9	28.0	551	68 / 31	23	7	5	9	2
AUG	21.7	26.2 <sub>a</sub>	19.8	14	24	24	89	87	27.2	27.0 <sub>a</sub>	401	55 / 12	15	2	5	6	2
SEP	20.7	25.8	17.7	16	26	26	88	84	25.7	26.5	227	64 / 8	6	1	1	3	1
OCT	18.5	23.8 <sub>a</sub>	12.0	7	15	15	84	82	23.0	22.7 <sub>a</sub>	0	0 / 0	0	0	0	0	0
NOV	13.2	19.4 <sub>e</sub>	11.4	30	0	0	81	77	16.2	16.3 <sub>e</sub>	0	0 / 0	0	0	0	0	0
DEC	11.5	17.9 <sub>q</sub>	9.5	13	0	0	80	80	13.7	14.7 <sub>q</sub>							
YEAR	17.1		7.3	JAN			84	78	21.0	21.8							

Missing number of days : a=1; e=5; q=17; v=22

LOCATION : KAZANI  
 INDEX NO. : 1007  
 DISTRICT : NUMAKOT

1988

LAT. : 27° 48' N  
 LONG. : 85° 15' E  
 ELEV. : 2064 m. AMSL

Month	AIR TEMPERATURE °C						RELATIVE HUMIDITY %			VAPOUR PRESSURE mb		PRECIPITATION mm						
	Mean		Absolute extreme		Number of days		Observed at		Observed at		Total	Maximum in 24 hrs. & Date	Number of rainy days					
	Max.	Min.	Max. Date	Min. Date	Max. >30°	Min. <10°	08:45 NST	17:45 NST	08:45 NST	17:45 NST			1.0 to 2.9	3.0 to 4.9	5.0 to 9.9	10.0 to 50.0		
JAN	14.9	4.0	17.3	2.6	0	0	80	79	8.4	8.9	0	0 / 0	0	0	0	0	0	
FEB	16.8	5.5	18.8	2.6	0	0	78	78	9.5	10.2	22	10 / 24	4	3	1	0	0	
MAR	18.9	7.4	22.6	4.0	0	0	77	80	11.0	12.3	75	29 / 20	5	2	2	1	0	
APR	23.5	6.6	28.0	2.5	0	0	71	74	14.5	15.3	38	13 / 18	7	6	1	0	0	
MAY	22.5	13.9	26.9	6.0	0	0	84	86	17.8	18.7	260	68 / 23	15	6	6	2	1	
JUN	21.4	15.7	26.4	11.7	0	0	89	91	19.2	20.2	443	67 / 11	24	10	7	6	1	
JUL	22.3	16.7	23.5	15.5	0	0	93	94	20.7	21.3	760	70 / 31	30	5	13	9	3	
AUG	21.8	16.6	24.2	15.5	0	0	93	94	20.3	20.6	729	83 / 7	29	11	5	10	3	
SEP	22.7	15.7	24.7	12.2	0	0	92	92	19.3	19.7	313	54 / 2	17	4	8	4	1	
OCT	21.9	12.5	24.2	10.0	0	0	84	85	16.0	16.2	51	35 / 2	3	2	0	1	0	
NOV	18.5	8.1	21.1	4.0	0	0	69	71	10.3	11.4	19	12 / 6	2	1	1	0	0	
DEC											65	49 / 25	2	0	1	1	0	0
YEAR											2775	83 / AUG	138	50	45	34	9	0

Missing number of days : 0/17



LONG.: 85° 10' E  
ELEV.: 1003 m. AMSL

Month	AIR TEMPERATURE °C						RELATIVE HUMIDITY %			VAPOUR PRESSURE mb		Total in 24 hrs.		PRECIPITATION mm					
	Mean		Absolut. extreme		Number of days		Observed at		Observed at		Maximum		Number of rainy days						
	Max.	Min.	Max. Date	Min. Date	Max. 30°	Min. 50°	NST	NST	NST	NST	Date	1.0	2.0	3.0	4.0	5.0			
JAN																			
FEB																			
MAR																			
APR	29.9 <sub>l</sub>	18.3 <sub>l</sub>	24.1 <sub>l</sub>	34.1 <sub>l</sub> 26.1 <sub>l</sub>	15.1 <sub>l</sub> 24.1 <sub>l</sub>	9 <sub>l</sub>	0 <sub>l</sub>	71 <sub>l</sub>	61 <sub>l</sub>	19.8 <sub>l</sub> 20.0 <sub>m</sub>	5	5	5	26	1	0	0	0	0
MAY	31.5	19.1	25.3	38.8 <sub>o</sub> 5 <sub>o</sub>	15.0 <sub>o</sub>	20	0	67	53	20.1 18.9	209	51	26	10	3	2	4	1	0
JUN	30.8	21.6 <sub>a</sub>	26.1 <sub>a</sub>	33.5 <sub>a</sub> 9 <sub>a</sub>	18.8 <sub>a</sub> 1 <sub>a</sub>	23	0	85	77	26.4 26.6	167	30	4	17	11	4	2	0	0
JUL	29.4 <sub>a</sub>	22.0 <sub>b</sub>	25.7 <sub>b</sub>	32.0 <sub>b</sub> 22 <sub>a</sub> 31 <sub>b</sub>	20.8 <sub>b</sub> 16 <sub>b</sub>	16	0	89	86 <sub>a</sub>	27.5 27.9 <sub>a</sub>	394	65	25	20	6	9	2	3	0
AUG	29.8	21.2	25.5	32.5 <sub>l</sub> 4 <sub>l</sub>	19.8 <sub>l</sub> 1 <sub>l</sub>	16	0	92	86	26.9 27.8	708	78	15	27	6	9	9	3	0
SEP	29.3 <sub>b</sub>	21.2	25.3	32.2 <sub>a</sub> 3 <sub>a</sub> 25 <sub>a</sub>	19.0 <sub>a</sub> 9 <sub>a</sub>	9	0	92	86	26.5 25.8	317	56	8	19	9	6	3	1	0
OCT	29.4	18.4 <sub>a</sub>	23.9 <sub>a</sub>	30.7 <sub>a</sub> 4 <sub>a</sub> 31 <sub>a</sub>	14.0 <sub>a</sub> 9 <sub>a</sub>	15	0	84 <sub>a</sub>	81	23.0 23.1	46	18	4	4	2	0	0	0	0
NOV	25.1	12.6	18.9	27.0 <sub>o</sub> 5 <sub>o</sub> 29 <sub>o</sub>	9.0 <sub>o</sub> 6.0 <sub>o</sub>	0	0	75	68	14.9 14.4	0	0	0	0	0	0	0	0	0
DEC	22.0	8.5	15.3	24.8 <sub>o</sub> 2 <sub>o</sub> 28 <sub>o</sub>	6.0 <sub>o</sub>	0	0	68	69	11.4 12.0	11	9	14	2	2	0	0	0	0
YEAR																			

Missing number of days : a=1; b=2; l=12; m=13

LAT.: 27° 48' N  
 LONG.: 85° 15' E  
 ELEV.: 2064 m. amsl

1989

LOCATION : KAKANI  
 INDEX NO. : 1007  
 DISTRICT : NUHAKOT

Month	AIR TEMPERATURE °C						RELATIVE HUMIDITY %			VAPOUR PRESSURE mb		PRECIPITATION mm							
	Mean		Absolute extreme		Number of days		Observed at			Observed at		Total in 24 hrs. & Date	Maximum	Number of rainy days					
	Max.	Min.	Max. Date	Min. Date	Max. 30°	Min. 50°	08:45 NST	17:45 NST	08:45 NST	17:45 NST	1.0 to 1.0			10.0 to 25.0	25.0 to 50.0	50.0 to 100			
JAN	12.3	2.6	7.5	31	12	0	3	78	75	7.2	7.7	35	18 / 8	2	0	2	0	0	0
FEB	14.8	4.5	9.6	28	20	0	1	47	60	5.4	7.6	12	9 / 19	2	0	0	0	0	0
MAR	18.4	7.7	13.0	26	30	0	0	61	67	9.3	10.6	57	35 / 12	4	2	1	1	0	0
APR	23.3	10.3	16.8	26	24	0	0	51	55	10.8	11.7	2	2 / 11	1	1	0	0	0	0
MAY	22.8 <sub>a</sub>	13.5	18.2 <sub>a</sub>	29	24	0	0	76	77	16.1	16.9	254	64 / 20	12	5	3	2	2	0
JUN	21.8 <sub>a</sub>	15.8	18.8 <sub>a</sub>	25	14	0	0	87	90	19.3	20.4	409	61 / 26	19	7	5	5	2	0
JUL	21.6 <sub>a</sub>	16.1	18.9 <sub>a</sub>	22	11	0	0	92	94	20.0	20.5	716	132 / 30	28	9	11	3	4	1
AUG	22.0	15.6	18.8	23	14	0	0	91	92	20.2	21.1	1014	111 / 16	27	8	4	6	7	2
SEP	21.8 <sub>a</sub>	15.4	18.6 <sub>a</sub>	24	13	0	0	92	94	19.3	19.1	580	108 / 8	25	10	9	1	4	1
OCT	21.5	12.8	17.2	24	10	0	0	83	88	16.4	16.6	62	27 / 18	6	3	2	1	0	0
NOV	17.6 <sub>r</sub>	7.5	12.6 <sub>r</sub>	19	4	0	0	63	77	10.8	12.2	0	0 / 0	0	0	0	0	0	0
DEC	13.1 <sub>x</sub>	4.5	8.8 <sub>x</sub>	14	1	0	0	70	84	9.7	10.8	22	20 / 14	2	1	1	0	0	0
YEAR	19.2	10.5	14.9	29	21	0	4	74	80	13.7	14.6	3162	132 / JUL	128	48	38	19	19	4

Missing number of days : a=1; f=6; j=10; r=18; x=24

LOCATION : NUHAKOT  
 INDEX NO. : 1004  
 DISTRICT : NUHAKOT

1990

LAT. : 27° 55' N  
 LONG. : 85° 10' E  
 ELEV. : 1003 m. AMSL

Month	AIR TEMPERATURE °C						RELATIVE HUMIDITY %			VAPOUR PRESSURE mb			PRECIPITATION mm					
	Mean		Absolute extreme		Number of days		Observed at			Observed at			Total in 24 hrs. & Date	Number of rainy days				
	Max.	Min.	Max. Daily	Min. Daily	Max. Date	Min. Date	08:45 NST	17:45 NST	08:45 NST	17:45 NST	08:45 NST	17:45 NST		1.0 to 2.9	3.0 to 9.9	10.0 to 24.9	25.0 to 50.0	50.0 to 100.0
JAN	22.2	10.2	16.2	24.7	6.5	0	0	79	70	12.1	12.9	0	0	0	0	0	0	0
FEB	22.4	9.9	16.2	24.8	8.0	0	0	85	60	13.2	11.6	47	16	11	5	3	2	0
MAR	25.2	11.2	18.2	30.0	9.2	1	0	69	67	13.9	14.9	65	32	17	6	4	1	1
APR	29.8	16.8	23.3	34.5	11.4	15	0	66	51	15.8	14.8	59	12	26	9	7	2	0
MAY	31.2	19.2	25.2	36.2	16.4	23	0	84	64	22.5	22.0	140	35	18	14	9	4	1
JUN	31.7	21.2	26.5	35.5	19.2	27	0	85	75	26.3	27.4	173	23	4	15	8	7	0
JUL	29.0	21.5	25.3	31.3	19.2	13	0	84	82	26.1	26.8	404	60	29	25	9	12	3
AUG	29.0	21.0	25.0	31.5	19.4	12	0	84	82	24.2	25.7	553	55	11	24	5	10	7
SEP	29.7	20.7	25.2	32.0	19.5	16	0	85	84	24.5	26.2	130	28	8	13	8	4	1
OCT	29.0	18.1	23.6	31.2	15.2	9	0	82	81	20.7	22.3	131	60	13	6	3	1	1
NOV	26.8	14.3	20.5	29.5	11.2	0	0	76	75	16.2	17.2	13	9	4	2	2	0	0
DEC	22.0	9.1	15.6	25.0	6.4	0	0	71	75	12.4	14.3	6	5	24	1	1	0	0
YEAR	27.3	16.1	21.7	34.5	6.4	116	0	79	72	19.0	19.7	1720	60	120	59	43	14	6

Missing number of days : 8=1

LOCATION : KAKANI  
 INDEX NO. : 1007  
 DISTRICT : NUNAKOT

1990

LAT.: 27° 48' N  
 LONG.: 85° 15' E  
 ELEV.: 2064 m. AMSL

Month	AIR TEMPERATURE °C						RELATIVE HUMIDITY %			VAPOUR PRESSURE mb			PRECIPITATION mm						
	Mean		Absolute extreme				Observed at			Maximum in 24 hrs.			Number of rainy days						
	Max.	Min.	Max. Date	Min. Date	Max. ≥30°	Min. ≤10°	08:45 NST	17:45 NST	24:45 NST	Total	Date	Maximum	≥ 1.0	1.0 to 2.5	2.5 to 5.0	5.0 to 10.0	10.0 to 25.0	25.0 to 50.0	≥ 50.0
JAN	15.9	5.6	10.8	18.6	1.9	0	61	70	8.9	9.1	0	0	0	0	0	0	0	0	0
FEB	14.3	4.8	9.6	18.4	2.5	0	80	82	10.2	9.5	100	26	14	9	4	5	0	0	0
MAR	16.1	6.4	11.3	20.2	3.4	0	74	73	10.3	9.7	93	19	27	10	5	5	0	0	0
APR	20.4	10.9	15.7	25.2	5.4	0	69	71	13.3	12.7	61	31	8	8	7	0	1	0	0
MAY	21.2	13.7	17.5	23.6	10.2	0	80	81	16.2	16.0	194	65	18	20	16	1	2	1	0
JUN	23.0	16.3	19.7	25.2	14.6	0	85	87	20.2	20.3	679	72	23	25	5	7	9	4	0
JUL	21.9	16.6	19.3	25.4	15.8	0	89	91	20.6	20.6	682	80	14	28	8	8	9	3	0
AUG	22.5	16.5	19.5	25.0	15.3	0	86	91	20.5	20.5	766	98	15	29	11	7	7	4	0
SEP	21.8	15.4	18.6	24.4	13.2	0	88	91	19.7	19.4	348	40	11	21	7	10	4	0	0
OCT	20.6	11.2	15.9	24.2	8.4	0	75	88	15.0	16.2	66	41	14	9	8	0	1	0	0
NOV	19.5	9.1	14.3	22.6	6.5	0	62	79	11.1	13.9	3	3	1	1	1	0	0	0	0
DEC	16.1	5.7	10.9	19.1	4.5	0	63	69	9.0	10.0	3	3	31	1	1	0	0	0	0
YEAR	19.4	11.0	15.2	25.2	1.9	0	76	81	14.6	14.8	2994	98	AUG	161	73	63	33	12	0

Missing number of days : a=1; b=2; c=3; d=4

# POTENTIAL EVAPOTRANSPIRATION IN NEPAL

