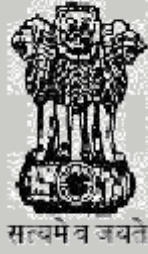


खंड-3
(केवल कार्यालय उपयोग हेतु)

Volume-III
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भारत सरकार

GOVERNMENT OF INDIA

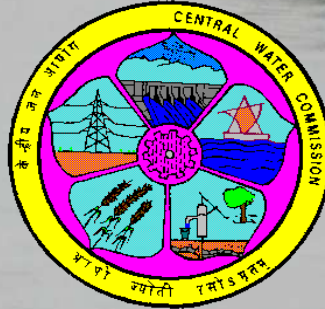
जल संसाधन, नदी विकास और गंगा संरक्षण मंत्रालय
MINISTRY OF WATER RESOURCES, RIVER
DEVELOPMENT & GANGA REJUVENATION

केन्द्रीय जल आयोग
CENTRAL WATER COMMISSION

जलवर्ष पुस्तिका
WATER YEAR BOOK

(जून 2016 - मई 2017) (June 2016 - May 2017)

बैतरणी, सुबर्णरेखा एवं बूढाबलंग बेसिन
BAITARANI, SUBARNAREKHA & BURHABALANG BASIN



जल विज्ञानीय प्रेक्षण परिमंडल
HYDROLOGICAL OBSERVATION CIRCLE
भुवनेश्वर (BHUBANESWAR)

September: 2017

खंड-3

Volume-III

जलवर्ष पुस्तिका

WATER YEAR BOOK

(जून 2016 से मई 2017) (June 2016 - May 2017)

बैतरणी, सुर्बणरेखा एवं बूढाबलंग बेसिन

BAITARANI, SUBARNAREKHA & BURHABALANG BASIN

FOREWORD

Proper assessment, analysis and compilation of hydro-meteorological data are essential for planning and management of precious water resources, which is vital not only for economic development but also for providing basic needs for such a large population of our country. Water reaches the land-mass through precipitation, a part of which evaporates, a portion of it percolates into ground as natural ground water and the excess runoff flows through rivulets and rivers and drain into the sea. Central Water Commission (CWC), an apex technical Organisation of Government of India for surface water resources, carries out systematic collection of hydro-meteorological data and assessment of surface water as one of its prime functions.

Hydro-meteorological observation stations have been established by CWC in almost all the river basins of India in a phased manner. These are further modernised and strengthened under various schemes. In the process, additional Divisions, Circles and Regional offices have been set up on a basin-wise concept.

The basin encompassing the east flowing rivers in-between the Ganga and the Godavari basins viz. Subarnarekha, Burhabalang, Baitarani, Brahmani, Mahanadi, Rushikulya, Vamsadhara, Nagavali and Sarada has been identified as Mahanadi and Eastern Rivers Basin which is dealt by Mahanadi and Eastern Rivers Organisation (MERO), CWC, Bhubaneswar. Hydrological Observation Circle (HOC), Bhubaneswar under MERO carries out hydrological observation and flood forecasting activities in these 9 river basins flowing mainly through Odisha along with its neighbouring States of Jharkhand, Chattisgarh, Andhra Pradesh and West Bengal through two Divisions under its jurisdiction viz. Mahanadi Division (MD), Burla and Eastern Rivers Division (ERD), Bhubaneswar.

There are a total of 119 observation stations under MERO. Systematic gauge and discharge observations are regularly conducted at 42 hydrological stations (out of the above 119) throughout the year. Sediment, Water Quality and Meteorological data are also observed at some of the stations. After scrutiny and checking, the collected & processed data are stored in a database through a custom made software "Surface Water Data Entry System (SWDES) and published in the form of Water Year Books. The present publication of Water Year Book contains Hydrological, Sediment and Water Quality data for the hydrological year 2016-17, i.e. from June 2016 to May 2017.

Water Year Book pertaining to the Hydrological Observation Circle, CWC, Bhubaneswar is published in four volumes. While Volume-I incorporates data of Mahanadi basin, Volume-II contains data of Brahmani basin, Volume-III of Subarnarekha, Burhabalang & Baitarani basins and Volume-IV of Rushikulya, Vamsadhara, Nagavali and Sarada basins. Each Volume contains Discharge data as Section-I, Sediment data as Section-II and Water Quality data as Section-III for respective river basins.

This Volume-III covers hydrological, sediment and water quality data for Water Year 2016-17 of eight sites of Subarnarekha, Burhabalang & Baitarani river basins and three effluent stations alongwith salient features and other important statistical information. Sincere effort put in by the officers and staff of ERD, CWC, Bhubaneswar namely, Smt. Dr. Shanthala Devi B.S, Extra Assistant Director and S.S. Mohanty, Senior Computer of Hydromet Section under the able leadership of Shri C. Mohanty, Executive Engineer, in collecting & processing the data and bringing out this publication is highly commendable. The guidance and encouragement of Shri A.K.Nayak, Chief Engineer, MERO, Bhubaneswar and co-operation of the officials of H.O. Circle and Chief Engineer's office are duly acknowledged.

Place: Bhubaneswar
Date: September, 2017

(D.K. Jena)
Superintending Engineer
HOC, CWC
Bhubaneswar

LIST OF ABBREVIATIONS USED:

General:

CWC	:	Central Water Commission
H.P.	:	Hydrology Project
IMD	:	India Meteorological Department
msl	:	mean sea level
Q	:	Discharge
WL	:	Water level

Type of station:

G	:	Gauge (Water Level)
D	:	Discharge (Average discharge passing across a cross section of the river)
S	:	Sediment (suspended sediment load)
Q	:	Water Quality

Units:

m	:	meter
mm	:	milli meter
km	:	kilometer
s	:	second
MCM	:	million cubic meters
MT	:	metric tonne
g	:	gramme
l	:	litre

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BAITARANI BASIN

BAITARANI BASIN

1. GENERAL

1.1 Introduction

Baitarani is one of the important east flowing rivers of peninsular India, falling into Bay of Bengal. Major portion of its catchment lies in the state of Orissa and a small patch of the upper reach lies in Jharkhand. The river originates from the hill ranges of Keonjhar district of Orissa near Mankarancho village at an elevation of about 900 m. The total catchment area of this basin is 10,982 sq. km. The basin is situated approximately between East longitudes of 85°10' to 87°03' and between North latitudes of 20°35' to 22°15'. The basin is surrounded by the Brahmani basin on the south and west, the Subarnarekha basin on the north, the Burhabalang and the Bay of Bengal on the east. The river is flashy in nature, having a total length of 355 km, with the upper reach upto Anandpur in the hilly region. There is a considerable fall in elevation from RL 367 m at Champua to RL 28 m at Anandpur. State-wise distribution of the catchment area is tabulated below:

State-wise Catchment area distribution

Sl. No.	Name of State	Catchment Area (sq. km)	Percentage of total catchment area
1.	Jharkhand	736	6.7
2.	Orissa	10,246	93.3
	Total	10,982	100.0

Basin Map of Baitarani river system showing the various hydrological and hydro meteorological observation stations maintained by CWC, State Governments and India Meteorological Department, is enclosed herewith. Central Water Commission is maintaining 6 sites (including seasonal rainfall site at Thakurmunda which remains operative only during monsoon), out of which 2 are of GDSQ type, 3 are of G type and 1 is RF type.

1.2 River system

Details of the tributaries which join Baitarani River on both sides are tabulated below:

Name of River	River/Tributary	Length (km)	Catchment area (sq.km)	Percentage of total catchment area
Baitarani	Main stream	355.00	4112.45	37.45
Mohida	Left Tributary	33.99	222.74	2.03
Baradpara	Left Tributary	49.88	331.52	3.02
Kangira	Left Tributary	40.00	458.43	4.17
Orarai	Right Tributary	72.41	821.03	7.48
Korribhandhan	Left Tributary	88.50	116.29	1.07
Deo	Left Tributary	78.84	722.61	6.58
Kanjhari	Right Tributary	59.53	497.69	4.53
Sita	Right Tributary	38.62	505.05	4.60
Kusal	Right Tributary	59.53	530.95	4.83
Kusai	Right Tributary	78.84	870.24	7.92
Salandi	Left Tributary	144.00	1793.00	16.32
	Total		10982	100.00

1.3 Climatic Characteristics

The basin receives most of the rainfall from the South-West monsoons during the period from June to October. Summer months from March to May are highly humid. Moderate cold winter is experienced from November to February. The average annual rainfall for the basin is approximately 1450 mm. The maximum temperature varies from 25 to 38⁰ C and the minimum from 12 to 24⁰ C.

1.4 Geology

The rocks of the basin belong to the iron ore series of the Upper Dharwar system of the Archean group. There is intrusion of Epidiorite with some Quartzite and at higher altitudes; intrusions of Hematite-Quartzite are seen. In the Zonal area of the Sundargarh district, Shales, Phyllites and Dolomites are found. At some places, Hematite deposits are seen over layers of Shale and Manganese. In the hills and forests between the Dhenkanal border and Anandpur, Quartzites, Shales, Phyllites, Granites and Genesis are also found

1.5 Site Details

Details of water storage/ diversion structures in the Baitarani Basin are as below:

Sl. No.	Name of Project	River	Status
1.	Akhuapada System	Baitarani	Existing
2.	Remal	Remal (Tributary of Kusei)	Existing
3.	Salandi	Salandi (Tributary of Baitarani)	Existing
4.	Kanupur	Baitarani	Under Construction
5.	Deo	Baitarani	Existing
6.	Kusei	(Tributary of Baitarani)	Existing
7.	Kanjhari	Baitarani	Existing
8.	Integrated Anandpur Barrage	Baitarani	Under Construction

2. STREAM FLOW DATA

2.1 Methodology

Area-velocity method is generally adopted for measuring discharge at sites. Cup type current meter is used to measure the velocity of the flow and the depth is measured by using sounding rod for depths upto 3 m and by log line beyond 3 m. Discharge by area velocity method is being observed once in a day starting at 0800 Hrs. at all the sites except on Sundays and holidays. Besides, silt and water quality observation are also being carried out at Anandpur and Champua sites of CWC.

The observed stage and discharge figures for each season (monsoon and non-monsoon) are plotted and a mean Stage V/s. Discharge curve is drawn, giving due attention to the scattered points with reference to area, velocity etc.

The factors responsible for the shifting of the curves are also taken care of by studying the river cross section at regular intervals and with super imposition of previous years' Stage V/s. Discharge curves. Accordingly, the trend of the current curve is finalised. Finally, the discharges of the non observed days are computed from these Stage V/s. Discharge Curves.

2.2 Data Availability

Details of data availability for Baitarani Basin is tabulated below:

Sl. No.	Code No.	Station Name	Type	Data available	
				From	To
1.	EC000K3	Anandpur	GDSQ		
			1) Gauge	07.03.72	Continuing
			2) Discharge	07.03.72	Continuing
			3) Sediment	26.08.72	-do-
			4) Water Quality	01.09.72	-do-
2.	EC000R5	Champua	GDSQ		
			1) Gauge	01.02.80	Continuing
			2) Discharge	20.07.90	Continuing
			3) Sediment	09.08.01	-do-
			4) Water Quality	08.09.01	-do-
3.	Keonjhar	Keonjhar	G		
			1)Gauge	01.10.94	Continuing
4.	Swampatana	Swampatana	G		
			1)Gauge	15.06.70	Continuing
5.	Akhuapada	Akhuapada	G		
			1)Gauge	01.06.73	Continuing

2.3 Explanatory Notes on Water Year Book

SWDES (Surface Water Data Entry Software), a custom made software for processing hydrological data, has been used for preparation of this volume. The explanatory notes described below can be used for interpretation of data presented in this volume.

- i) Water Year ranges from June 1st of one calendar year to May 31st of the next calendar year and covers one complete hydrological cycle.
- ii) Discharge is given in cubic meters per second.
- iii) Discharges are expressed as 0.000 when river bed is dry and 0.000 N.F. when velocity is observed as 'NIL'.
- iv) The zero R.L. of gauge is a datum level fixed for given site, which is kept 1 or 2 m lower than the lowest water level recorded in a perennial stream. In a non-perennial stream, it is kept 1 or 2 m lower than the lowest bed level of the stream.
- v) Discharges are rounded off as per standard practice.
- vi) Runoff in mm is the notional depth of water in millimeters over the catchment, equivalent to annual runoff volume calculated at the discharge measurement station. It is computed using the relation:

$$\text{Runoff (mm)} = \frac{\text{Annual runoff (Mm}^3\text{)} \times 1000}{\text{Catchment area (km}^2\text{)}}$$

- vii) Peak and lowest flow correspond to the highest and lowest water levels recorded from 'SWDES' entered data.
- viii) Measuring Authority refers to the field division of Central Water Commission (Eastern Rivers Division) responsible for the operation of the gauging station.

- ix) The gauging station code number is a unique seven column alphanumeric reference number which facilitates storage and retrieval of flow data in data base. The first column is identifier of either an integral river basin or, for the sake of convenience, a region having several contiguous river catchments. This is followed by a column which identifies an independent river system which either has one or more outlets to the sea or crosses international border to enter another country. The third, fourth and fifth column spaces denote first, second and third order tributaries, respectively, from the mouth upstream. The sixth and seventh column spaces indicate the location of the gauging station in one of the 225 slots earmarked on the river. The blank column spaces are filled by zero.

3. HYDROLOGICAL DATA

This volume contains the following information for each site stated above:

- i. History Sheet: Site Name, State, District, River Basin, Tributary, Sub-Tributary, Catchment Area, Latitude / Longitude, Opening / Closing date for various types of data.
- ii. Annual maximum/minimum discharge since period of observation.
- iii. Daily Water level and observed/ computed discharge data including 10-daily, monthly and annual totals etc.
- iv. Histogram and Hydrograph showing current year monthly mean discharges, Historical monthly mean discharges, historical monthly minimum and monthly maximum discharges.
- v. Histogram showing Annual Run off volume since beginning of observation.
- vi. Pie-Chart showing monthly mean run off (as percentage of Annual Run off) historical for the current year.
- vii. Plot of Pre and Post Monsoon Cross-section of the rivers for current year.
- viii. Water Level hydrograph for 3(three) major flood events of current year.

4. SEDIMENT DATA (In case of Sediment Observation sites)

The frequency of sediment observation is carried out daily during monsoon season and once in a week (on Monday) during the non-monsoon period. Data for non-observed days is estimated/ interpolated from the relationship of discharge v/s. sediment load, prepared on the basis of observed sediment concentration and weighted mean discharge of the same year.

Sediment samples are collected from 0.6 depth, using Punjab type bottle sampler, from all the verticals along the hydrological observation sections where velocity is observed for computation of discharge. The collected samples from all the segments are combined in 3 to 7 groups having compartments or groups of equal or nearly equal discharges for analysis. Quantum of suspended sediment load is estimated in three grades, viz. Coarse, Medium and Fine. Coarse and medium grades are separated by sieving process and the fine grade by filtration of left over samples after sieving through filter paper. Grade wise concentration is derived gravimetrically as per standard procedure. The following parameters are derived and recorded:

- Daily Observed suspended sediment (g/l).
- Corresponding discharge.
- Average sediment load in tonnes/day (10 daily & monthly basis).
- Annual sediment load for the current year.

- Annual & seasonal sediment load and the corresponding volume of inflow for all the years since inception.
- Grain size distribution of bed load.

5. WATER QUALITY DATA (In case of Water Quality Observation sites)

The water samples are collected at a regular interval of once in a month for trend stations and once in two month for base station (on 1st working day), from the main flowing segment of the stream just below the water surface (20 to 30 cm) on the Station Gauge line where depth of flow and velocity are maximum, preferably in the mid stream. The water samples are collected in the pre-rinsed and cleaned one-litre capacity polythene bottle having double stopper (inside and out side) facility. Sampling bottle is filled to its full capacity without entrapping air bubbles inside.

After sampling, the collected samples are sent to the Water Quality Laboratory (Level-II) based at Bhubaneswar (under the Eastern Rivers Division) and to Raipur laboratory (under Mahanadi Division, Burla), along with in-situ physical characteristics, for analysis. The samples received from the sites are preserved in a refrigerator in the water quality laboratories for analysis.

Analysis of parameters, namely pH, Electrical conductivity, Sodium, Potassium, Iron, Aluminum, Ammonia, Fluoride, Nitrate, Nitrite, Phosphate, Silicate, Boron, Sulphate, Calcium, Magnesium, Carbonate, Bi-carbonate, Chloride, Dissolved Oxygen, BOD and COD, are carried out at the Level II laboratory by using standard methodology. Micro biological parameters like total coliform and faecal coliform are also being analyzed. For analysis of trace and toxic elements, samples are sent to Level-II+ laboratory at Hyderabad once in a year, in the month of April.

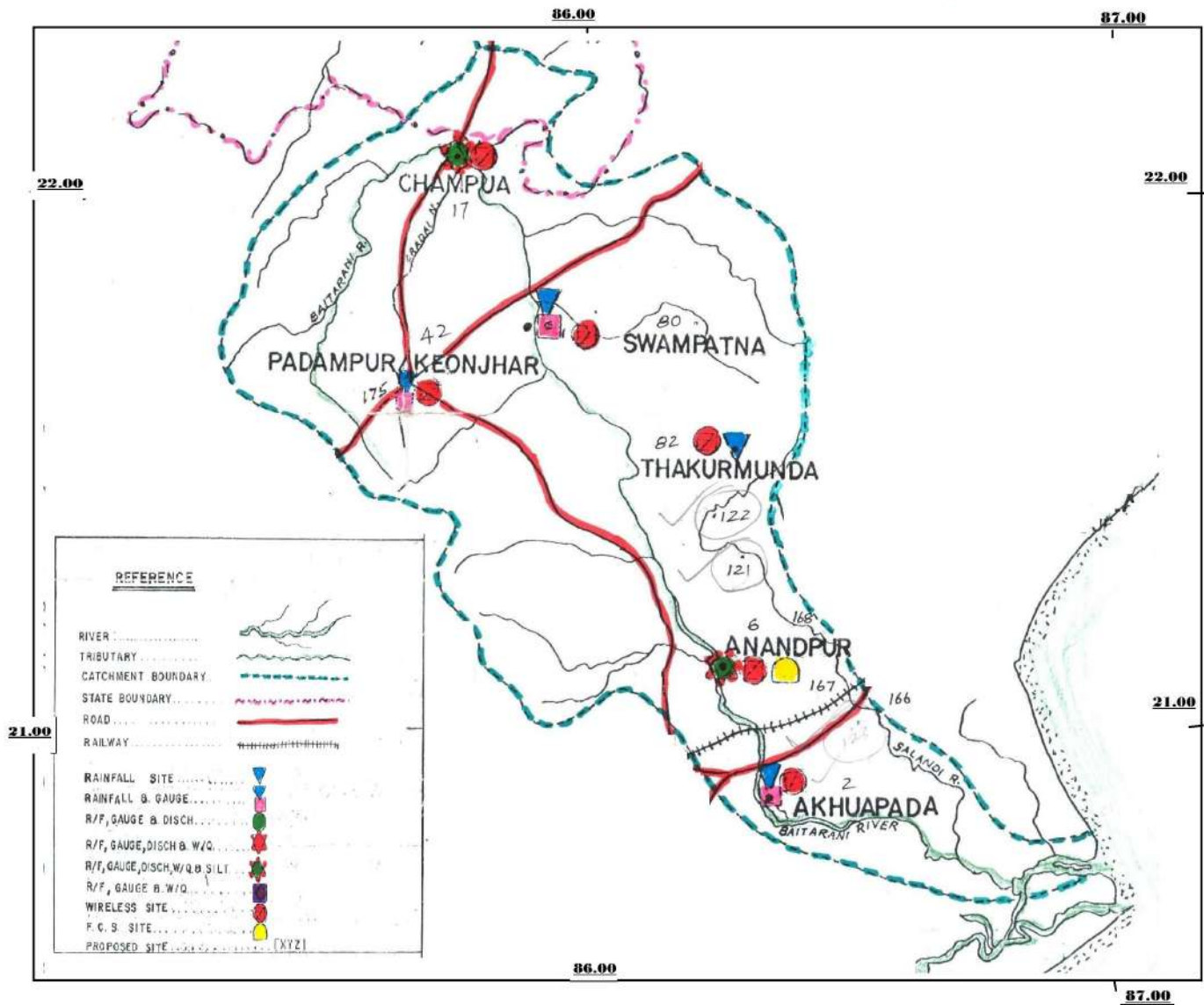
The following parameters are analyzed and recorded:

- Monthly Values: Physical; Chemical (mg/l); Biological (mg/l); Traces & Toxic (mg/l) and Chemical Indices.
- Average Values for the Year: 10 Years data to be given season wise averages:-
 - Average for Summer (March to June).
 - Average for Floods (July to October).
 - Average for Winter (November to February)

NAME OF THE SITES IN OPERATION UNDER BAITARANI BASIN

Sl. No.	Station Name	River/ Tributary	Code No.	Type	Latitude	Longitude
1.	Keonjhar	Aridi		G	21°-.40-'00"	85°-35-'00"
2.	Champua	Baitarini	EC000R5	GDSQ	22°-03 '-57"	85°-40-'56"
3.	Ananadpur	Baitarini	EC000K3	GDSQ	22°-12 '-34"	86°-07-'83"
4.	Swampatana	Baitarini		G	21°-37 '-00"	85°-55-'00"
5.	Akhuapada	Baitarini		G	20°-56 '-00"	86°-17-'00"
6	Thakurmunda	Baitarini		RF	21°-31-'00"	86°-09-'00"

Note : Thakurmunda is a seasonal rainfall site, remaining operative only during monsoon.



HISTORY SHEET

Water Year : 2016-2017

Site : CHAMPUA State : Orissa Basin : Brahmani-Baitarani Tributary : Baitarani Sub-Sub Tributary : Division : E.E., Bhubaneswar Drainage Area : 1710 Sq. Km. Latitude : 22°03'57" Zero of Gauge (m) : 0 (m.s.l) 367 (m.s.l) Opening Date Gauge : 2/1/1980 Discharge : 7/20/1990 Sediment : 8/9/2001 Water Quality : 9/8/2001	Code : EC000R5 District : Keonjhar Independent River : Baitarani Sub Tributary : Local River : Baitarani Sub-Division : Bhubaneswar Bank : Right Longitude : 85°40'56" 2/1/1980 - 5/31/1991 6/1/1991 - 12/31/2050 Closing Date 1/1/2100 1/1/2100 1/1/2100 1/1/2100

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1991-1992	1010	376.350	8/13/1991	3.006	370.950	4/22/1992
1992-1993	159.1	372.760	8/1/1992	1.331	370.870	5/15/1993
1993-1994	479.5	374.160	7/16/1993	1.763	370.790	5/9/1994
1994-1995	652.8	375.700	7/20/1994	2.445	370.880	6/3/1994
1995-1996	403.5	374.470	8/10/1995	2.286	370.890	5/18/1996
1996-1997	503.2	374.890	6/23/1996	2.308	370.895	6/2/1996
1997-1998	752.6	375.075	8/6/1997	2.884	370.850	6/11/1997
1998-1999	343.0	373.465	9/11/1998	1.608	370.950	5/3/1999
1999-2000	880.0	375.620	10/19/1999	3.947	370.940	4/25/2000
2000-2001	439.0	374.020	7/18/2000	2.821	370.860	5/16/2001
2001-2002	499.7	373.720	7/22/2001	2.753	370.880	5/24/2002
2002-2003	105.2	372.680	9/10/2002	2.277	370.870	5/20/2003
2003-2004	430.7	375.285	10/9/2003	2.700	370.920	6/8/2003
2004-2005	363.0	374.585	8/21/2004	4.037	370.940	6/1/2004
2005-2006	920.8	376.120	6/29/2005	3.251	370.930	5/2/2006
2006-2007	420.7	374.820	8/23/2006	4.015	370.920	5/31/2007
2007-2008	731.3	376.895	8/20/2007	3.632	370.930	6/10/2007
2008-2009	538.9	372.310	6/18/2008	2.808	370.880	5/2/2009
2009-2010	263.2	373.270	7/22/2009	1.821	370.750	4/27/2010
2010-2011	204.6	372.950	7/26/2010	1.985	370.790	3/24/2011
2011-2012	1705	378.950	9/23/2011	1.821	370.780	5/31/2012
2012-2013	213.4	372.680	9/17/2012	0.425	370.820	5/24/2013
2013-2014	550.8	373.910	8/21/2013	3.001	370.920	6/4/2013
2014-2015	1159	376.090	8/5/2014	2.205	370.800	5/31/2015
2015-2016	309.8	373.160	7/28/2015	0.083	370.720	5/7/2016
2016-2017	325.1	373.340	8/18/2016	0.000	370.820	3/29/2017

Stage-Discharge Data for the period 2016 - 2017

Station Name : CHAMPUA (EC000R5)

Division : E.E., Bhubaneswar

Local River : Baitarani

Sub-Division : Bhubaneswar

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	370.970	3.953	371.910	3.310	371.660	44.31	371.720	46.24	371.580	44.00	371.170	11.73
2	370.950	3.876	371.950	9.111	372.070	72.96	371.940	83.43	371.605	38.69	371.160	11.12
3			371.150	9.812 *	373.150	291.7	371.760	49.53	371.580	39.31	371.160	11.04
4	370.920	3.327	371.180	10.69	372.350	113.7	371.890	61.91 *	371.600	40.19	371.150	10.69
5	370.950	3.829	371.760	48.17	372.280	102.5	372.550	121.6	371.580	38.27	371.150	10.60
6	370.950	3.818	371.700	43.66	372.320	102.7	372.330	110.6	371.640	39.72	371.150	10.60
7	370.940	3.668	371.650	43.88 *	371.850	57.29	372.330	131.9	371.770	51.14	371.140	10.05
8	370.940	3.608	371.620	42.90			372.600	102.8	371.690	43.26	371.140	9.805
9	370.930	3.487	371.600	41.99	371.790	48.09	372.470	114.4	371.620	41.43 *	371.140	9.622
10	370.950	3.671	371.590	41.38 *	372.340	110.1	372.230	102.8	371.700	44.24 *	371.130	9.343
11	370.980	4.324	371.560	39.64	372.370	112.2	372.050	90.80 *	371.735	45.47 *	371.130	9.147
12	370.960	3.717 *	371.550	35.12	372.560	128.0	371.950	84.13	371.720	44.95 *	371.120	9.049
13	370.950	3.607	371.510	34.05	372.430	118.0			371.630	41.22	371.120	9.049 *
14	370.990	4.082	371.430	27.08	372.430	123.6	371.740	50.48	371.630	38.67	371.110	8.334 *
15	370.970	3.742	371.400	22.90	372.510	128.9 *	371.720	48.25	371.590	37.63	371.110	8.334
16	370.940	3.530	371.470	30.53	372.510	128.9	371.660	44.14	371.540	37.61 *	371.110	8.258
17	370.960	3.630	371.450	29.74 *	372.600	137.2	371.620	41.57	371.450	35.04	371.100	8.086
18	370.950	3.500	371.430	27.24	373.340	325.1	371.580	39.68 *	371.390	28.14	371.100	8.041
19	370.980	3.950 *	371.560	38.13	372.560	132.4	371.580	38.68	371.380	25.68	371.090	7.856
20	370.970	3.803	371.420	27.21	372.300	113.1	371.620	41.63	371.300	16.12	371.090	7.861 *
21	370.970	3.679	371.570	36.41	372.040	90.65 *	371.560	36.83	371.270	15.53	371.080	7.608
22	370.950	3.548	371.240	107.1	372.090	94.90	371.540	36.26	371.270	14.90	371.080	7.490
23	370.940	3.482			372.500	120.2	371.630	42.44	371.260	14.90 *	371.070	7.341
24	370.980	4.141	371.400	28.08 *	372.440	111.3	371.690	46.50	371.240	14.83	371.070	7.273
25	371.000	6.745	371.380	26.31	372.490	117.1	371.895	58.93 *	371.220	14.30	371.070	7.225
26	370.990	4.899 *	371.420	27.11	372.330	107.4	371.640	43.35	371.210	13.71	371.060	7.194
27	370.940	3.597	372.060	70.33	372.000	87.39	371.570	38.97	371.200	12.56	371.060	7.194
28	370.930	3.529	371.740	46.66	371.870	62.64 *	371.720	49.28	371.200	12.35	371.060	7.122
29	370.920	3.390	371.570	36.16	371.820	53.10	371.720	46.75	371.190	12.09	371.060	7.032
30	370.910	3.334	371.510	35.69	371.780	51.81	371.580	39.33	371.190	12.09 *	371.050	6.868
31					371.780	51.75			371.180	11.68		
Ten-Daily Mean												
I Ten-Daily	370.944	3.693	371.611	29.49	372.201	104.8	372.182	92.51	371.637	42.02	371.149	10.46
II Ten-Daily	370.965	3.789	371.478	31.16	372.561	144.7	371.724	53.26	371.536	35.05	371.108	8.401
III Ten-Daily	370.953	4.034	371.543	45.98	372.104	86.20	371.655	43.86	371.221	13.54	371.066	7.235
Monthly												
Min.	370.910	3.327	371.150	3.310	371.660	44.31	371.540	36.26	371.180	11.68	371.050	6.868
Max.	371.000	6.745	372.060	107.1	373.340	325.1	372.600	131.9	371.770	51.14	371.170	11.73
Mean	370.954	3.844	371.544	35.19	372.285	111.3	371.858	63.55	371.457	29.67	371.108	8.699

Annual Runoff in MCM = 687 Annual Runoff in mm = 402

Peak Observed Discharge = 325.1 cumecs on 18/08/2016 Corres. Water Level :373.34 m

Lowest Observed Discharge = 0.000 cumecs on 29/03/2017 Corres. Water Level :370.82 m

Stage-Discharge Data for the period 2016 - 2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	371.050	5.586			370.920	3.070	370.830	1.853	370.820	1.027	370.720	0.829
2	371.040	6.607	370.970	4.157	370.910	3.009	370.820	1.854			370.740	0.885
3	371.040	6.524	370.990	4.641	370.910	2.984	370.820	1.859	370.810	0.994	370.730	0.852
4	371.040	6.527	370.990	4.619	370.910	2.963	370.820	1.580	370.800	1.930	370.730	0.832
5	371.030	6.342	370.980	4.413					370.800	1.861	370.730	0.819
6	371.030	6.289	370.980	4.353	370.900	3.128	370.820	1.606	370.790	1.768	370.730	0.838
7	371.030	6.246	370.980	4.345	370.910	3.104	370.820	1.538	370.790	4.292		
8	371.020	6.046	370.970	4.025	370.910	3.073	370.820	1.542	370.790	1.496	370.760	0.989
9	371.020	6.046	370.970	4.363	370.910	3.098	370.830	1.781			370.750	0.954
10	371.020	5.954	370.970	4.383	370.900	3.015	370.830	1.603	370.780	1.295		
11	371.002	6.026	370.970	3.929	370.900	3.016	370.840	1.777	370.780	1.237	370.770	1.099
12	371.010	6.098 *	370.970	3.869					370.780	1.202	370.800	1.686
13	371.055	6.097	370.970	3.851	370.900	2.969			370.780	1.187	370.790	1.587
14	371.010	6.044	370.970	3.759	370.900	2.949	370.840	1.784				
15	371.010	5.988			370.900	2.920	370.840	1.511	370.770	1.146	370.770	1.114
16	371.010	5.824	370.960	3.764	370.890	2.862	370.830	1.561			370.760	1.062
17	371.010	5.799	370.960	3.743	370.890	2.840	370.830	1.537	370.760	1.063	370.780	1.489
18	371.000	5.805 *	370.950	3.646	370.890	2.805	370.830	1.328	370.760	1.059	370.760	1.570
19	371.000	5.332	370.950	3.732					370.760	1.047	370.800	1.717
20	371.000	4.931	370.960	3.635	370.880	2.394	370.840	1.831	370.760	1.037	370.790	1.566
21	371.000	5.124	370.960	3.564	370.880	2.373	370.840	1.637	370.750	0.998		
22	371.000	4.826			370.880	2.337	370.840	1.440	370.750	0.983	370.900	4.099
23	371.000	4.622	370.950	3.309	370.880	2.319	370.830	1.353			370.860	2.519
24	371.000	4.695	370.940	3.398			370.830	1.340	370.740	0.919	370.780	1.606
25	370.980	4.822 *	370.940	3.364	370.870	2.338	370.830	1.165	370.740	0.910	370.780	1.575
26	370.990	4.175							370.740	0.907	370.760	1.280
27	370.990	4.647	370.950	3.324	370.840	2.027	370.820	1.146	370.730	0.879	370.910	4.360
28	371.990	4.541	370.930	3.241	370.830	1.951	370.820	1.062	370.730	0.877		
29	370.990	5.022	370.940	3.358			370.820	0.000	370.730	0.850	370.890	3.974
30	370.980	4.282	370.930	3.154			370.820	1.044			370.920	4.599
31	370.980	4.220	370.930	3.110			370.820	1.042			370.890	3.954
Ten-Daily Mean												
I Ten-Daily	371.032	6.217	370.978	4.366	370.909	3.049	370.823	1.691	370.798	1.833	370.736	0.875
II Ten-Daily	371.011	5.794	370.962	3.770	370.894	2.844	370.836	1.618	370.769	1.122	370.780	1.432
III Ten-Daily	371.082	4.634	370.941	3.314	370.863	2.224	370.827	1.123	370.739	0.915	370.854	3.107
Monthly												
Min.	370.980	4.175	370.930	3.110	370.830	1.951	370.820	0.000	370.730	0.850	370.720	0.819
Max.	371.990	6.607	370.990	4.641	370.920	3.128	370.840	1.859	370.820	4.292	370.920	4.599
Mean	371.043	5.519	370.960	3.817	370.892	2.763	370.828	1.453	370.768	1.29	370.792	1.84

Peak Computed Discharge = 128.9 cumecs on 15/08/2016

Corres. Water Level :372.51 m

Lowest Computed Discharge = 3.717 cumecs on 12/06/2016

Corres. Water Level :370.96 m

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

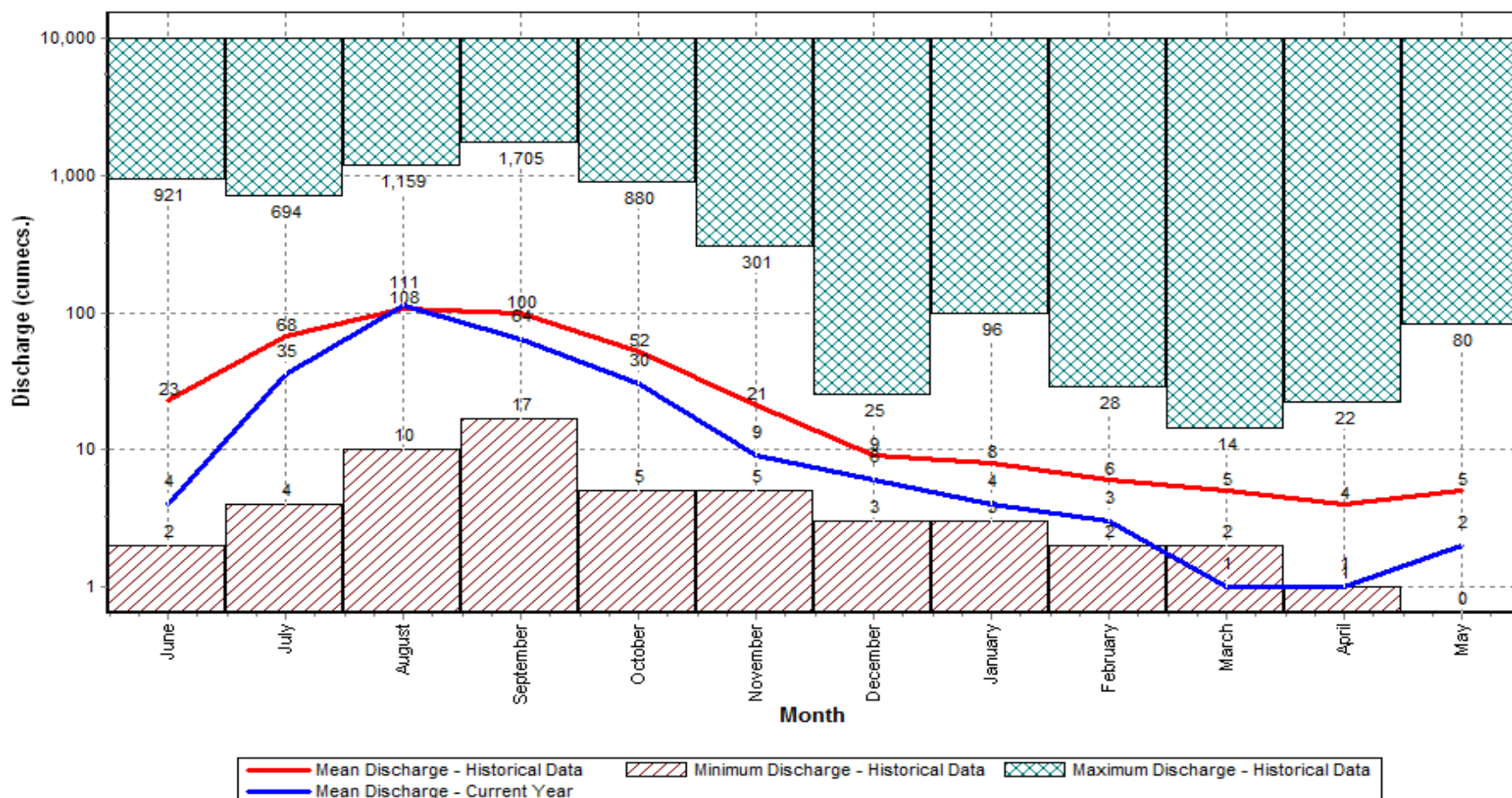
Station Name : CHAMPUA (EC000R5)

Data considered : 1991-2017

Division : E.E., Bhubaneswar

Local River : Baitarani

Sub-Division : Bhubaneswar



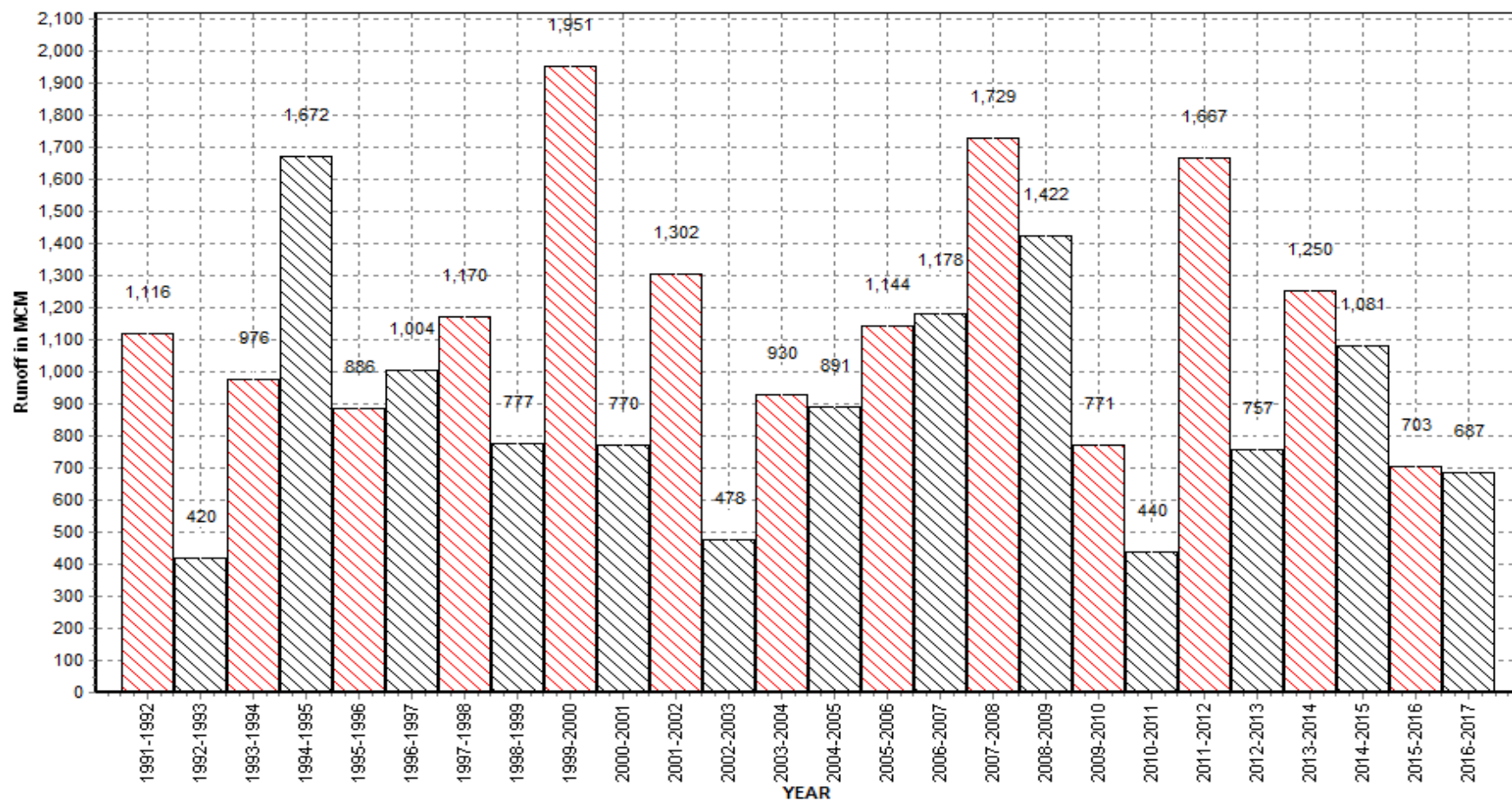
Annual Runoff Values for the period: 1991 - 2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



Note: Missing values have not been considered while arriving at Annual Runoff

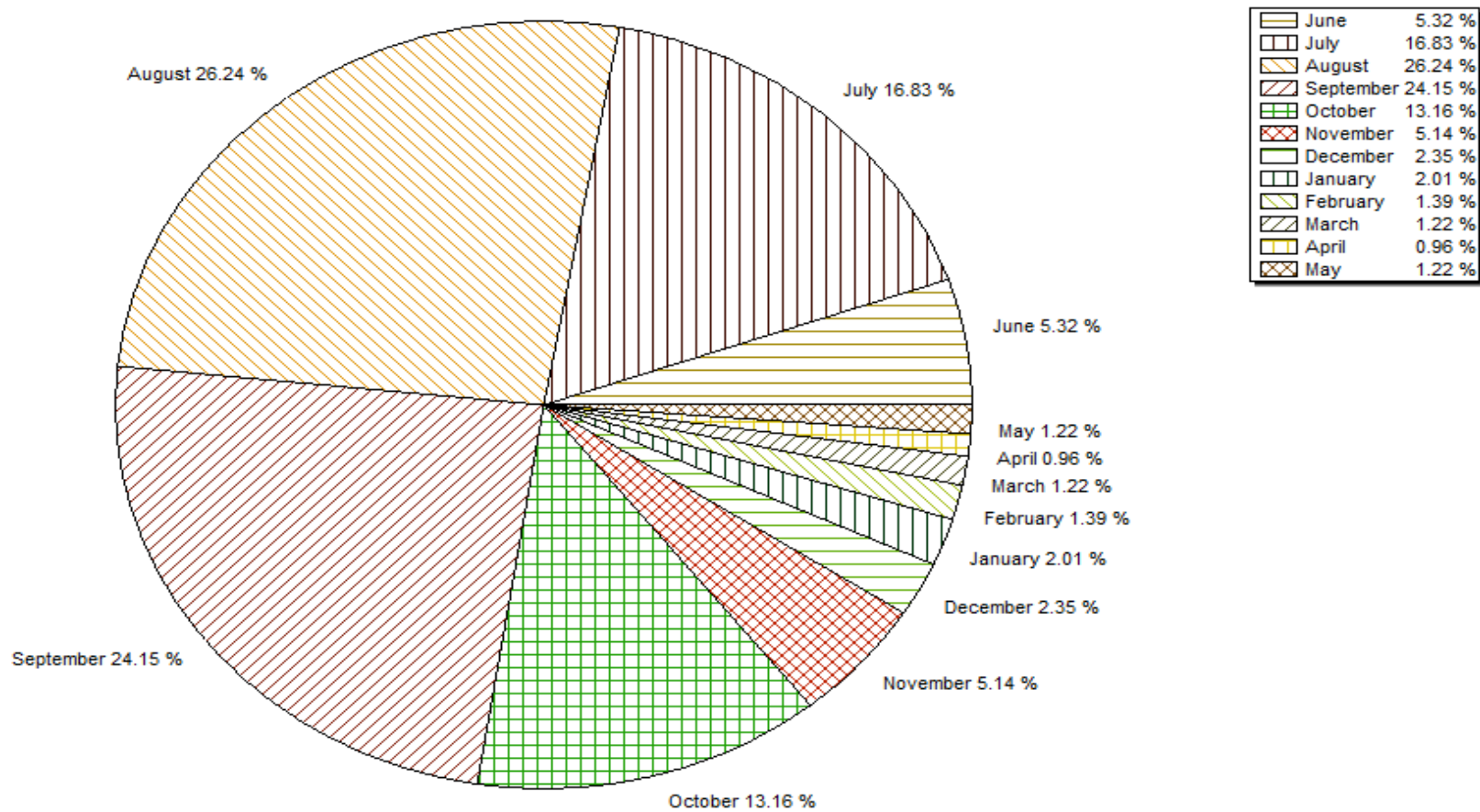
Monthly Average Runoff based on period : 1991-2016

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



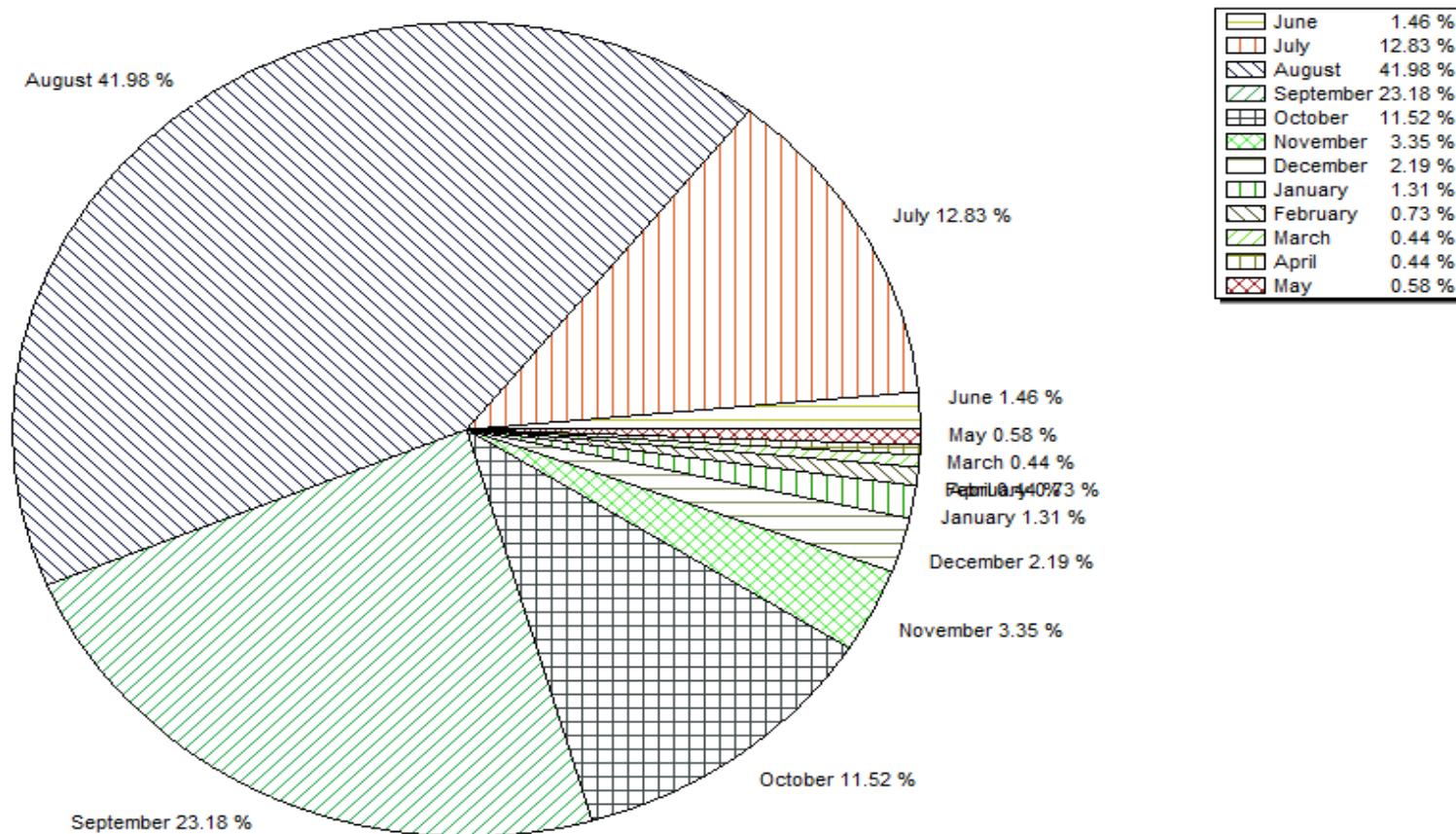
Monthly Runoff for the Year : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



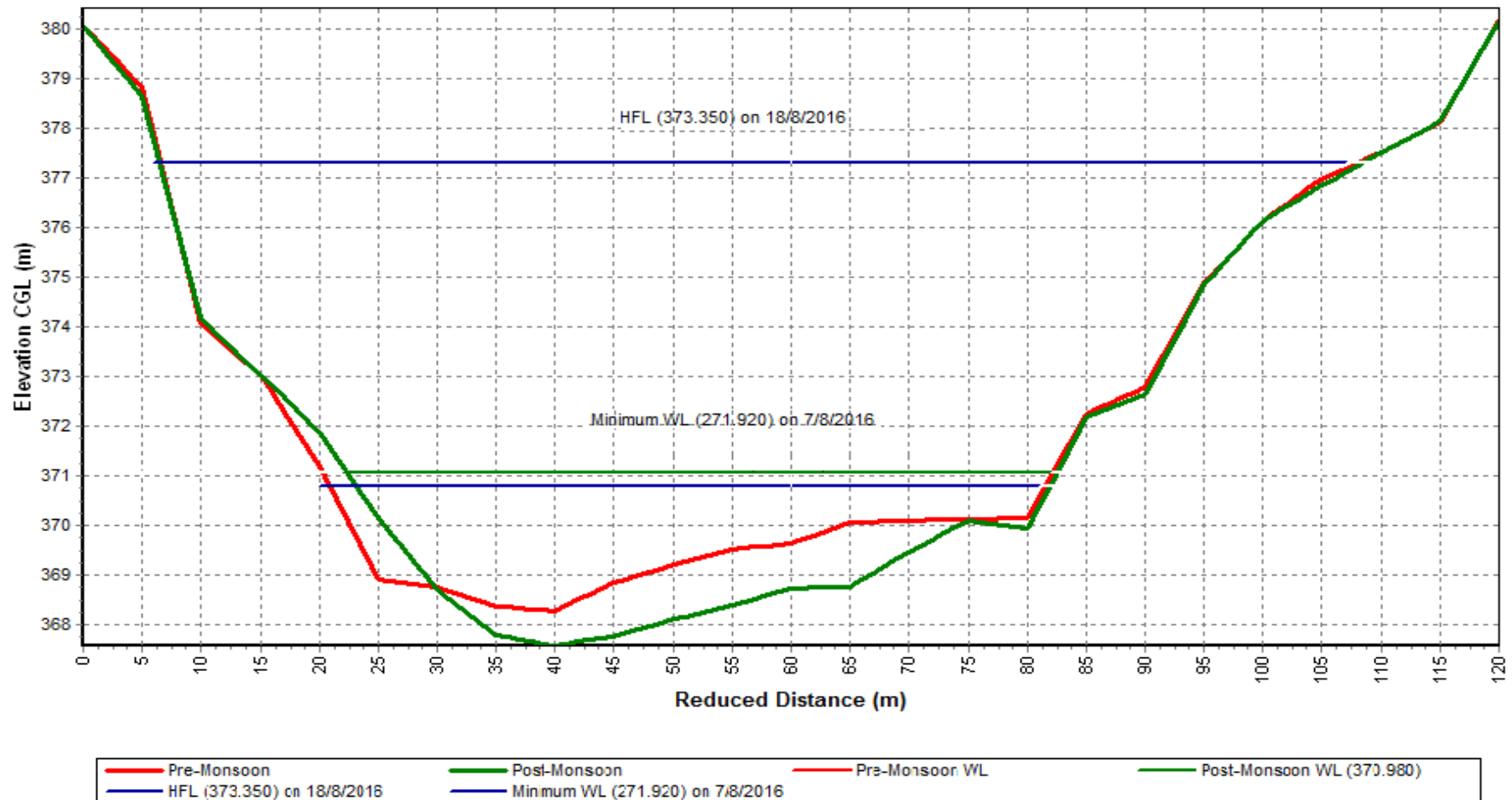
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



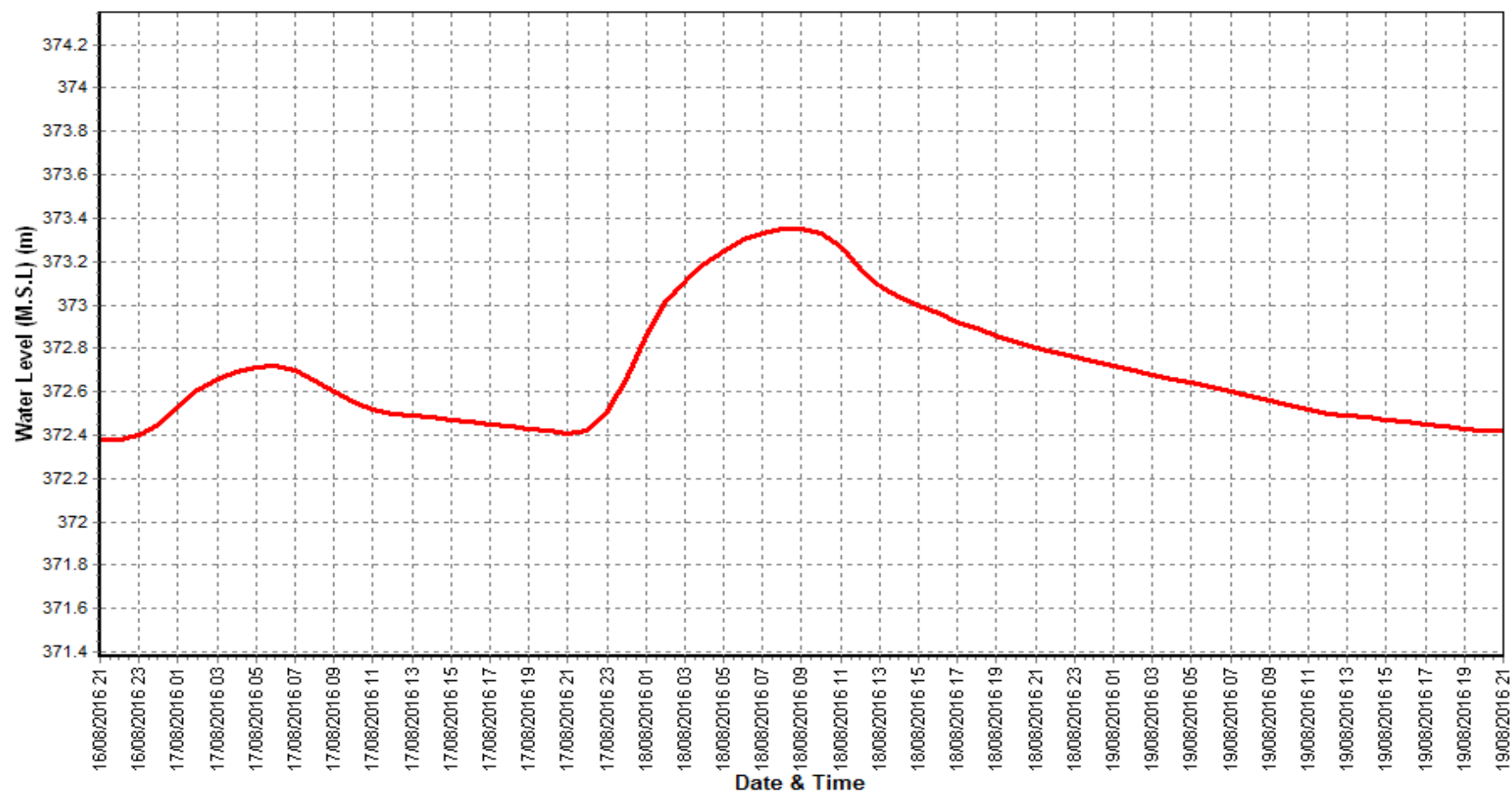
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



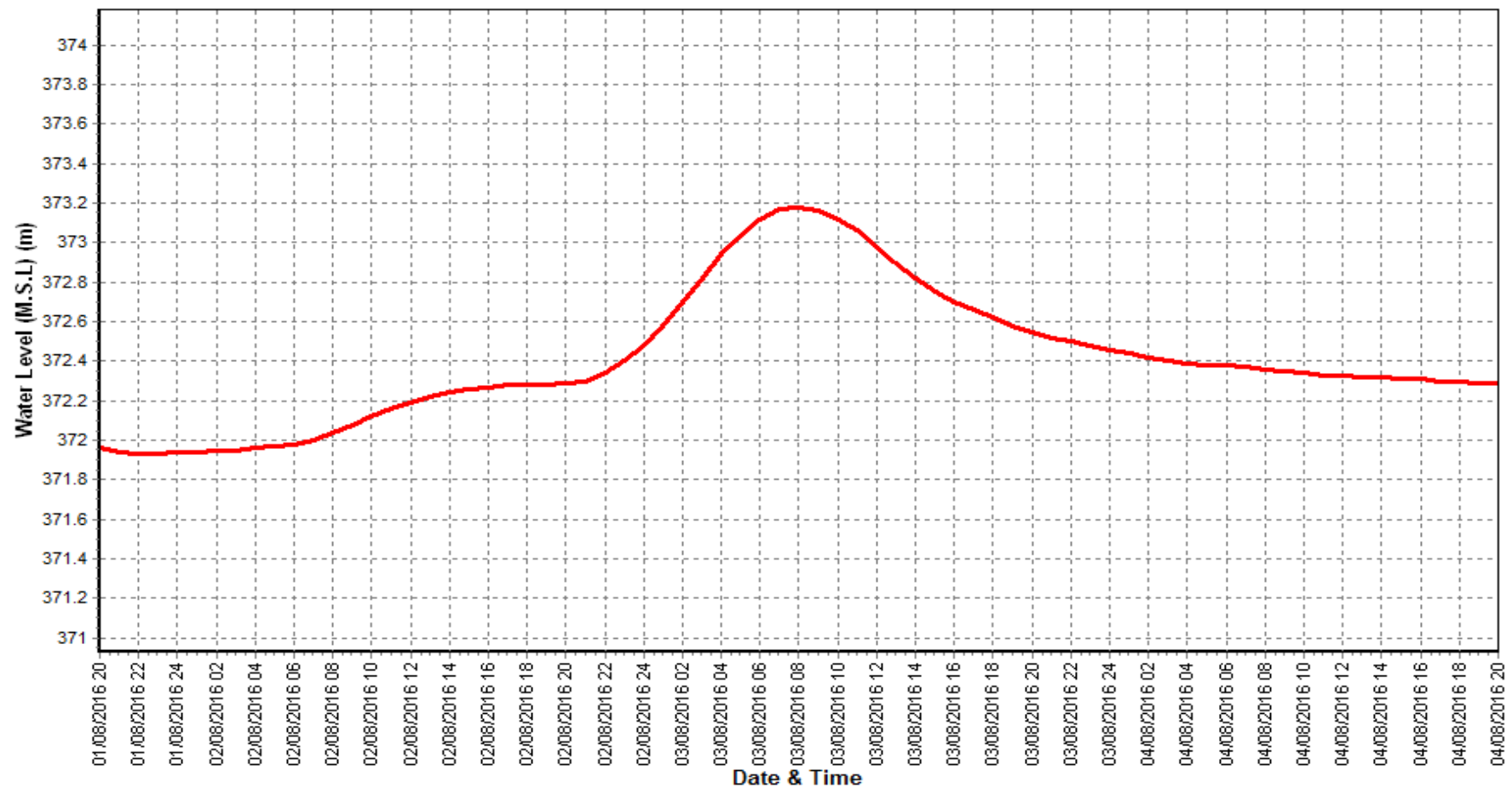
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



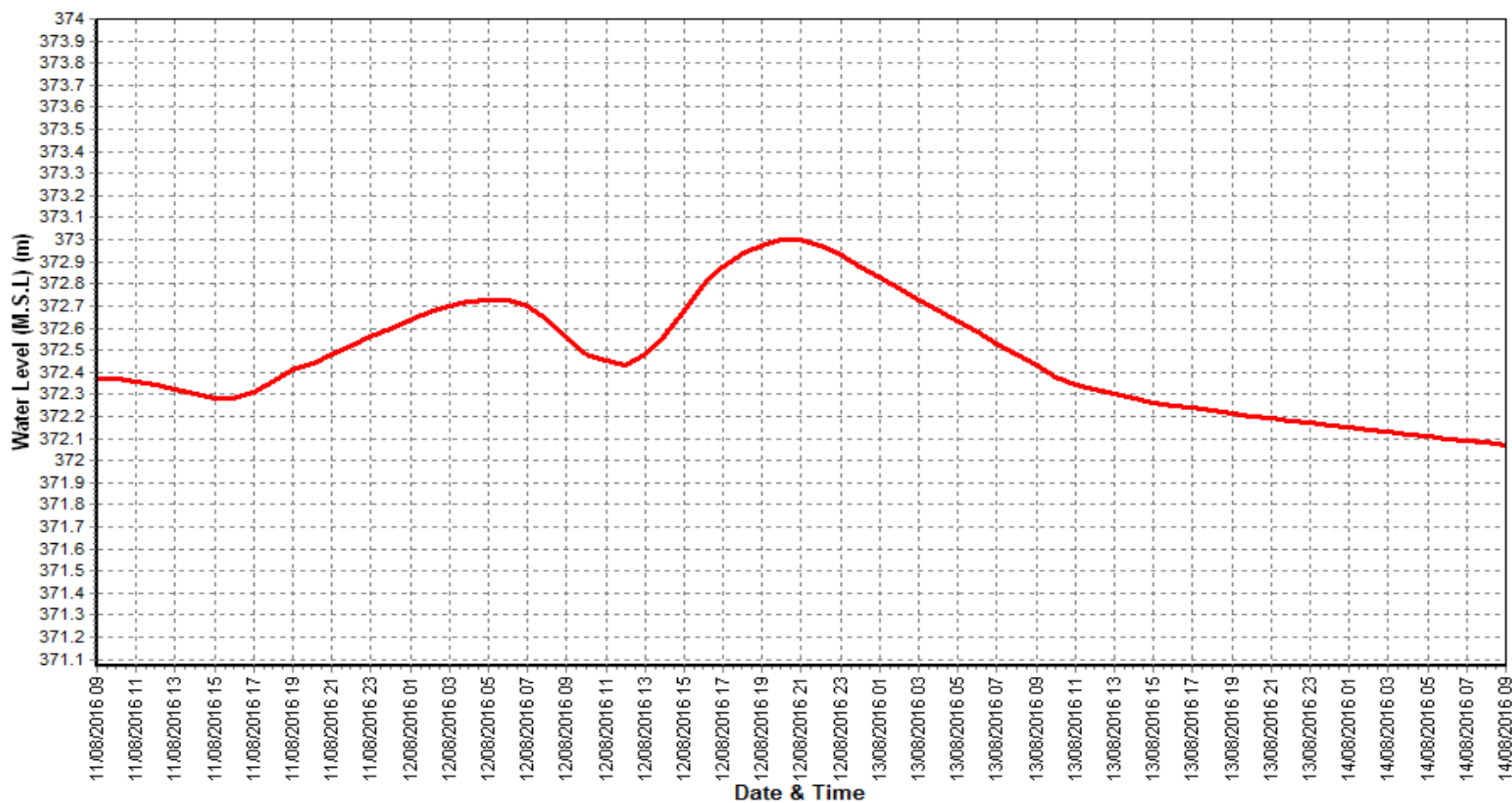
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	3.953	0.000	0.000	0.099	0.099	34	3.310	0.000	0.000	0.119	0.119	34	44.31	0.000	0.000	0.167	0.167	639
2	3.876	0.000	0.000	0.112	0.112	38	9.111	0.000	0.000	0.116	0.116	91	72.96	0.000	0.000	0.325	0.325	2049
3							9.812						291.7	0.113	0.184	1.354	1.651	41623
4	3.327	0.000	0.000	0.130	0.130	37	10.69	0.000	0.000	0.135	0.135	125	113.7	0.000	0.070	0.764	0.834	8192
5	3.829						48.17	0.000	0.000	0.215	0.215	895	102.5	0.000	0.057	0.722	0.779	6900
6	3.818	0.000	0.000	0.099	0.099	33	43.66	0.000	0.000	0.230	0.230	868	102.7	0.000	0.626	0.647	1.273	11297
7	3.668	0.000	0.000	0.078	0.078	25	43.88						57.29	0.000	0.000	0.768	0.768	3802
8	3.608	0.000	0.000	0.097	0.097	30	42.90	0.000	0.000	0.344	0.344	1275						
9	3.487	0.000	0.000	0.039	0.039	12	41.99	0.000	0.000	0.297	0.297	1077	48.09	0.000	0.000	0.565	0.565	2347
10	3.671	0.000	0.000	0.077	0.077	24	41.38						110.1	0.000	0.728	0.709	1.437	13672
11	4.324	0.000	0.000	0.102	0.102	38	39.64	0.000	0.000	0.100	0.100	342	112.2	0.000	0.676	0.419	1.095	10614
12	3.717						35.12	0.000	0.000	0.103	0.103	313	128.0	0.071	0.103	0.507	0.681	7530
13	3.607	0.000	0.000	0.149	0.149	46	34.05	0.000	0.000	0.172	0.172	506	118.0	0.000	0.070	0.728	0.798	8139
14	4.082	0.000	0.000	0.107	0.107	38	27.08	0.000	0.000	0.118	0.118	276	123.6	0.075	0.097	1.199	1.371	14640
15	3.742	0.000	0.000	0.125	0.125	40	22.90	0.000	0.000	0.104	0.104	206	128.9					
16	3.530	0.000	0.000	0.200	0.200	61	30.53	0.000	0.000	0.110	0.110	290	128.9	0.077	0.108	1.378	1.563	17403
17	3.630	0.000	0.000	0.120	0.120	38	29.74						137.2	0.137	0.187	1.372	1.696	20102
18	3.500	0.000	0.000	0.119	0.119	36	27.24	0.000	0.000	0.103	0.103	242	325.1	0.137	0.187	1.372	1.696	47648
19	3.950						38.13	0.000	0.000	0.182	0.182	600	132.4	0.079	0.099	0.874	1.052	12035
20	3.803	0.000	0.000	0.108	0.108	35	27.21	0.000	0.000	0.293	0.293	689	113.1	0.000	0.065	0.493	0.558	5450
21	3.679	0.000	0.000	0.058	0.058	18	36.41	0.000	0.000	0.380	0.380	1195	90.65					
22	3.548	0.000	0.000	0.050	0.050	15	107.1	0.000	0.060	0.489	0.549	5081	94.90	0.000	0.000	0.440	0.440	3608
23	3.482	0.000	0.000	0.069	0.069	21							120.2	0.058	0.068	0.607	0.733	7610
24	4.141	0.000	0.000	0.038	0.038	14	28.08	0.000	0.000	0.426	0.426	1034	111.3	0.000	0.066	1.020	1.086	10440
25	6.745	0.000	0.000	0.175	0.175	102	26.31	0.000	0.000	0.269	0.269	612	117.1	0.050	0.068	0.832	0.950	9611
26	4.899						27.11	0.000	0.000	0.189	0.189	443	107.4	0.000	0.063	0.825	0.888	8243
27	3.597	0.000	0.000	0.141	0.141	44	70.33	0.000	0.000	0.349	0.349	2121	87.39	0.000	0.000	0.485	0.485	3662
28	3.529	0.000	0.000	0.096	0.096	29	46.66	0.000	0.000	0.207	0.207	835	62.64					
29	3.390	0.000	0.000	0.071	0.071	21	36.16	0.000	0.000	0.208	0.208	650	53.10	0.000	0.000	0.254	0.254	1165
30	3.334	0.000	0.000	0.077	0.077	22	35.69	0.000	0.000	0.176	0.176	543	51.81	0.000	0.000	0.230	0.230	1030
31													51.75	0.000	0.000	0.194	0.194	867
Ten Daily Mean																		
Ten Daily I	3.693	0.000	0.000	0.091	0.091	29	29.49	0.000	0.000	0.208	0.208	624	104.8	0.013	0.185	0.669	0.867	10058
Ten Daily II	3.789	0.000	0.000	0.129	0.129	42	31.16	0.000	0.000	0.143	0.143	385	144.7	0.064	0.177	0.927	1.168	15951
Ten Daily III	4.034	0.000	0.000	0.086	0.086	32	45.98	0.000	0.007	0.299	0.306	1390	86.20	0.012	0.029	0.543	0.584	5137
Monthly																		
Total						851						20340						280317

Annual Sediment Load (Metric Tonnes) : 356835

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	46.24	0.000	0.000	0.169	0.169	675	44.00	0.000	0.000	0.152	0.152	578	11.73	0.000	0.000	0.025	0.025	25
2	83.43	0.000	0.000	0.218	0.218	1571	38.69						11.12	0.000	0.000	0.026	0.026	25
3	49.53	0.000	0.000	0.275	0.275	1177	39.31	0.000	0.000	0.143	0.143	486	11.04	0.000	0.000	0.026	0.026	25
4	61.91						40.19	0.000	0.000	1.360	1.360	4722	10.69	0.000	0.000	0.026	0.026	24
5	121.6	0.061	0.076	0.199	0.336	3530	38.27	0.000	0.000	0.130	0.130	430	10.60	0.000	0.000	0.024	0.024	22
6	110.6	0.000	0.065	0.392	0.457	4365	39.72	0.000	0.000	0.134	0.134	460	10.60					
7	131.9	0.057	0.072	0.556	0.685	7809	51.14	0.000	0.000	0.131	0.131	579	10.05	0.000	0.000	0.030	0.030	26
8	102.8	0.000	0.000	0.399	0.399	3543	43.26	0.000	0.000	0.116	0.116	434	9.805	0.000	0.000	0.027	0.027	23
9	114.4	0.061	0.068	0.499	0.628	6205	41.43						9.622	0.000	0.000	0.025	0.025	21
10	102.8	0.000	0.000	0.028	0.028	245	44.24						9.343	0.000	0.000	0.026	0.026	21
11	90.80						45.47						9.147	0.000	0.000	0.024	0.024	19
12	84.13	0.000	0.000	0.213	0.213	1548	44.95						9.049	0.000	0.000	0.025	0.025	20
13							41.22	0.000	0.000	0.112	0.112	399	9.049					
14	50.48	0.000	0.000	0.017	0.017	73	38.67	0.000	0.000	0.110	0.110	367	8.334					
15	48.25	0.000	0.000	0.163	0.163	679	37.63	0.000	0.000	0.110	0.110	358	8.334	0.000	0.000	0.025	0.025	18
16	44.14	0.000	0.000	0.157	0.157	599	37.61						8.258	0.000	0.000	0.025	0.025	18
17	41.57	0.000	0.000	0.163	0.163	585	35.04	0.000	0.000	0.086	0.086	260	8.086	0.000	0.000	0.024	0.024	17
18	39.68						28.14	0.000	0.000	0.084	0.084	204	8.041	0.000	0.000	0.023	0.023	16
19	38.68	0.000	0.000	0.144	0.144	481	25.68	0.000	0.000	0.069	0.069	153	7.856	0.000	0.000	0.024	0.024	16
20	41.63	0.000	0.000	0.087	0.087	313	16.12	0.000	0.000	0.062	0.062	86	7.861					
21	36.83	0.000	0.000	0.121	0.121	385	15.53	0.000	0.000	0.055	0.055	74	7.608	0.000	0.000	0.023	0.023	15
22	36.26	0.000	0.000	0.144	0.144	451	14.90	0.000	0.000	0.057	0.057	73	7.490	0.000	0.000	0.022	0.022	14
23	42.44	0.000	0.000	0.113	0.113	414	14.90						7.341	0.000	0.000	0.022	0.022	14
24	46.50	0.000	0.000	0.129	0.129	518	14.83	0.000	0.000	0.048	0.048	61	7.273	0.000	0.000	0.018	0.018	11
25	58.93						14.30	0.000	0.000	0.044	0.044	54	7.225	0.000	0.000	0.020	0.020	12
26	43.35	0.000	0.000	0.144	0.144	539	13.71	0.000	0.000	0.036	0.036	43	7.194	0.000	0.000	0.017	0.017	11
27	38.97	0.000	0.000	0.130	0.130	438	12.56	0.000	0.000	0.040	0.040	43	7.194					
28	49.28	0.000	0.000	0.127	0.127	541	12.35	0.000	0.000	0.034	0.034	36	7.122	0.000	0.000	0.019	0.019	12
29	46.75	0.000	0.000	0.133	0.133	537	12.09	0.000	0.000	0.035	0.035	37	7.032	0.000	0.000	0.018	0.018	11
30	39.33	0.000	0.000	0.122	0.122	415	12.09						6.868	0.000	0.000	0.018	0.018	11
31							11.68	0.000	0.000	0.033	0.033	33						
Ten Daily Mean																		
Ten Daily I	92.51	0.020	0.031	0.304	0.355	3236	42.02	0.000	0.000	0.309	0.309	1098	10.46	0.000	0.000	0.026	0.026	24
Ten Daily II	53.26	0.000	0.000	0.135	0.135	611	35.05	0.000	0.000	0.090	0.090	261	8.401	0.000	0.000	0.024	0.024	18
Ten Daily III	43.86	0.000	0.000	0.129	0.129	471	13.54	0.000	0.000	0.042	0.042	51	7.235	0.000	0.000	0.020	0.020	12
Monthly																		
Total						37638						9971						446

Annual Sediment Load (Metric Tonnes) : 356835

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	5.586	0.000	0.000	0.021	0.021	10							3.070					
2	6.607						4.157						3.009					
3	6.524						4.641						2.984					
4	6.527						4.619						2.963					
5	6.342	0.000	0.000	0.021	0.021	12	4.413											
6	6.289						4.353						3.128	0.000	0.000	0.016	0.016	4
7	6.246						4.345						3.104					
8	6.046						4.025						3.073					
9	6.046						4.363	0.000	0.000	0.017	0.017	6	3.098					
10	5.954						4.383						3.015					
11	6.026						3.929						3.016					
12	6.098						3.869											
13	6.097	0.000	0.000	0.021	0.021	11	3.851						2.969	0.000	0.000	0.014	0.014	4
14	6.044						3.759						2.949					
15	5.988												2.920					
16	5.824						3.764	0.000	0.000	0.017	0.017	6	2.862					
17	5.799						3.743						2.840					
18	5.805						3.646						2.805					
19	5.332	0.000	0.000	0.018	0.018	8	3.732											
20	4.931						3.635						2.394	0.000	0.000	0.013	0.013	3
21	5.124						3.564						2.373					
22	4.826												2.337					
23	4.622						3.309	0.000	0.000	0.017	0.017	5	2.319					
24	4.695						3.398											
25	4.822						3.364						2.338	0.000	0.000	0.012	0.012	2
26	4.175	0.000	0.000	0.018	0.018	6												
27	4.647						3.324						2.027					
28	4.541						3.241						1.951					
29	5.022						3.358											
30	4.282						3.154	0.000	0.000	0.018	0.018	5						
31	4.220						3.110											
Ten Daily Mean																		
Ten Daily I	6.217	0.000	0.000	0.021	0.021	11	4.366	0.000	0.000	0.017	0.017	6	3.049	0.000	0.000	0.016	0.016	4
Ten Daily II	5.794	0.000	0.000	0.020	0.020	10	3.770	0.000	0.000	0.017	0.017	6	2.844	0.000	0.000	0.014	0.014	3
Ten Daily III	4.634	0.000	0.000	0.018	0.018	6	3.314	0.000	0.000	0.018	0.018	5	2.224	0.000	0.000	0.012	0.012	2
Monthly																		
Total						47						22						13

Annual Sediment Load (Metric Tonnes) : 356835

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	1.853						1.027						0.829	0.000	0.000	1.152	1.152	83
2	1.854												0.885					
3	1.859						0.994	0.000	0.000	0.013	0.013	1	0.852					
4	1.580						1.930						0.832					
5							1.861						0.819					
6	1.606	0.000	0.000	0.013	0.013	2	1.768						0.838					
7	1.538						4.292											
8	1.542						1.496						0.989	0.000	0.000	1.152	1.152	98
9	1.781												0.954					
10	1.603						1.295	0.000	0.000	0.013	0.013	1						
11	1.777						1.237						1.099					
12							1.202						1.686					
13							1.187						1.587					
14	1.784	0.000	0.000	0.016	0.016	2												
15	1.511						1.146						1.114	0.000	0.000	2.110	2.110	203
16	1.561												1.062					
17	1.537						1.063	0.000	0.000	0.016	0.016	1	1.489					
18	1.328						1.059						1.570					
19							1.047						1.717					
20	1.831	0.000	0.000	0.013	0.013	2	1.037						1.566					
21	1.637						0.998											
22	1.440						0.983						4.099	0.000	0.000	9.319	9.319	3300
23	1.353												2.519					
24	1.340						0.919	0.000	0.000	0.015	0.015	1	1.606					
25	1.165						0.910						1.575					
26							0.907						1.280					
27	1.146	0.000	0.000	0.014	0.014	1	0.879						4.360					
28	1.062						0.877											
29	0.000						0.850						3.974	0.000	0.000	10.170	10.170	3492
30	1.044												4.599					
31	1.042												3.954					
Ten Daily Mean																		
Ten Daily I	1.691	0.000	0.000	0.013	0.013	2	1.833	0.000	0.000	0.013	0.013	1	0.875	0.000	0.000	1.152	1.152	91
Ten Daily II	1.618	0.000	0.000	0.015	0.015	2	1.122	0.000	0.000	0.016	0.016	1	1.432	0.000	0.000	2.110	2.110	203
Ten Daily III	1.123	0.000	0.000	0.014	0.014	1	0.915	0.000	0.000	0.015	0.015	1	3.107	0.000	0.000	9.745	9.745	3396
Monthly																		
Total						8						5						7176

Annual Sediment Load (Metric Tonnes) : 356835

Annual Sediment Load for period : 2002-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
2002-2003	178766	1566	180332	478
2003-2004	573618	1443	575061	930
2004-2005	519075	1602	520677	891
2005-2006	583976	1962	585938	1144
2006-2007	554886	1890	556775	1178
2007-2008	865725	2771	868496	1729
2008-2009	1085022	1448	1086469	1422
2009-2010	178094	998	179092	771
2010-2011	119800	4729	124529	440
2011-2012	821117	4948	826065	1667
2012-2013	203423	252	203675	757
2013-2014	443770	802	444571	1250
2014-2015	480249	451	480700	1081
2015-2016	229591	714	230305	703
2016-2017	349563	7271	356835	687

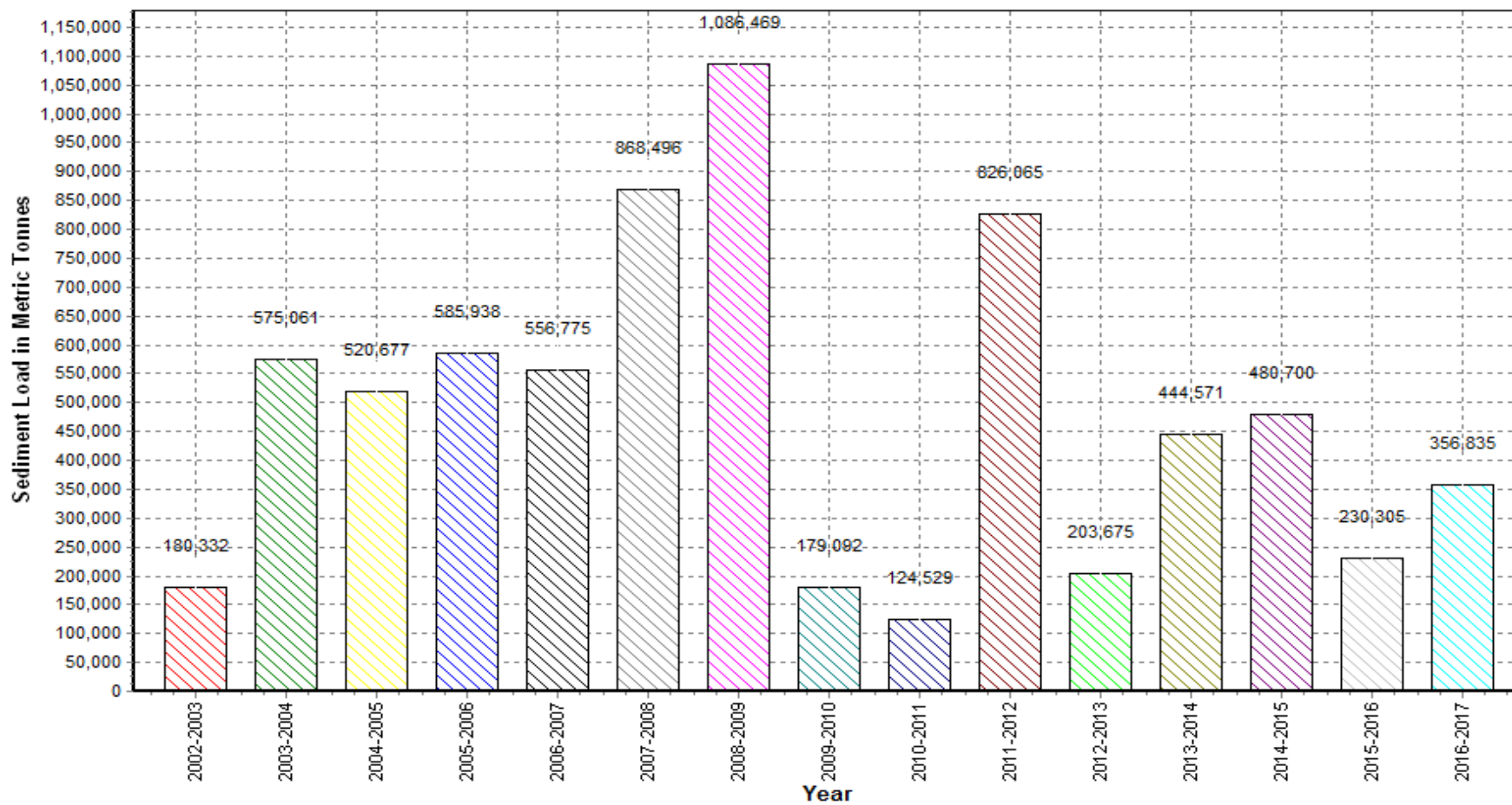
Annual Sediment Load for the period: 2002-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

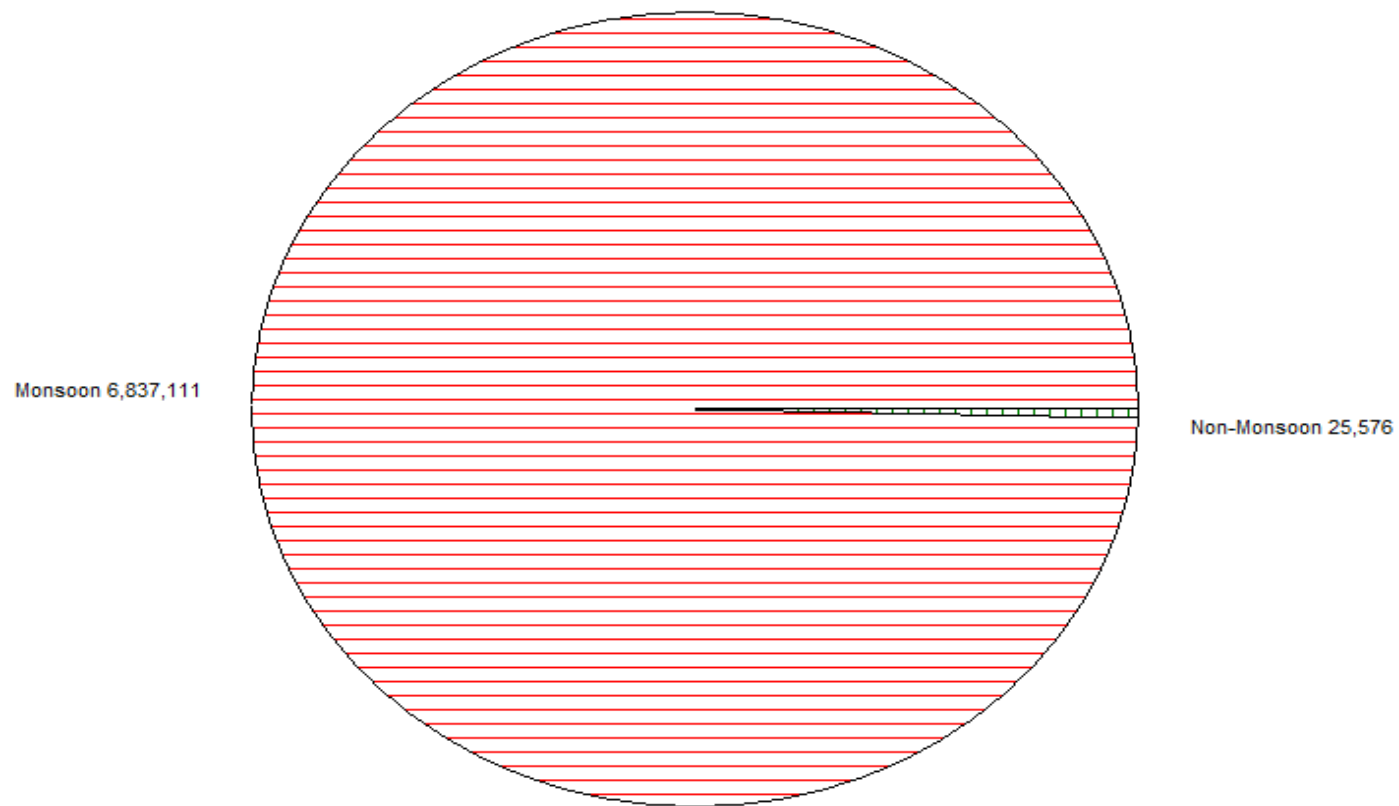
Sub-Division : Bhubaneswar



Seasonal Sediment Load for the period : 2002-2016

Station Name : CHAMPUA (EC000R5)
Local River : Baitarani

Division : E.E., Bhubaneswar
Sub-Division : Bhubaneswar



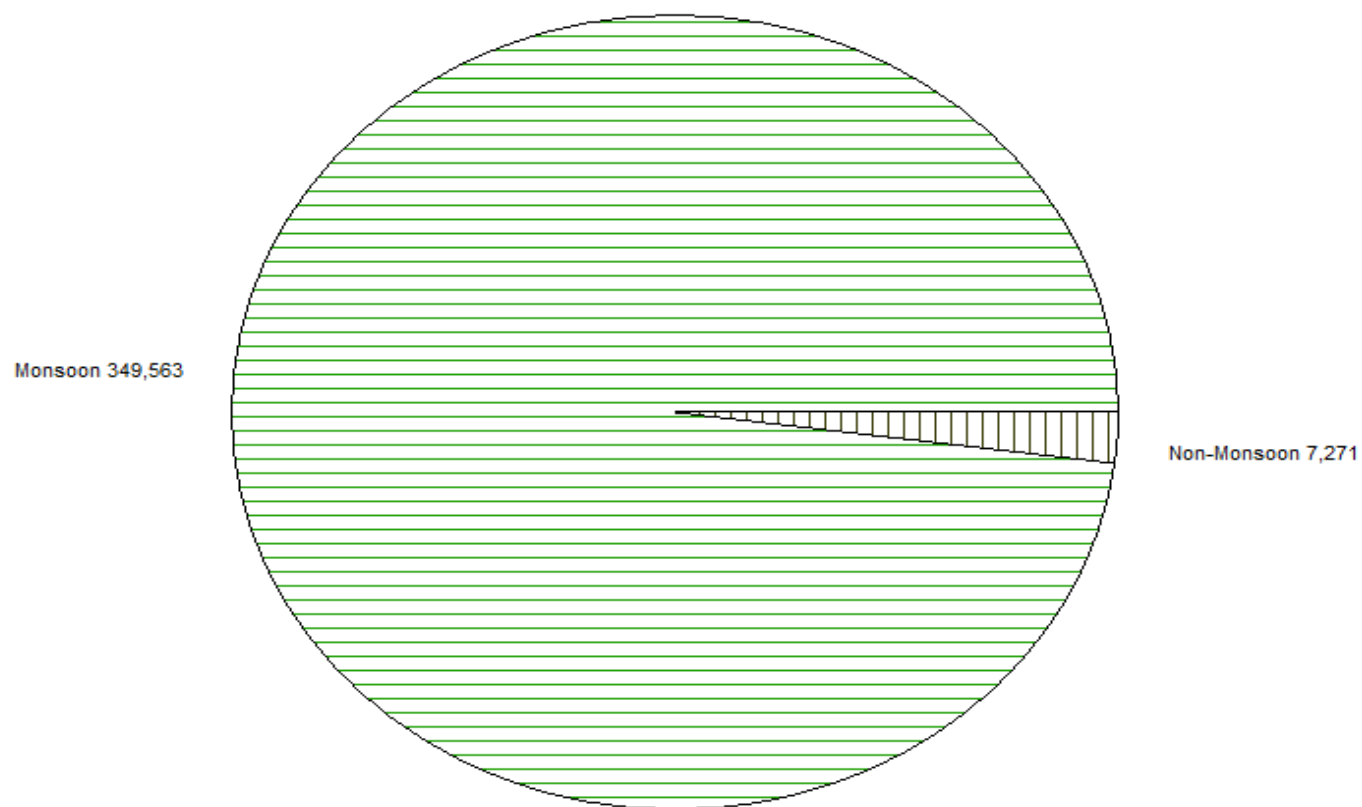
Seasonal Sediment Load for the Year: 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



Water Quality Datasheet for the period : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

River Water Analysis

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

S.No	Parameters	6/1/2016	8/1/2016	10/1/2016	12/1/2016	2/1/2017	4/1/2017
		A	A	A	A	A	A
	PHYSICAL						
1	Q (cumec)						
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	290	98	140	223	201	165
4	EC_GEN (µmho/cm)	294	100	143	227	203	168
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.5	7.5	7.4	7.3	7.1	7.1
7	pH_GEN (pH units)	7.5	7.6	7.5	7.4	7.1	7.2
8	Temp (deg C)	28.0	28.0	28.0	29.5	19.5	27.0
	CHEMICAL						
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	60	65	51	60	55	60
3	B (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	19	21	22	24	59	61
5	Cl (mg/L)	32.1	34.0	9.4	9.4	28.3	7.5
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.5	0.7	1.0	0.2	0.4	0.5
9	HCO3 (mg/L)	73	79	62	73	68	73
10	K (mg/L)	2.9	7.5	4.3	5.1	2.8	3.6
11	Mg (mg/L)	9.7	10.7	12.6	12.6	25.3	26.3
12	Na (mg/L)	2.7	13.8	12.5	14.2	23.8	24.1
13	NO2+NO3 (mg N/L)	0.85	0.98	1.37	1.12	0.85	1.23
14	NO2-N (mgN/L)	0.07	0.03	0.03	0.00	0.03	0.01
15	NO3-N (mgN/L)	0.78	0.95	1.35	1.12	0.83	1.22
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	7.0	7.0	6.0	6.0	6.0	8.0
18	SO4 (mg/L)	10.6	10.9	5.0	5.2	5.6	6.0
	BIOLOGICAL/BACTERIOLOGICAL						
	TRACE & TOXIC						
	CHEMICAL INDICES						
1	HAR_Ca (mgCaCO3/L)	48	52	56	60	148	152
2	HAR_Total (mgCaCO3/L)	89	97	109	113	254	262
3	Na% (%)	6	22	19	21	17	17
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.1	0.6	0.5	0.6	0.7	0.7
	PESTICIDES						

Water Quality Summary for the period : 2016-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	6	290	98	186
3	EC_GEN (μmho/cm)	6	294	100	189
4	pH_FLD (pH units)	6	7.5	7.1	7.3
5	pH_GEN (pH units)	6	7.6	7.1	7.4
6	Temp (deg C)	6	29.5	19.5	26.7
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	6	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	6	65	51	59
3	B (mg/L)	6	0.01	0.01	0.01
4	Ca (mg/L)	6	61	19	34
5	Cl (mg/L)	6	34.0	7.5	20.1
6	CO3 (mg/L)	6	0.0	0.0	0
7	F (mg/L)	6	0.05	0.05	0.05
8	Fe (mg/L)	6	1.0	0.2	0.6
9	HCO3 (mg/L)	6	79	62	71
10	K (mg/L)	6	7.5	2.8	4.4
11	Mg (mg/L)	6	26.3	9.7	16.2
12	Na (mg/L)	6	24.1	2.7	15.2
13	NO2+NO3 (mg N/L)	6	1.37	0.85	1.07
14	NO2-N (mgN/L)	6	0.07	0.00	0.03
15	NO3-N (mgN/L)	6	1.35	0.78	1.04
16	P-Tot (mgP/L)	6	0.010	0.010	0.01
17	SiO2 (mg/L)	6	8.0	6.0	6.7
18	SO4 (mg/L)	6	10.9	5.0	7.2
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	6	152	48	86
2	HAR_Total (mgCaCO3/L)	6	262	89	154
3	Na% (%)	6	22	6	17
4	RSC (-)	6	0.0	0.0	0
5	SAR (-)	6	0.7	0.1	0.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

River Water

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

S.No	Parameters	Flood Jun - Oct																	
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005
	PHYSICAL																		
1	Q (cumec)																		
2	EC_FLD (µmho/cm)	184		88			133		115	129	94	107	135	162	191	176	94		103
3	EC_GEN (µmho/cm)	182		88			131		115	129	94	107	135	162	189	179	94		103
4	pH_FLD (pH units)	7.7		7.6			7.5		7.6	7.6	8.1	7.6	7.4	7.3	6.8	7.5	7.6		7.8
5	pH_GEN (pH units)	7.7		7.6			7.5		7.6	7.6	8.1	7.6	7.4	7.3	7.0	7.5	7.6		7.8
6	Temp (deg C)	26.9		25.7			23.7		27.5	28.0	26.0	26.9	26.8	27.5	24.3	28.0	22.5		23.0
	CHEMICAL																		
1	Alk-Phen (mgCaCO3/L)	0.0		0.0			0.0		0.0	0.0	0.0		0.0		0.0	0.0	0.0		
2	ALK-TOT (mgCaCO3/L)	132		39			64		40	41	55		56		72	59	67		
3	B (mg/L)	0.00		0.00			0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00		0.00
4	Ca (mg/L)	18		9			12		10	12	12	20	12	22	24	21	9		10
5	Cl (mg/L)	10.5		5.4			11.8		9.1	9.4	12.6	14.1	13.3	10.4	12.6	25.1	5.8		6.8
6	CO3 (mg/L)	0.0		0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0
7	F (mg/L)	0.44		0.48			0.00		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.27		0.56
8	Fe (mg/L)	0.1		0.1			0.0		0.0	0.1	0.0	1.4	0.1	0.6	0.4	0.8	0.1		0.3
9	HCO3 (mg/L)	81		33			54		44	50	68	108	64	88	88	71	41		51
10	K (mg/L)	1.8		1.6			1.8		1.6	1.7	1.4	3.8	1.0	2.8	4.6	4.9	1.3		1.3
11	Mg (mg/L)	7.0		2.9			4.2		4.9	4.9	3.6	4.1	2.2	9.7	12.6	11.0	3.2		3.4
12	Na (mg/L)	6.9		3.7			7.8		5.4	5.5	2.3	5.8	4.1	5.5	6.7	9.7	3.7		4.5
13	NO2+NO3 (mg N/L)	1.04		0.38			0.51		0.51	0.78	0.37	0.96	0.64	0.90	0.99	1.07	0.76		0.40
14	NO2-N (mgN/L)	0.00		0.00			0.00		0.00	0.00	0.07	0.01	0.00	0.00	0.02	0.04	0.00		0.00
15	NO3-N (mgN/L)	1.04		0.38			0.51		0.51	0.78	0.30	0.95	0.64	0.90	0.96	1.03	0.76		0.40
16	o-PO4-P (mg P/L)	0.000		0.000			0.000		0.000								0.000		
17	P-Tot (mgP/L)	0.001		0.001			0.001		0.007	0.004	0.010	0.001	0.001	0.001	0.004	0.010	0.001		0.001
18	SiO2 (mg/L)	13.4		19.3			9.1		8.0	8.0	9.3	16.4	9.4	6.7	6.0	6.7	9.7		20.4
19	SO4 (mg/L)	6.3		6.4			4.6		5.4	5.1	7.4	14.2	13.7	8.9	5.8	8.8	1.7		1.6
	BIOLOGICAL/BACTERIOLOGICAL																		
	TRACE & TOXIC																		
	CHEMICAL INDICES																		
1	HAR_Ca (mgCaCO3/L)	44		22			31		24	29	29	51	30	55	59	52	23		26
2	HAR_Total (mgCaCO3/L)	73		32			48		44	50	44	68	39	95	111	98	36		40
3	Na% (%)	19		19			28		19	19	10	14	18	10	11	16	18		19
4	RSC (-)	0.0		0.0			0.0		0.0	0.0	0.3	0.4	0.3	0.0	0.0	0.0	0.0		0.0
5	SAR (-)	0.4		0.3			0.5		0.3	0.3	0.1	0.3	0.3	0.2	0.3	0.4	0.3		0.3
	PESTICIDES																		

Water Quality Seasonal Average for the period: 2002-2017

Station Name : CHAMPUA (EC000R5)

Local River : Baitarani

River Water

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

S.No	Parameters	Winter																	
		Nov - Feb																	
		2005-2006	2006-2007	2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008
	PHYSICAL																		
1	Q (cumec)																		
2	EC_FLD (µmho/cm)			85		91	183	106	101	120	200	269	212	136					100
3	EC_GEN (µmho/cm)			78		91	183	106	101	120	200	265	215	132					105
4	pH_FLD (pH units)			7.5		7.5	7.5	7.8	7.4	7.4	7.2	7.4	7.2	7.8					8.1
5	pH_GEN (pH units)			7.5		7.5	7.5	7.8	7.4	7.3	7.2	7.9	7.3	7.8					8.1
6	Temp (deg C)			22.0		19.5	21.5	19.0	19.6	25.3	18.8	27.5	24.5	25.3					22.5
	CHEMICAL																		
1	Alk-Phen (mgCaCO3/L)			0.0		0.0	0.0	0.0	0.0			6.9	0.0	8.2					
2	ALK-TOT (mgCaCO3/L)			55		26	59	60	65			62	58	111					
3	B (mg/L)			0.00		0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.01	0.00					0.00
4	Ca (mg/L)			7		8	14	12	15	14	10	21	42	11					11
5	Cl (mg/L)			9.5		10.7	15.1	12.3	18.7	14.3	11.3	17.9	18.9	7.1					7.8
6	CO3 (mg/L)			0.0		0.0	0.0	0.0	0.0	0.0	0.0	8.3	0.0	9.9					0.0
7	F (mg/L)			0.00		0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.66					0.23
8	Fe (mg/L)			0.0		0.0	0.1	0.0	3.0	0.1	0.4	0.2	0.3	0.3					
9	HCO3 (mg/L)			26		32	72	73	84	62	57	59	70	57					46
10	K (mg/L)			0.4		1.0	2.3	1.1	2.2	1.0	1.6	5.6	3.9	11.7					0.6
11	Mg (mg/L)			1.8		3.4	6.8	5.8	6.6	4.1	5.4	11.7	19.0	3.6					2.9
12	Na (mg/L)			6.0		6.1	8.6	2.6	7.4	4.2	9.0	13.1	19.0	4.3					5.8
13	NO2+NO3 (mg N/L)			0.81		0.46	0.72	0.36	1.02	0.56	0.95	0.81	0.99	1.01					0.90
14	NO2-N (mgN/L)			0.00		0.00	0.00	0.07	0.00	0.01	0.01	0.01	0.01	0.00					0.00
15	NO3-N (mgN/L)			0.81		0.46	0.72	0.29	1.02	0.55	0.93	0.80	0.97	1.01					0.90
16	o-PO4-P (mg P/L)			0.000		0.000								0.000					0.010
17	P-Tot (mgP/L)			0.001		0.010	0.001	0.010	0.001	0.001	0.001	0.010	0.010	0.001					0.050
18	SiO2 (mg/L)			6.3		7.9	9.2	7.5	19.4	10.3	6.0	5.0	6.0	11.5					9.8
19	SO4 (mg/L)			2.7		2.2	5.4	1.3	4.0	11.7	1.8	54.0	5.4	3.9					1.9
	BIOLOGICAL/BACTERIOLOGICAL																		
	TRACE & TOXIC																		
	CHEMICAL INDICES																		
1	HAR_Ca (mgCaCO3/L)			19		20	34	30	38	35	26	52	104	28					28
2	HAR_Total (mgCaCO3/L)			26		34	62	54	66	52	48	101	183	43					40
3	Na% (%)			33		28	22	9	18	15	24	21	19	14					24
4	RSC (-)			0.0		0.0	0.0	0.2	0.1	0.1	0.1	0.0	0.0	0.5					0.0
5	SAR (-)			0.5		0.5	0.5	0.2	0.4	0.3	0.5	0.6	0.6	0.3					0.4
	PESTICIDES																		

Water Quality Seasonal Average for the period: 2002-2017

Station Name : CHAMPUA (EC000R5)

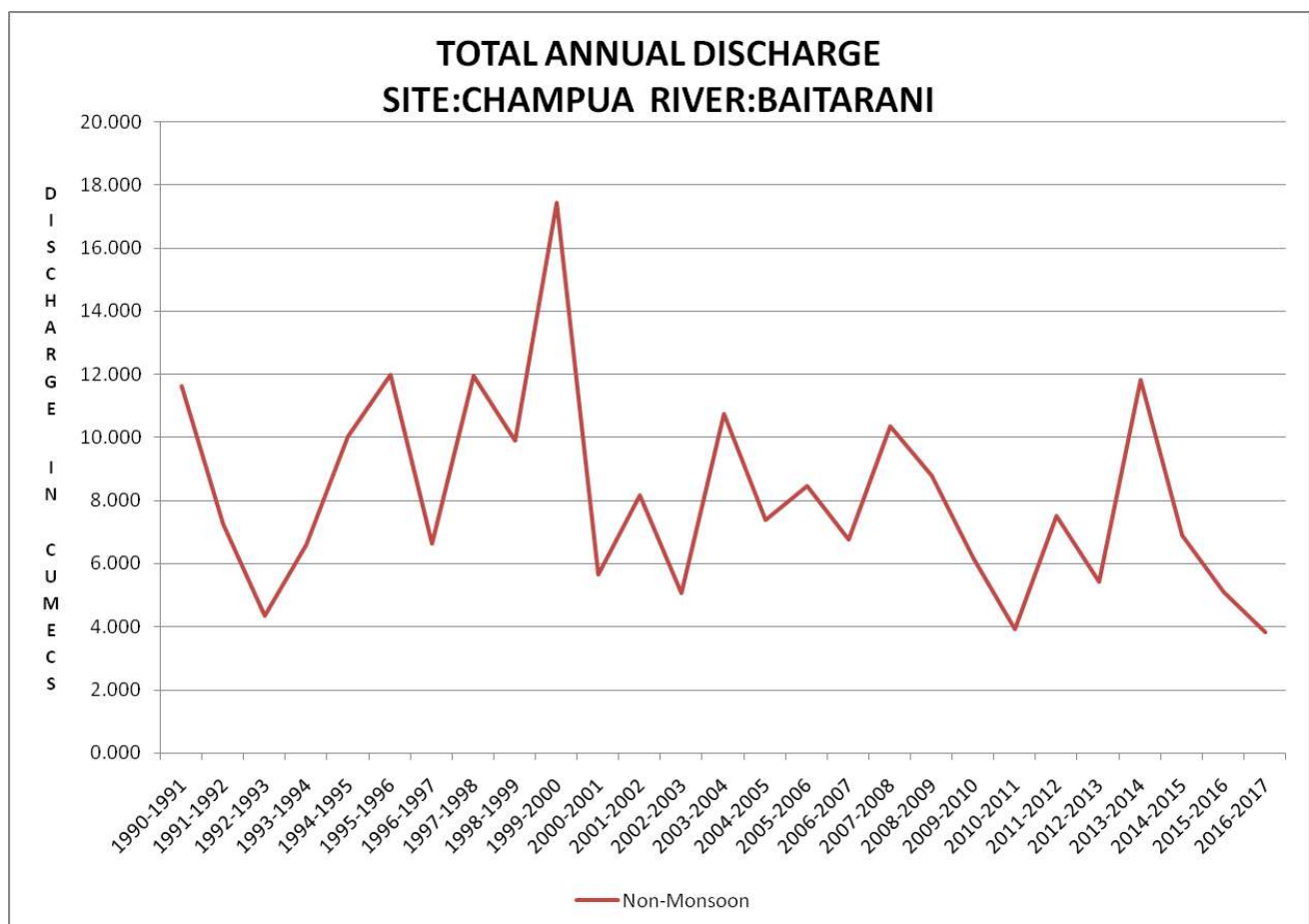
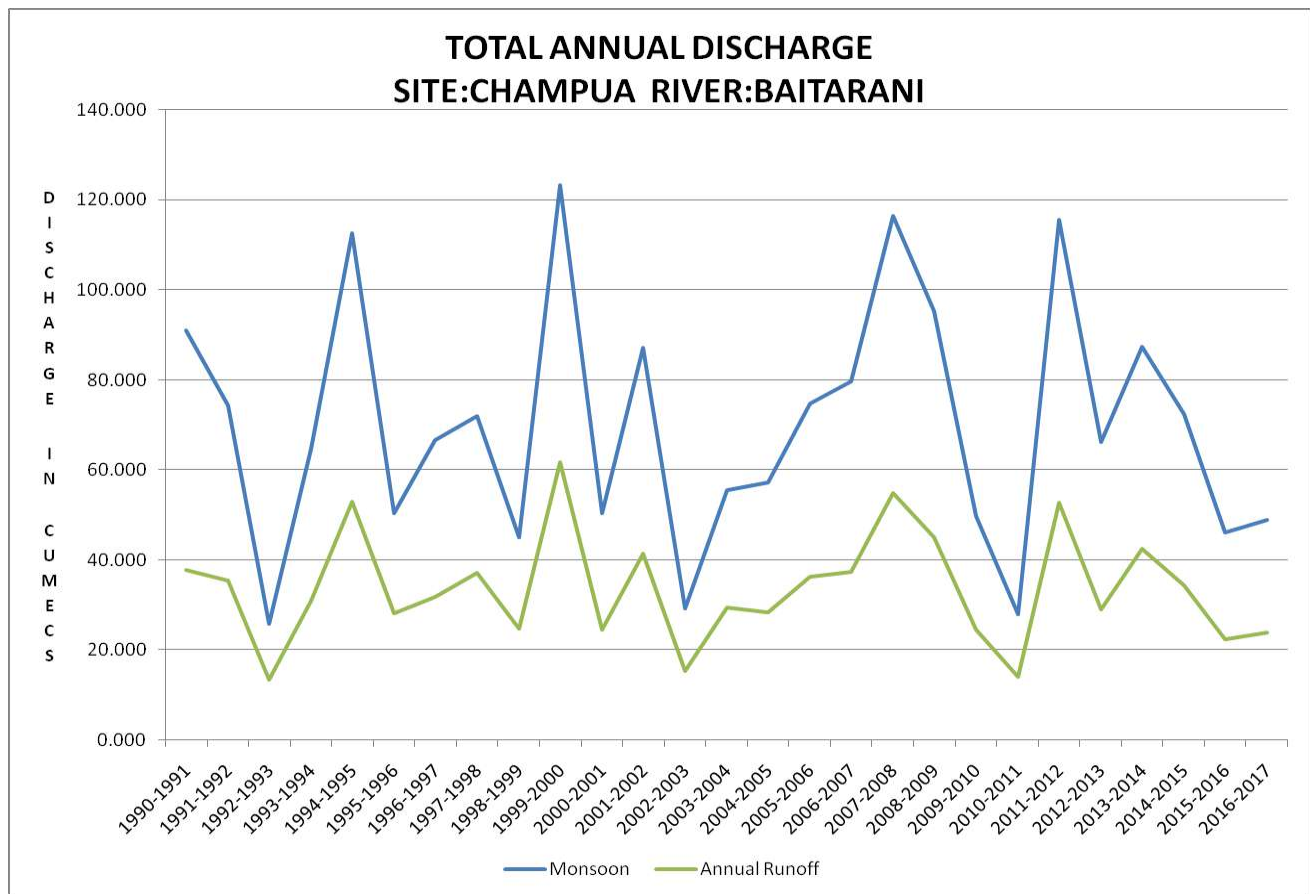
Local River : Baitarani

River Water

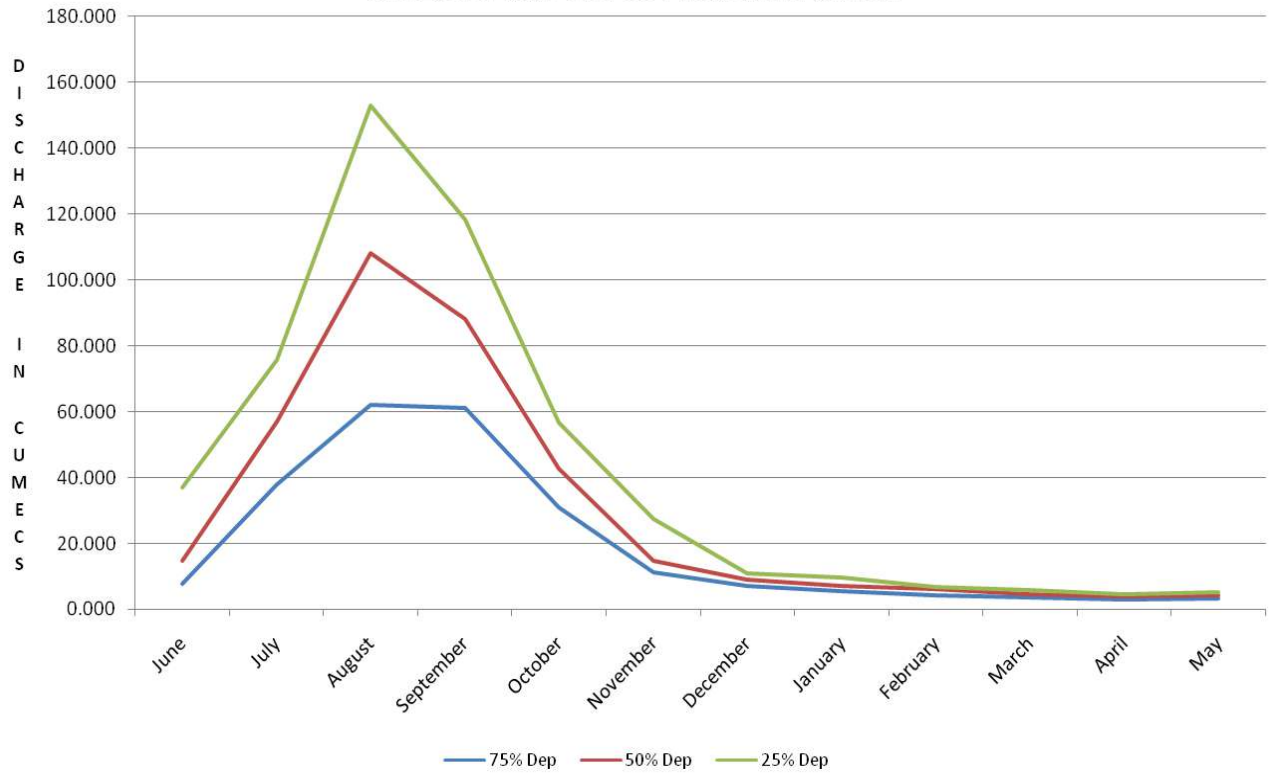
Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

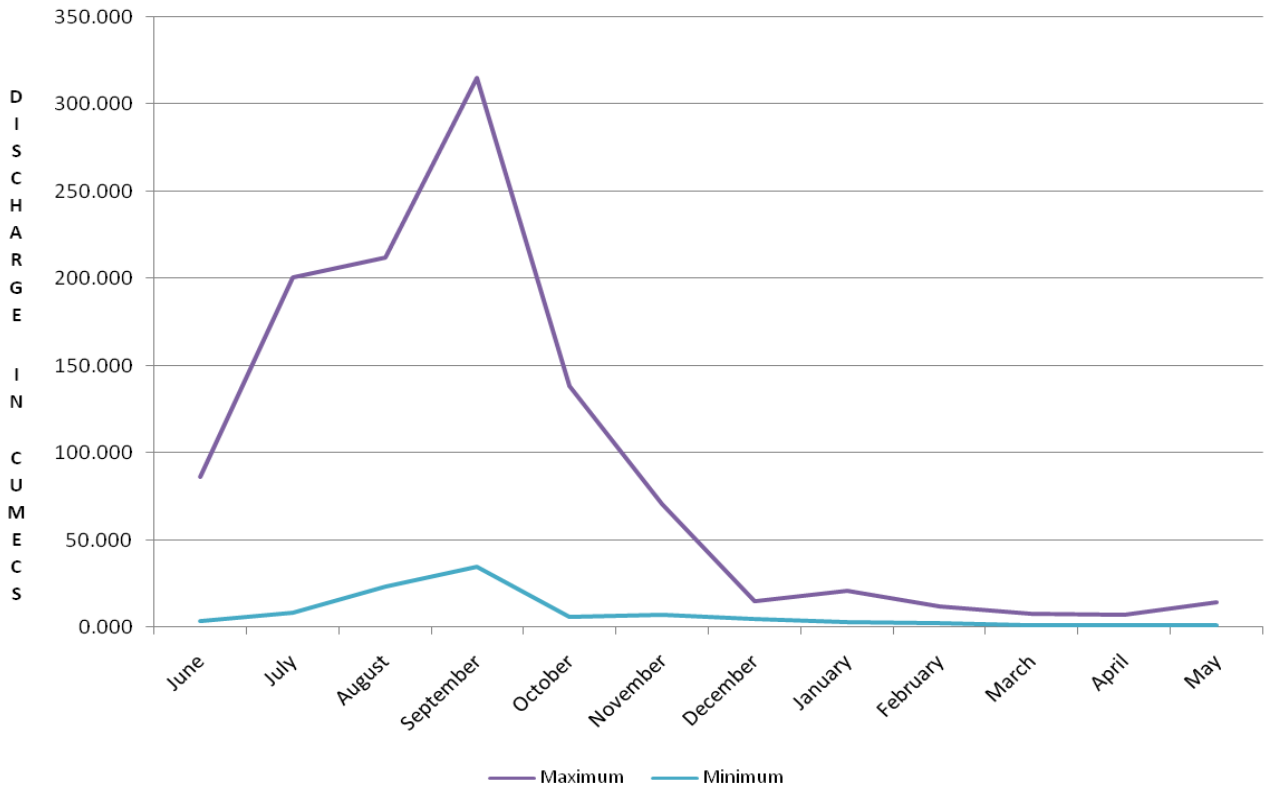
S.No	Parameters	Summer								
		Mar - May								
		2009	2010	2011	2012	2013	2014	2015	2016	2017
	PHYSICAL									
1	Q (cumec)									
2	EC_FLD (µmho/cm)		142	195	138	103	114	180	254	165
3	EC_GEN (µmho/cm)		142	194	138	103	114	180	266	168
4	pH_FLD (pH units)		7.8	7.8	7.6	7.2	7.6	7.4	7.9	7.1
5	pH_GEN (pH units)		7.8	7.8	7.6	7.2	7.6	7.4	7.6	7.2
6	Temp (deg C)		28.0	26.5		23.1	26.5	26.5	23.0	27.0
	CHEMICAL									
1	Alk-Phen (mgCaCO3/L)		0.0		0.0				0.0	0.0
2	ALK-TOT (mgCaCO3/L)		58		55				51	60
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01
4	Ca (mg/L)		13	18	18	20	13	22	29	61
5	Cl (mg/L)		5.6	15.1	24.5	22.6	12.5	32.1	24.5	7.5
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)		0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)		0.0	0.2	0.0	2.2	0.1	0.3	0.3	0.5
9	HCO3 (mg/L)		71	79	68	117	73	96	62	73
10	K (mg/L)		2.1	2.6	1.6	5.9	0.6	2.3	1.8	3.6
11	Mg (mg/L)		6.8	7.8	4.9	6.3	1.8	6.8	13.6	26.3
12	Na (mg/L)		3.3	7.9	2.9	12.6	3.2	9.8	37.0	24.1
13	NO2+NO3 (mg N/L)		0.38	0.94	0.39	0.95	0.67	0.81	0.78	1.23
14	NO2-N (mgN/L)		0.00	0.00	0.07	0.00	0.00	0.00	0.01	0.01
15	NO3-N (mgN/L)		0.38	0.94	0.32	0.95	0.67	0.81	0.77	1.22
16	o-PO4-P (mg P/L)		0.000							
17	P-Tot (mgP/L)		0.010	0.001	0.010	0.001	0.001	0.001	0.010	0.010
18	SiO2 (mg/L)		8.7	9.5	7.0	24.6	8.6	3.0	5.0	8.0
19	SO4 (mg/L)		2.0	2.9	29.7	6.5	16.2	12.6	52.9	6.0
	BIOLOGICAL/BACTERIOLOGICAL									
	TRACE & TOXIC									
	CHEMICAL INDICES									
1	HAR_Ca (mgCaCO3/L)		32	44	44	49	32	56	72	152
2	HAR_Total (mgCaCO3/L)		60	77	64	75	39	84	129	262
3	Na% (%)		10	18	9	25	15	20	38	17
4	RSC (-)		0.0	0.0	0.0	0.4	0.4	0.0	0.0	0.0
5	SAR (-)		0.2	0.4	0.2	0.6	0.2	0.5	1.4	0.7
	PESTICIDES									

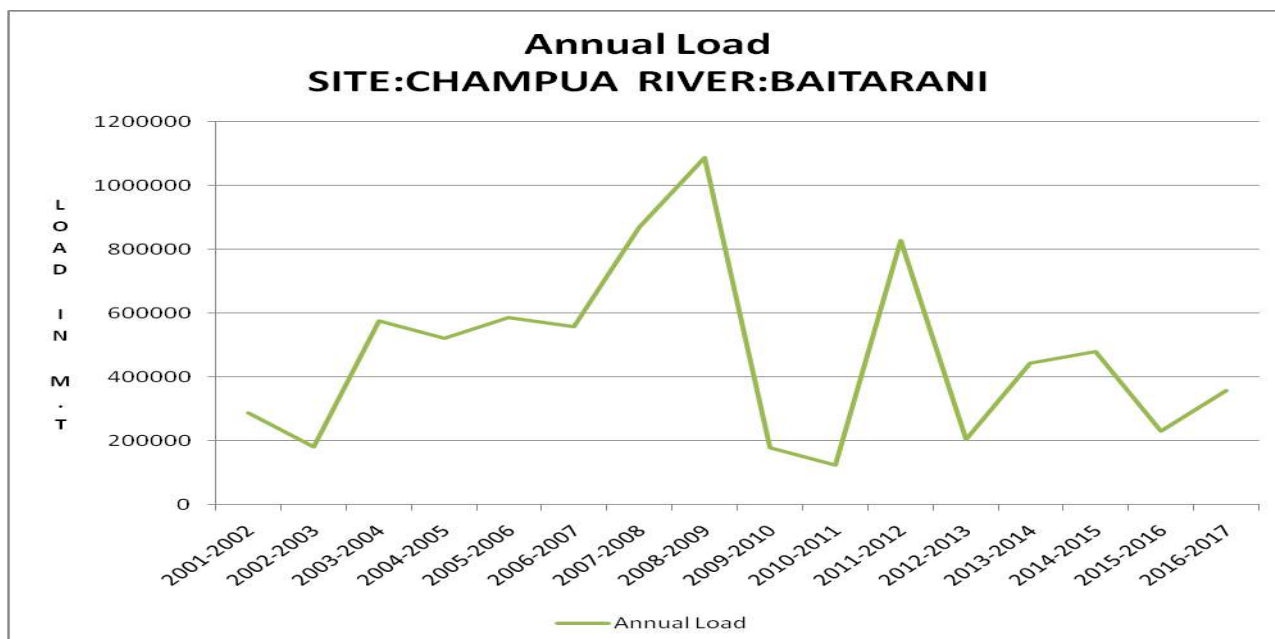
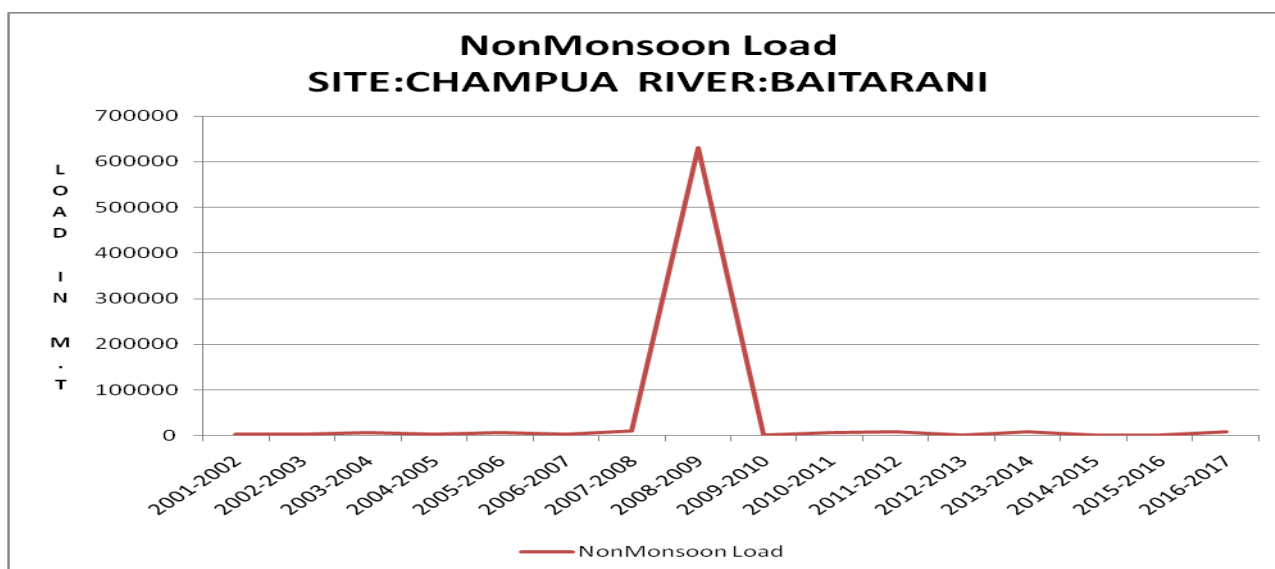
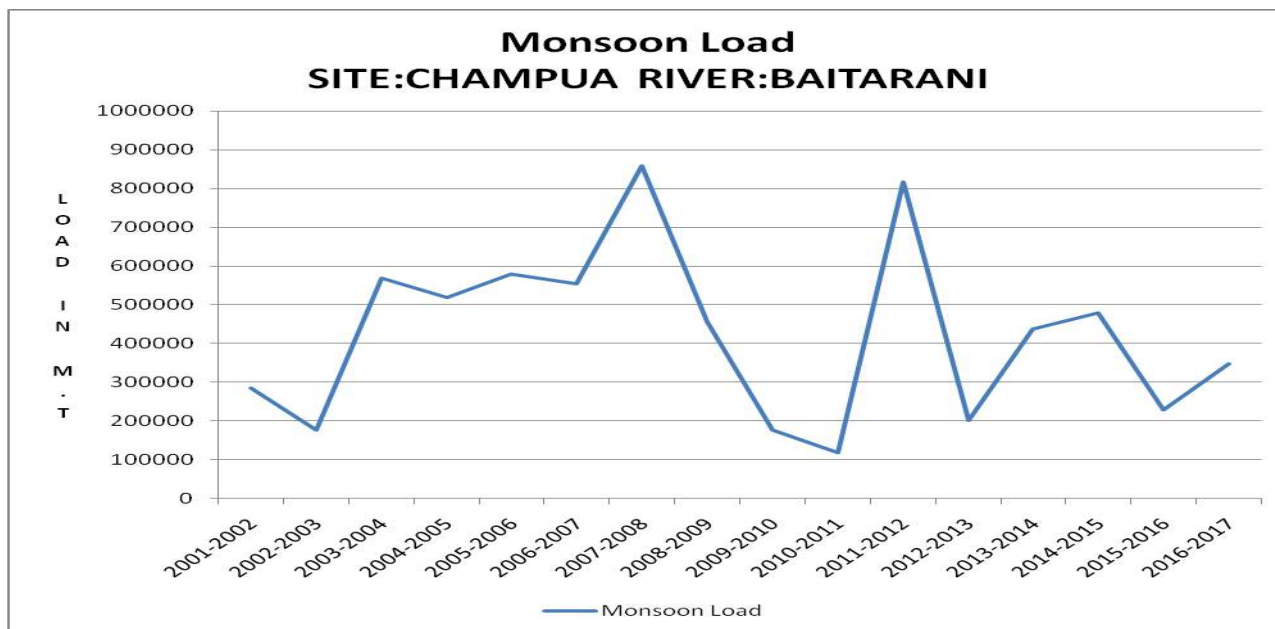


DEPENDIBILITY FLOW FROM JUNE TO MAY SITE:CHAMPUA RIVER:BAITARANI

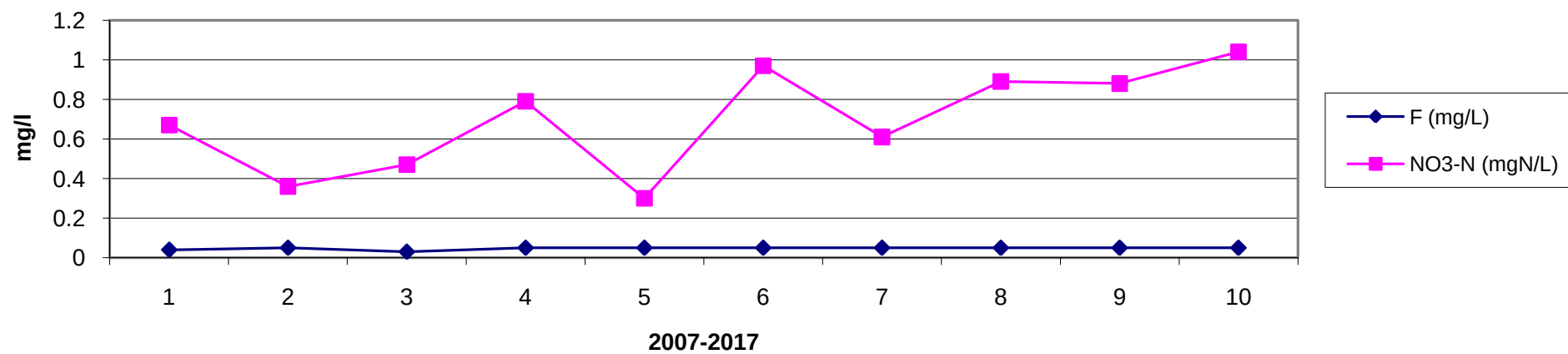


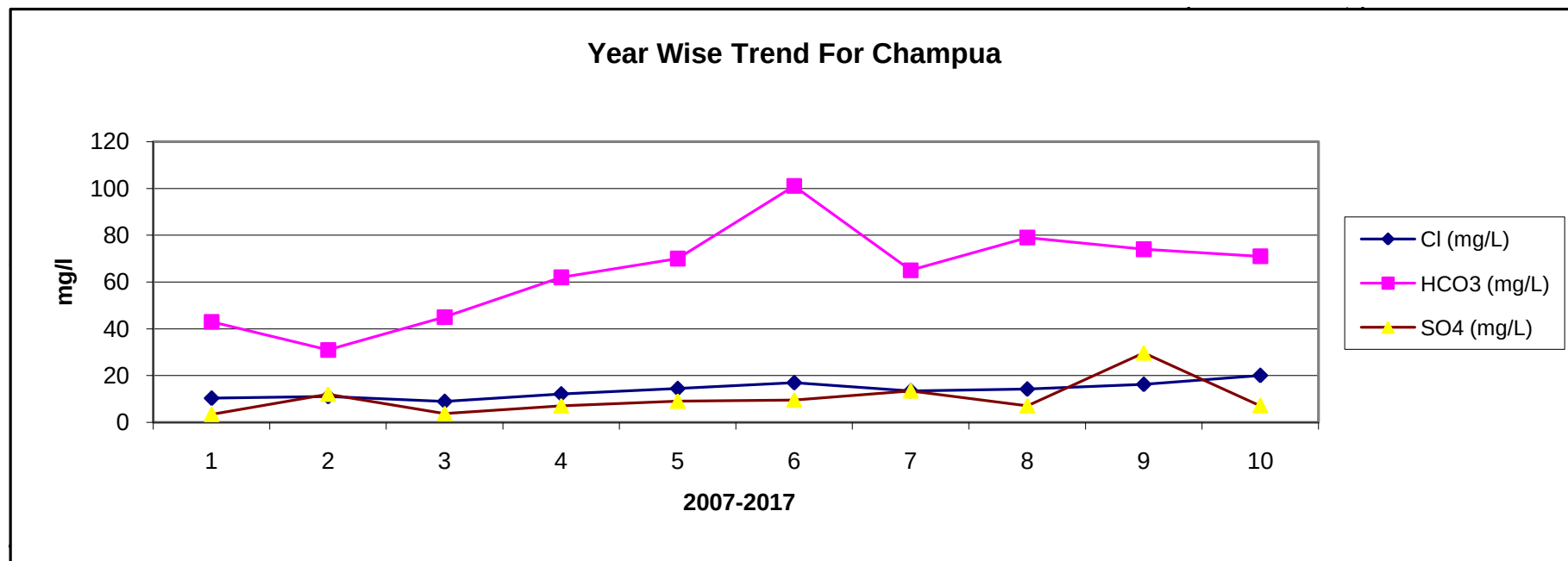
MAXIMUM-MINIMUM FLOW FROM JUNE TO MAY SITE:CHAMPUA RIVER:BAITARANI



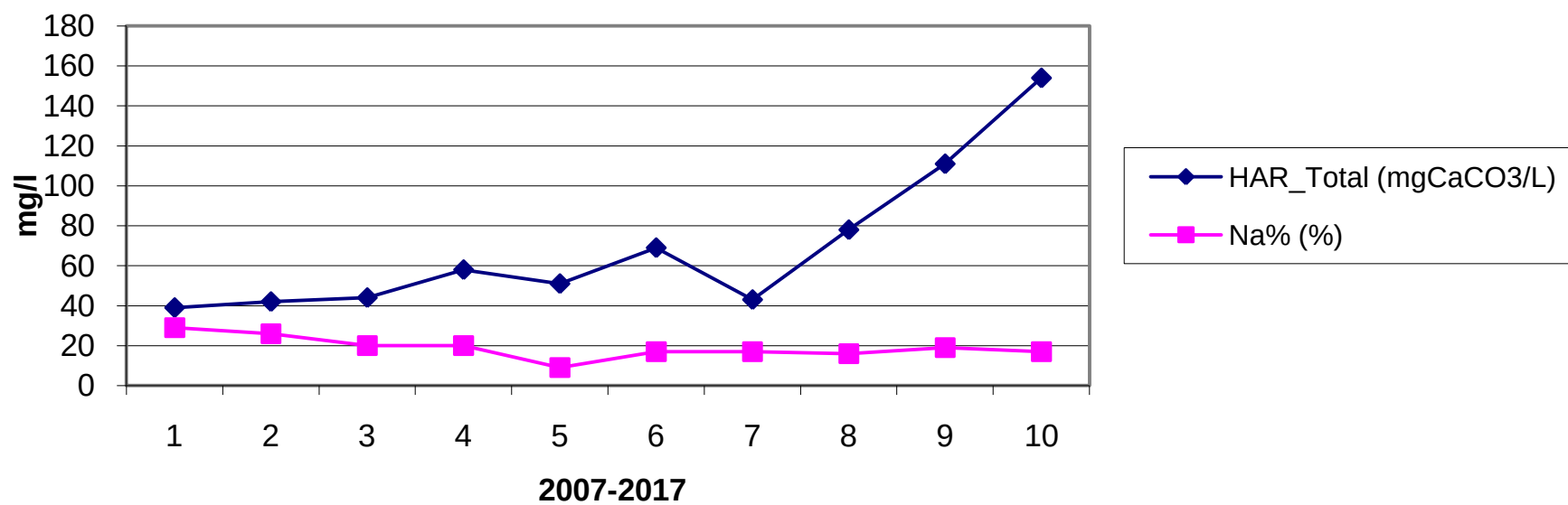


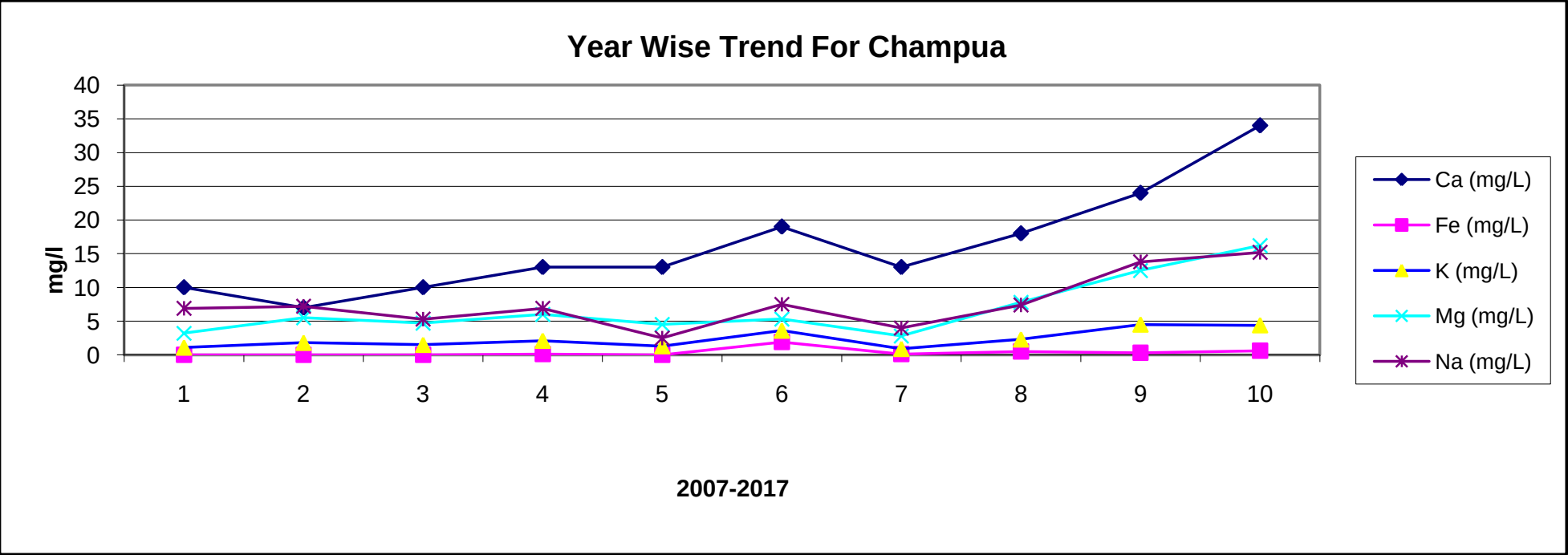
Year Wise Trend For Champua





Year Wise Trend For Champua





HISTORY SHEET

Water Year : 2016-2017

Site : ANANDPUR

Code : EC000K3

State : Orissa

District : Keonjhar

Basin : Brahmani-Baitarani

Independent River : Baitarani

Tributary : Baitarani

Sub Tributary :

Sub-Sub Tributary :

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Drainage Area : 8570 Sq. Km.

Bank : Right

Latitude : 21°12'34"

Longitude : 86°07'23"

Zero of Gauge (m) : 28 (m.s.l)

1/1/1970 - 12/31/2050

Opening Date

Closing Date

Gauge : 3/7/1972

1/1/2100

Discharge : 3/7/1972

1/1/2100

Sediment : 6/1/1972

1/1/2100

Water Quality : 9/1/1972

1/1/2100

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	4426	38.745	9/12/1972	1.500	32.565	4/27/1973
1973-1974	8100	39.918	9/3/1973	2.700	32.415	5/13/1974
1974-1975	3902	39.005	8/16/1974	1.500	32.320	5/17/1975
1975-1976	10394	40.625	8/19/1975	3.400	32.295	5/9/1976
1976-1977	2299	38.195	8/14/1976	2.900	32.200	3/25/1977
1977-1978	1568	36.455	7/6/1977	3.500	32.300	4/19/1978
1978-1979	3254	38.535	9/2/1978	1.600	32.305	5/28/1979
1979-1980	4936	39.178	8/8/1979	0.996	32.130	5/15/1980
1980-1981	1078	36.023	6/23/1980	3.447	32.225	4/17/1981
1981-1982	2631	37.140	6/22/1981	3.492	32.290	5/10/1982
1982-1983	1635	36.830	8/22/1982	1.920	32.310	4/13/1983
1983-1984	4189	38.670	9/17/1983	1.338	32.665	5/10/1984
1984-1985	3666	38.480	8/27/1984	1.318	32.585	4/25/1985
1985-1986	7974	39.675	10/16/1985	4.100	32.710	4/21/1986
1986-1987	1052	36.353	10/3/1986	2.900	32.610	4/27/1987
1987-1988	869.4	35.945	7/18/1987	2.700	32.640	2/17/1988
1988-1989	4294	39.168	8/3/1988	0.500	32.380	5/11/1989
1989-1990	5482	39.345	8/4/1989	2.600	32.805	2/14/1990
1990-1991	2835	37.680	7/15/1990	2.570	32.650	5/23/1991
1991-1992	4760	38.900	8/13/1991	2.590	32.810	5/1/1992
1992-1993	869.4	35.990	8/16/1992	1.347	32.730	4/8/1993
1993-1994	4075	37.745	7/16/1993	2.000	32.990	4/3/1994

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1994-1995	4223	38.650	6/29/1994	2.960	33.090	5/2/1995
1995-1996	5218	38.923	8/9/1995	3.105	33.100	5/23/1996
1996-1997	5450	39.095	6/23/1996	2.928	33.100	3/24/1997
1997-1998	5762	39.300	8/6/1997	5.260	33.140	6/1/1997
1998-1999	1363	36.650	9/13/1998	1.298	33.140	5/5/1999
1999-2000	5856	39.500	10/30/1999	9.590	33.390	4/13/2000
2000-2001	2528	38.210	9/15/2000	5.488	33.235	3/22/2001
2001-2002	2788	38.245	7/4/2001	4.953	33.200	5/16/2002
2002-2003	1030	36.715	9/11/2002	3.724	33.075	4/30/2003
2003-2004	1998	38.015	7/31/2003	3.256	33.175	5/28/2004
2004-2005	3728	38.565	8/21/2004	5.177	33.220	3/9/2005
2005-2006	4106	39.160	6/29/2005	4.500	33.145	5/7/2006
2006-2007	3134	38.730	8/23/2006	8.151	33.140	4/30/2007
2007-2008	5779	39.750	9/24/2007	8.678	33.125	6/1/2007
2008-2009	6328	68.140	6/18/2008	5.600	33.100	5/10/2009
2009-2010	1844	37.500	7/21/2009	2.000	33.160	5/2/2010
2010-2011	567.7	35.495	9/20/2010	3.844	32.890	4/1/2011
2011-2012	7424	40.085	9/23/2011	6.000	33.000	4/8/2012
2012-2013	750.0	36.720	8/12/2012	0.008	28.008	3/10/2013
2013-2014	4840	40.240	10/14/2013	2.933	32.880	5/24/2014
2014-2015	7689	40.920	8/5/2014	4.127	32.795	4/16/2015
2015-2016	2382	38.645	7/28/2015	0.000	32.520	5/11/2016
2016-2017	1435	36.310	8/18/2016	0.000	32.760	2/13/2017

Stage-Discharge Data for the period 2016 - 2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	32.870	4.200 *	33.100	7.984	34.090	125.1	34.380	202.4	34.070	167.2	33.320	38.60
2	32.860	4.346	33.090	7.724	35.270	573.6	33.043	194.2	34.200	180.0		
3	32.860	4.341	33.340	10.10 *	35.960	971.8	34.160	179.4	34.070	177.3	33.300	36.16
4	32.850	4.299	33.410	12.82	35.895	880.8	34.100	150.0 *	34.040	172.3	33.290	44.34
5	32.870	4.200 *	33.410	12.82	35.935	931.9	35.350	605.7	33.955	160.3	33.270	31.06
6	32.860	4.286	33.435	13.96	35.475	698.8	35.810	1031	33.895	148.8	33.260	29.50 *
7	32.850	4.153	33.680	18.00 *	35.045	300.0 *	35.760	991.9	33.820	141.3	33.250	29.25
8	32.840	4.086	33.580	14.77	34.630	254.7	35.360	631.2	33.955	145.0	33.250	29.01
9	32.840	3.973	33.400	13.66	34.330	193.3	35.045	481.6	33.800	143.0 *	33.240	27.12
10	32.860	4.346	33.290	12.50 *	34.370	195.5	35.695	666.4	33.860	142.0 *	33.230	26.99
11	32.870	4.307	33.210	11.56	35.115	507.7	34.985	465.5	33.990	148.0 *	33.220	26.62
12	32.870	4.200	33.210	10.41	35.325	465.8	34.985	465.5	34.050	150.0 *	33.220	26.49
13	32.860	4.185	33.170	9.697	35.410	605.4			33.945	144.6	33.220	24.58
14	32.850	4.302	33.170	8.792	34.840	514.9	35.005	438.5	33.775	133.0	33.210	26.00 *
15	32.840	4.203	33.120	8.546	34.525	240.0 *	34.780	401.7	33.665	122.8	33.200	25.32
16	32.830	4.241	33.120	10.44			34.595	220.2	33.590	118.0 *	33.200	24.50
17	32.860	4.499	33.280	12.30	35.630	728.4	34.545	212.0	33.565	111.4	33.190	24.09
18	32.880	4.550	33.500	14.42	36.310	1435	34.260	200.0 *	33.490	108.8	33.190	23.55
19	32.890	4.750 *	33.450	13.24	36.185	1258	34.120	179.9	33.450	102.9	33.180	22.89
20	32.920	6.135	33.420	12.84	35.280	673.4	32.580	176.3	33.430	87.18	33.170	22.76
21	32.980	7.167	33.420	12.84	34.850	260.0	34.035	170.2	33.400	74.10	33.170	22.76
22	32.980	7.665	33.870	87.99	34.530	246.9			33.380	64.27	33.170	19.34
23	33.020	7.611	34.400	153.4	34.570	256.8	34.110	180.1	33.370	50.00 *	33.140	17.91
24	33.030	7.729	33.950	119.8	35.240	480.9	34.200	195.6	33.340	41.03	33.130	15.46
25	33.010	7.455	33.950	119.8	35.320	544.6	34.380	204.0 *	33.320	37.01	33.120	17.28
26	32.980	7.200 *	34.910	279.8	35.925	1051	34.270	198.2	33.290	33.51	33.110	16.82
27	33.000	7.447	34.610	235.9	35.320	586.7	34.170	186.1	33.280	32.94	33.110	16.50 *
28	33.060	7.780	34.560	220.2	34.905	280.0 *	34.095	177.8	33.380	49.61	33.100	16.06
29	33.000	8.358	34.395	220.2	34.740	396.4	34.000	170.0	33.380	49.61	33.090	15.54
30	33.130	8.132	33.990	116.0	34.555	247.1	34.000	170.0	33.340	45.00 *	33.080	15.30
31					34.430	215.4			33.330	45.28		
Ten-Daily Mean												
I Ten-Daily	32.856	4.223	33.373	12.43	35.100	512.6	34.870	513.4	33.966	157.7	33.268	32.45
II Ten-Daily	32.867	4.537	33.265	11.22	35.402	714.3	34.428	306.6	33.695	122.7	33.200	24.68
III Ten-Daily	33.019	7.654	34.205	156.6	34.944	415.0	34.140	183.6	33.346	47.49	33.122	17.30
Monthly												
Min.	32.830	3.973	33.090	7.724	34.090	125.1	32.580	150.0	33.280	32.94	33.080	15.30
Max.	33.130	8.358	34.910	279.8	36.310	1435	35.810	1031	34.200	180.0	33.320	44.34
Mean	32.914	5.471	33.615	60.08	35.133	537.3	34.493	340.9	33.659	107.3	33.194	24.54

Annual Runoff in MCM = 2810 Annual Runoff in mm = 328

Peak Observed Discharge = 1435 cumecs on 18/08/2016 Corres. Water Level :36.31 m

Lowest Observed Discharge = 0.000 cumecs on 13/02/2017 Corres. Water Level :32.76 m

Stage-Discharge Data for the period 2016 - 2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	33.070	15.07			32.800	5.943	32.720	3.954	32.650	2.198	32.620	1.565
2	33.070	15.07	32.900	8.855	32.800	5.866	32.360	3.940			32.630	1.576
3	33.050	14.68	32.890	8.537	32.800	5.807	32.720	3.874	32.640	2.155	32.640	1.688
4	33.050	14.68	32.890	8.468	32.790	5.719	32.720	3.530	32.640	2.122	32.660	2.002
5	33.040	13.85	32.890	8.379					32.630	2.050	32.650	1.946
6	33.030	13.29	32.890	8.252			32.710	3.467	32.630	2.022	32.650	1.836
7	33.020	13.28	32.880	8.167	32.780	5.603	32.700	3.080	32.630	1.909	32.640	1.797
8	33.010	13.18			32.780	5.529	32.700	2.739	32.630	1.878	32.640	1.797
9	33.000	13.67	32.880	8.111	32.780	5.460	32.700	2.630			32.640	1.758
10	33.000	12.59	32.970	7.931		5.054	32.700	2.753	32.620	1.735		
11	32.990	12.70 *	32.870	7.876	32.770	5.060	32.690	2.636	32.620	1.692	32.660	1.877
12	32.990	12.60 *	32.870	7.796					32.620	1.667		
13	32.980	12.52	32.870	7.689	32.760	0.000			32.610	1.613	32.650	1.994
14	32.980	12.34	32.860	7.653	32.760	5.031	32.700	2.714				
15	32.970	12.00	32.850	6.975	32.760	4.915	32.690	2.631	32.610	1.554	32.650	1.968
16	32.970	12.17	32.850	6.975	32.760	4.928	32.690	2.610			32.640	1.907
17	32.960	11.91	32.850	43.69	32.750	4.392	32.690	2.376	32.650	2.109	32.640	1.859
18	32.960	11.90 *	32.850	6.810	32.750	4.363	32.680	2.218	32.680	2.175	32.640	1.696
19	32.950	11.16	32.840	6.566					32.670	1.999	32.640	1.662
20	32.950	10.96	32.840	6.487	32.740	4.629	32.680	2.117	32.660	2.047	32.630	1.623
21	32.940	10.86	32.840	6.390	32.740	4.574	32.680	2.090	32.660	2.030		
22	32.940	10.88			32.740	4.191	32.670	2.062	32.650	1.856	32.630	1.565
23	32.930	10.41	32.830	6.159	32.740	4.225	32.670	1.922			32.620	1.492
24	32.930	10.30	32.830	6.009			32.670	2.032	32.650	1.818	32.620	1.432
25	32.920	10.15 *	32.830	6.060	32.730	4.154	32.660	2.456	32.640	1.772	32.620	1.330
26	32.920	10.01							32.640	1.732		
27	32.920	9.903	32.820	6.210	32.730	4.077	32.660	2.309	32.630	1.596	32.610	1.245
28	32.910	9.744	32.820	6.123	32.720	4.008	32.660	2.326	32.630	1.562		
29	32.910	9.667					32.650	2.315	32.620	1.495		1.196
30	32.900	9.470	32.825	6.056			32.650	2.320			32.600	1.185
31	32.900	9.287	32.810	5.993			32.650	2.252			32.600	1.186
Ten-Daily Mean												
I Ten-Daily	33.034	13.93	32.899	8.337	32.790	5.622	32.670	3.330	32.634	2.009	32.641	1.774
II Ten-Daily	32.970	12.03	32.855	10.85	32.756	4.165	32.689	2.472	32.640	1.857	32.644	1.823
III Ten-Daily	32.920	10.06	32.826	6.125	32.733	4.205	32.662	2.208	32.640	1.733	32.614	1.329
Monthly												
Min.	32.900	9.287	32.810	5.993	32.720	0.000	32.360	1.922	32.610	1.495	32.600	1.185
Max.	33.070	15.07	32.970	43.69	32.800	5.943	32.720	3.954	32.680	2.198	32.660	2.002
Mean	32.973	11.94	32.859	8.624	32.761	4.706	32.672	2.667	32.638	1.866	32.634	1.647

Peak Computed Discharge = 300.0 cumecs on 07/08/2016

Corres. Water Level :35.045 m

Lowest Computed Discharge = 4.200 cumecs on 01/06/2016

Corres. Water Level :32.87 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

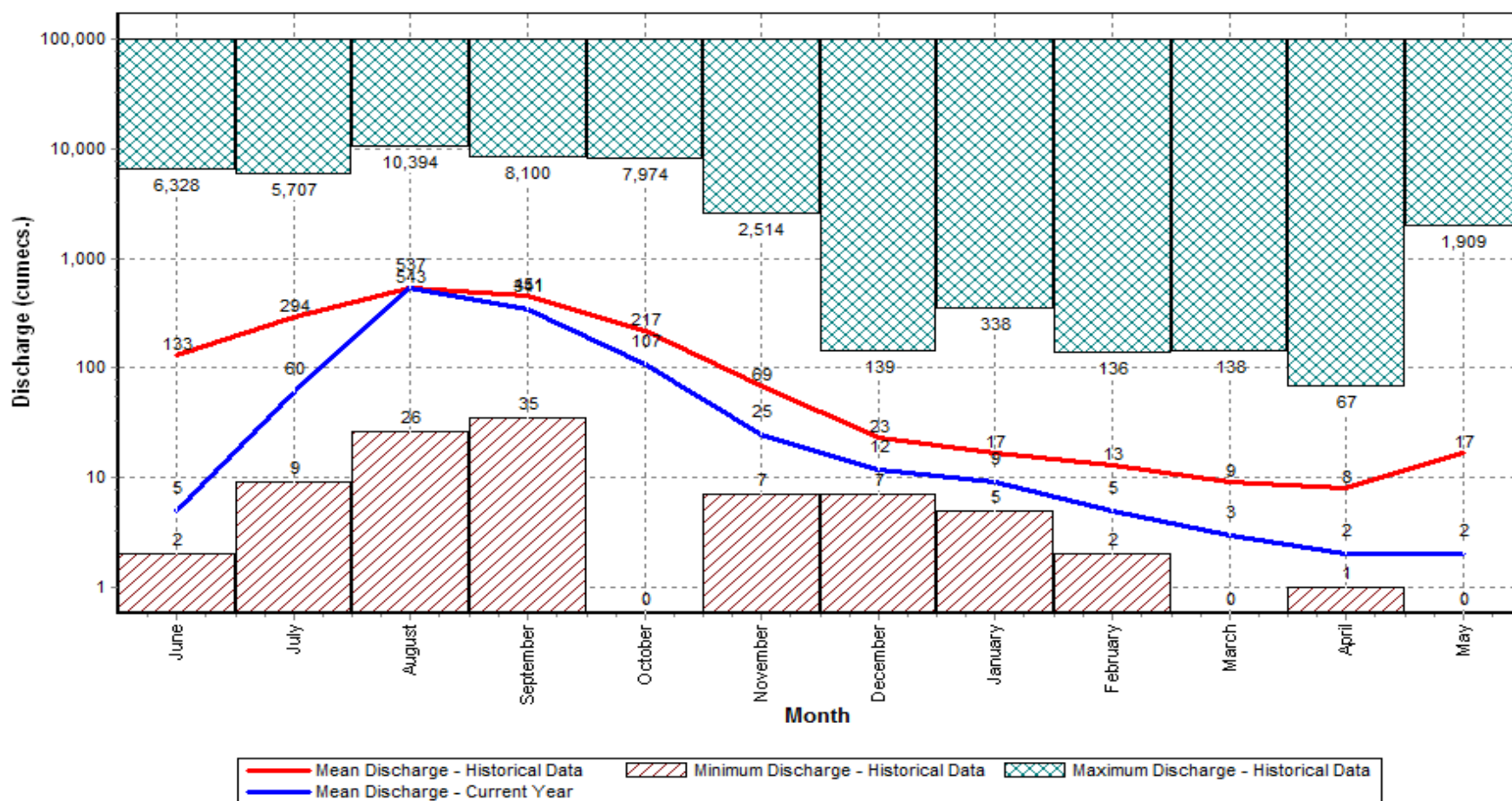
Station Name : ANANDPUR (EC000K3)

Data considered : 1972-2017

Division : E.E., Bhubaneswar

Local River : Baitarani

Sub-Division : Bhubaneswar



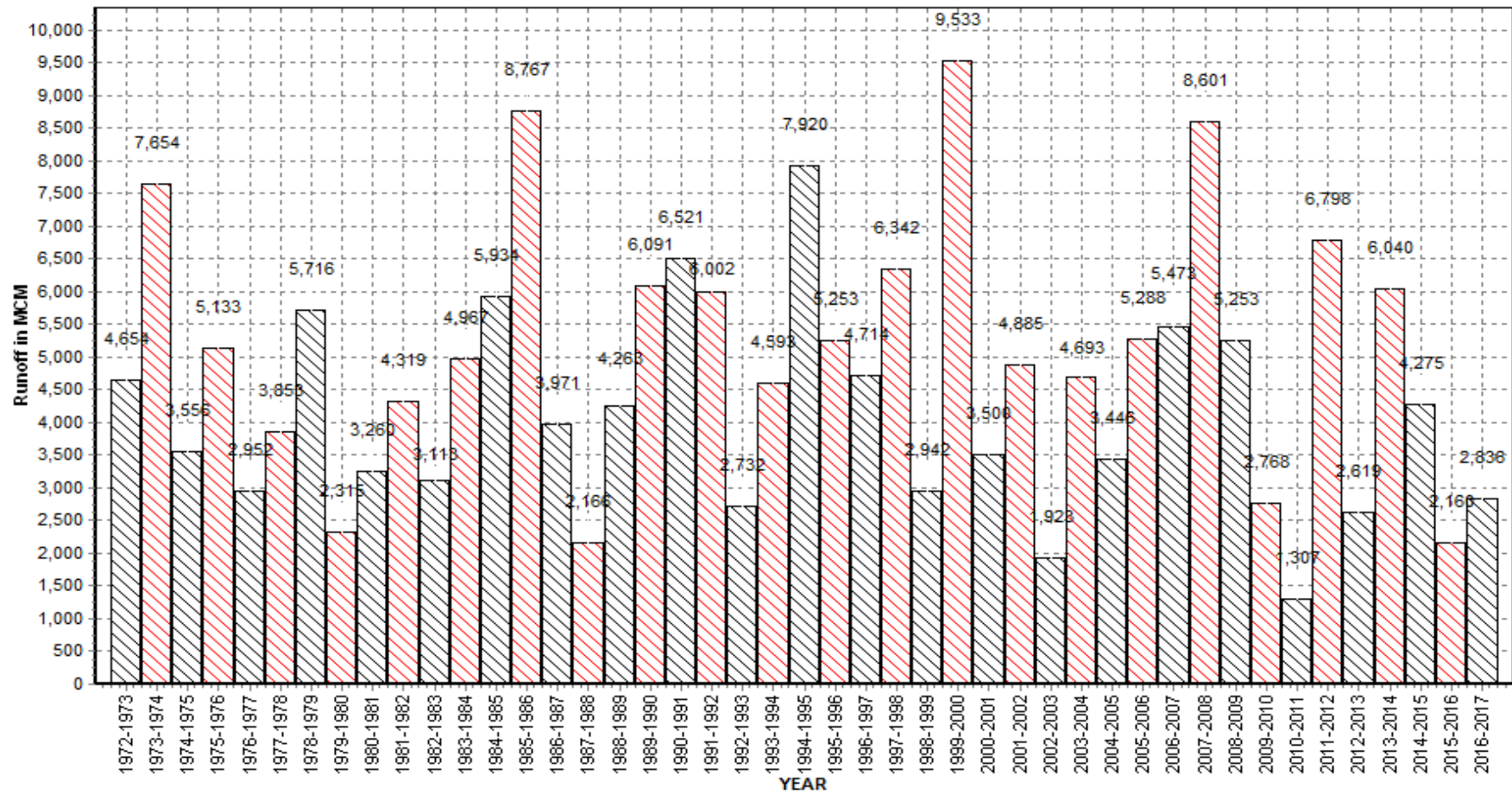
Annual Runoff Values for the period: 1972 - 2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



Note: Missing values have not been considered while arriving at Annual Runoff

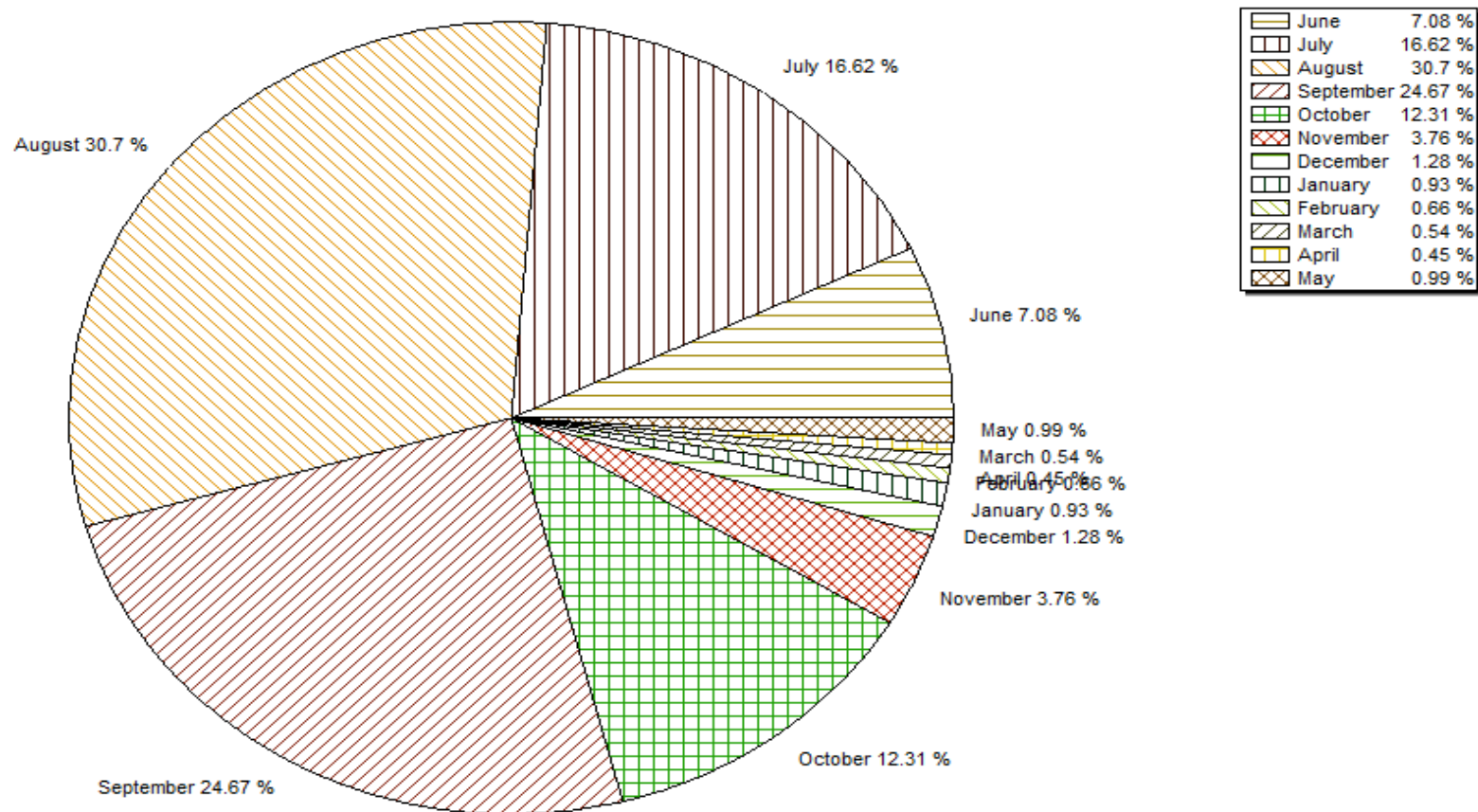
Monthly Average Runoff based on period : 1972-2016

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

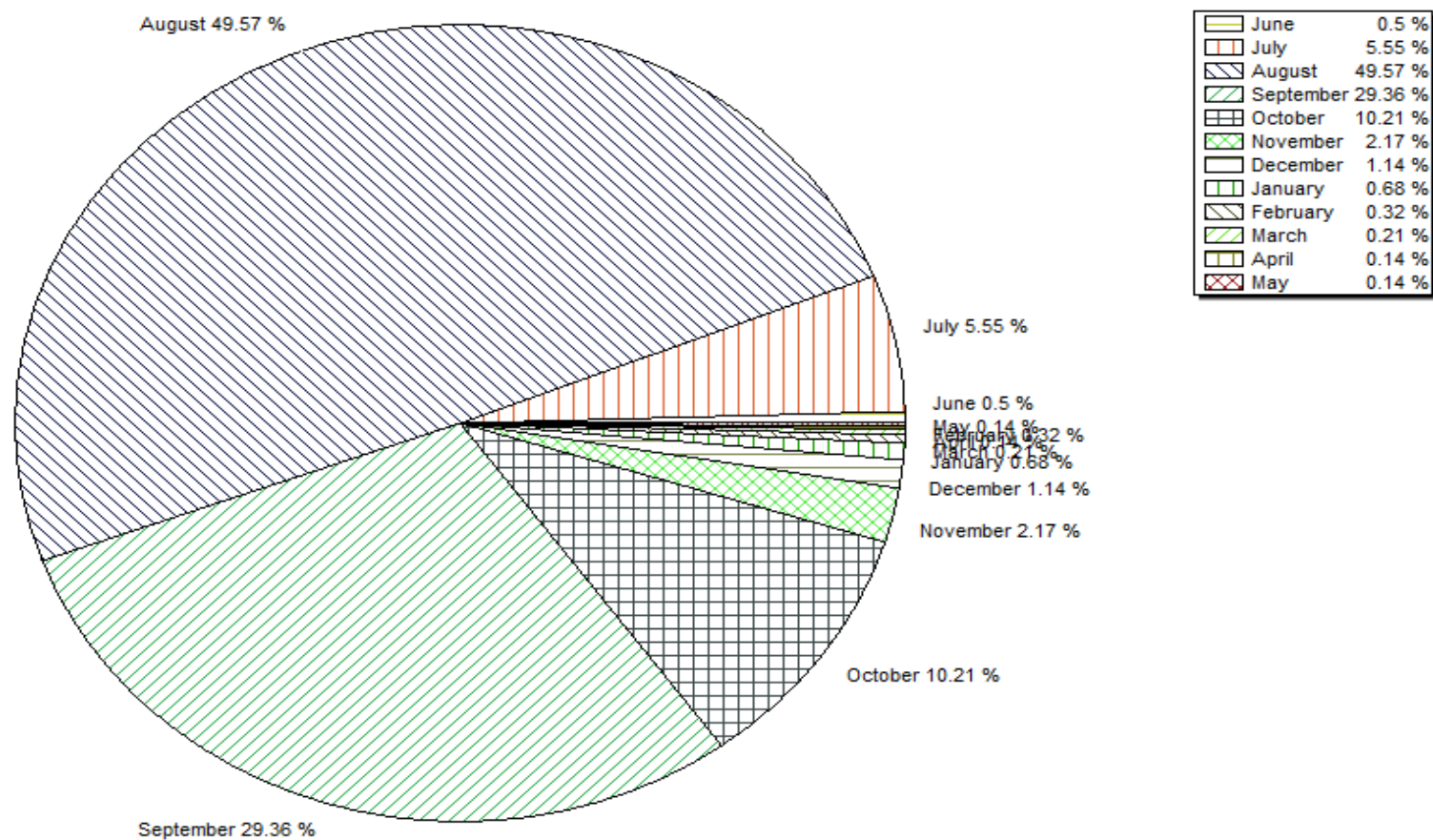
Sub-Division : Bhubaneswar



Monthly Runoff for the Year : 2016-2017

Station Name : ANANDPUR (EC000K3)
Local River : Baitarani

Division : E.E., Bhubaneswar
Sub-Division : Bhubaneswar



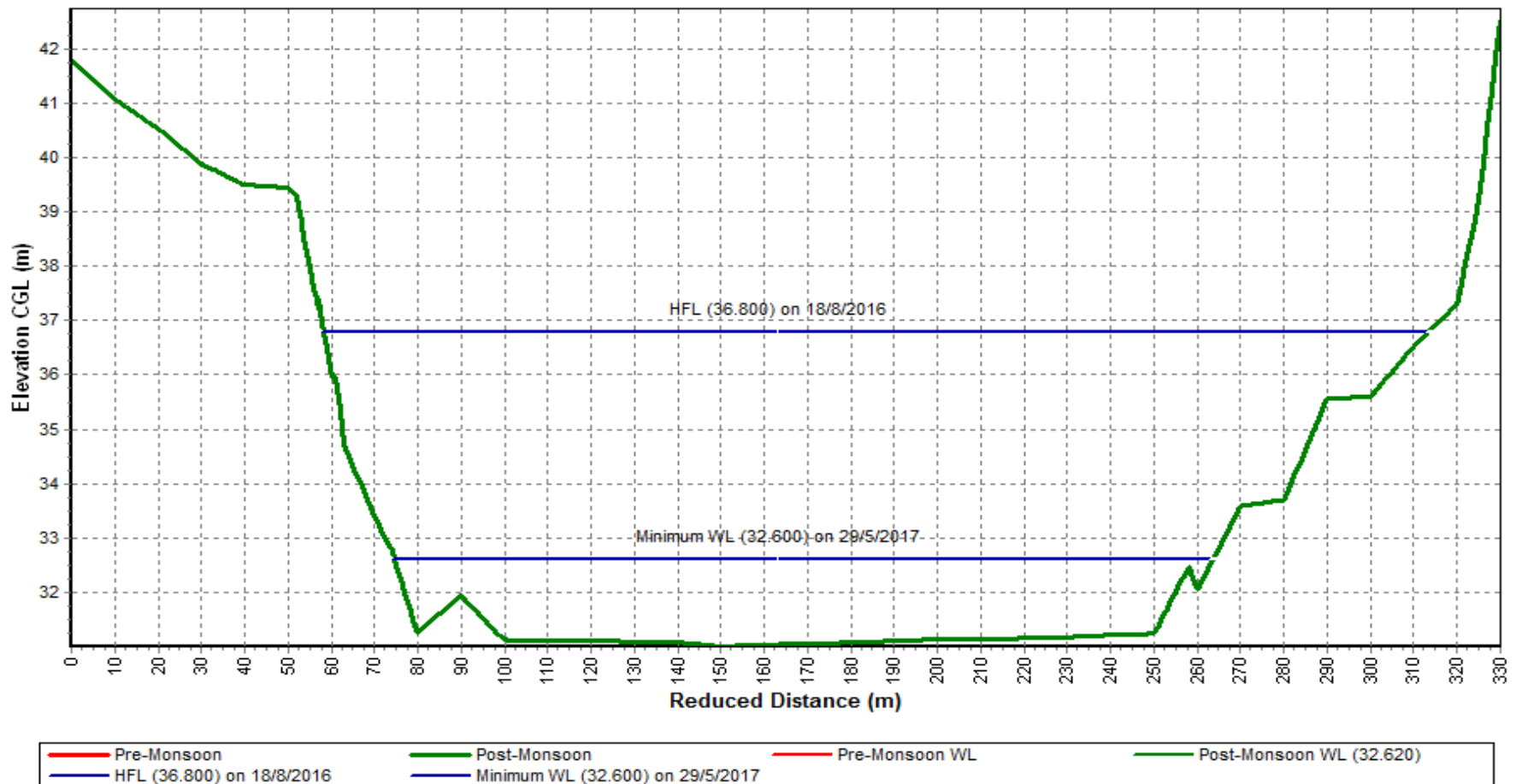
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



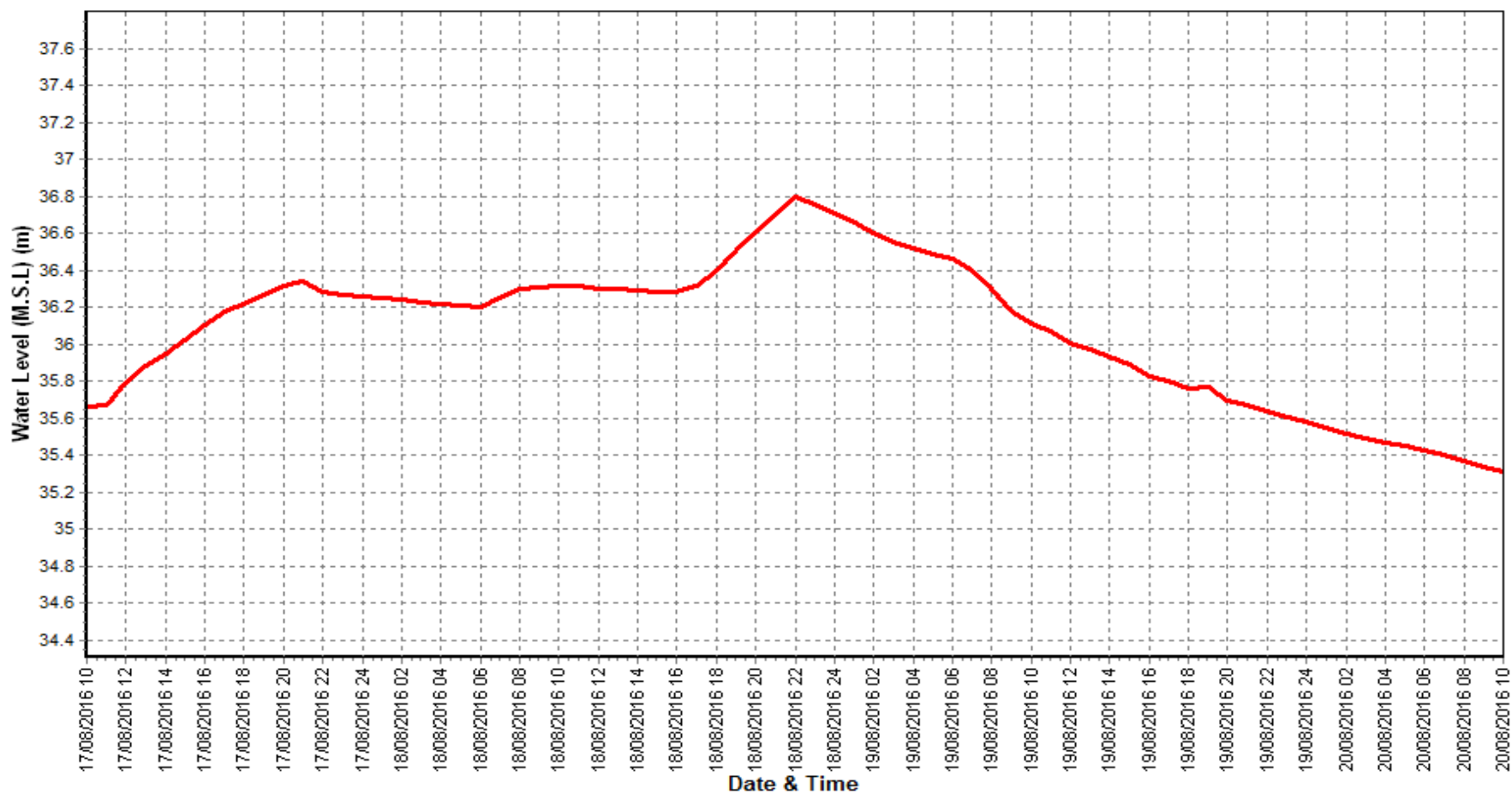
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

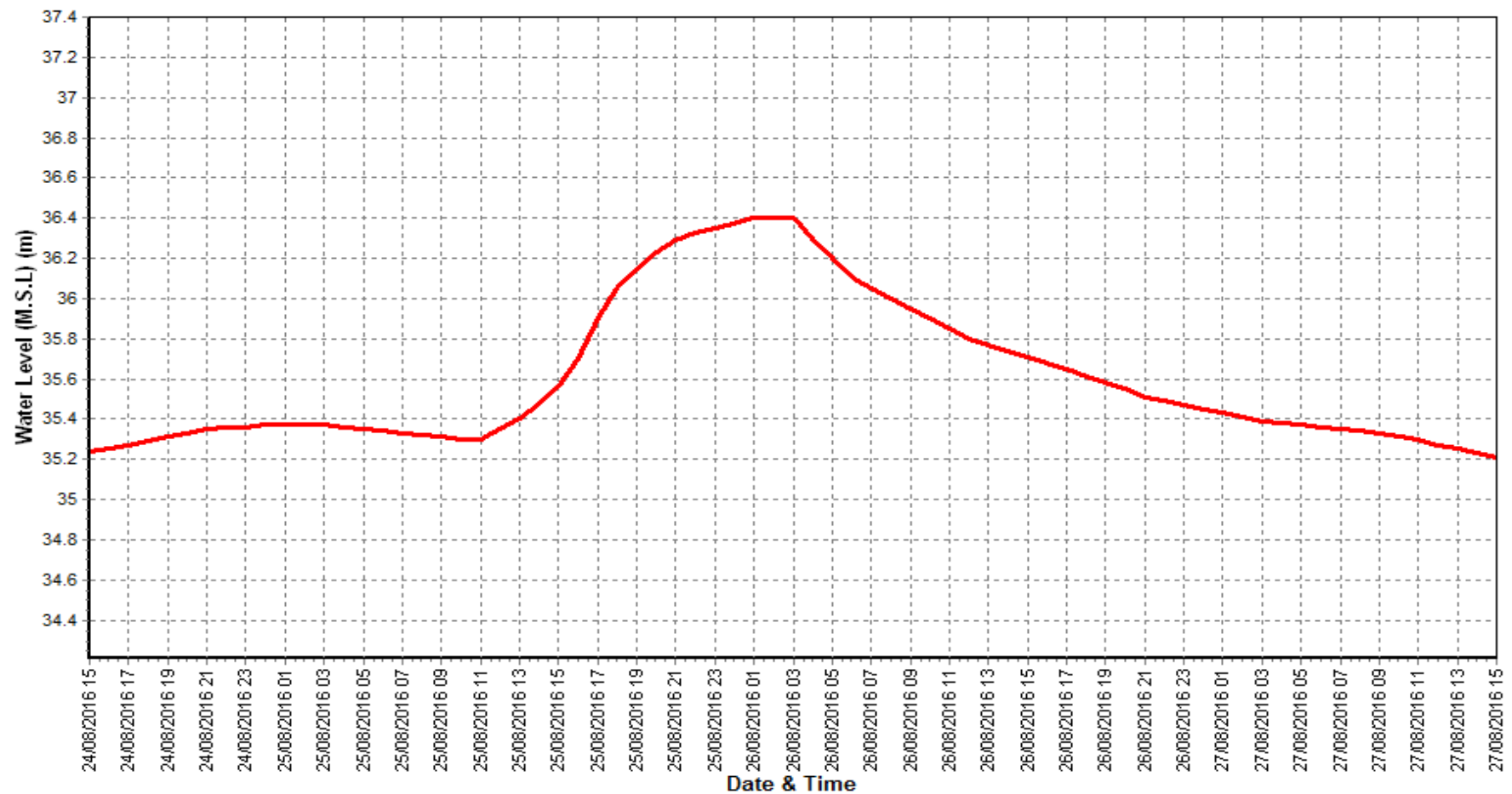
Sub-Division : Bhubaneswar



Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : ANANDPUR (EC000K3)
Local River : Baitarani

Division : E.E., Bhubaneswar
Sub-Division : Bhubaneswar



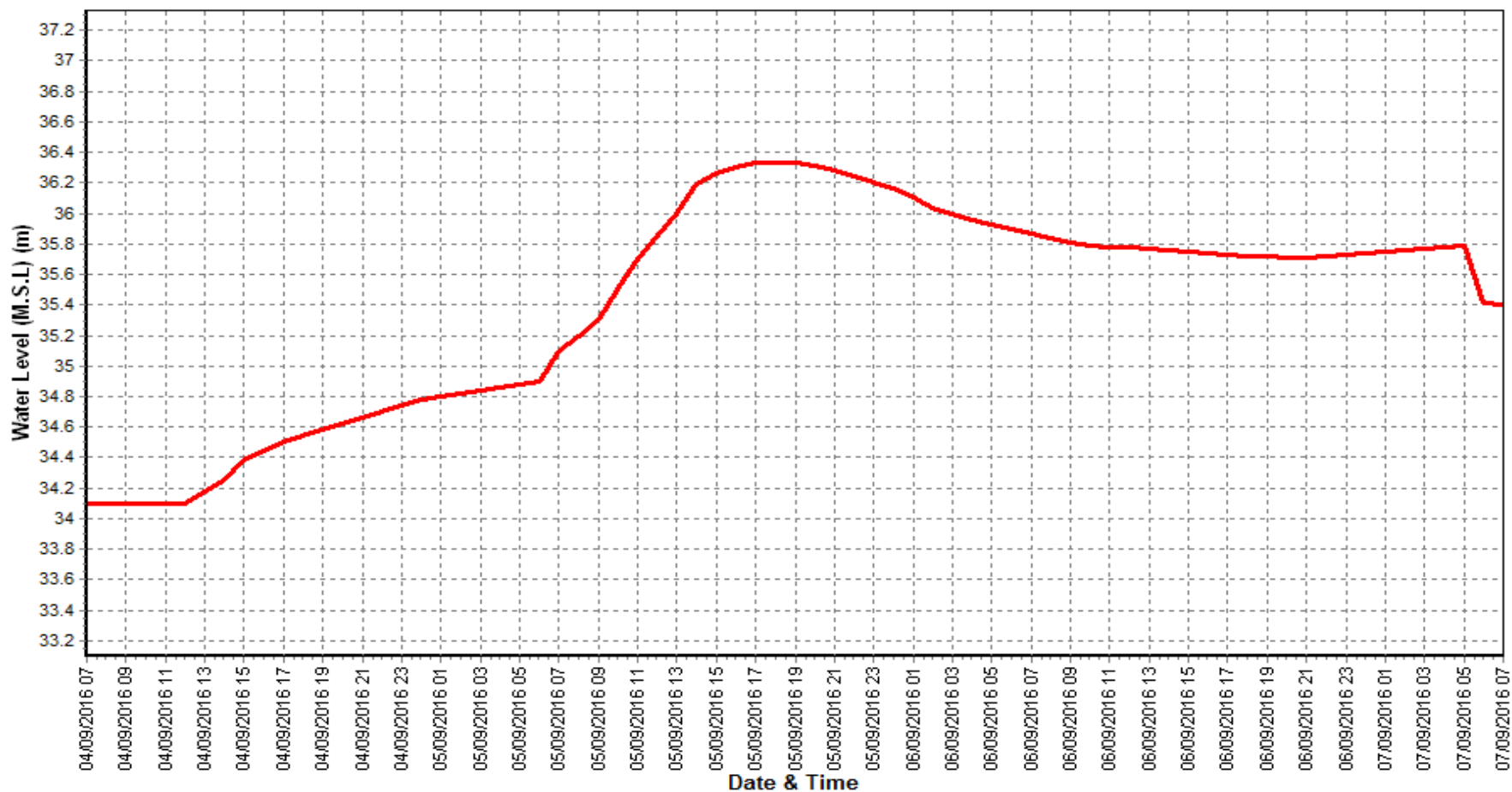
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	4.200						7.984	0.000	0.000	0.086	0.086	59	125.1	0.037	0.054	0.071	0.162	1751
2	4.346	0.000	0.000	0.059	0.059	22	7.724	0.000	0.000	0.078	0.078	52	573.6	0.049	0.056	0.158	0.263	13033
3	4.341	0.000	0.000	0.064	0.064	24	10.10						971.8	0.049	0.054	0.260	0.363	30480
4	4.299	0.000	0.000	0.066	0.066	25	12.82	0.000	0.000	0.092	0.092	102	880.8	0.052	0.047	0.264	0.363	27625
5	4.200						12.82	0.000	0.000	0.092	0.092	102	931.9	0.052	0.057	0.288	0.397	31966
6	4.286	0.000	0.000	0.067	0.067	25	13.96	0.000	0.000	0.093	0.093	112	698.8	0.050	0.064	0.304	0.418	25238
7	4.153	0.000	0.000	0.068	0.068	24	18.00						300.0					
8	4.086	0.000	0.000	0.069	0.069	24	14.77	0.000	0.000	0.099	0.099	126	254.7	0.064	0.036	0.081	0.181	3983
9	3.973	0.000	0.000	0.071	0.071	24	13.66	0.000	0.000	0.084	0.084	99	193.3	0.010	0.041	0.096	0.147	2455
10	4.346	0.000	0.000	0.069	0.069	26	12.50						195.5	0.023	0.033	0.071	0.127	2145
11	4.307	0.000	0.000	0.067	0.067	25	11.56	0.000	0.000	0.082	0.082	82	507.7	0.037	0.069	0.084	0.190	8335
12	4.200				0.067	24	10.41	0.000	0.000	0.077	0.077	69	465.8	0.018	0.350	0.144	0.512	20605
13	4.185	0.000	0.000	0.065	0.065	24	9.697	0.000	0.000	0.078	0.078	65	605.4	0.019	0.035	0.161	0.215	11246
14	4.302	0.000	0.000	0.069	0.069	26	8.792	0.000	0.000	0.072	0.072	55	514.9	0.066	0.084	0.114	0.264	11744
15	4.203	0.000	0.000	0.066	0.066	24	8.546	0.000	0.000	0.074	0.074	55	240.0					
16	4.241	0.000	0.000	0.077	0.077	28	10.44	0.000	0.000	0.096	0.096	87						
17	4.499	0.000	0.000	0.077	0.077	30	12.30						728.4	0.029	0.052	0.169	0.250	15733
18	4.550	0.000	0.000	0.075	0.075	29	14.42	0.000	0.000	0.102	0.102	127	1435	0.053	0.065	0.278	0.396	49086
19	4.750						13.24	0.000	0.000	0.101	0.101	115	1258	0.049	0.062	0.278	0.389	42288
20	6.135	0.000	0.000	0.073	0.073	39	12.84	0.000	0.000	0.098	0.098	109	673.4	0.035	0.032	0.072	0.139	8087
21	7.167	0.000	0.000	0.071	0.071	44	12.84	0.000	0.000	0.097	0.097	108	260.0				0.121	2718
22	7.665	0.000	0.000	0.074	0.074	49	87.99	0.000	0.040	0.085	0.125	950	246.9	0.067	0.035	0.019	0.121	2582
23	7.611	0.000	0.000	0.075	0.075	49	153.4	0.018	0.035	0.091	0.144	1909	256.8	0.034	0.039	0.032	0.105	2330
24	7.729	0.000	0.000	0.073	0.073	49	119.8						480.9	0.039	0.043	0.175	0.257	10678
25	7.455	0.000	0.000	0.072	0.072	46	119.8	0.032	0.061	0.086	0.179	1853	544.6	0.017	0.034	0.156	0.207	9740
26	7.200						279.8	0.032	0.061	0.068	0.161	3891	1051	0.054	0.069	0.217	0.340	30863
27	7.447	0.000	0.000	0.075	0.075	48	235.9	0.038	0.054	0.060	0.152	3098	586.7	0.019	0.037	0.149	0.205	10391
28	7.780	0.000	0.000	0.080	0.080	54	220.2	0.039	0.077	0.082	0.198	3766	280.0					
29	8.358	0.000	0.000	0.086	0.086	62	220.2	0.038	0.053	0.079	0.170	3234	396.4	0.065	0.096	0.132	0.293	10036
30	8.132	0.000	0.000	0.085	0.085	60	116.0	0.037	0.053	0.060	0.150	1504	247.1	0.035	0.036	0.082	0.153	3267
31													215.4	0.021	0.039	0.057	0.117	2178
Ten Daily Mean																		
Ten Daily I	4.223	0.000	0.000	0.067	0.067	24	12.43	0.000	0.000	0.089	0.089	93	512.6	0.043	0.049	0.177	0.269	15409
Ten Daily II	4.537	0.000	0.000	0.071	0.071	28	11.22	0.000	0.000	0.087	0.087	85	714.3	0.038	0.094	0.163	0.294	20891
Ten Daily III	7.654	0.000	0.000	0.077	0.077	51	156.6	0.026	0.048	0.079	0.153	2257	415.0	0.039	0.048	0.113	0.192	8478
Monthly																		
Total						904						21730						390582

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	202.4	0.044	0.068	0.044	0.156	2729	167.2	0.037	0.065	0.175	0.277	4001	38.60	0.000	0.000			
2	194.2	0.040	0.057	0.064	0.161	2702	180.0											
3	179.4	0.040	0.057	0.630	0.727	11271	177.3	0.037	0.071	0.072	0.180	2757	36.16	0.000	0.000	0.051	0.051	159
4	150.0						172.3	0.038	0.072	0.073	0.183	2725	44.34	0.000	0.000	0.052	0.052	199
5	605.7	0.017	0.031	0.077	0.125	6542	160.3	0.039	0.072	0.073	0.184	2548	31.06	0.000	0.000	0.050	0.050	134
6	1031	0.028	0.033	0.061	0.122	10872	148.8	0.040	0.073	0.680	0.793	10194	29.50					
7	991.9	0.022	0.060	0.061	0.143	12255	141.3	0.000	0.075	0.037	0.112	1367	29.25	0.000	0.000	0.049	0.049	124
8	631.2	0.040	0.059	0.078	0.177	9653	145.0	0.000	0.031	0.050	0.081	1015	29.01	0.000	0.000	0.048	0.048	120
9	481.6	0.062	0.064	0.092	0.218	9070	143.0						27.12	0.000	0.000	0.048	0.048	112
10	666.4	0.052	0.051	0.061	0.164	9443	142.0						26.99	0.000	0.000	0.048	0.048	112
11	465.5						148.0						26.62	0.000	0.000	0.048	0.048	110
12	465.5	0.058	0.061	0.117	0.236	9491	150.0						26.49	0.000	0.000	0.042	0.042	96
13							144.6	0.000	0.037	0.040	0.077	962	24.58					
14	438.5	0.060	0.065	0.098	0.223	8448	133.0	0.000	0.044	0.040	0.084	966	26.00					
15	401.7	0.057	0.060	0.102	0.219	7601	122.8						25.32	0.000	0.000	0.047	0.047	103
16	220.2	0.038	0.053	0.078	0.169	3215	118.0						24.50	0.000	0.000	0.046	0.046	97
17	212.0	0.040	0.056	0.062	0.158	2895	111.4	0.000	407.020	546.010	953.030	9168844	24.09	0.000	0.000	0.045	0.045	94
18	200.0						108.8						23.55	0.000	0.000	0.045	0.045	92
19	179.9	0.028	0.036	0.129	0.193	3000	102.9						22.89	0.000	0.000	0.044	0.044	87
20	176.3	0.041	0.058	0.064	0.163	2482	87.18						22.76					
21	170.2	0.052	0.061	0.076	0.189	2779	74.10						22.76	0.000	0.000	0.043	0.043	85
22							64.27						19.34	0.000	0.000	0.041	0.041	69
23	180.1	0.042	0.060	0.066	0.168	2615	50.00						17.91	0.000	0.000	0.042	0.042	65
24	195.6	0.037	0.052	0.650	0.739	12486	41.03						15.46	0.000	0.000	0.042	0.042	56
25	204.0						37.01						17.28	0.000	0.000	0.040	0.040	60
26	198.2	0.039	0.055	0.062	0.156	2671	33.51						16.82	0.000	0.000	0.040	0.040	58
27	186.1	0.038	0.051	0.056	0.145	2332	32.94	0.000	0.060	0.062	0.122	347	16.50					
28	177.8	0.038	0.046	0.061	0.145	2227	49.61	0.000	274.490	283.070	557.560	2390089	16.06	0.000	0.000	0.041	0.041	57
29	170.0	0.036	0.041	0.064	0.141	2071	49.61	0.000	0.000	0.064	0.064	274	15.54	0.000	0.000	0.039	0.039	52
30	170.0	0.039	0.073	0.084	0.196	2879	45.00						15.30	0.000	0.000	0.039	0.039	52
31							45.28	0.000	0.000	0.060	0.060	235						
Ten Daily Mean																		
Ten Daily I	513.4	0.038	0.053	0.130	0.221	8282	157.7	0.027	0.066	0.166	0.259	3515	32.45	0.000	0.000	0.049	0.049	137
Ten Daily II	306.6	0.046	0.056	0.093	0.194	5305	122.7	0.000	135.700	182.030	317.730	3056924	24.68	0.000	0.000	0.045	0.045	97
Ten Daily III	183.6	0.040	0.055	0.140	0.235	3758	47.49	0.000	68.638	70.814	139.452	597736	17.30	0.000	0.000	0.041	0.041	61
Monthly																		
Total						141730						11586323						2193

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	15.07												5.943					
2	15.07						8.855	0.000	0.000	0.041	0.041	31	5.866					
3	14.68						8.537						5.807					
4	14.68						8.468						5.719					
5	13.85	0.000	0.000	0.047	0.047	56	8.379											
6	13.29						8.252											
7	13.28						8.167						5.603					
8	13.18												5.529					
9	13.67						8.111	0.000	0.000	0.037	0.037	26	5.460					
10	12.59						7.931						5.054					
11	12.70						7.876						5.060					
12	12.60						7.796											
13	12.52	0.000	0.000	0.039	0.039	42	7.689						0.000	0.000	0.000	0.004	0.004	0
14	12.34						7.653						5.031					
15	12.00						6.975						4.915					
16	12.17						6.975	0.000	0.000	0.035	0.035	21	4.928					
17	11.91						43.69						4.392					
18	11.90						6.810						4.363					
19	11.16	0.000	0.000	0.040	0.040	39	6.566											
20	10.96						6.487						4.629	0.000	0.000	0.039	0.039	16
21	10.86						6.390						4.574					
22	10.88												4.191					
23	10.41						6.159	0.000	0.000	0.032	0.032	17	4.225					
24	10.30						6.009											
25	10.15						6.060						4.154					
26	10.01	0.000	0.000	0.037	0.037	32												
27	9.903						6.210						4.077	0.000	0.000	0.039	0.039	14
28	9.744						6.123						4.008					
29	9.667																	
30	9.470						6.056	0.000	0.000	0.034	0.034	18						
31	9.287						5.993											
Ten Daily Mean																		
Ten Daily I	13.93	0.000	0.000	0.047	0.047	56	8.337	0.000	0.000	0.039	0.039	29	5.622					
Ten Daily II	12.03	0.000	0.000	0.040	0.040	40	10.85	0.000	0.000	0.035	0.035	21	4.165	0.000	0.000	0.021	0.021	8
Ten Daily III	10.06	0.000	0.000	0.037	0.037	32	6.125	0.000	0.000	0.033	0.033	17	4.205	0.000	0.000	0.039	0.039	14
Monthly																		
Total						169						113						29

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	3.954						2.198						1.565	0.000	0.000	0.037	0.037	5
2	3.940												1.576					
3	3.874						2.155	0.000	0.000	0.039	0.039	7	1.688					
4	3.530						2.122						2.002					
5							2.050						1.946					
6	3.467	0.000	0.000	0.037	0.037	11	2.022						1.836					
7	3.080						1.909						1.797					
8	2.739						1.878						1.797	0.000	0.000	0.044	0.044	7
9	2.630												1.758					
10	2.753						1.735	0.000	0.000	0.031	0.031	5						
11	2.636						1.692						1.877					
12							1.667											
13							1.613						1.994					
14	2.714	0.000	0.000	0.029	0.029	7												
15	2.631						1.554						1.968	0.000	0.000	0.041	0.041	7
16	2.610												1.907					
17	2.376						2.109	0.000	0.000	0.037	0.037	7	1.859					
18	2.218						2.175						1.696					
19							1.999						1.662					
20	2.117	0.000	0.000	0.033	0.033	6	2.047						1.623					
21	2.090						2.030											
22	2.062						1.856						1.565	0.000	0.000	0.050	0.050	7
23	1.922												1.492					
24	2.032						1.818	0.000	0.000	0.033	0.033	5	1.432					
25	2.456						1.772						1.330					
26							1.732											
27	2.309	0.000	0.000	0.043	0.043	9	1.596						1.245					
28	2.326						1.562											
29	2.315						1.495						1.196	0.000	0.000	0.044	0.044	5
30	2.320												1.185					
31	2.252												1.186					
<u>Ten Daily Mean</u>																		
Ten Daily I	3.330	0.000	0.000	0.037	0.037	11	2.009	0.000	0.000	0.035	0.035	6	1.774	0.000	0.000	0.041	0.041	6
Ten Daily II	2.472	0.000	0.000	0.031	0.031	6	1.857	0.000	0.000	0.037	0.037	7	1.823	0.000	0.000	0.041	0.041	7
Ten Daily III	2.208	0.000	0.000	0.043	0.043	9	1.733	0.000	0.000	0.033	0.033	5	1.329	0.000	0.000	0.047	0.047	6
<u>Monthly</u>																		
Total						33						24						30

Annual Sediment Load for period : 1972-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1972-1973	60141	1925	62066	4654
1973-1974	403492	4501	407993	7654
1974-1975	4425803	14522	4440324	3556
1975-1976	18975623	45415	19021038	5133
1976-1977	2829707	241561	3071268	2950
1977-1978	2405897	49202	2455099	3853
1978-1979	3312461	2535	3314996	5716
1979-1980	3481235	34593	3515828	2315
1980-1981	1988771	122493	2111264	3260
1981-1982	5141697	38303	5180000	4319
1982-1983	2384603	60456	2445059	3113
1983-1984	5132526	2969	5135495	4967
1984-1985	5919527	48089	5967616	5934
1985-1986	15938995	30571	15969566	8767
1986-1987	1967417	13896	1981313	3971
1987-1988	1449752	137628	1587380	2166
1988-1989	3754425	51870	3806295	4263
1989-1990	6456690	43615	6500306	6091
1990-1991	4442577	11352	4453929	6521
1991-1992	10340815	98387	10439202	6002
1992-1993	1263618	67053	1330671	2732
1993-1994	2551737	6144	2557881	4593
1994-1995	6265349	2403877	8669225	7920
1995-1996	2873624	7819	2881442	5253
1996-1997	2945811	20511	2966323	4670
1997-1998	3804487	79893	3884380	6342
1998-1999	1017179	21071	1038251	2942
1999-2000	5009740	11210	5020951	9520
2000-2001	2099965	4653	2104618	3500
2001-2002	1955255	10262	1965517	4885
2002-2003	499797	7713	507510	1923
2003-2004	1542136	6578	1548714	4693
2004-2005	1138740	7467	1146207	3446
2005-2006	2476820	11323	2488143	5288
2006-2007	2802117	7225	2809342	5473
2007-2008	4181890	12743	4194633	8601
2008-2009	2136834	8608	2145441	5253
2009-2010	685319	3090	688410	2768
2010-2011	191810	5447	197257	1307
2011-2012	2514495	17673	2532168	6798
2012-2013	310051	862	310912	2619
2013-2014	1579388	4465	1583854	6040
2014-2015	1636413	2550	1638963	4274
2015-2016	11627537	1085	11628622	2160
2016-2017	12001732	368	12002100	2810

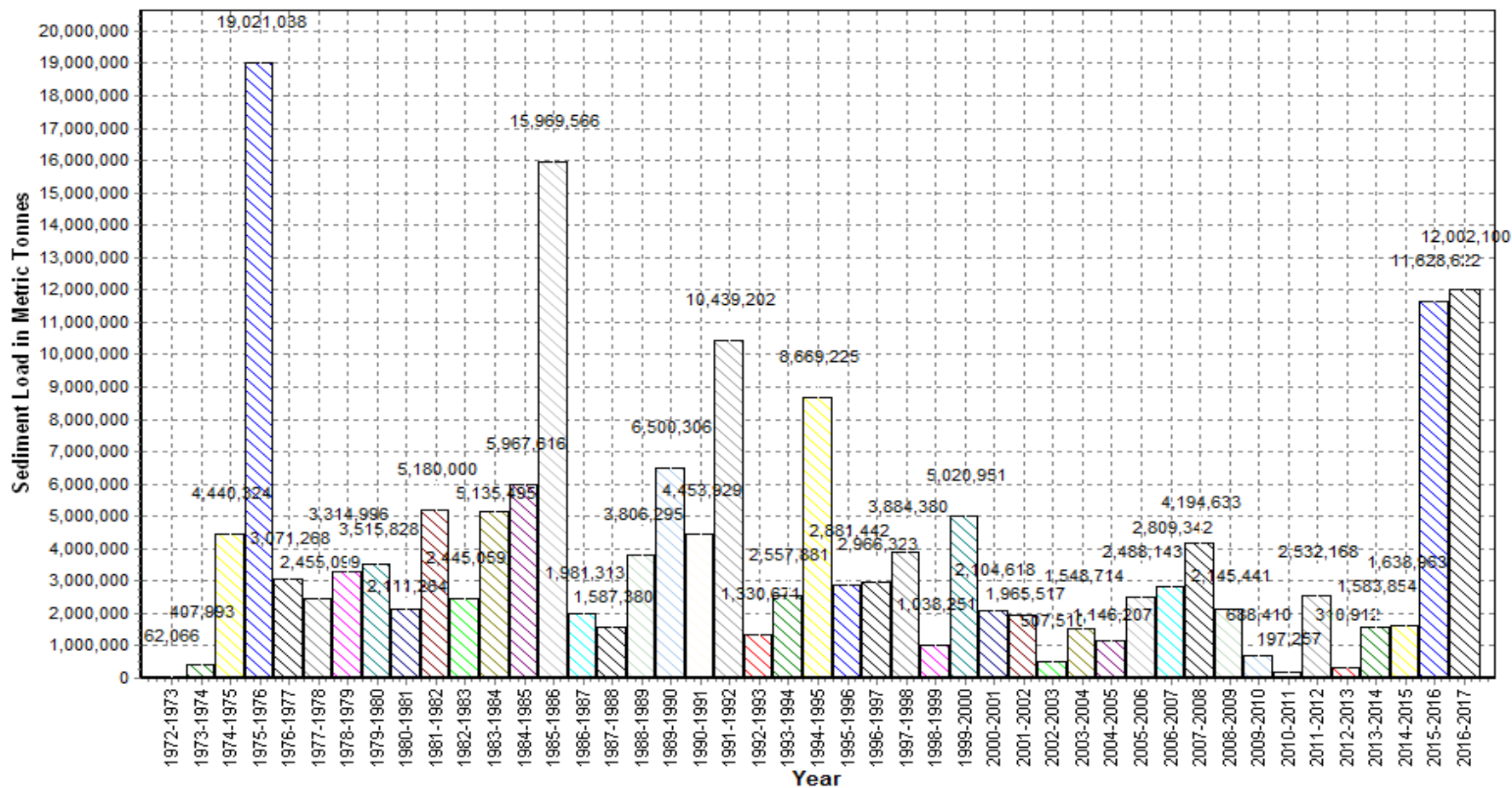
Annual Sediment Load for the period: 1972-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar



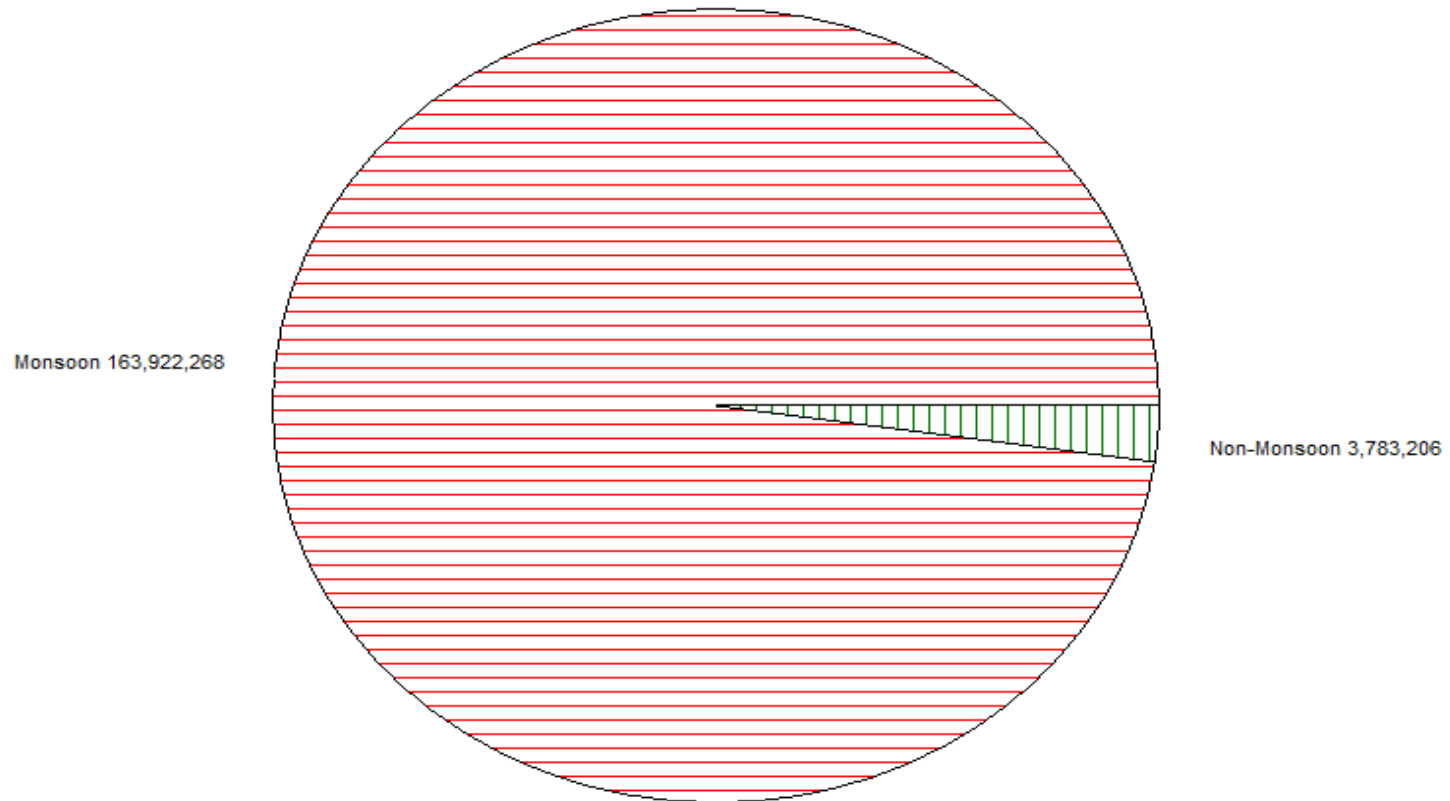
Seasonal Sediment Load for the period : 1972-2016

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

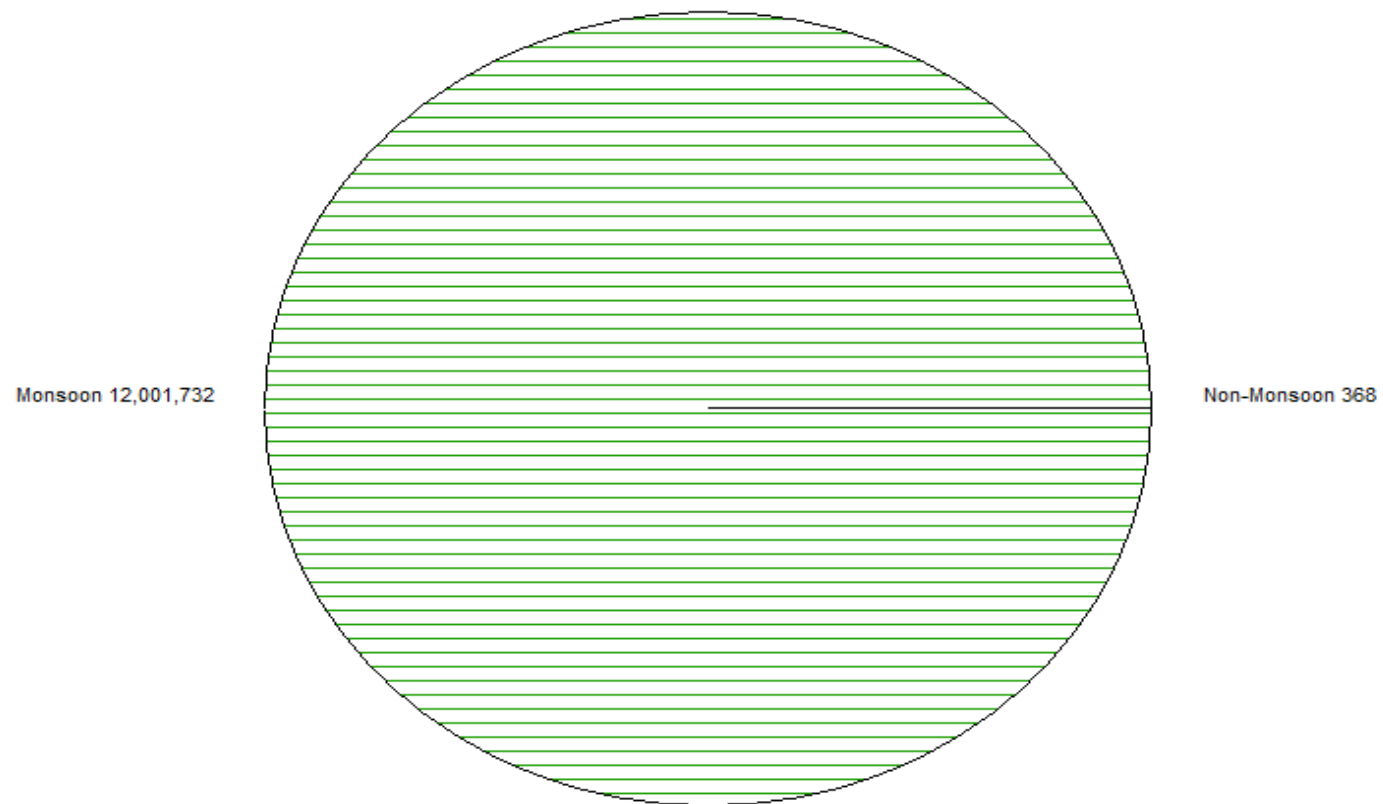
Sub-Division : Bhubaneswar



Seasonal Sediment Load for the Year: 2016-2017

Station Name : ANANDPUR (EC000K3)
Local River : Baitarani

Division : E.E., Bhubaneswar
Sub-Division : Bhubaneswar



Water Quality Datasheet for the period : 2016-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

River Water Analysis

S.No	Parameters	6/1/2016 A	7/2/2016 A	8/1/2016 A	9/1/2016 A	10/1/2016 A	11/1/2016 A	12/1/2016 A	1/2/2017 A	2/1/2017 A	3/1/2017 A	4/1/2017 A	5/1/2017 A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	159	131	150	131	152	434	463	165	207	218	221	240
4	EC_GEN (µmho/cm)	161	134	156	134	156	437	465	170	209	220	224	260
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	8.1	8.2	6.9	7.7	7.7	8.0	8.2	7.7	7.9	8.1	8.0	8.2
7	pH_GEN (pH units)	8.1	8.2	7.0	7.8	7.9	8.1	8.3	7.8	8.0	8.2	8.1	7.9
8	Temp (deg C)	30.0	29.5	28.5	28.5	28.0	23.5	20.5	20.5	19.5	24.5	28.5	31.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	69	51	55	55	65	69	55	60	65	83	83	92
3	B (mg/L)	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
4	Ca (mg/L)	34	37	38	40	42	43	43	45	47	48	50	67
5	Cl (mg/L)	49.0	15.1	52.8	50.9	7.5	9.4	11.3	13.2	15.1	13.2	15.1	15.1
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.3	0.4	0.7	0.2	0.6	0.2	0.6	0.5	0.4	0.6	0.4	0.5
9	HCO3 (mg/L)	85	62	68	68	79	85	68	73	79	101	101	113
10	K (mg/L)	1.6	5.2	6.1	6.3	3.1	6.9	7.6	25.6	3.1	4.2	4.2	4.9
11	Mg (mg/L)	13.6	14.6	14.6	14.6	12.6	13.6	12.6	20.4	14.6	15.6	16.5	27.2
12	Na (mg/L)	6.6	21.2	22.7	23.0	19.2	27.4	35.2	51.1	47.9	48.0	48.1	49.8
13	NO2+NO3 (mg N/L)	0.87	0.80	1.12	0.70	1.32	0.77	1.08	1.28	0.94	1.30	1.20	1.22
14	NO2-N (mgN/L)	0.03	0.00	0.00	0.03	0.03	0.00	0.00	0.00	0.01	0.01	0.03	0.00
15	NO3-N (mgN/L)	0.84	0.80	1.12	0.67	1.29	0.77	1.08	1.28	0.92	1.29	1.18	1.22
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	7.0	7.0	6.0	7.0	7.0	6.0	7.0	8.0	8.5	8.0	8.9
18	SO4 (mg/L)	71.2	7.2	7.6	8.0	2.6	16.1	2.3	1.7	2.0	2.0	2.5	4.0
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.4	1.8	0.6	4.0	0.4	0.2	1.4	0.4	0.4	0.8	1.0	0.8
2	DO (mg/L)	7.7	9.1	5.4	7.0	8.1	5.4	7.2	8.1	6.4	6.0	6.0	7.2
3	DO_SAT% (%)	102	119	69	89	104	63	79	90	69	71	76	96
4	FCol-MPN (MPN/100mL)						40	20	80	170	220	110	70
5	Tcol-MPN (MPN/100mL)						90	40	130	210	270	220	120
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	84	92	96	100	104	108	108	112	116	120	124	168
2	HAR_Total (mgCaCO3/L)	141	153	157	161	157	165	161	197	177	185	193	282
3	Na% (%)	9	23	23	23	21	26	31	33	37	36	35	27
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.2	0.7	0.8	0.8	0.7	0.9	1.2	1.6	1.6	1.5	1.5	1.3
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : ANANDPUR (EC000K3)

Division : E.E., Bhubaneswar

Local River : Baitarani

Sub-Division : Bhubaneswar

River Water Summary					
S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	12	463	131	223
3	EC_GEN (μmho/cm)	12	465	134	227
4	pH_FLD (pH units)	12	8.2	6.9	7.9
5	pH_GEN (pH units)	12	8.3	7.0	7.9
6	Temp (deg C)	12	31.0	19.5	26
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	92	51	67
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	67	34	44
5	Cl (mg/L)	12	52.8	7.5	22.3
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.7	0.2	0.5
9	HCO3 (mg/L)	12	113	62	82
10	K (mg/L)	12	25.6	1.6	6.6
11	Mg (mg/L)	12	27.2	12.6	15.9
12	Na (mg/L)	12	51.1	6.6	33.4
13	NO2+NO3 (mg N/L)	12	1.32	0.70	1.05
14	NO2-N (mgN/L)	12	0.03	0.00	0.01
15	NO3-N (mgN/L)	12	1.29	0.67	1.04
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	8.9	6.0	7.2
18	SO4 (mg/L)	12	71.2	1.7	10.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	4.0	0.2	1
2	DO (mg/L)	12	9.1	5.4	7
3	DO_SAT% (%)	12	119	63	85
4	FCol-MPN (MPN/100mL)	7	220	20	101
5	Tcol-MPN (MPN/100mL)	7	270	40	154
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	168	84	111
2	HAR_Total (mgCaCO3/L)	12	282	141	177
3	Na% (%)	12	37	9	27
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	1.6	0.2	1.1
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

River Water

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

S.No	Parameters	Flood Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	104	114	122	112	162	119		123	142	132	121	95	134	203	145	119	127	123	132	386	178
3	EC_GEN (µmho/cm)	111	119	121	109	158	110		123	142	127	121	95	134	203	148	127	139	129	128	216	172
4	pH_FLD (pH units)	7.2	7.6	7.7	7.7	7.5	7.8		7.9	7.9	8.3	7.6	7.5	7.7	7.4	7.7	7.5	7.4	7.8	8.0	8.1	8.1
5	pH_GEN (pH units)	7.2	7.4	7.6	7.8	7.5	7.9		7.9	7.9	8.2	7.6	7.5	7.7	7.5	7.8	7.4	7.2	7.8	8.0	8.1	8.1
6	Temp (deg C)	28.6	27.9	28.0	27.9	27.6	29.7		29.6	28.4	26.8	28.8	28.3	28.9	29.2	28.9	26.7	22.8	21.4	21.4	21.9	23.1
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)					0.0	0.0		0.0	2.0	11.7	0.0			0.0	0.0					0.0	0.0
2	ALK-TOT (mgCaCO3/L)					80	35		31	43	102	64			70	59					96	55
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	10	10	11	11	18	12		11	13	12	14	14	12	21	38	11	10	12	13	22	17
5	Cl (mg/L)	10.5	8.9	12.4	11.0	15.5	9.8		9.2	11.5	15.8	15.8	17.5	15.8	13.6	35.1	12.2	13.0	11.1	10.3	17.8	15.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	1.9	14.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.00	0.00	0.34	0.02	0.00	0.00		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.07	0.03	0.28	0.00	0.12	0.07
8	Fe (mg/L)	0.3	0.1	0.1	0.1	0.1	0.1		0.1	0.3	0.0	135.0	0.1	0.8	0.4	0.5	0.2	0.1	0.2	0.1	0.1	0.1
9	HCO3 (mg/L)	42	39	61	42	78	43		38	50	96	65	60	96	86	72	50	44	58	48	96	67
10	K (mg/L)	1.6	1.4	2.6	1.5	1.6	1.6		1.4	1.9	1.2	2.4	1.5	1.4	1.6	4.5	1.7	1.7	1.6	1.5	1.9	2.0
11	Mg (mg/L)	3.5	2.4	4.7	2.4	4.9	3.4		5.2	5.5	6.4	3.2	3.8	6.4	14.6	14.0	4.1	2.4	4.6	2.8	7.5	4.2
12	Na (mg/L)	6.9	6.1	9.1	7.1	9.6	6.6		5.3	6.5	4.1	7.5	11.6	4.8	5.6	18.5	8.1	9.2	6.5	7.2	11.6	10.7
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	0.66	0.77	0.69	0.86	0.29	1.17		0.92	0.59	0.39	0.91	0.78	1.24	1.05	0.96	0.44	0.30	0.29	0.89	0.88	1.60
15	NO2-N (mgN/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.07	0.00	0.01	0.02	0.01	0.02	0.00	0.00	0.00	0.00	0.01	0.00
16	NO3-N (mgN/L)	0.66	0.77	0.69	0.86	0.29	1.17		0.92	0.59	0.32	0.91	0.77	1.22	1.03	0.94	0.44	0.30	0.29	0.89	0.87	1.60
17	o-PO4-P (mg P/L)				0.000	0.019	0.000		0.021										0.000	0.000	0.013	0.000
18	P-Tot (mgP/L)	0.007	0.013	0.001	0.001	0.019	0.001		0.013	0.001	0.010	0.001	0.001	0.001	0.001	0.010	0.003	0.001	0.001	0.001	0.015	0.001
19	SiO2 (mg/L)	7.9	10.2	20.1	24.0	13.7	8.6		8.1	7.5	9.4	18.7	8.8	5.8	6.0	6.6	8.2	6.6	22.0	25.0	20.7	9.4
20	SO4 (mg/L)	5.3	1.3	2.7	1.6	1.4	3.9		11.3	7.7	10.3	24.7	19.5	14.9	8.5	19.4	3.1	0.9	1.9	2.2	5.1	4.0
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)				0.7	1.0	1.0		1.3	1.2	1.3	0.6	0.8	1.0	0.8	1.4			1.0	0.7	0.8	0.9
2	COD (mg/L)									1.3												
3	DO (mg/L)				6.6	6.9	7.0		7.3	6.8	6.6	7.0	7.1	5.4	6.2	7.5			8.7	8.4	8.1	8.1
4	DO_SAT% (%)				84	87	92		96	87	83	90	91	70	81	97			94	95	92	94
5	Fcol-MPN (MPN/100mL)					7	80		22	127		12									17	48
6	Tcol-MPN (MPN/100mL)					11	130		26	215		18									17	88
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	25	25	28	28	44	29		28	33	30	34	36	30	52	95	28	25	31	33	56	43
2	HAR_Total (mgCaCO3/L)	39	35	49	38	65	43		50	56	56	47	52	56	113	154	45	35	52	44	87	61
3	Na% (%)	27	27	27	29	22	25		19	20	14	22	32	15	10	20	28	35	22	25	24	27
4	RSC (-)	0.0	0.0	0.1	0.0	0.0	0.0		0.0	0.0	1.1	0.2	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.5	0.5	0.6	0.5	0.5	0.4		0.3	0.4	0.2	0.5	0.7	0.3	0.2	0.6	0.5	0.7	0.4	0.5	0.6	0.6
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

River Water

Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

S.No	Parameters	Winter Nov - Feb									Summer Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		136	195	123	163	117	167	357	317	166	176	155	166	154	150		174	244	157	197	147
3	EC_GEN (µmho/cm)		136	190	123	163	117	167	353	320	170	182	151	160	149	154		174	244	157	197	147
4	pH_FLD (pH units)		8.0	7.8	7.8	7.6	8.0	7.9	7.7	8.0	7.5	7.7	8.0	7.7	8.2	8.1		8.1	8.4	7.9	7.8	7.8
5	pH_GEN (pH units)		8.0	7.8	7.8	7.6	8.0	7.9	7.8	8.0	7.3	7.6	8.1	7.8	8.1	8.1		8.1	8.4	7.9	7.8	7.8
6	Temp (deg C)		19.0	20.9	21.3	19.8	21.1	20.9	20.6	21.0	30.5	27.0	27.3	26.8	26.3	25.7		27.3	23.7	27.0	27.7	28.1
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	0.0	0.0			4.6	0.0					0.0			1.3	3.9	0.0	0.0	
2	ALK-TOT (mgCaCO3/L)		37	78	61	76			70	62					92			59	90	69	69	
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00
4	Ca (mg/L)		11	16	16	17	15	14	20	44	18	16	14	16	14	17		15	17	21	24	15
5	Cl (mg/L)		13.6	13.7	9.9	17.3	19.3	10.4	17.4	12.3	14.3	12.7	10.3	10.4	13.2	10.5		13.6	14.5	20.7	16.9	17.0
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	5.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0		1.6	4.7	0.0	0.0	0.0
7	F (mg/L)		0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.13	0.04	0.00	0.05		0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)		0.1	0.3	0.0	1.7	0.1	0.3	0.4	0.5	0.2	0.1	0.3	0.1	0.3	0.1		0.1	0.4	0.0	0.4	0.0
9	HCO3 (mg/L)		45	90	75	86	78	73	75	76	72	71	68	82	63	63		69	100	85	94	54
10	K (mg/L)		1.1	1.3	1.1	2.8	1.6	1.0	2.0	10.8	2.3	1.9	2.5	1.7	2.0	0.7		1.4	7.9	2.3	3.1	1.6
11	Mg (mg/L)		5.3	9.0	6.1	6.6	3.2	8.1	10.7	15.3	5.2	5.2	5.0	6.6	4.9	4.5		7.5	12.2	5.5	6.6	4.2
12	Na (mg/L)		7.7	7.9	5.5	8.8	12.4	4.6	10.6	40.4	9.1	8.4	6.7	7.1	8.6	7.3		8.2	8.5	9.2	9.1	13.4
13	NH3-N (mg N/L)															0.05						
14	NO2+NO3 (mg N/L)		0.51	0.40	0.37	0.94	0.81	0.94	0.96	1.02	0.84	0.74	0.56	1.19	0.85	0.28		0.53	0.76	0.35	0.98	0.68
15	NO2-N (mgN/L)		0.00	0.00	0.07	0.00	0.00	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.07	0.01	0.00
16	NO3-N (mgN/L)		0.51	0.40	0.30	0.94	0.81	0.94	0.93	1.01	0.84	0.74	0.56	1.19	0.85	0.28		0.53	0.76	0.28	0.97	0.68
17	o-PO4-P (mg P/L)		0.000										0.000	0.000	0.010			0.000				
18	P-Tot (mgP/L)		0.002	0.001	0.010	0.001	0.001	0.001	0.010	0.010	0.001	0.001	0.001	0.001	0.011	0.053		0.007	0.001	0.010	0.001	0.001
19	SiO2 (mg/L)		8.1	7.3	10.0	16.5	11.5	4.8	5.5	7.0	15.9	18.4	20.7	24.8	15.4	11.8		8.4	9.3	11.0	19.1	9.6
20	SO4 (mg/L)		7.4	3.1	2.5	2.2	17.3	3.3	4.3	5.5	1.9	2.9	1.8	4.7	2.6	7.4		8.1	4.8	2.5	2.6	12.4
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		1.2	1.1	1.5	1.7	0.5	0.8	1.3	0.6			0.9	0.8	1.1	1.0		1.1	1.2	1.3	0.6	1.3
2	COD (mg/L)																					
3	DO (mg/L)		8.1	8.4	7.7	7.4	7.7	9.2	8.1	6.8			6.8	7.8	7.4	6.9		7.1	6.8	7.0	6.5	6.6
4	DO_SAT% (%)		88	93	87	81	86	102	90	75			86	97	92	85		89	79	88	83	83
5	Fcol-MPN (MPN/100mL)		8	20		12				78					7	11		176	19		14	
6	Tcol-MPN (MPN/100mL)		11	25		18				118					12	13		176	19		18	
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		28	40	40	44	37	35	50	111	44	40	35	41	34	42		39	41	53	59	38
2	HAR_Total (mgCaCO3/L)		50	78	65	71	51	69	95	175	66	62	53	69	55	61		70	92	76	87	55
3	Na% (%)		24	18	15	20	34	13	18	32	23	22	20	18	25	20		20	16	19	18	34
4	RSC (-)		0.0	0.0	0.0	0.1	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.1	0.0	0.1	0.0
5	SAR (-)		0.5	0.4	0.3	0.5	0.8	0.2	0.5	1.3	0.5	0.5	0.4	0.4	0.5	0.4		0.4	0.4	0.5	0.4	0.8
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ANANDPUR (EC000K3)

Local River : Baitarani

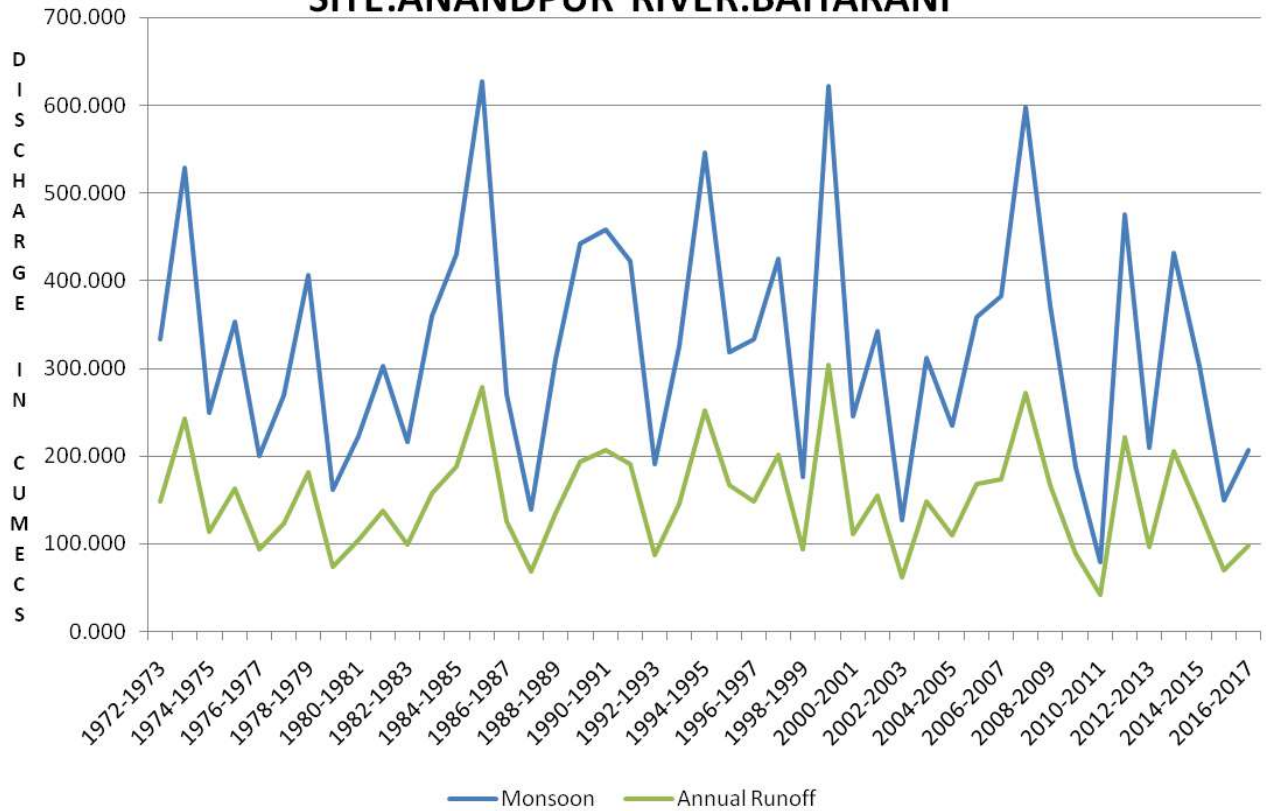
Division : E.E., Bhubaneswar

Sub-Division : Bhubaneswar

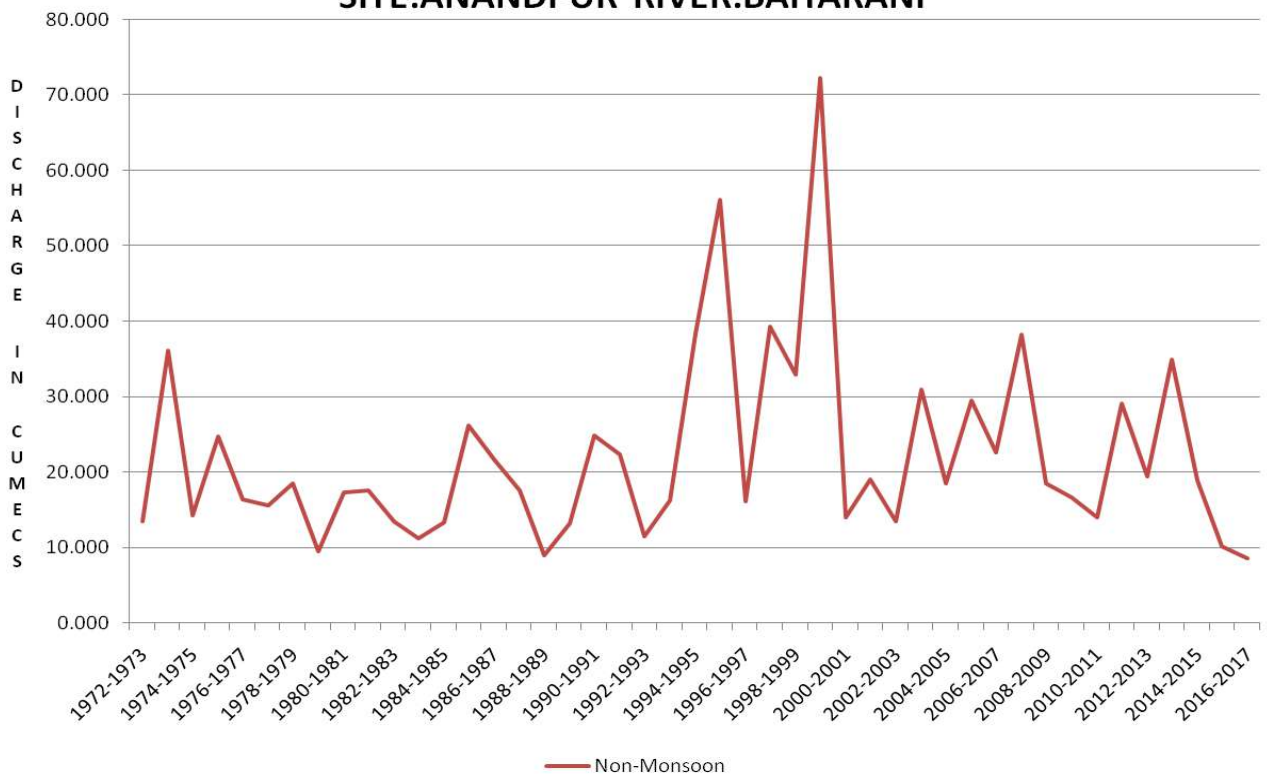
River Water

S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	233	271	226
3	EC_GEN (µmho/cm)	233	271	235
4	pH_FLD (pH units)	8.1	7.5	8.1
5	pH_GEN (pH units)	8.1	8.0	8.1
6	Temp (deg C)	26.3	27.0	28.0
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	18.4	0.0
2	ALK-TOT (mgCaCO3/L)	16	100	86
3	B (mg/L)	0.00	0.01	0.02
4	Ca (mg/L)	24	31	55
5	Cl (mg/L)	20.9	22.0	14.5
6	CO3 (mg/L)	0.0	22.2	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.4	0.5
9	HCO3 (mg/L)	67	77	105
10	K (mg/L)	2.0	2.4	4.4
11	Mg (mg/L)	7.5	12.6	19.8
12	Na (mg/L)	8.9	13.3	48.6
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	1.13	0.96	1.24
15	NO2-N (mgN/L)	0.00	0.00	0.01
16	NO3-N (mgN/L)	1.13	0.95	1.23
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.010	0.010
19	SiO2 (mg/L)	3.8	5.3	8.5
20	SO4 (mg/L)	1.9	19.0	2.8
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	0.7	0.9	0.9
2	COD (mg/L)			
3	DO (mg/L)	6.5	5.8	6.4
4	DO_SAT% (%)	81	73	81
5	FCol-MPN (MPN/100mL)			133
6	Tcol-MPN (MPN/100mL)			203
	TRACE & TOXIC			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	60	77	138
2	HAR_Total (mgCaCO3/L)	91	130	220
3	Na% (%)	17	18	33
4	RSC (-)	0.0	0.2	0.0
5	SAR (-)	0.4	0.5	1.4
	PESTICIDES			

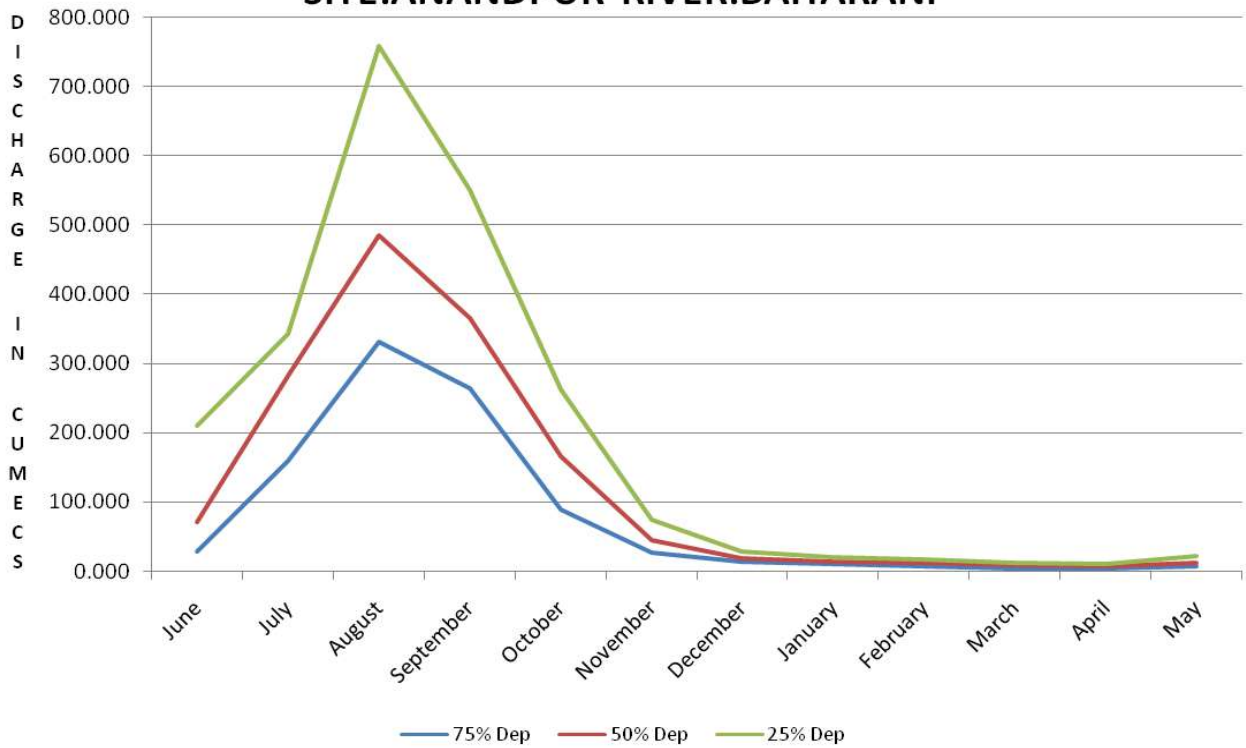
TOTAL ANNUAL DISCHARGE **SITE:ANANDPUR RIVER:BAITARANI**



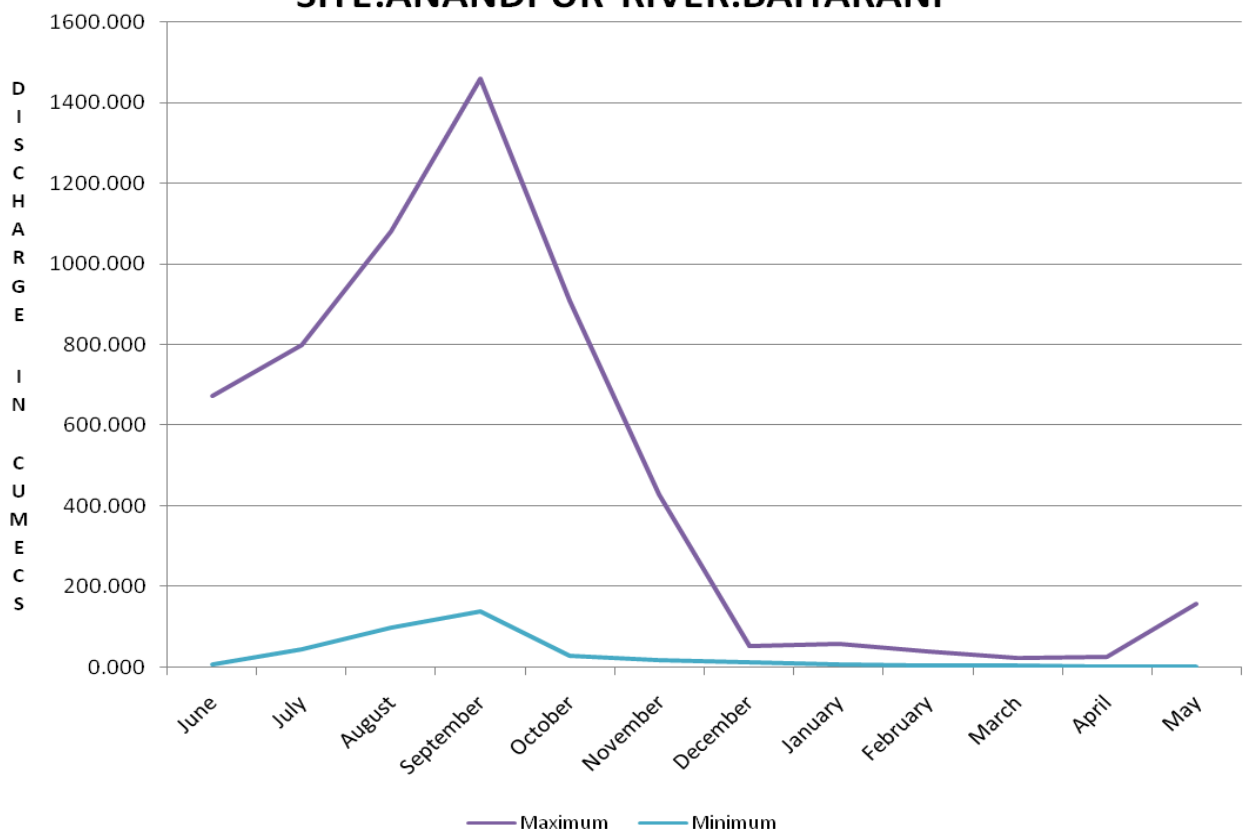
TOTAL ANNUAL DISCHARGE **SITE:ANANDPUR RIVER:BAITARANI**

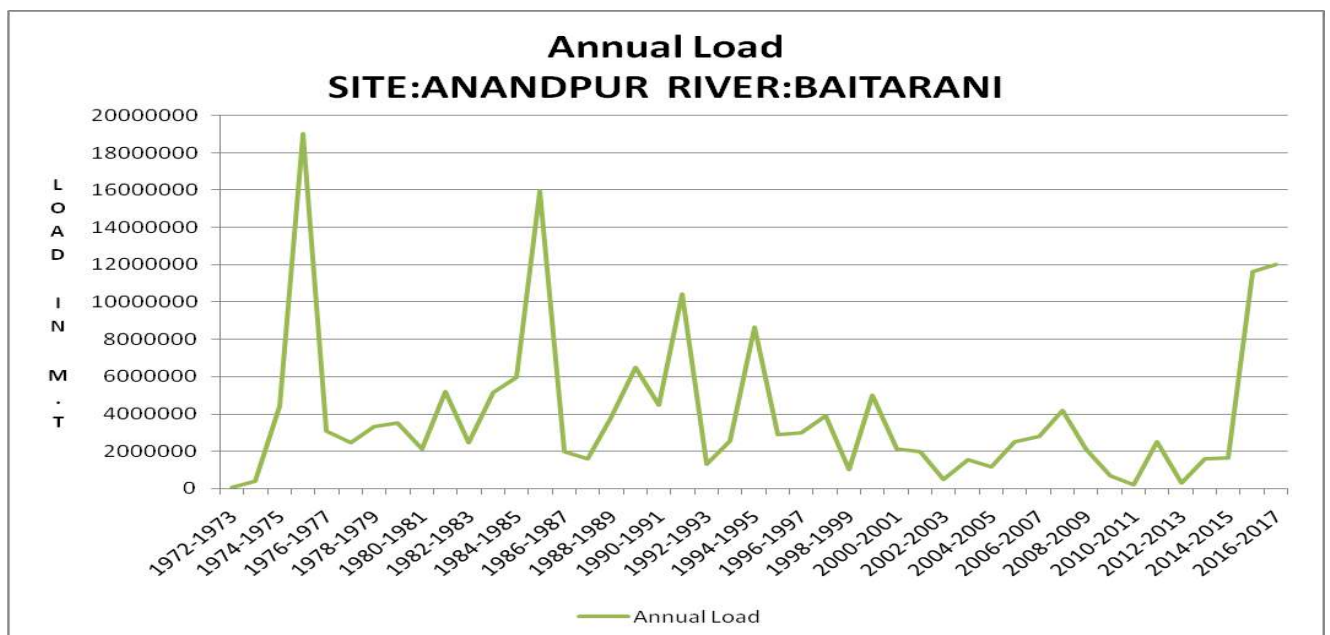
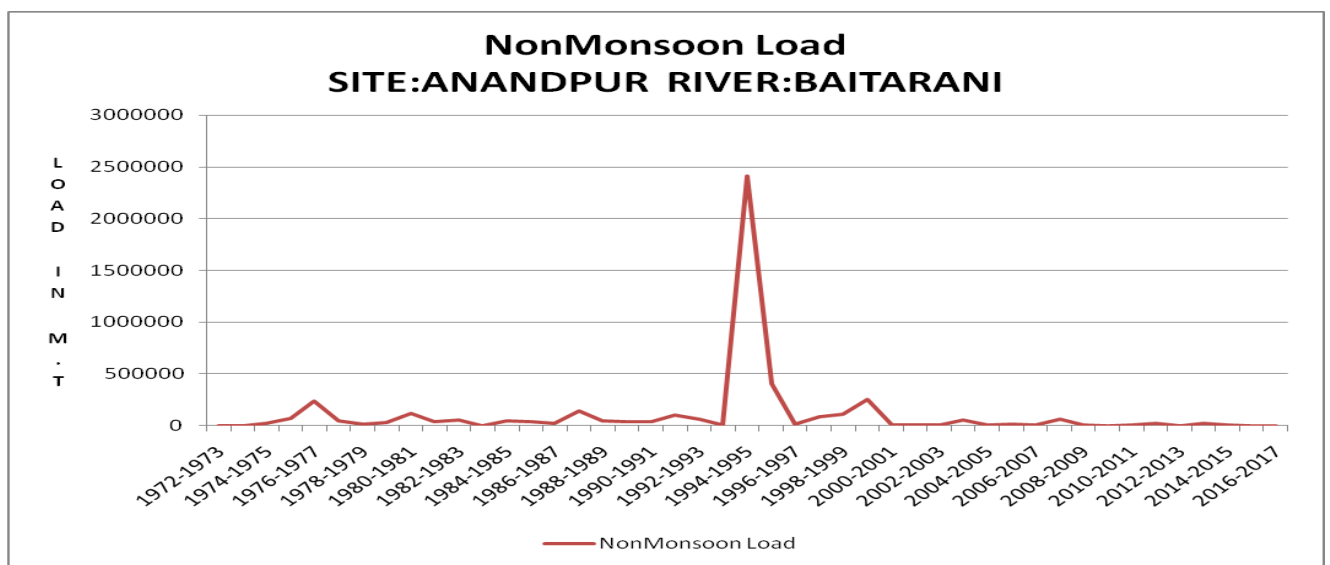
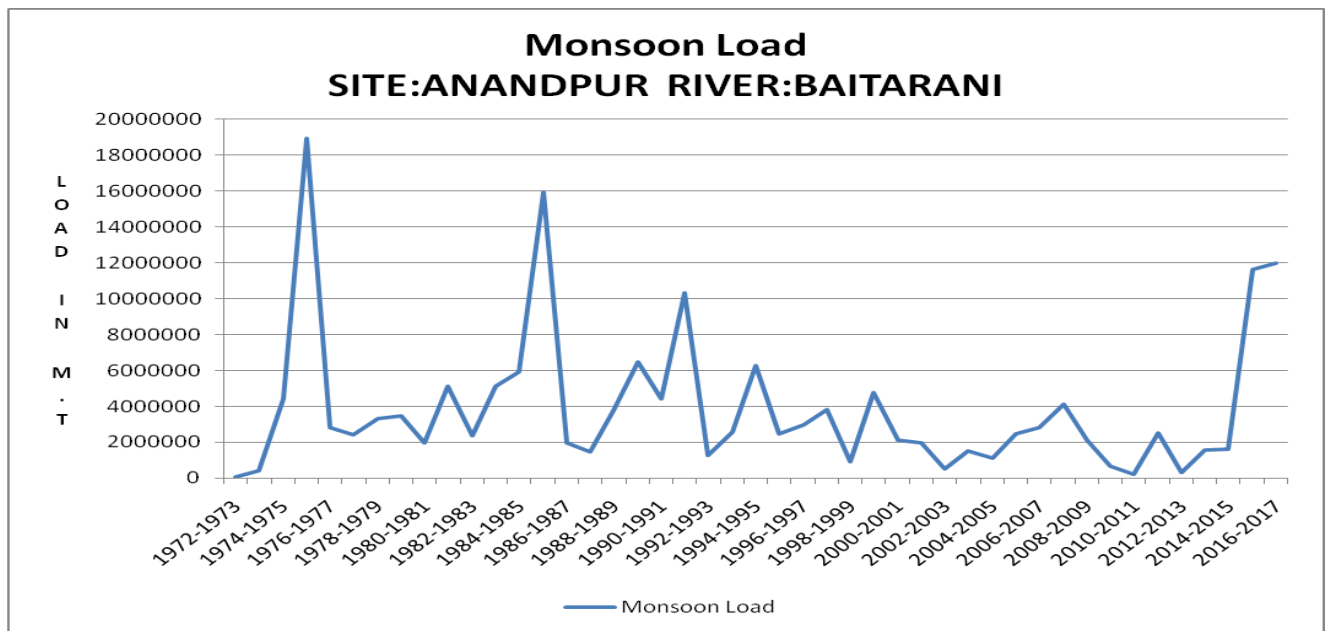


DEPENDIBILITY FLOW FROM JUNE TO MAY SITE:ANANDPUR RIVER:BAITARANI

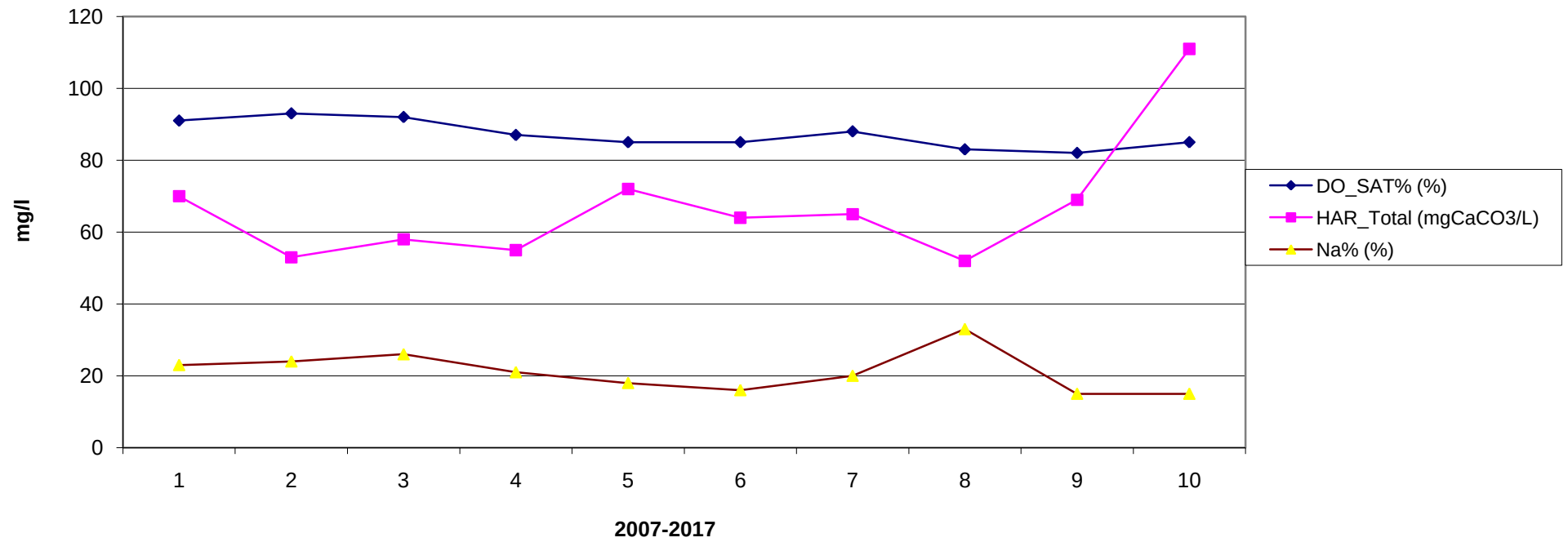


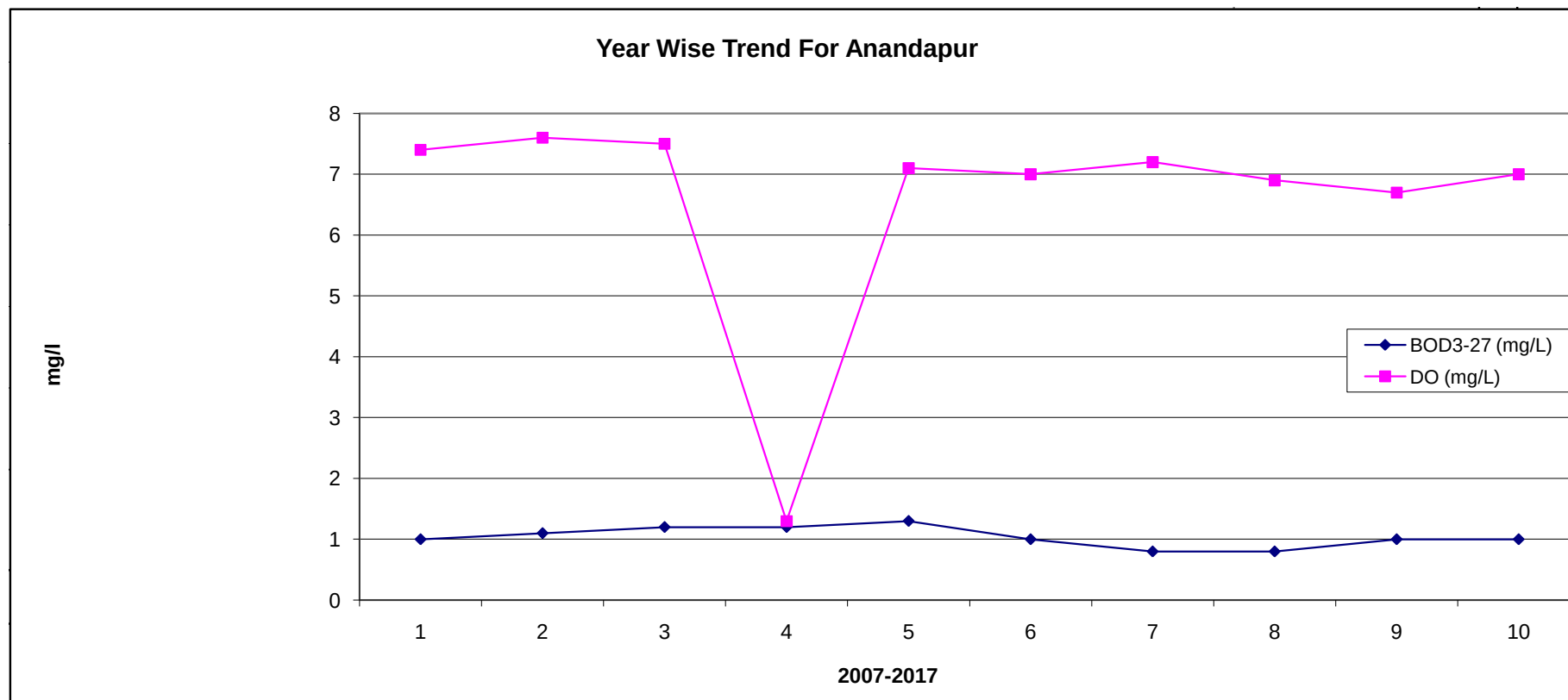
MAXIMUM-MINIMUM FLOW FROM JUNE TO MAY SITE:ANANDPUR RIVER:BAITARANI

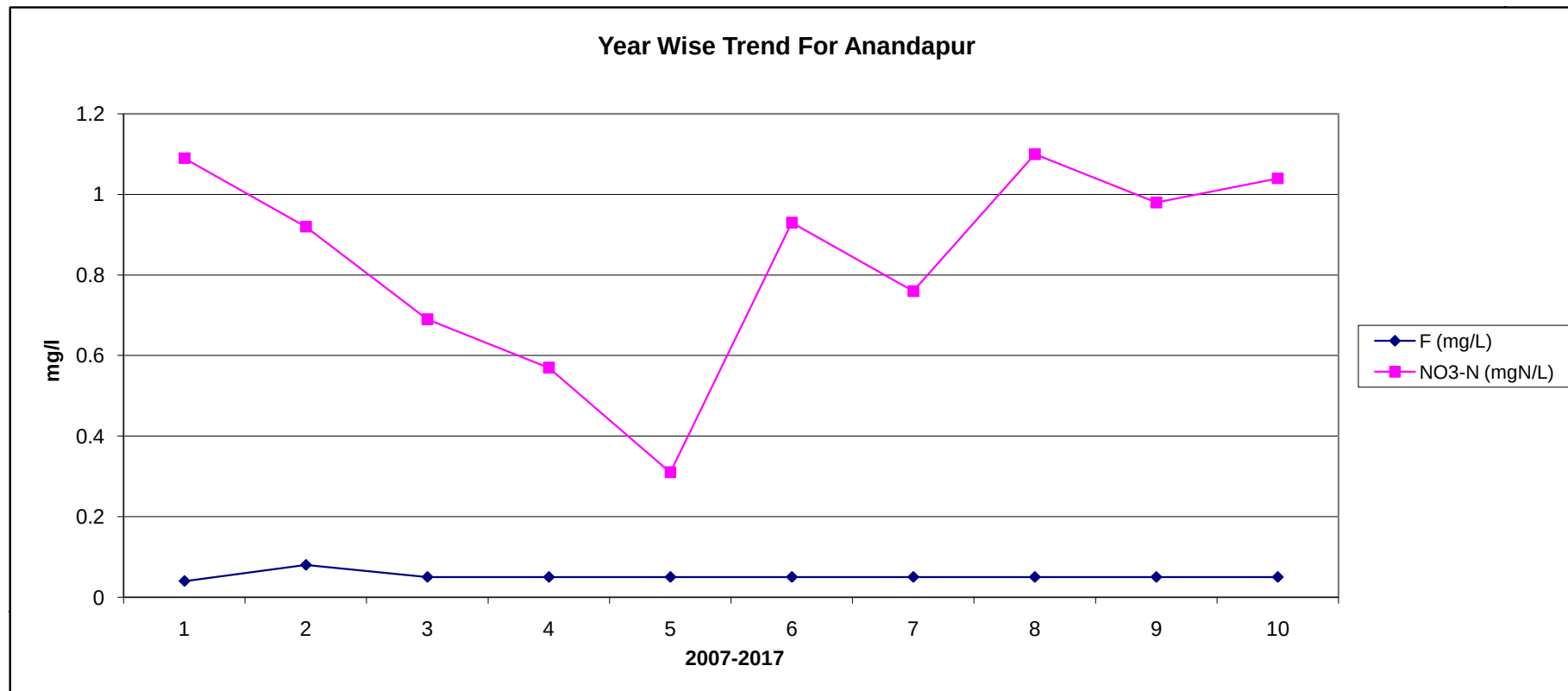


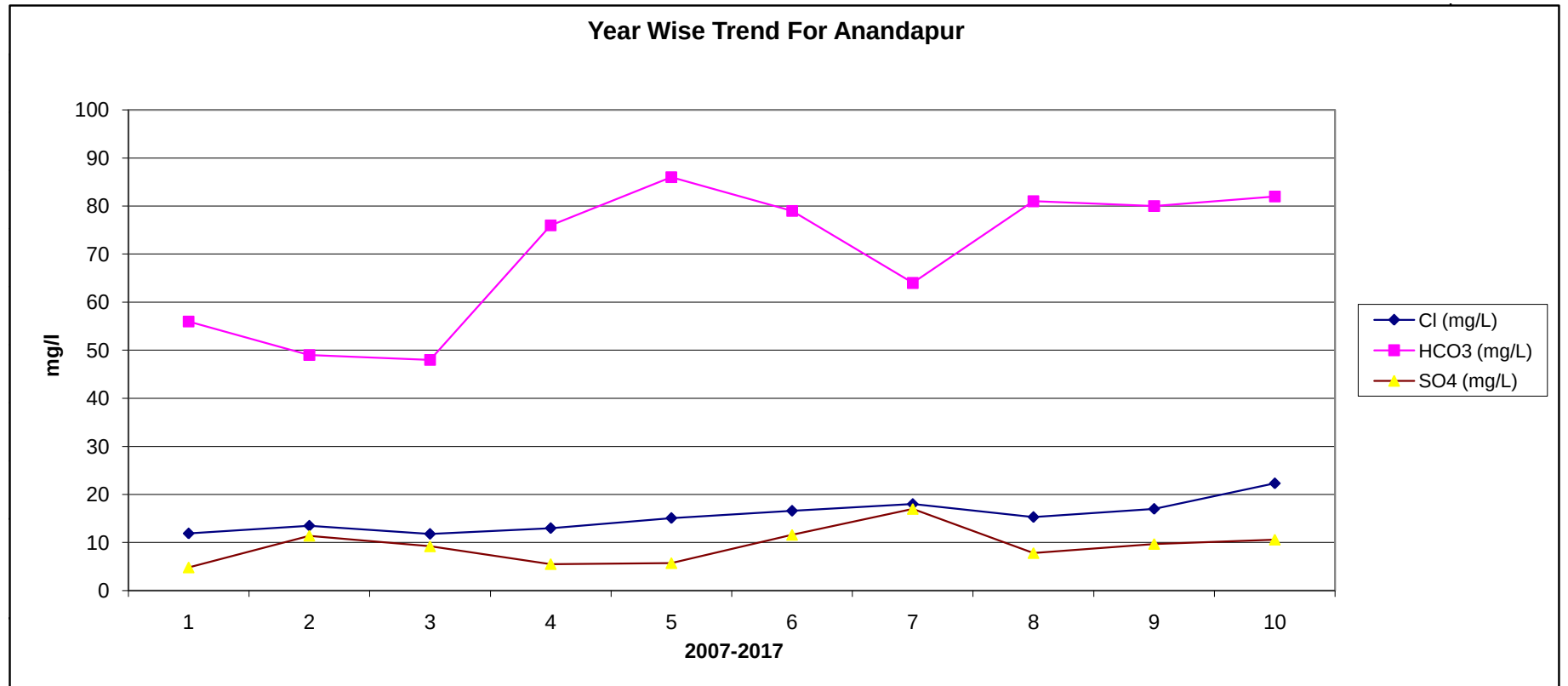


Year Wise Trend For Anandapur

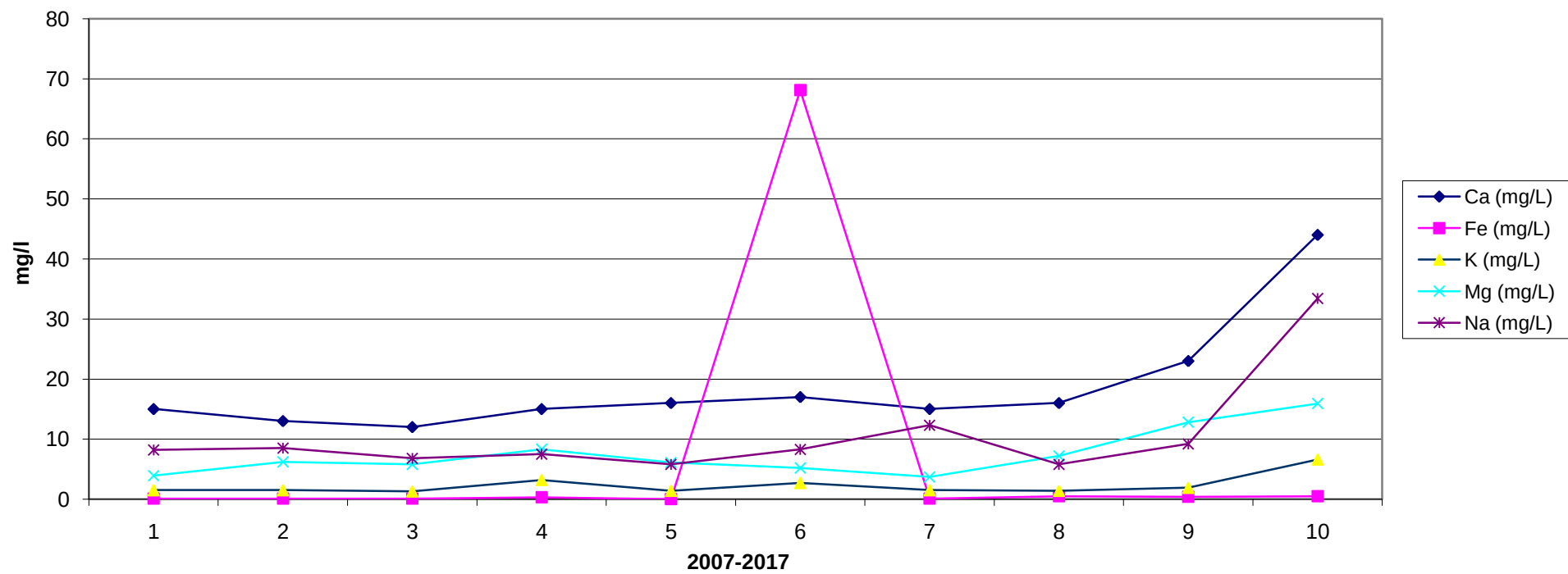








Year wise trend for Anandapur



SUBARNAREKHA BASIN

SUBARNAREKHA BASIN

1. GENERAL

1.1 Introduction

Subarnarekha is one of the longest east flowing inter-state rivers. It originates near Nagri village in Ranchi district of Jharkhand at an elevation of 600 m. The total length of the river is about 395 km. The principal tributaries of the river are Kanchi, Kharkai and Karkari. The basin lies between north latitudes of 21° 33' to 23° 32' and east longitudes of 85° 09' to 87° 27' situated in the North-East corner of the peninsular India. It is bounded on the North-West by the Chhotnagpur Plateau, in the South-West by Brahmani basin, in the South by Burhabalang basin and in the South-East by the Bay of Bengal.

The total catchment area of the basin is 18,951 sq.km. State-wise distribution of the drainage area is tabulated below:

Sl. No.	Name of State	Catchment Area (sq. km)	Percentage of total catchment area
1.	Jharkhand	13,590	71.7
2.	Orissa	3,201	16.9
3.	West Bengal	2,160	11.4
	Total	18,951	100.0

Basin Map of Subarnarekha river system showing the various hydrological and hydro meteorological observation stations maintained by CWC, State Governments and the India Meteorological Department is enclosed herewith. Central Water Commission is maintaining six discharge sites in this basin of which Fekoghat and Jamsolaghat are seasonal discharge sites. Details are given in the table at the end of this chapter.

1.2 River System

The catchment areas of the important tributaries are given below:

Name of River	River/Tributary	Length (km)	Catchment area (sq.km)	Percentage of total catchment area
Subarnarekha	Main Stream	395	7,383	39.0
Kanchi	Right Tributary	76	1,096	5.8
Karkari	Right Tributary	110	1,341	7.0
Kharkai	Right Tributary	136	6,611	34.9
Raru	Right Tributary	52	680	3.6
Garru	Right Tributary	58	640	3.4
Dulang	Left Tributary	84	1,200	6.3
	Total		18,951	100.0

1.3 Climatic Characteristics

The basin is generally influenced by the south-west monsoon, which onsets in the month of June and extends upto October. The average annual rainfall for the basin is around 1800 mm. The climate in the sub-basin is tropical with hot summers and mild winters. The mean monthly temperature varies from 40.5°C (May) to 9.00 °C (December). The highest temperature recorded is 47.2°C and the lowest is 2.8°C. Annual average maximum and minimum temperatures vary from 32.4° C to 18.0°C.

1.4 Geology

The geological formations occurring in the basin are (i) Pre-Cambrian or Achaean (ii) Tertiary and (iii) Alluvium plains. Out of these, Pre-Cambrian formations mostly cover Jharkhand and West Bengal regions and Tertiary and Alluvium plains cover the basin area in Orissa. The Achaean formations mostly comprise Gneiss, Micagenists, Phyllites, Dolomites and Granites. The underlying rock is highly undulating. This region contains some of the richest coal and ore deposits like iron and bauxite.

1.5 Site Details

Sl. No.	Name of Project	River	Status
1.	Torlow	(Tributary of Kharkai)	Existing
2.	Kadkai (Icha dam)	Kharkai	Existing
3.	Nesa	Nesa	Existing
4.	Kanchi	Kanchi	Existing
5.	Aradih	Kanchi	Existing
6.	Kokro	Kokro	Existing
7.	Roru	Barager	Existing
8.	Bamninala	Bamninala	Existing
9.	Bijoy	Sanjal	Existing
10.	Sona weir	Sona	Existing
11.	Kharkai Dam	Kharkai	Ongoing
12.	Kharkai Barrage	Kharkai	Ongoing
13.	Chandil Dam	Subernarekha	Ongoing
14.	Galudih Barrage	Subernarekha	Ongoing

2. STREAM FLOW DATA

2.1 Methodology

Area-velocity method is generally adopted for measuring discharge at sites. Cup type current meter is used to measure the velocity of the flow and the depth is measured by using sounding rod for depths upto 3 m and by log line beyond 3 m. Discharge by area velocity method is being observed once in a day starting at 0800 Hrs. at all the sites except on Sundays and holidays. Besides, silt and water quality observation are also being carried out at the CWC sites detailed as listed above..

The observed stage and discharge figures for each season (monsoon and non-monsoon) are plotted and a mean Stage V/s. Discharge curve is drawn, giving due attention to the scattered points with reference to area, velocity etc.

The factors responsible for the shifting of the curves are also taken care of by studying the river cross section at regular intervals and with super imposition of previous years' Stage V/s. Discharge curves. Accordingly, the trend of the current curve is finalised. Finally, the discharges of the non observed days are computed from these Stage V/s. Discharge Curves.

2.2 Data Availability

Sl. No.	Code No.	Station Name	Type	Data available From To	
1.	ES000R3	Muri	GDQ	G-20.08.88 D-01.11.89 Q-01.05.91	Continuing -do- -do-
2.	ES000N5	Jamshedpur	GDSQ	G-24.06.71 D-01.02.72 S-27.11.72 Q-01.09.72	Continuing -do- -do- -do-
3.	ESB00D5	Adityapur	GDSQ	G-23.06.71 D-22.11.71 S-02.06.75 Q-01.01.76	Continuing -do- -do- -do-
4.	ES000K7	Ghatsila	GDSQ	G-16.03.71 D-16.03.71 S-30.12.72 Q-01.09.72	Continuing -do- -do- -do-
5.	ESA00F3	Fekoghat	F.F &GD	G-01.07.87 D-18.06.88	Continuing -do- (Seasonal)
6.		Jamsholaghat	GD	G -21.06.73 D -17.06.04	Continuing -do- (Seasonal)
7.		Rajghat	GD	G -01.06.72 D -01.03.13	Continuing -do-
8.		Gopiballavpur	GD	G -07.08.14 D -15.09.14	Continuing
9.	-	Ghatsila Rd Bridge *	Q	Q-01.04.91	Continuing
10.	-	Baridhi Nala *	Q	Q-01.04.91	Continuing
11.	-	Kulpatanga *	Q	Q-01.04.91	Continuing

Note: * These are Water Quality sample collection points. No regular CWC set up exists.

2.3 Explanatory Notes on Water Year Book

SWDES (Surface Water Data Entry Software), a custom made software for processing hydrological data, has been used for preparation of this volume. The explanatory notes described below can be used for interpretation of data presented in this volume.

- i) Water Year ranges from June 1st of one calendar year to May 31st of the next calendar year and covers one complete hydrological cycle.
- ii) Discharge is given in cubic meters per second.
- iii) Discharges are expressed as 0.000 when river bed is dry and 0.000 N.F. when velocity is observed as 'NIL'.
- iv) The zero R.L. of gauge is a datum level fixed for given site, which is kept 1 or 2 m lower than the lowest water level recorded in a perennial stream. In a non-perennial stream, it is kept 1 or 2 m lower than the lowest bed level of the stream.
- v) Discharges are rounded off as per standard practice.
- vi) Runoff in mm is the notional depth of water in millimeters over the catchment, equivalent to annual runoff volume calculated at the discharge measurement station. It is computed using the relation:

$$\text{Runoff (mm)} = \frac{\text{Annual runoff (Mm}^3\text{)} \times 1000}{\text{Catchment area (km}^2\text{)}}$$

- vii) Peak and lowest flow correspond to the highest and lowest water levels recorded from 'SWDES' entered data.
- viii) Measuring Authority refers to the field division of Central Water Commission (Eastern Rivers Division) responsible for the operation of the gauging station.
- ix) The gauging station code number is a unique seven column alphanumeric reference number which facilitates storage and retrieval of flow data in data base. The first column is identifier of either an integral river basin or, for the sake of convenience, a region having several contiguous river catchments. This is followed by a column which identifies an independent river system which either has one or more outlets to the sea or crosses international border to enter another country. The third, fourth and fifth column spaces denote first, second and third order tributaries, respectively, from the mouth upstream. The sixth and seventh column spaces indicate the location of the gauging station in one of the 225 slots earmarked on the river. The blank column spaces are filled by zero.

3. HYDROLOGICAL DATA

This volume contains the following information for each site stated above:

- i. History Sheet: Site Name, State, District, River Basin, Tributary, Sub-Tributary, Catchment Area, Latitude / Longitude, Opening / Closing date for various types of data.
- ii. Annual maximum/minimum discharge since period of observation.
- iii. Daily Water level and observed/ computed discharge data including 10-daily, monthly and annual totals etc.
- iv. Histogram and Hydrograph showing current year monthly mean discharges, Historical monthly mean discharges, historical monthly minimum and monthly maximum discharges.
- v. Histogram showing Annual Run off volume since beginning of observation.
- vi. Pie-Chart showing monthly mean run off (as percentage of Annual Run off) historical for the current year.
- vii. Plot of Pre and Post Monsoon Cross-section of the rivers for current year.
- viii. Water Level hydrograph for 3(three) major flood events of current year.

4. SEDIMENT DATA (In case of Sediment Observation sites)

The frequency of sediment observation is carried out daily during monsoon season and once in a week (on Monday) during the non-monsoon period. Data for non-observed days is estimated/ interpolated from the relationship of discharge v/s. sediment load, prepared on the basis of observed sediment concentration and weighted mean discharge of the same year.

Sediment samples are collected from 0.6 depth, using Punjab type bottle sampler, from all the verticals along the hydrological observation sections where velocity is observed for computation of discharge. The collected samples from all the segments are combined in 3 to 7 groups having compartments or groups of equal or nearly equal discharges for analysis. Quantum of suspended sediment load is estimated in three grades, viz. Coarse, Medium and Fine. Coarse and medium grades are separated by sieving process and the fine grade by filtration of left over samples after sieving through filter paper. Grade wise concentration is

derived gravimetrically as per standard procedure. The following parameters are derived and recorded:

- Daily Observed suspended sediment (g/l).
- Corresponding discharge.
- Average sediment load in tonnes/day (10 daily & monthly basis).
- Annual sediment load for the current year.
- Annual & Seasonal sediment load and the corresponding volume of inflow for all the years since inception.
- Grain size distribution of bed load.

5. WATER QUALITY DATA (In case of Water Quality Observation sites)

The water samples are collected at a regular interval of once in a month for trend stations and once in two month for base station (on 1st working day), from the main flowing segment of the stream just below the water surface (20 to 30 cm) on the Station Gauge line where depth of flow and velocity are maximum, preferably in the mid stream. The water samples are collected in the pre-rinsed and cleaned one-litre capacity polythene bottle having double stopper (inside and outside) facility. Sampling bottle is filled to its full capacity without entrapping air bubbles inside.

After sampling, the collected samples are sent to the Water Quality Laboratory (Level-II) based at Bhubaneswar (under the Eastern Rivers Division) and to Raipur laboratory (under Mahanadi Division, Burla), along with in-situ physical characteristics, for analysis. The samples received from the sites are preserved in a refrigerator in the water quality laboratories for analysis.

Analysis of parameters, namely pH, Electrical conductivity, Sodium, Potassium, Iron, Aluminum, Ammonia, Fluoride, Nitrate, Nitrite, Phosphate, Silicate, Boron, Sulphate, Calcium, Magnesium, Carbonate, Bi-carbonate, Chloride, Dissolved Oxygen, BOD and COD, are carried out at the Level II laboratory by using standard methodology. Micro biological parameters like total colliform and faecal colliform are also being analyzed. For analysis of trace and toxic elements, samples are sent to Level-II+ laboratory at Hyderabad once in a year, in the month of April.

The following parameters are analyzed and recorded:

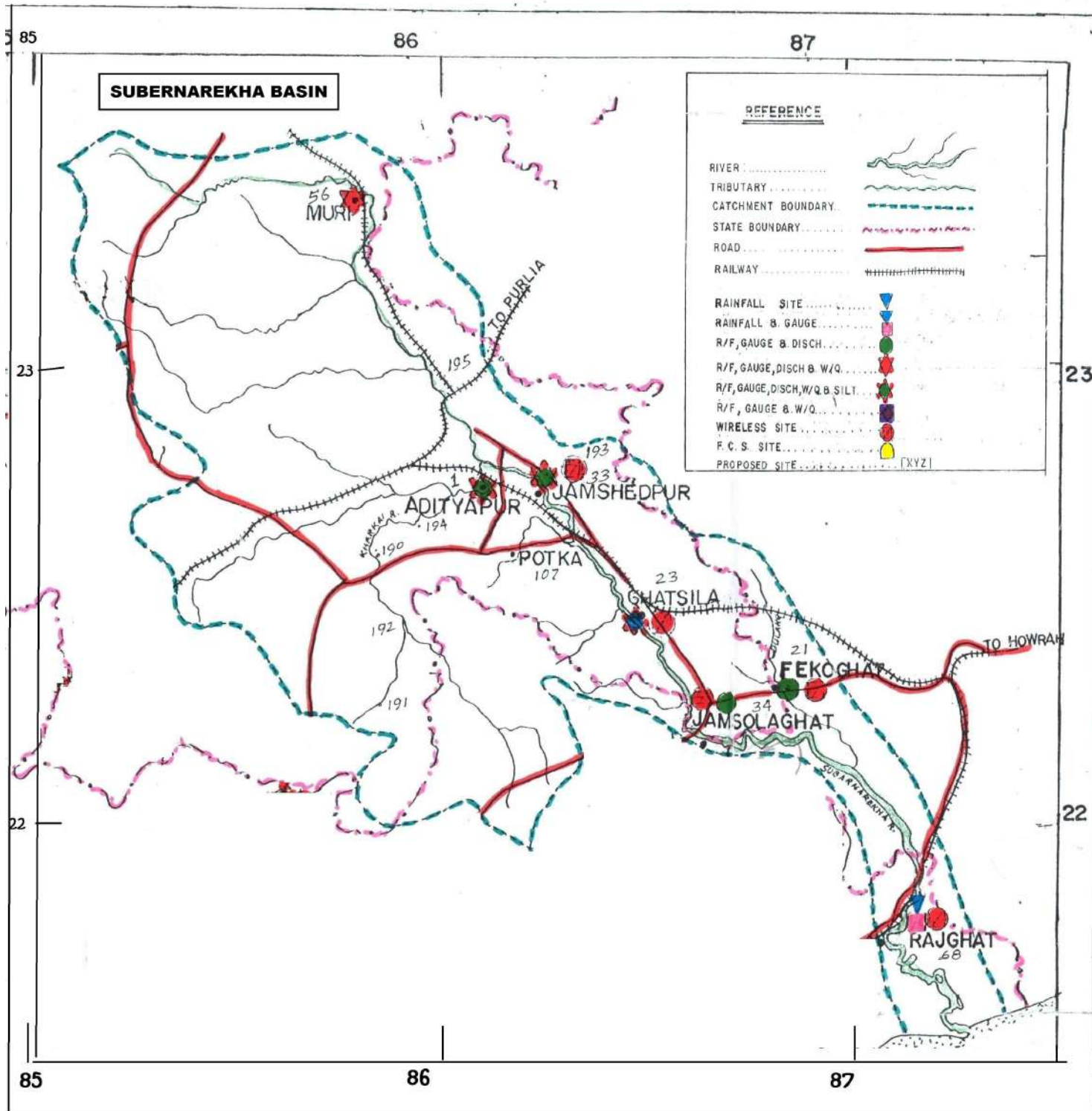
- Monthly Values: Physical; Chemical (mg/l); Biological (mg/l); Traces & Toxic (mg/l) and Chemical Indices.
- Average Values for the Year: 10 Years data to be given season wise averages:-
 - Average for Summer (March to June).
 - Average for Floods (July to October).
 - Average for Winter (November to February)

NAME OF THE SITES IN OPERATION UNDER SUBARNAREKHA BASIN

Sl. No.	Station Name	River/ Tributary	Code No.	Type	Latitude	Longitude
1.	Adityapur	Kharkhai	ESB00D5	GDSQ	22° 47' 29"	86° 10' 06"
2.	Fekoghat	Dulong	ESA00F3	GD	22° 18' 28"	86° 55' 11"
3.	Ghatsila	Subarnarekha	ES000K7	GDSQ	22° 34' 49"	86° 20' 08"
4.	Jamshedpur	Subarnarekha	ES000N5	GDSQ	22° 47' 00"	86° 12' 00"
5.	Jamsholaghat	Subarnarekha		GD	22° 13' 08"	86° 43' 00"
6.	Muri	Subarnarekha	ES000R3	GDQ	22° 48' 56"	86° 12' 47"
7.	Rajghat	Subarnarekha		G	21° 46' 04"	87° 09' 51"

In addition, Water Quality observation samples are also collected from the following locations, which are not CWC sites per-se. The data of these sites is also presented in this report.

Sl. No.	Station Name	River/tributary	Type	Co-ordinates	
				Latitude	longitude
1	Ghatsila road bridge	Subarnarekha	Q	22°-35 '-15"	86°-27 '-12"
2	Baridhinala	Baridhinala	Q	86°-14 '-33"	22°-49 '-05"
3	Kulpatanga	Kharkhai	Q	86°-06 '-10"	22°-49 '-04"



HISTORY SHEET

Water Year : 2016-2017

Site : MURI

Code : ES000R3

State : Jharkhand

District : Ranchi

Basin : Subarnarekha

Independent River : Subarnarekha

Tributary : -

Sub Tributary :

Sub-Sub Tributary :

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Drainage Area : 1330 Sq. Km.

Bank : Right

Latitude : 22°48'56"

Longitude : 86°12'47"

Zero of Gauge (m) : 231 (m.s.l)

8/20/1988 - 8/20/2028

Opening Date

Closing Date

Gauge : 8/20/1988

8/20/2018

Discharge : 11/1/1989

8/20/2018

Sediment :

Water Quality : 5/1/1991

8/20/2018

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1990-1991	350.1	235.840	10/5/1990	0.700	234.595	6/14/1990
1991-1992	431.3	236.400	9/7/1991	0.640	234.460	6/5/1991
1992-1993	133.5	236.010	8/7/1992	0.081	234.230	5/28/1993
1993-1994	72.72	235.120	8/21/1993	0.209	234.260	6/1/1993
1994-1995	296.0	237.335	7/9/1994	0.743	234.380	5/31/1995
1995-1996	261.8	236.990	9/6/1995	0.466	234.395	5/29/1996
1996-1997	226.2	236.580	8/23/1996	0.150	234.365	6/4/1996
1997-1998	189.0	236.680	8/7/1997	0.061	234.290	6/12/1997
1998-1999	209.4	236.720	9/12/1998	0.090	234.270	6/12/1998
1999-2000	220.6	236.540	7/29/1999	0.098	234.470	4/22/2000
2000-2001	65.25	235.240	7/27/2000	0.200	234.270	5/27/2001
2001-2002	141.1	235.970	8/31/2001	0.270	234.320	6/3/2001
2002-2003	74.57	235.500	9/11/2002	0.424	234.180	5/31/2003
2003-2004	123.7	236.035	10/9/2003	0.000	234.135	6/13/2003
2004-2005	93.20	235.450	10/7/2004	0.322	234.070	5/31/2005
2005-2006	83.78	235.250	8/22/2005	0.000	234.050	6/23/2005
2006-2007	428.2	237.500	9/24/2006	0.000	233.540	4/10/2007
2007-2008	225.9	236.020	8/18/2007	0.198	233.640	4/24/2008
2008-2009	206.7	237.025	7/9/2008	0.180	233.640	5/23/2009
2009-2010	118.0	236.020	9/7/2009	0.000	233.480	5/25/2010
2010-2011	44.80	234.515	9/16/2010	0.000	233.390	6/16/2010
2011-2012	140.0	236.200	8/14/2011	0.000	233.560	6/8/2011
2012-2013	86.97	234.590	9/17/2012	0.000	233.250	5/23/2013
2013-2014	145.0	235.440	10/14/2013	0.000	233.260	5/22/2014
2014-2015	90.00	234.500	9/21/2014	0.000	233.440	3/3/2015
2015-2016	92.57	233.980	7/27/2015	0.000	233.280	2/22/2016
2016-2017	95.43	234.780	8/18/2016	0.000	233.280	3/21/2017

Stage-Discharge Data for the period 2016 - 2017

Station Name : MURI (ES000R3)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	233.300	0.000	233.420	0.927	233.560	2.446	234.080	46.88	233.700	16.51	233.470	9.320
2	233.320	0.000	233.400	0.370	233.590	8.179	234.080	46.10	233.650	9.400 *	233.460	9.277
3	233.350	0.305	233.600	9.400 *	233.750	20.18	233.860	20.76	233.660	9.462	233.480	9.457
4	233.570	7.565	233.470	2.550	234.000	38.50	233.840	20.74 *	233.630	8.658	233.500	9.709
5	233.490	0.900 *	233.450	2.193	233.840	21.09	233.750	17.93	233.610	8.444	233.490	9.623
6	233.450	0.937	233.430	0.520	233.760	16.81	234.440	76.23	233.760	20.60	233.480	9.400 *
7	233.410	0.742	233.430	0.520 *	233.790	23.28 *	234.330	71.34	233.700	14.94	233.490	9.624
8	233.400	0.460	233.410	0.811	233.780	23.26	234.320	71.66	233.670	13.63	233.480	9.492
9	233.360	0.000	233.430	0.841	233.850	20.50	234.600	79.14	233.670	13.60 *	233.490	9.623
10	233.360	0.000	233.390	0.820 *	233.730	15.71	234.380	76.04	233.670	13.60 *	233.490	9.622
11	233.410	0.463	233.400	0.709	234.030	32.79	234.600	79.00 *	233.700	13.80 *	233.480	9.580
12	233.470	0.480 *	233.410	0.604	233.940	26.99	234.330	76.45	233.650	13.60 *	233.490	9.451
13	233.440	0.814	233.480	3.443	233.780	18.96	234.330	76.00 *	233.620	7.849	233.480	9.500 *
14	233.480	3.145	233.470	3.581	233.690	18.00 *	234.180	68.53	233.590	6.854	233.500	9.540 *
15	233.540	7.762	233.570	7.514	233.630	17.00 *	234.170	67.60	233.610	6.739	233.490	9.234
16	233.460	3.443	233.680	14.63	233.770	18.16	234.150	63.23	233.640	6.510 *	233.490	5.483
17	233.430	2.211	233.600	9.400 *	234.080	36.64	234.120	63.19	233.600	6.507	233.480	5.353
18	233.500	4.851	233.600	9.433	234.780	95.43	234.140	65.00 *	233.600	6.129	233.480	5.353
19	233.460	2.300 *	233.530	7.088	234.390	82.11	234.160	65.90	233.600	5.728	233.470	5.267
20	233.440	2.305	233.510	6.304	233.940	38.89	234.140	65.05	233.580	6.030	233.460	5.200 *
21	233.430	2.378	233.780	20.67	233.750	20.20 *	233.950	18.84	233.590	6.238	233.480	5.274
22	233.430	2.311	233.920	26.91	233.790	21.55	233.930	33.09	233.590	6.025	233.480	5.310
23	233.420	0.669	233.640	11.57	234.670	78.26	233.750	18.17	233.600	6.000 *	233.460	5.309
24	233.410	0.547	233.610	11.00 *	234.310	66.02	233.730	16.61	233.550	5.056	233.480	5.440
25	233.490	3.697	233.540	5.199	234.170	46.47	233.860	25.00 *	233.520	4.356	233.470	5.310
26	233.500	3.600 *	233.500	3.264	234.150	46.55	234.020	48.19	233.500	2.875	233.460	5.223
27	233.480	4.136	233.490	3.680	233.890	23.28	234.000	48.06	233.490	2.536	233.460	5.200 *
28	233.450	1.043	233.530	5.375	233.690	13.00 *	233.740	18.29	233.480	3.888	233.460	5.223
29	233.460	1.279	233.540	5.486	233.680	13.34	233.700	16.63	233.470	9.320	233.460	5.267
30	233.430	0.921	233.550	5.763	234.060	44.42	233.660	15.39	233.460	9.400 *	233.460	5.363
31			233.730		234.090	47.85			233.480	9.449		
Ten-Daily Mean												
I Ten-Daily	233.401	1.091	233.443	1.895	233.765	18.99	234.168	52.68	233.672	12.88	233.483	9.515
II Ten-Daily	233.463	2.777	233.525	6.271	234.003	38.50	234.232	68.99	233.619	7.975	233.482	7.396
III Ten-Daily	233.450	2.058	233.621	9.891	234.023	38.27	233.834	25.83	233.521	5.922	233.467	5.292
Monthly												
Min.	233.300	0.000	233.390	0.370	233.560	2.446	233.660	15.39	233.460	2.536	233.460	5.200
Max.	233.570	7.762	233.920	26.91	234.780	95.43	234.600	79.14	233.760	20.60	233.500	9.709
Mean	233.438	1.975	233.533	6.019	233.933	32.12	234.078	49.17	233.601	8.83	233.477	7.401

Annual Runoff in MCM = 364 Annual Runoff in mm = 274

Peak Observed Discharge = 95.43 cumecs on 18/08/2016 Corres. Water Level :234.78 m

Lowest Observed Discharge = 0.000 cumecs on 01/06/2016 Corres. Water Level :233.3 m

Stage-Discharge Data for the period 2016 - 2017

Station Name : MURI (ES000R3)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	233.460	5.223	233.440	4.700 *	233.360	2.302	233.300	1.725	233.410	3.281	233.520	12.99
2	233.450	5.352	233.440	4.707	233.340	3.682	233.300	1.747	233.380	3.100 *	233.490	12.73
3	233.450	5.309	233.460	5.054	233.340	2.273	233.260	0.000	233.330	1.726	233.440	5.588
4	233.450	5.300 *	233.440	4.836	233.340	2.186	233.240	0.000	233.300	1.294	233.310	3.941
5	233.450	5.309	233.430	4.707	233.340	2.190 *	233.240	0.000 *	233.280	1.272	233.480	13.29
6	233.450	5.309	233.430	4.663	233.340	2.187	233.260	0.000	233.260	1.294	233.550	16.06
7	233.440	4.316	233.420	4.490	233.340	2.215	233.560	15.24	233.260	1.316	233.540	15.19 *
8	233.440	4.317	233.420	4.400 *	233.340	2.244	233.450	9.539	233.320	1.381	233.540	15.19
9	233.440	4.490	233.420	4.576	233.340	2.215	233.430	9.408	233.290	1.280 *	233.570	16.32
10	233.440	4.403	233.430	4.404	233.340	2.186	233.390	2.878	233.280	1.251	233.560	15.82 *
11	233.440	4.400 *	233.420	4.490	233.320	0.766	233.380	2.849	233.280	1.251	233.560	15.97
12	233.440	4.400 *	233.430	4.577	233.310	1.300 *	233.370	2.600 *	233.280	1.251	233.460	6.465
13	233.430	4.531	233.420	4.490	233.310	1.316	233.360	2.580 *	233.280	3.972	233.410	5.611
14	233.440	4.317	233.420	4.319	233.310	1.294	233.360	2.906	233.470	4.200 *	233.400	5.600 *
15	233.440	4.747	233.420	4.300 *	233.300	1.251	233.360	2.877	233.400	2.994	233.560	15.82
16	233.440	4.359	233.420	4.576	233.280	1.229	233.340	2.647	233.380	2.600 *	233.570	16.13
17	233.440	4.359	233.430	4.577	233.280	1.035	233.330	2.675	233.340	2.618	233.550	15.22
18	233.440	4.400 *	233.420	4.533	233.340	1.381	233.320	2.618	233.340	2.618	233.460	6.493
19	233.440	4.488	233.420	4.576	233.510	12.40 *	233.310	0.000 *	233.310	1.747	233.500	13.46
20	233.440	4.359	233.420	4.576	233.510	12.43	233.290	0.000	233.310	1.747	233.440	7.534
21	233.440	4.316	233.410	4.489	233.440	6.084	233.280	0.000	233.300	1.682	233.400	5.600 *
22	233.430	5.006	233.410	4.440 *	233.400	3.080	233.260	0.000	233.530	14.21	233.380	2.822
23	233.430	4.704	233.400	3.628	233.380	2.849	233.250	0.000	233.430	12.00 *	233.580	16.52
24	233.430	4.229	233.400	2.792	233.360	2.200 *	233.240	0.000	233.510	11.91	233.570	16.13
25	233.430	4.200 *	233.380	2.302	233.340	1.877	233.230	0.000	233.550	15.33	233.580	16.54
26	233.440	4.532	233.380	2.300 *	233.320	1.700 *	233.220	0.000 *	233.540	15.37	233.590	16.77
27	233.440	4.489	233.380	2.331	233.320	1.726	233.220	0.000	233.640	19.18	233.650	19.05
28	233.440	4.532	233.370	2.389	233.310	1.725	233.210	0.000	233.640	19.31	233.510	12.95 *
29	233.440	4.704	233.370	2.300 *			233.220	0.000	233.550	15.45	233.700	23.55
30	233.450	4.618	233.360	2.446			233.550	12.18	233.540	15.30 *	233.520	12.87
31	233.440	4.704	233.360	2.331			233.440	8.804			233.620	18.32
Ten-Daily Mean												
I Ten-Daily	233.447	4.933	233.433	4.654	233.342	2.368	233.343	4.053	233.311	1.720	233.500	12.71
II Ten-Daily	233.439	4.436	233.422	4.501	233.347	3.440	233.342	2.175	233.339	2.500	233.491	10.83
III Ten-Daily	233.437	4.549	233.384	2.886	233.359	2.655	233.284	1.907	233.523	13.97	233.555	14.65
Monthly												
Min.	233.430	4.200	233.360	2.300	233.280	0.766	233.210	0.000	233.260	1.251	233.310	2.822
Max.	233.460	5.352	233.460	5.054	233.510	12.43	233.560	15.24	233.640	19.31	233.700	23.55
Mean	233.441	4.636	233.412	3.977	233.349	2.833	233.322	2.686	233.391	6.065	233.516	12.79

Peak Computed Discharge = 79.00 cumecs on 11/09/2016

Corres. Water Level :234.6 m

Lowest Computed Discharge = 0.000 cumecs on 05/03/2017

Corres. Water Level :233.24 m

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

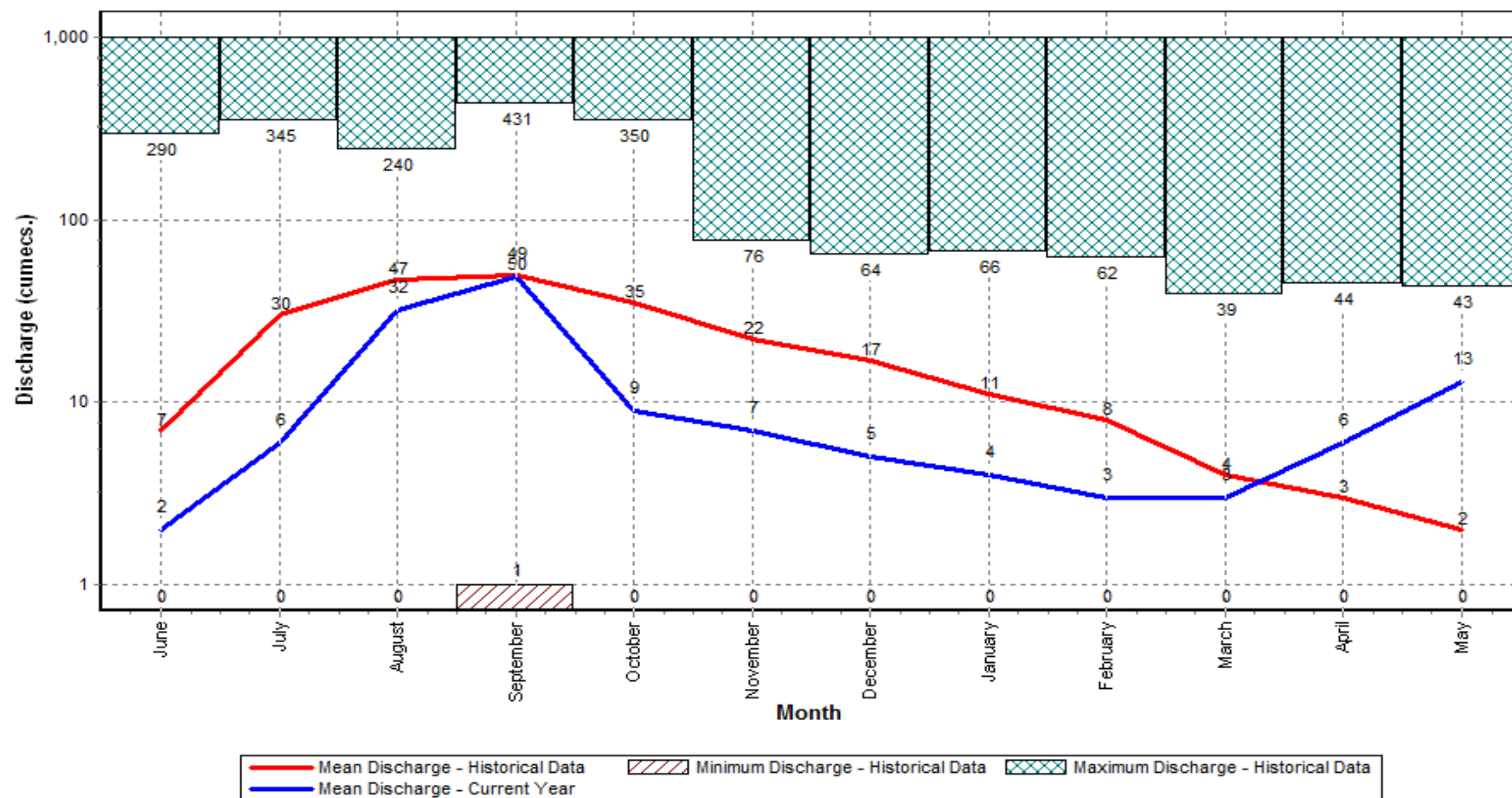
Station Name : MURI (ES000R3)

Data considered : 1990-2017

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore



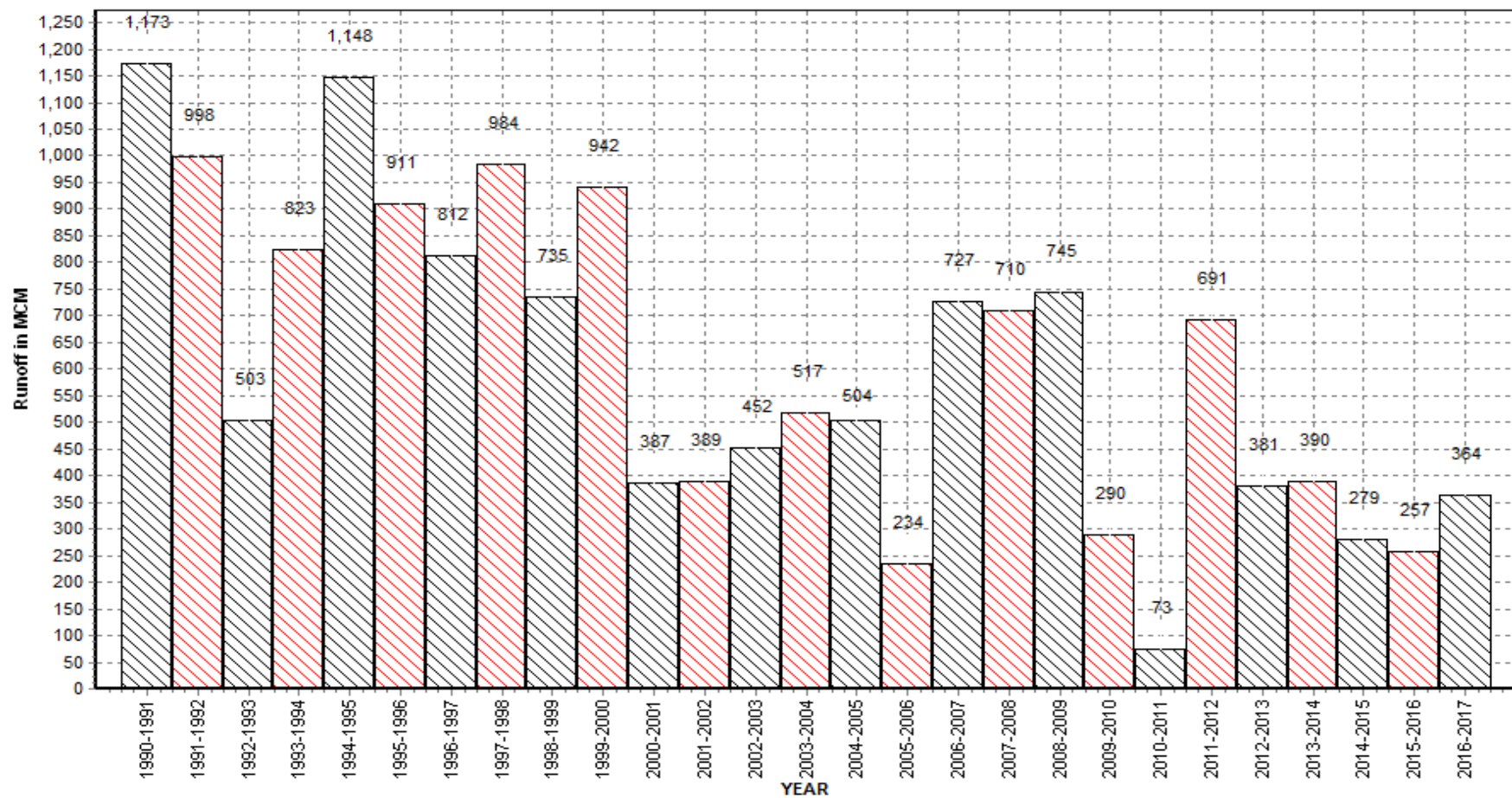
Annual Runoff Values for the period: 1990 - 2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Note: Missing values have not been considered while arriving at Annual Runoff

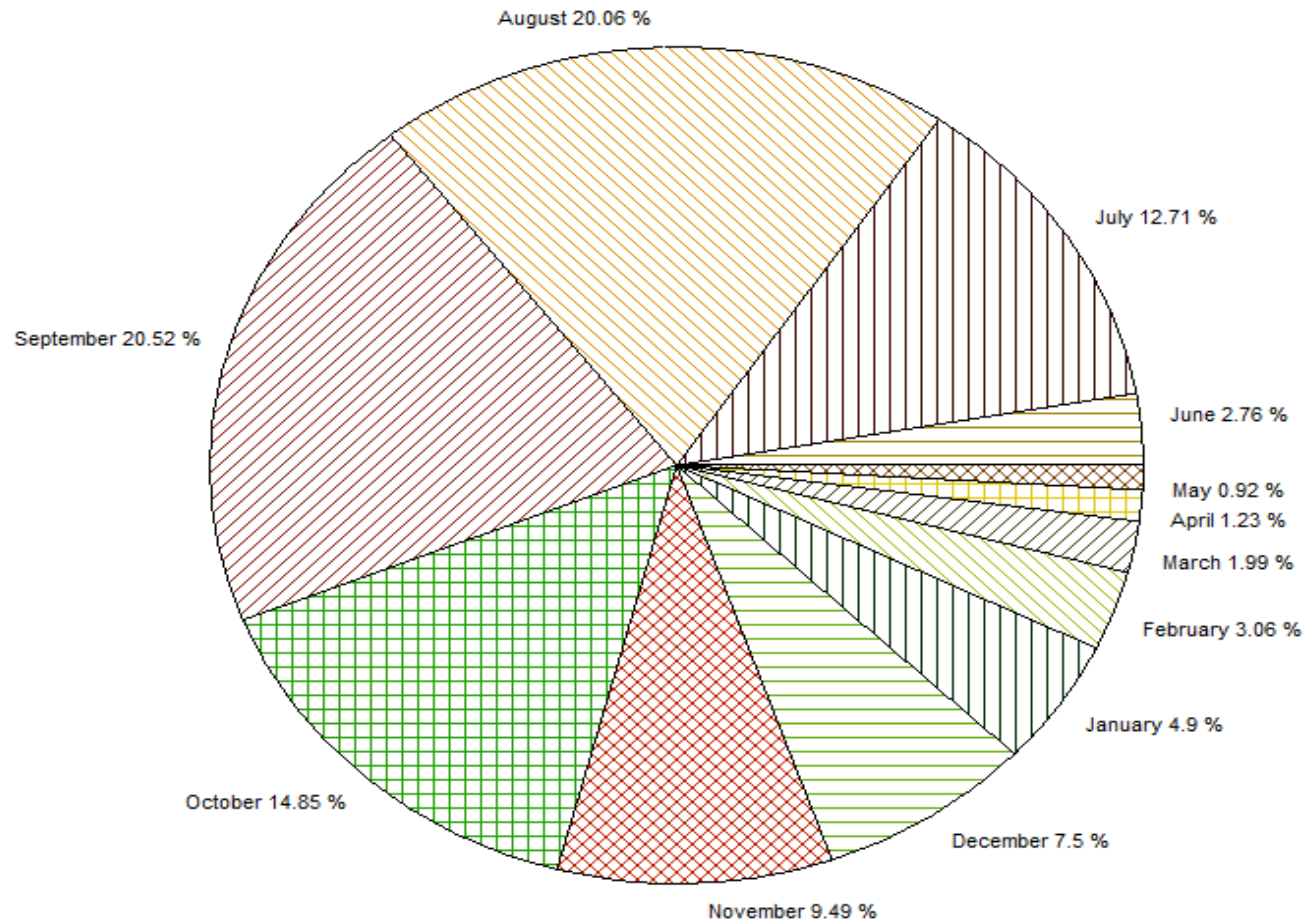
Monthly Average Runoff based on period : 1990-2016

Station Name : MURI (ES000R3)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



June	2.76 %
July	12.71 %
August	20.06 %
September	20.52 %
October	14.85 %
November	9.49 %
December	7.5 %
January	4.9 %
February	3.06 %
March	1.99 %
April	1.23 %
May	0.92 %

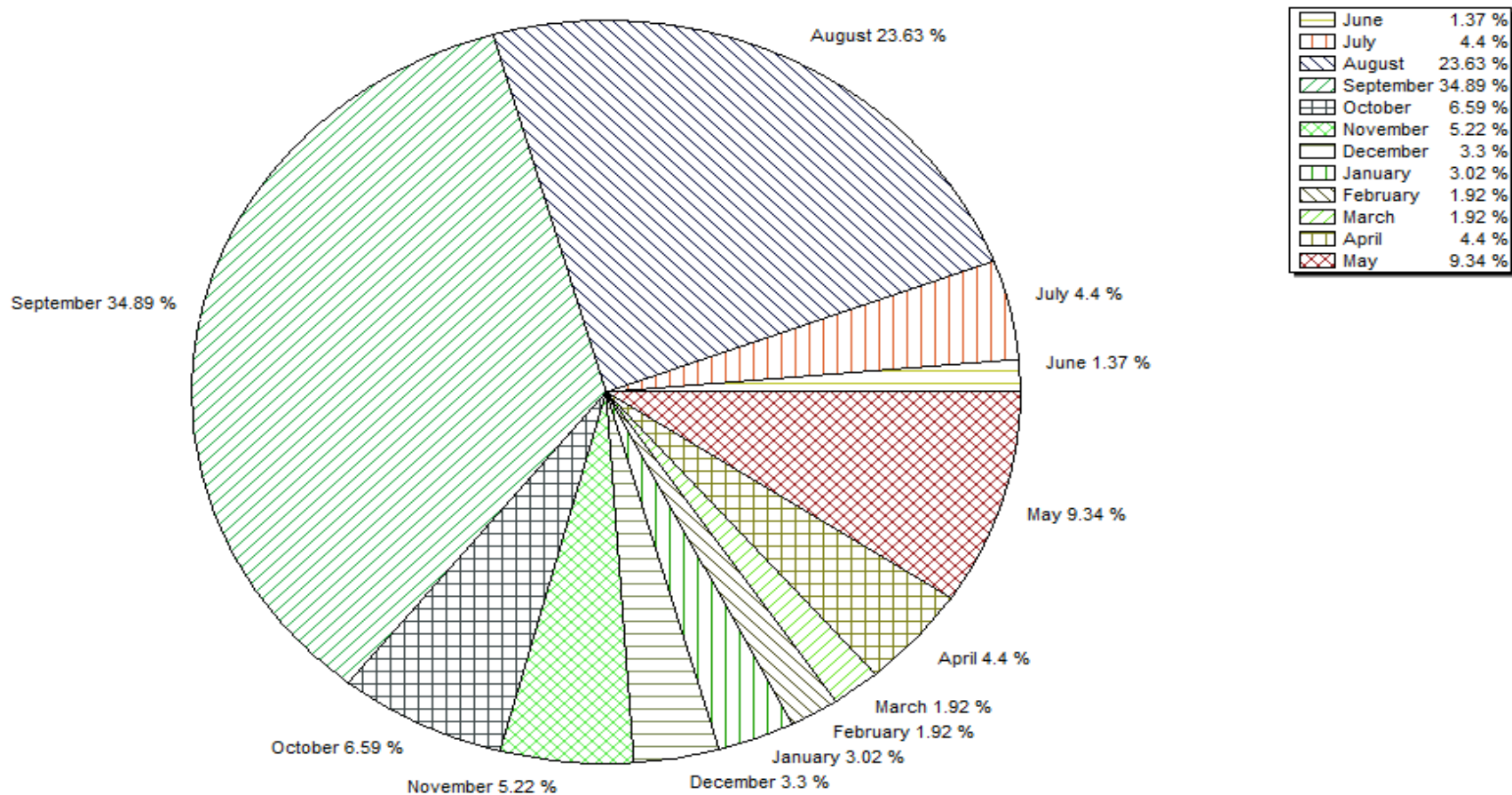
Monthly Runoff for the Year : 2016-2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



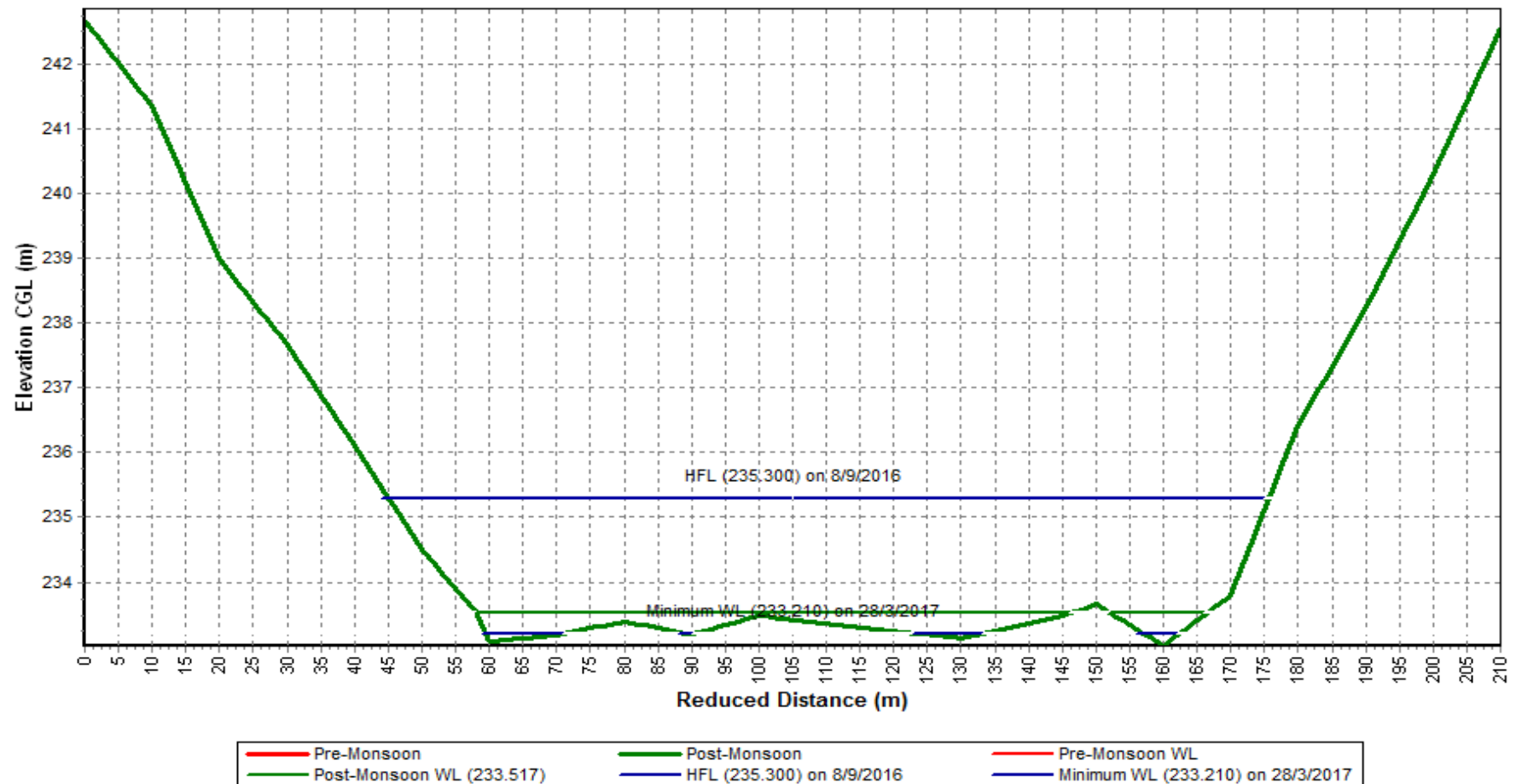
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



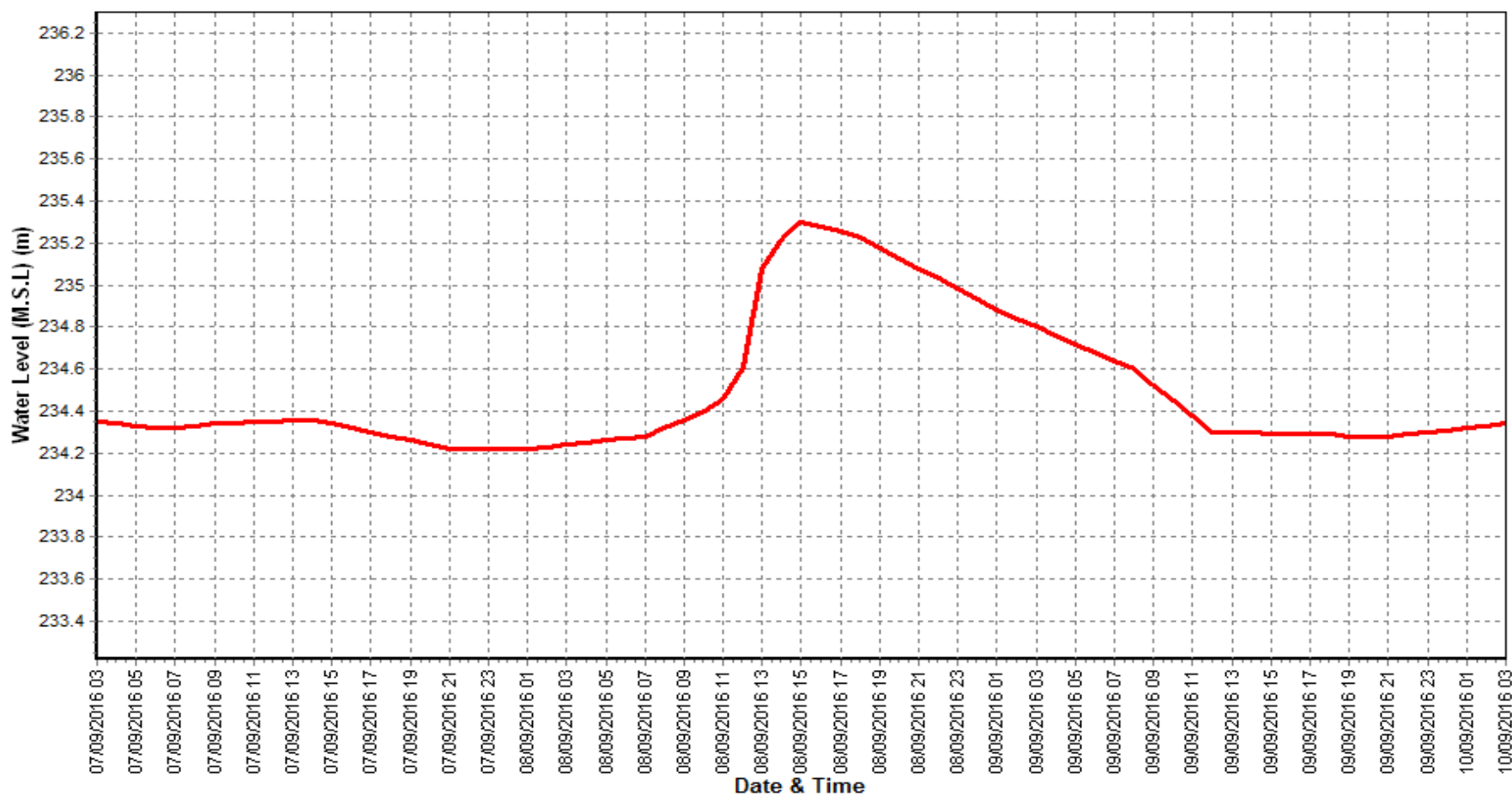
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



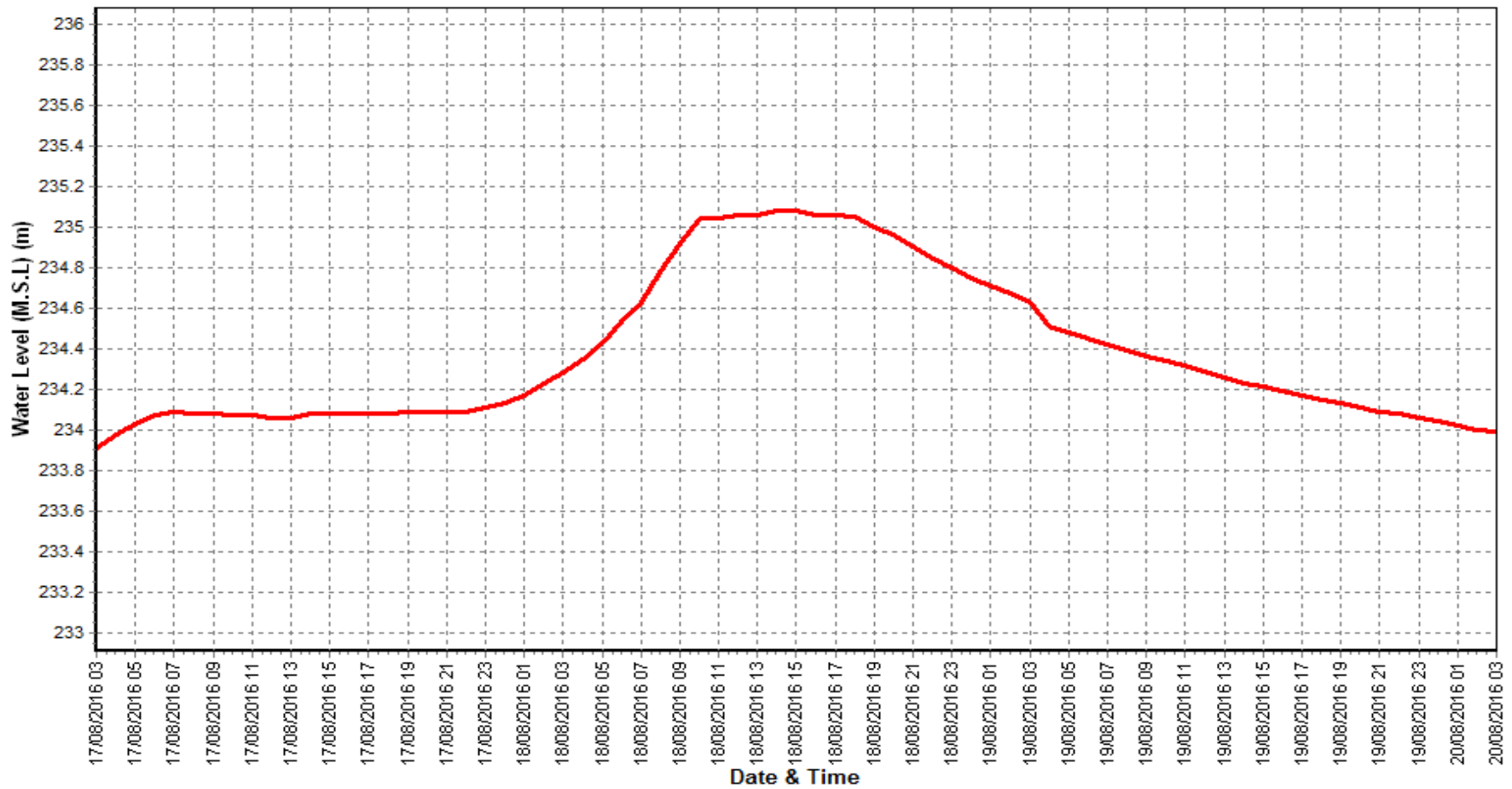
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



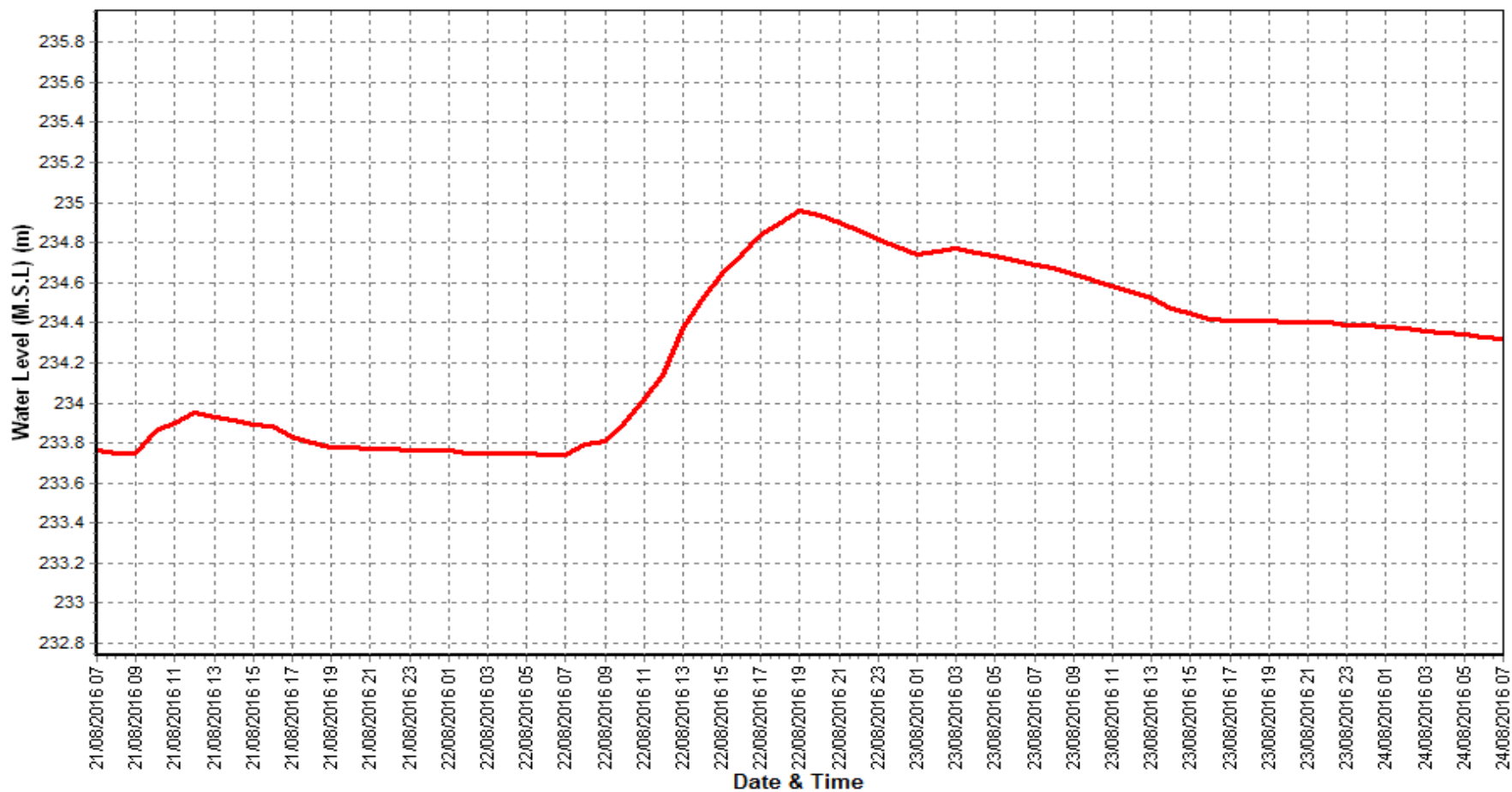
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Water Quality Datasheet for the period : 2016-2017

Station Name : MURI (ES000R3)
Local River : Subarnarekha

Division : E.E., Bhubaneswar
Sub-Division : Balasore

River Water Analysis

S.No	Parameters	6/1/2016 A	7/2/2016 A	8/1/2016 A	9/1/2016 A	10/1/2016 A	11/1/2016 A	12/1/2016 A	1/2/2017 A	2/1/2017 A	3/1/2017 A	4/1/2017 A	5/1/2017 A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	461	8	316	270	342	780	607	400	470	574	402	397
4	EC_GEN (µmho/cm)	464	820	319	276	348	783	605	403	471	576	406	410
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	9.4	9.1	7.9	8.1	7.6	8.1	8.4	8.7	8.6	8.3	7.9	7.8
7	pH_GEN (pH units)	9.5	9.1	8.0	8.2	7.7	8.2	8.5	8.8	8.7	8.4	8.0	8.0
8	Temp (deg C)	34.0	32.0	30.5	27.0	26.5	25.0	20.0	18.0	18.5	22.0	26.0	30.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	106	129	97	134	97	83	21	88	97	180	97	79
3	B (mg/L)	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02
4	Ca (mg/L)	22	42	38	40	42	37	43	42	45	46	43	46
5	Cl (mg/L)	50.9	71.7	52.8	54.7	24.5	22.6	112.7	15.1	17.0	34.0	20.8	43.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.6	1.1	0.4	0.9	0.2	0.4	0.4	0.2	0.5	0.4	0.5	0.4
9	HCO3 (mg/L)	130	158	118	163	118	101	26	107	118	220	118	96
10	K (mg/L)	5.3	3.2	10.9	10.6	13.3	3.7	3.9	26.6	48.9	39.0	31.5	29.0
11	Mg (mg/L)	7.8	11.7	12.6	12.6	13.6	11.7	14.6	14.6	14.6	15.6	14.6	17.5
12	Na (mg/L)	67.4	44.4	44.7	44.8	26.1	35.9	39.1	73.5	69.8	70.2	71.0	73.0
13	NO2+NO3 (mg N/L)	0.91	0.92	0.99	1.12	1.02	0.95	1.23	1.11	1.12	1.13	1.11	1.25
14	NO2-N (mgN/L)	0.07	0.07	0.01	0.03	0.07	0.00	0.01	0.01	0.00	0.00	0.01	0.00
15	NO3-N (mgN/L)	0.84	0.85	0.98	1.09	0.95	0.95	1.22	1.09	1.12	1.13	1.09	1.25
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	7.0	7.0	6.0	6.0	7.0	6.0	6.0	7.0	7.0	8.3	6.0
18	SO4 (mg/L)	34.3	34.8	35.2	36.1	12.9	25.9	26.0	26.4	26.8	49.0	24.0	15.0
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	1.4	2.0	0.8	0.2	0.4	2.8	1.2	1.0	5.2	2.2	2.2	1.0
2	DO (mg/L)	8.5	9.9	6.2	6.6	8.9	7.2	10.5	11.1	11.1	6.2	5.8	7.4
3	DO_SAT% (%)	121	136	82	82	110	87	116	117	118	70	71	97
4	FCol-MPN (MPN/100mL)						60	210	90	60	90	70	140
5	Tcol-MPN (MPN/100mL)						170	330	340	330	170	170	220
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	56	104	96	100	104	92	108	104	112	116	108	116
2	HAR_Total (mgCaCO3/L)	89	153	149	153	161	141	169	165	173	181	169	189
3	Na% (%)	61	38	38	37	24	35	33	45	39	40	43	41
4	RSC (-)	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	3.1	1.6	1.6	1.6	0.9	1.3	1.3	2.5	2.3	2.3	2.4	2.3
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : MURI (ES000R3)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

River Water Summary					
S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	12	780	8	419
3	EC_GEN (μmho/cm)	12	820	276	490
4	pH_FLD (pH units)	12	9.4	7.6	8.3
5	pH_GEN (pH units)	12	9.5	7.7	8.4
6	Temp (deg C)	12	34.0	18.0	25.8
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	180	21	101
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	46	22	41
5	Cl (mg/L)	12	112.7	15.1	43.3
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	1.1	0.2	0.5
9	HCO3 (mg/L)	12	220	26	123
10	K (mg/L)	12	48.9	3.2	18.8
11	Mg (mg/L)	12	17.5	7.8	13.4
12	Na (mg/L)	12	73.5	26.1	55
13	NO2+NO3 (mg N/L)	12	1.25	0.91	1.07
14	NO2-N (mgN/L)	12	0.07	0.00	0.02
15	NO3-N (mgN/L)	12	1.25	0.84	1.05
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	8.3	6.0	6.6
18	SO4 (mg/L)	12	49.0	12.9	28.9
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	5.2	0.2	1.7
2	DO (mg/L)	12	11.1	5.8	8.3
3	DO_SAT% (%)	12	136	70	101
4	FCol-MPN (MPN/100mL)	7	210	60	103
5	Tcol-MPN (MPN/100mL)	7	340	170	247
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	116	56	102
2	HAR_Total (mgCaCO3/L)	12	189	89	158
3	Na% (%)	12	61	24	39
4	RSC (-)	12	0.4	0.0	0
5	SAR (-)	12	3.1	0.9	1.9
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

River Water

Division : E.E., Bhubaneswar

Sub-Division : Balasore

S.No	Parameters	Flood Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	243	264	260	271	199	264		430	401	296	320	215	288	532	279	199	209	185	295	217	213
3	EC_GEN (µmho/cm)	243	264	260	268	194	262		430	401	296	320	215	288	540	445	199	209	185	290	215	201
4	pH_FLD (pH units)	8.2	7.7	8.0	8.1	8.1	8.1		8.2	8.7	8.4	7.8	7.8	8.1	7.9	8.4	7.8	7.4	7.9	8.3	8.1	8.1
5	pH_GEN (pH units)	8.2	7.7	8.0	8.2	8.1	8.1		8.2	8.7	8.4	7.8	7.8	8.1	8.0	8.5	7.8	7.5	7.9	8.4	8.1	8.1
6	Temp (deg C)	29.7	30.3	29.6	28.8	28.2	29.4		28.4	29.5	28.8	29.2	27.6	29.4	30.2	30.0	19.3	19.8	19.0	19.4	20.5	19.1
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0		5.6	19.9	4.4				8.3	0.0					0.0	
2	ALK-TOT (mgCaCO3/L)						74		50	132	75				123	113					57	
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
4	Ca (mg/L)	22	19	23	22	19	22		27	26	19	25	29	19	24	37	16	21	16	23	19	16
5	Cl (mg/L)	22.0	29.8	20.5	31.3	23.8	28.3		52.5	38.7	34.3	29.4	24.2	34.3	20.0	50.9	20.4	19.4	19.4	31.1	23.9	26.6
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		6.7	19.2	5.3	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	
7	F (mg/L)	0.17	0.16	0.61	0.20	0.10	0.10		0.27	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.30	0.00	0.38	0.14	0.15	0.00
8	Fe (mg/L)			0.1	0.1	0.2	0.1		0.2	0.2	0.0	1.4	0.1	0.3	0.4	0.6			0.1	0.1	0.2	0.1
9	HCO3 (mg/L)	95	78	106	89	65	91		47	92	81	104	119	81	130	138	76	83	69	82	77	69
10	K (mg/L)	2.9	2.6	3.0	2.4	2.6	2.8		4.2	3.5	3.8	3.1	2.7	3.8	3.3	8.7	2.7	2.2	2.6	2.7	2.9	2.7
11	Mg (mg/L)	8.0	5.9	9.3	6.9	3.7	9.1		12.7	16.1	7.2	10.9	6.6	7.2	10.9	11.7	5.3	4.2	4.1	5.5	5.2	5.1
12	Na (mg/L)	14.6	22.1	13.5	22.9	15.1	19.0		38.0	24.8	24.1	25.3	17.4	24.1	20.3	45.5	14.8	13.6	13.9	22.2	17.1	17.9
13	NO2+NO3 (mg N/L)	0.94	1.83	1.13	2.64	1.06	1.67		2.83	3.51	0.39	0.83	0.75	1.41	1.16	0.99	0.54	0.49	0.79	2.68	0.95	1.47
14	NO2-N (mgN/L)	0.00	0.00	0.02	0.00	0.00	0.00		0.00	0.00	0.07	0.00	0.01	0.01	0.02	0.05	0.00	0.02	0.01	0.00	0.00	0.02
15	NO3-N (mgN/L)	0.94	1.83	1.11	2.64	1.06	1.67		2.83	3.51	0.32	0.83	0.74	1.41	1.14	0.94	0.54	0.48	0.78	2.68	0.95	1.45
16	o-PO4-P (mg P/L)		0.052		0.000	0.000	0.000		0.053										0.000	0.013	0.000	0.000
17	P-Tot (mgP/L)	0.001	0.001	0.001	0.001	0.001	0.001		0.001	0.001	0.010	0.001	0.002	0.001	0.001	0.010	0.001	0.001	0.001	0.013	0.001	0.001
18	SiO2 (mg/L)	15.6	12.0	20.6	23.8	10.0	9.4		8.9	8.5	9.6	12.4	9.4	5.6	5.8	6.4	12.1	13.2	21.3	22.1	17.9	9.7
19	SO4 (mg/L)	7.7	7.5	9.4	6.6	7.2	12.4		58.6	18.1	21.4	27.2	36.5	21.4	27.2	30.7	4.1	0.8	6.5	7.8	8.7	8.5
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	0.9	1.0	0.8	1.1	1.2	1.1		1.3	1.3	1.5	4.8	0.6	0.5	1.2	1.0	1.2	0.7	1.3	1.0	1.0	1.7
2	DO (mg/L)	7.2	6.2	7.0	6.7	6.9	6.8		7.0	7.4	7.0	5.5	6.8	5.8	6.1	8.0	7.5	8.3	8.0	8.2	8.2	7.9
3	DO_SAT% (%)	94	82	91	87	88	89		89	96	91	71	86	76	80	106	80	90	86	88	90	84
4	FCol-MPN (MPN/100mL)																					
5	Tcol-MPN (MPN/100mL)																					
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	54	48	58	54	47	54		68	66	46	62	72	46	61	92	41	53	41	59	46	41
2	HAR_Total (mgCaCO3/L)	87	73	84	83	63	92		121	133	76	107	99	76	106	141	63	70	63	82	68	62
3	Na% (%)	26	39	23	38	33	31		34	26	38	32	26	38	27	40	33	30	33	38	33	37
4	RSC (-)	0.0	0.1	0.0	0.1	0.0	0.0		0.0	0.0	0.2	0.0	0.2	0.1	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.7	1.2	0.6	1.2	0.8	0.9		1.3	0.9	1.2	1.1	0.8	1.2	0.9	1.8	0.8	0.7	0.8	1.2	0.9	1.0
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : MURI (ES000R3)

Local River : Subarnarekha

River Water

Division : E.E., Bhubaneswar

Sub-Division : Balasore

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		233	398	230	253	216	335	657	564	247	203	244	336	372	388		260	700	503	480	323
3	EC_GEN (µmho/cm)		233	398	230	253	216	335	659	566	247	203	242	330	370	380		260	820	503	480	323
4	pH_FLD (pH units)		7.9	8.3	7.8	7.6	8.0	8.1	8.0	8.5	8.0	7.8	8.2	8.2	8.1	8.7		8.2	8.9	8.3	8.2	8.2
5	pH_GEN (pH units)		7.9	8.3	7.8	7.6	8.0	8.1	8.2	8.5	8.0	7.8	8.3	8.2	8.1	8.8		8.2	8.9	8.3	8.2	8.2
6	Temp (deg C)		21.6	21.3	20.4	23.6	20.3	19.9	20.6	20.4	26.8	27.0	25.0	25.0	27.7	25.5		24.0	25.5	25.3	25.0	25.8
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	13.7	4.6			0.0	5.8	0.0					0.0	0.8		0.0	27.3	0.0		
2	ALK-TOT (mgCaCO3/L)		57	114	91			46	103	72					222	137		70	163	111		
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.01	0.00
4	Ca (mg/L)		17	26	28	23	30	27	36	42	20	19	22	32	33	46		17	51	32	22	29
5	Cl (mg/L)		25.3	43.2	22.2	24.5	33.9	24.0	15.6	41.9	25.9	18.4	19.2	27.9	25.7	22.7		31.0	57.2	33.9	41.8	33.1
6	CO3 (mg/L)		0.0	12.3	5.5	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	1.0		0.0	32.9	0.0	0.0	0.0
7	F (mg/L)		0.17	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.00	0.35	0.74	0.30	0.05		0.01	0.05	0.05	0.05	0.05
8	Fe (mg/L)		0.1	0.1	0.0	1.3	0.1	0.2	0.5	0.4			0.1	0.1	0.2	0.1		0.1	0.3	0.0	1.5	0.1
9	HCO3 (mg/L)		69	113	100	57	137	97	111	88	97	75	108	121	143	165		86	132	135	151	113
10	K (mg/L)		2.8	3.2	2.6	3.3	2.7	2.8	2.7	20.8	3.4	2.9	2.1	2.7	3.4	6.6		3.7	5.3	3.1	4.2	2.5
11	Mg (mg/L)		8.7	12.9	9.2	7.3	9.0	4.4	13.1	13.9	6.8	4.6	8.4	11.4	14.1	7.0		8.7	24.6	9.1	4.9	8.1
12	Na (mg/L)		15.7	31.9	13.4	17.5	22.2	16.1	18.3	54.6	20.1	13.8	13.0	20.4	16.6	15.6		21.4	42.3	48.9	58.6	21.6
13	NO2+NO3 (mg N/L)		1.43	1.25	0.43	0.86	0.88	0.94	1.14	1.10	1.08	0.76	0.65	4.94	2.11	1.23		0.77	3.12	0.39	0.91	0.87
14	NO2-N (mgN/L)		0.02	0.00	0.07	0.00	0.01	0.01	0.00	0.01	0.01	0.02	0.01	0.00	0.00	0.00		0.02	0.00	0.07	0.00	0.00
15	NO3-N (mgN/L)		1.41	1.25	0.36	0.86	0.87	0.93	1.14	1.10	1.06	0.74	0.64	4.94	2.11	1.23		0.74	3.12	0.32	0.91	0.87
16	o-PO4-P (mg P/L)		0.047										0.010	0.055	0.000	0.010		0.050				
17	P-Tot (mgP/L)		0.001	0.001	0.010	0.001	0.001	0.001	0.010	0.010	0.001	0.001	0.001	0.055	0.001	0.050		0.001	0.001	0.010	0.001	0.002
18	SiO2 (mg/L)		8.3	5.5	10.0	13.0	12.3	3.9	5.5	6.5	13.1	11.1	22.1	19.8	15.4	9.7		9.6	5.0	10.0	13.0	12.2
19	SO4 (mg/L)		13.7	18.1	9.8	12.5	46.1	15.0	16.6	26.3	3.5	5.2	4.8	9.1	12.9	14.8		10.4	76.4	41.1	28.2	40.7
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		1.4	1.4	2.0	0.4	0.9	0.8	1.3	2.5	1.8	0.8	1.0	1.3	1.7	1.4		1.6	1.7	1.6	1.1	2.5
2	DO (mg/L)		7.8	8.4	7.8	7.8	8.0	9.8	9.5	10.0	6.5	6.9	6.9	7.6	6.9	6.6		7.1	7.5	6.9	6.5	7.4
3	DO_SAT% (%)		88	94	86	92	88	106	105	109	81	85	83	91	88	81		84	91	83	78	90
4	FCol-MPN (MPN/100mL)									105												
5	Tcol-MPN (MPN/100mL)									293												
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		43	65	71	58	76	66	89	104	51	47	54	80	82	115		41	128	80	55	71
2	HAR_Total (mgCaCO3/L)		80	119	109	88	114	85	144	162	79	66	72	128	140	144		78	231	118	76	105
3	Na% (%)		29	35	21	29	29	28	21	38	35	30	24	26	20	21		36	28	42	56	30
4	RSC (-)		0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0		0.0	0.0	0.4	1.0	0.0
5	SAR (-)		0.8	1.3	0.6	0.8	0.9	0.8	0.7	1.9	1.0	0.7	0.6	0.8	0.6	0.6		1.1	1.2	2.2	3.0	0.9
	PESTICIDES																					

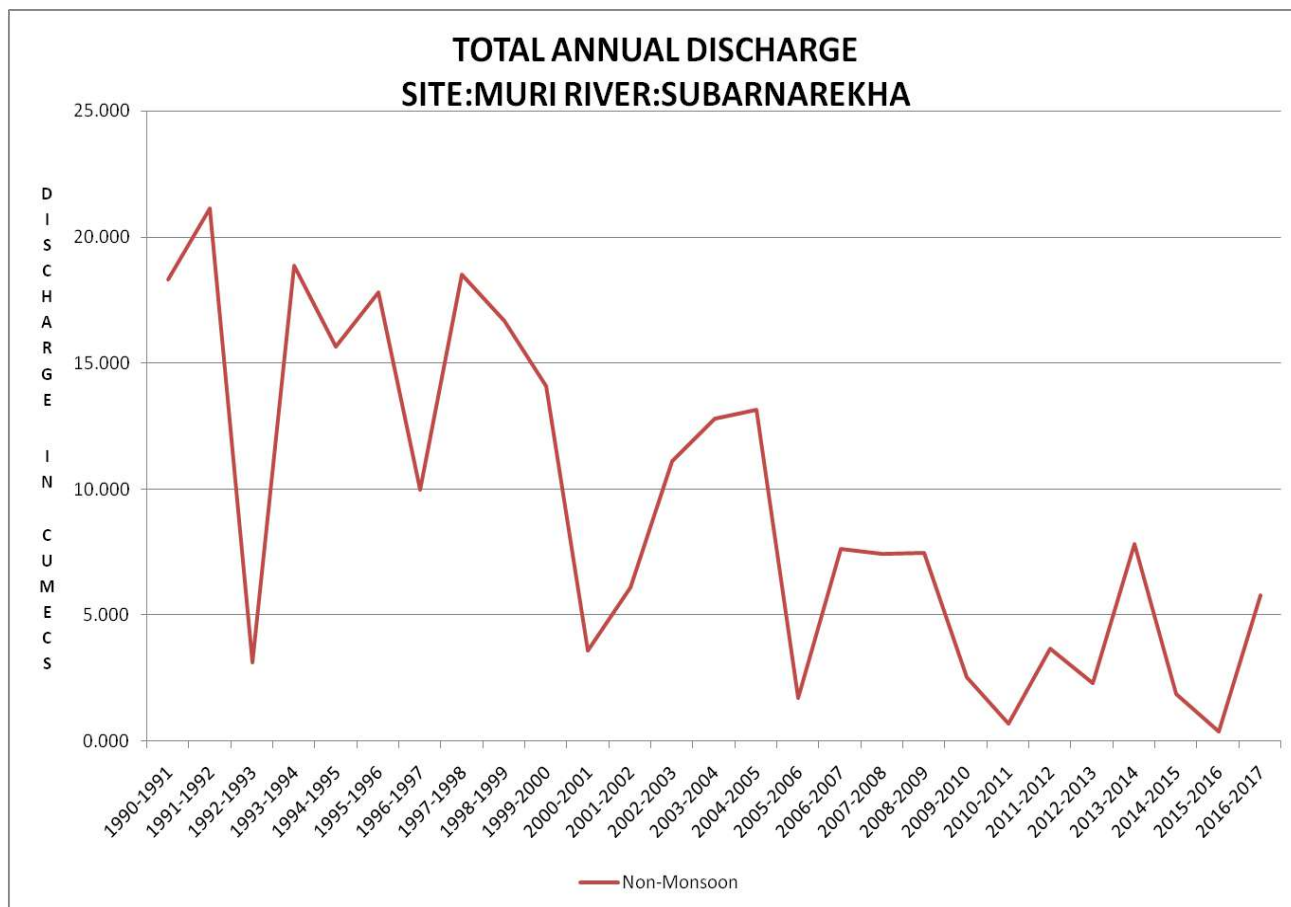
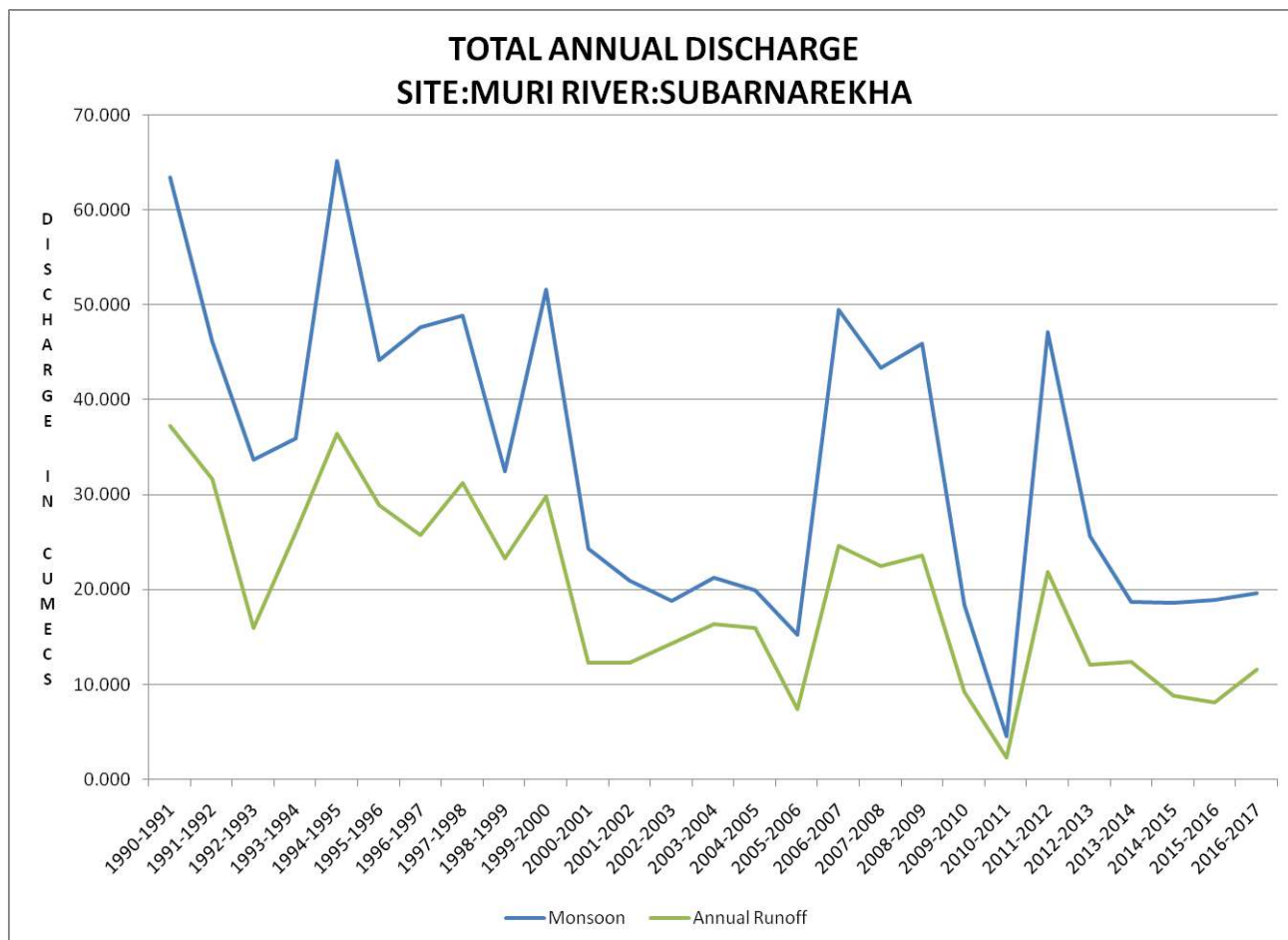
Water Quality Seasonal Average for the period: 2002-2017

Station Name : MURI (ES000R3)
Local River : Subarnarekha

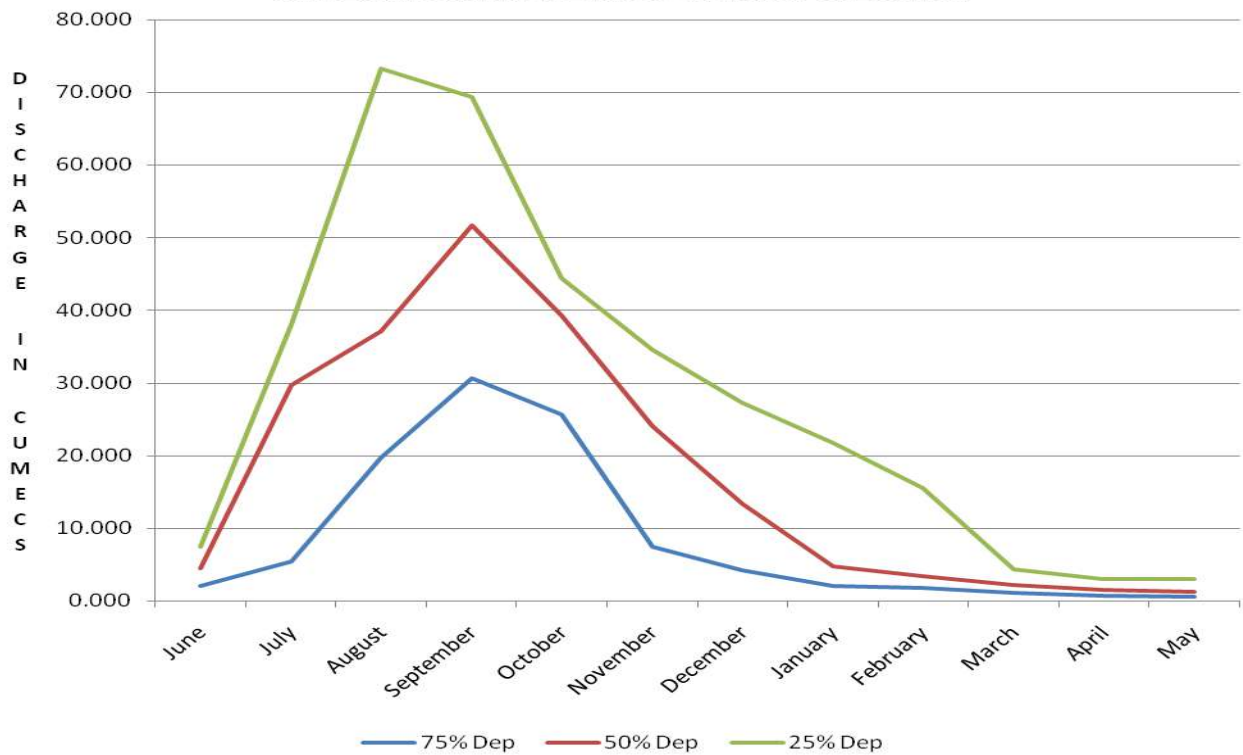
Division : E.E., Bhubaneswar
Sub-Division : Balasore

River Water

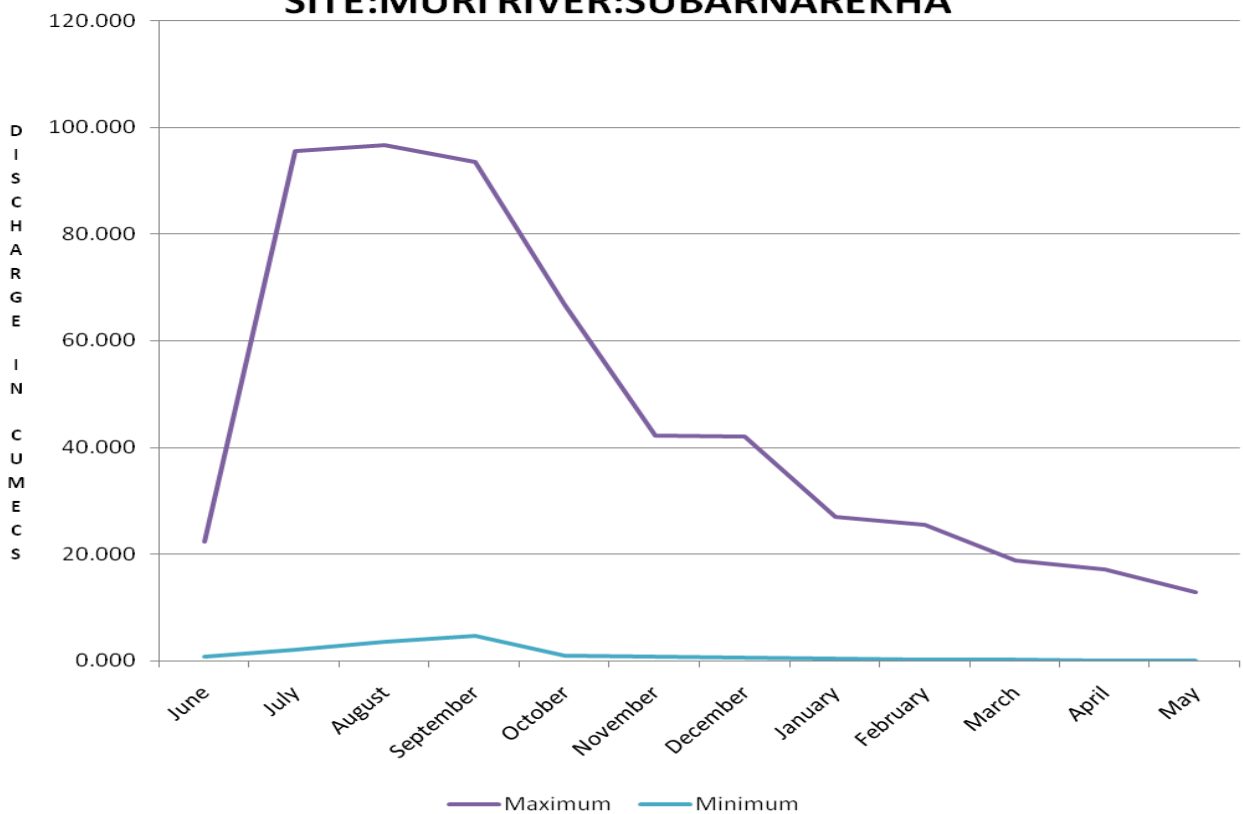
S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	389	895	458
3	EC_GEN (µmho/cm)	389	896	464
4	pH_FLD (pH units)	7.6	8.4	8.0
5	pH_GEN (pH units)	7.6	8.6	8.1
6	Temp (deg C)	25.5	26.0	26.0
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	12.3	0.0
2	ALK-TOT (mgCaCO3/L)	16	163	119
3	B (mg/L)	0.00	0.01	0.02
4	Ca (mg/L)	26	38	45
5	Cl (mg/L)	21.8	42.7	32.7
6	CO3 (mg/L)	0.0	14.8	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.3	0.3	0.4
9	HCO3 (mg/L)	78	169	145
10	K (mg/L)	2.6	3.0	33.2
11	Mg (mg/L)	9.7	14.9	15.9
12	Na (mg/L)	25.7	45.1	71.4
13	NO2+NO3 (mg N/L)	1.13	0.98	1.16
14	NO2-N (mgN/L)	0.00	0.00	0.00
15	NO3-N (mgN/L)	1.13	0.98	1.16
16	o-PO4-P (mg P/L)			
17	P-Tot (mgP/L)	0.001	0.010	0.010
18	SiO2 (mg/L)	5.0	5.7	7.1
19	SO4 (mg/L)	26.5	24.1	29.4
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	0.8	0.8	1.8
2	DO (mg/L)	5.1	6.0	6.4
3	DO_SAT% (%)	62	73	80
4	FCol-MPN (MPN/100mL)			100
5	Tcol-MPN (MPN/100mL)			187
	TRACE & TOXIC			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	64	96	114
2	HAR_Total (mgCaCO3/L)	105	158	180
3	Na% (%)	33	31	41
4	RSC (-)	0.0	0.8	0.0
5	SAR (-)	1.3	1.6	2.3
	PESTICIDES			



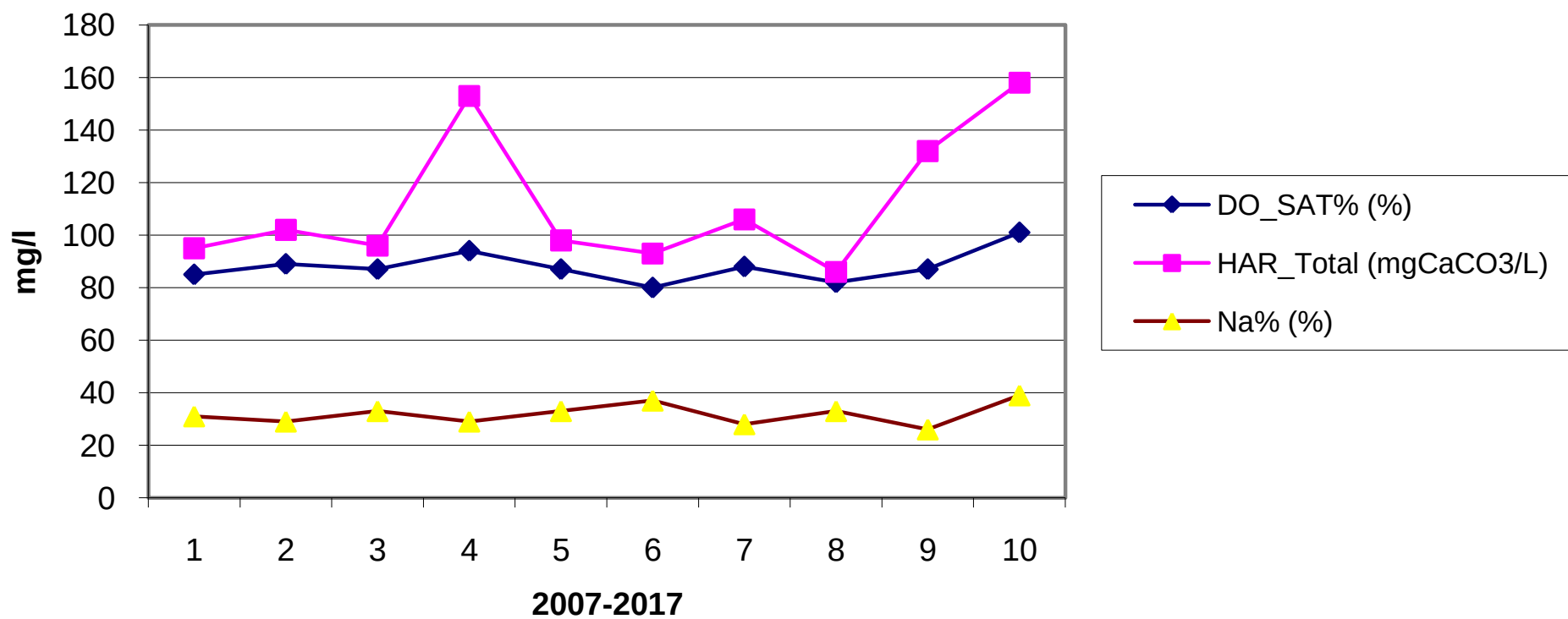
DEPENDIBILITY FLOW FROM JUNE TO MAY SITE:MURI RIVER:SUBARNAREKHA

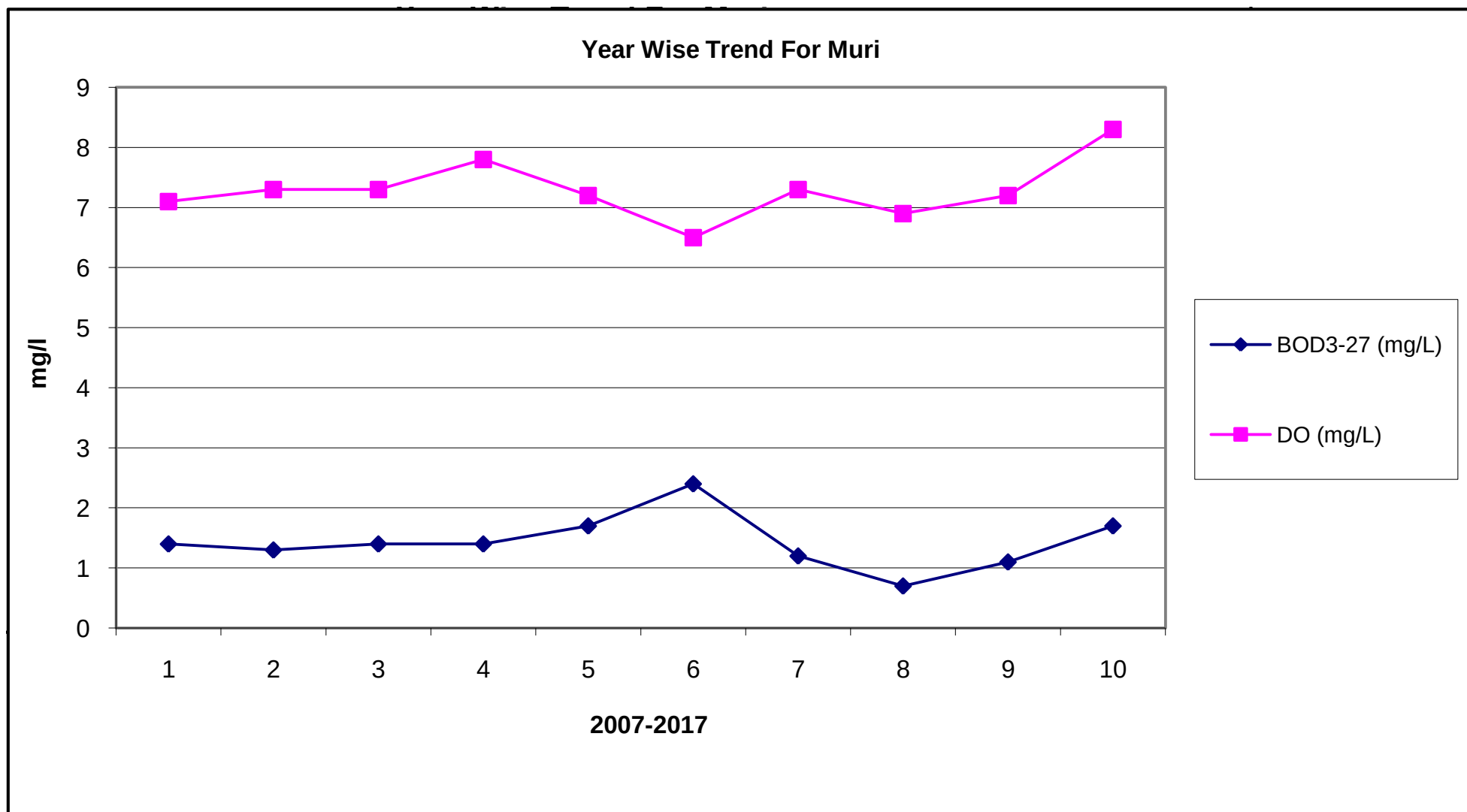


MAXIMUM-MINIMUM FLOW FROM JUNE TO MAY SITE:MURI RIVER:SUBARNAREKHA

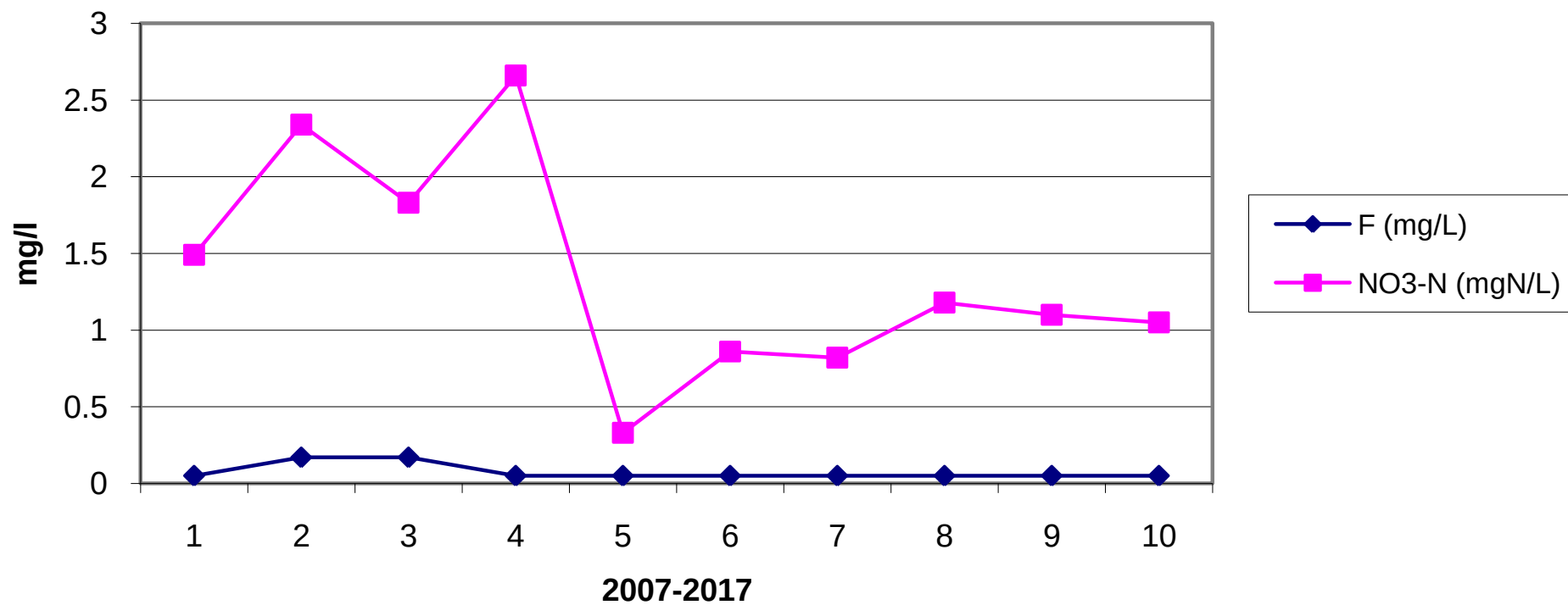


Year Wise Trend For Muri

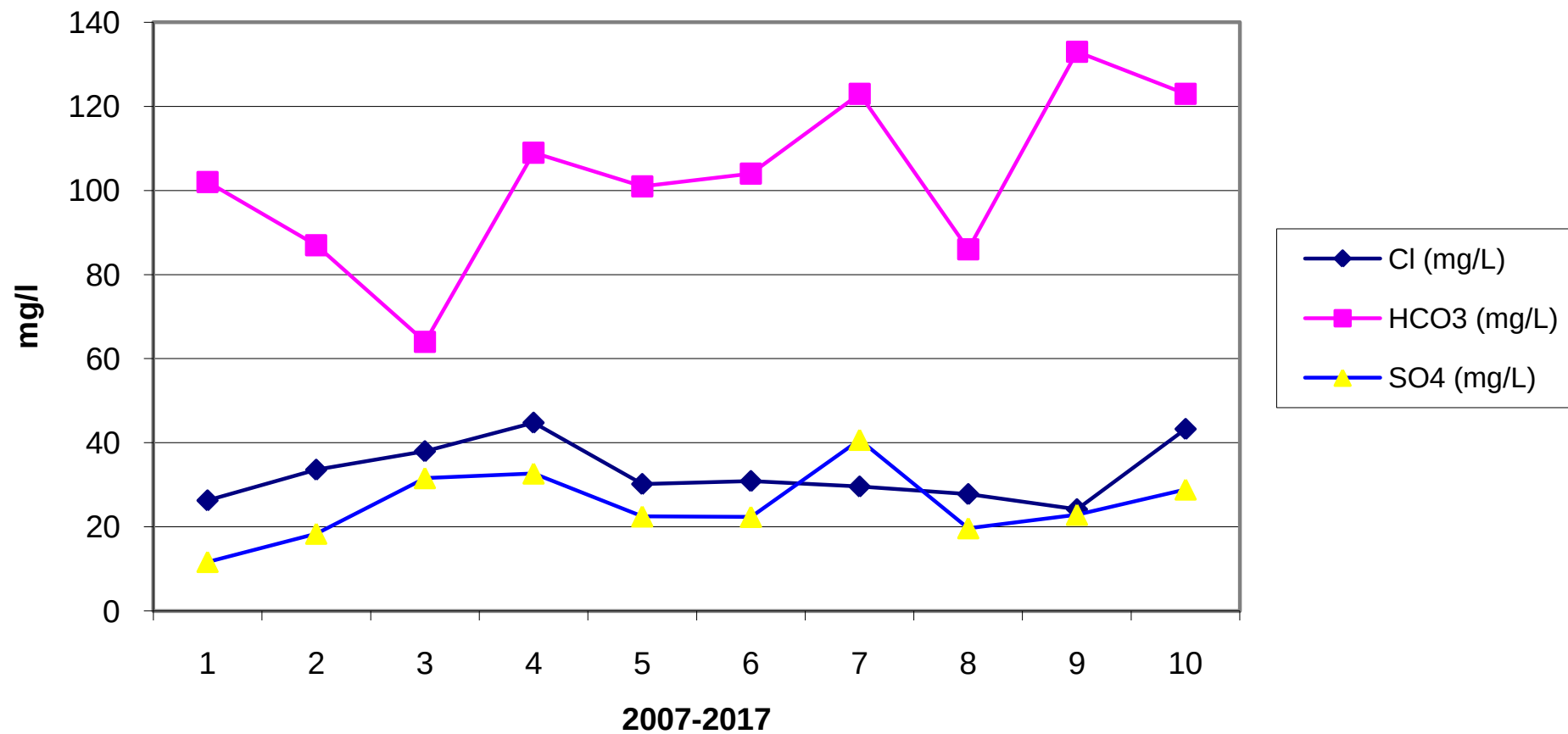




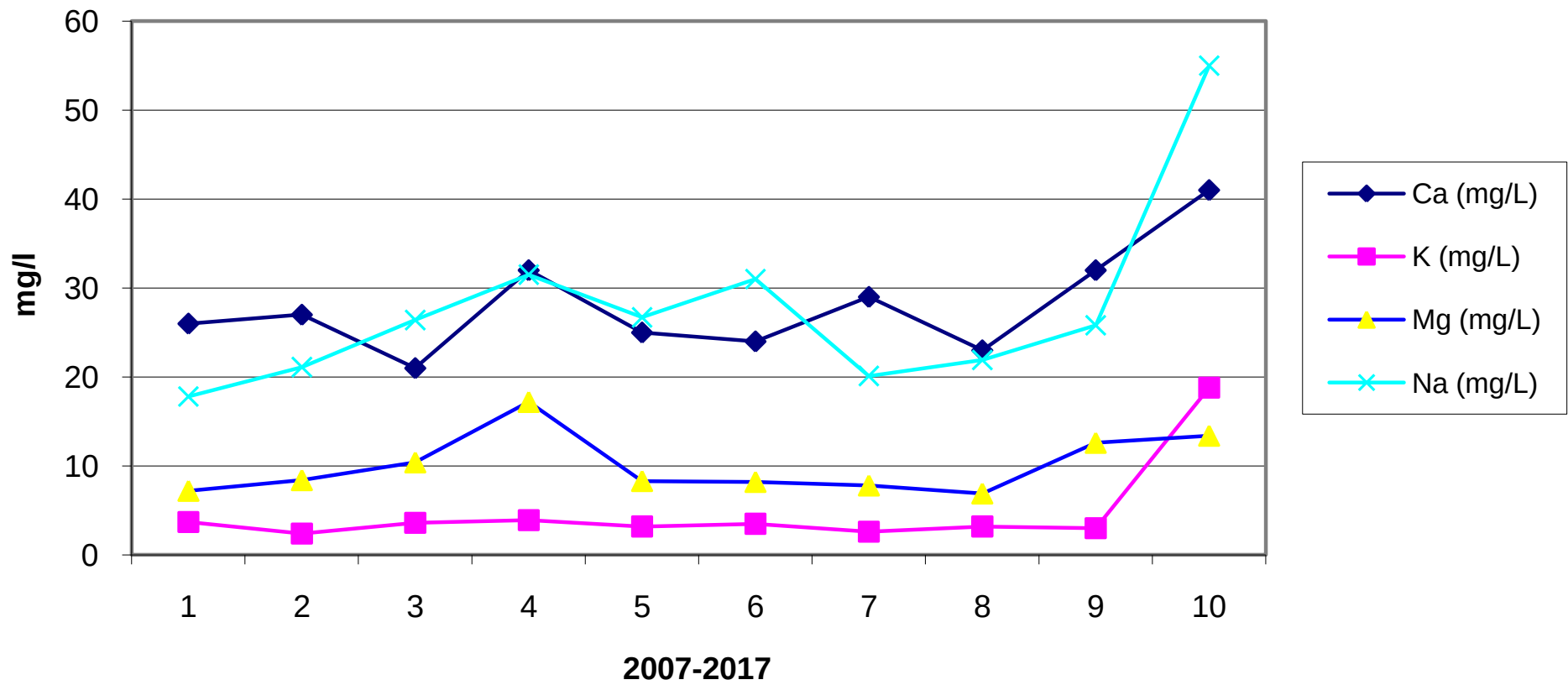
Year Wise Trend For Muri



Year Wise Trend For Muri



Year Wise Trend For Muri



HISTORY SHEET

Water Year : 2016-2017

Site : ADITYAPUR

Code : ESB00D5

State : Jharkhand	District : Purba Singhbhum
Basin : Subarnarekha	Independent River : Subarnarekha
Tributary : Kharkhai	Sub Tributary :
Sub-Sub Tributary :	Local River : Kharkhai
Division : E.E., Bhubaneswar	Sub-Division : Balasore
Drainage Area : 6309 Sq. Km.	Bank : Left
Latitude : 22°47'29"	Longitude : 86°10'06"
Zero of Gauge (m) : 125 (m.s.l) 123 (m.s.l)	11/22/1971 - 5/31/1972 6/1/1972 - 12/31/2031
Opening Date	Closing Date
Gauge : 6/23/1971	6/23/2011
Discharge : 11/22/1971	6/23/2011
Sediment : 2/6/1975	6/23/2011
Water Quality : 1/1/1976	6/23/2011

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	1711	131.598	8/14/1972	0.000	125.615	11/5/1972
1973-1974	3431	133.225	10/12/1973	0.500	125.150	5/10/1974
1974-1975	5812	137.130	9/30/1974	0.400	124.645	5/18/1975
1975-1976	6416	137.560	8/20/1975	0.060	124.993	5/12/1976
1976-1977	1690	131.500	9/12/1976	0.500	124.810	3/15/1977
1977-1978	3020	133.400	8/7/1977	1.500	124.820	6/5/1977
1978-1979	895.7	125.325	6/27/1978	0.200	125.125	5/16/1979
1979-1980	650.0	128.905	8/8/1979	0.080	125.140	5/27/1980
1980-1981	524.7	128.880	7/3/1980	0.309	125.275	4/19/1981
1981-1982	1883	131.610	6/22/1981	0.379	125.190	5/31/1982
1982-1983	819.2	129.680	8/7/1982	0.367	125.175	6/3/1982
1983-1984	2081	131.160	9/5/1983	1.078	125.050	5/7/1984
1984-1985	2959	132.673	8/27/1984	0.460	124.870	5/4/1985
1985-1986	4532	135.000	10/17/1985	0.820	124.670	4/6/1986
1986-1987	614.5	128.960	8/5/1986	0.900	125.025	4/15/1987
1987-1988	1335	130.250	7/20/1987	0.470	124.925	4/11/1988
1988-1989	1231	130.780	8/4/1988	0.056	124.880	5/12/1989
1989-1990	2500	132.650	8/5/1989	1.110	124.940	5/10/1990
1990-1991	2137	130.975	9/4/1990	1.220	124.820	5/18/1991
1991-1992	3517	132.900	8/23/1991	1.004	124.660	5/1/1992
1992-1993	770.0	128.900	9/27/1992	1.096	124.650	6/6/1992

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1993-1994	1000	129.320	8/15/1993	1.085	124.600	5/15/1994
1994-1995	4101	133.295	8/4/1994	0.669	124.590	5/10/1995
1995-1996	2340	131.880	8/9/1995	0.494	124.440	5/25/1996
1996-1997	2692	133.075	7/26/1996	0.177	124.495	4/30/1997
1997-1998	6700	136.400	8/6/1997	0.524	124.520	6/2/1997
1998-1999	1200	129.700	9/13/1998	0.772	124.460	5/11/1999
1999-2000	3300	133.430	8/8/1999	1.234	124.490	4/22/2000
2000-2001	933.7	130.700	7/26/2000	0.857	124.450	2/28/2001
2001-2002	3970	133.750	7/12/2001	0.710	124.430	5/23/2002
2002-2003	938.5	129.400	9/11/2002	0.760	124.440	6/3/2002
2003-2004	556.8	127.790	10/9/2003	1.400	124.410	6/1/2003
2004-2005	2828	131.850	8/21/2004	1.614	124.420	5/26/2005
2005-2006	1041	129.440	6/30/2005	2.000	124.420	4/11/2006
2006-2007	5180	133.700	7/30/2006	2.941	124.440	4/9/2007
2007-2008	3879	133.700	8/20/2007	2.759	124.440	6/9/2007
2008-2009	5856	136.950	6/18/2008	2.000	124.410	4/26/2009
2009-2010	1848	130.225	9/8/2009	1.880	124.380	3/14/2010
2010-2011	139.7	126.410	9/20/2010	0.860	124.390	4/19/2011
2011-2012	2400	132.620	9/23/2011	1.061	124.430	6/2/2011
2012-2013	967.6	128.675	6/22/2012	1.490	124.350	4/12/2013
2013-2014	3033	131.200	9/20/2013	2.038	124.380	7/22/2013
2014-2015	1931	129.600	7/21/2014	1.880	124.140	3/26/2015
2015-2016	2030	132.620	7/29/2015	1.846	124.130	4/11/2016
2016-2017	3496	131.400	8/18/2016	2.810	124.200	5/14/2017

Stage-Discharge Data for the period 2016 - 2017

Station Name : ADITYAPUR (ESB00D5)

Division : E.E., Bhubaneswar

Local River : Kharkhai

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	124.600	15.72	124.530	21.36	125.120	75.28	125.170	74.36	125.760	178.2	124.610	32.57
2	124.430	9.204	124.640	34.71	125.740	246.6	125.010	73.70	125.600	160.0 *	124.600	30.83
3	124.430	9.032	124.520	21.00 *	126.840	378.3	125.150	75.11	125.470	147.9	124.600	28.13
4	124.420	7.398	125.750	139.2	126.440	281.2	127.000	708.0 *	125.380	138.2	124.590	29.28
5	124.390	8.100 *	125.110	73.02	126.060	244.9	129.300	1194	125.280	98.10	124.590	29.06
6	124.390	8.127	124.870	48.24	126.210	218.1	130.750	2324	125.230	80.19	124.590	29.00 *
7	124.340	7.524	124.690	36.00 *	126.060	210.0 *	128.800	965.5	125.280	96.47	124.580	26.06
8	124.310	6.680	124.650	35.58	126.610	371.2	127.780	708.3	125.280	99.95	124.570	25.14
9	124.290	6.097	124.610	32.65	126.260	269.2	128.290	780.6	125.260	98.00 *	124.560	25.06
10	124.390	8.219	124.470	23.80 *	126.900	433.4	127.870	752.2	125.280	100.0 *	124.550	24.50
11	124.310	6.656	124.540	23.83	127.930	778.2	127.110	520.0 *	125.200	96.00 *	124.540	24.04
12	124.430	7.400 *	124.560	18.65	127.650	659.3	126.480	290.0	125.200	96.00 *	124.530	23.87
13	124.390	8.255	124.720	41.65	127.150	554.1	126.550	240.0 *	125.190	77.31	124.520	22.00 *
14	124.350	7.603	124.920	53.24	126.300	540.0 *	126.370	236.1	125.130	74.24	124.510	22.40 *
15	124.350	7.598	124.950	57.88	125.920	520.0 *	126.260	269.4	125.070	72.19	124.510	22.58
16	124.320	6.702	126.000	215.8	126.280	342.9	125.920	238.5	124.950	70.00 *	124.510	22.63
17	124.390	8.285	125.530	106.0 *	127.400	598.6	125.720	201.3	124.890	54.83	124.500	22.45
18	124.280	5.973	125.570	110.5	131.400	3496	125.700	200.0 *	124.830	50.42	124.490	21.32
19	124.250	5.800 *	125.270	72.57	130.450	1843	125.450	147.1	124.800	49.00	124.490	21.17
20	124.390	8.471	125.420	116.6	127.930	689.5	125.340	115.3	124.770	46.29	124.490	21.00 *
21	124.600	15.55	125.310	108.1	126.690	580.0 *	125.440	142.8	124.730	42.61	124.480	19.68
22	124.500	9.785	125.160	72.33	126.320	337.1	125.480	151.3	124.720	41.74	124.480	20.12
23	124.400	8.478	126.000	214.3	128.400	873.4	125.430	144.4	124.700	40.00 *	124.470	19.01
24	124.420	8.765	125.770	140.0 *	127.410	598.2	125.630	183.8	124.690	40.08	124.470	18.93
25	124.420	8.760	125.540	122.9	126.960	430.6	126.080	180.0 *	124.680	39.31	124.460	18.52
26	124.990	49.22 *	125.270	72.70	127.130	553.8	126.470	300.1	124.660	37.02	124.460	18.57
27	124.860	49.28	125.340	119.3	126.600	356.0	127.110	553.8	124.650	35.42	124.450	18.00 *
28	124.670	36.37	125.860	153.7	126.330	320.0 *	126.320	278.0	124.640	34.15	124.450	18.05
29	124.550	24.11	125.530	122.3	125.790	184.5	126.020	246.0	124.640	33.67	124.450	18.04
30	124.510	21.65	125.250	73.08	125.500	119.5	125.950	240.4	124.630	33.64 *	124.440	17.72
31			125.330	75.00 *	125.290	92.18			124.620	33.16		
Ten-Daily Mean												
I Ten-Daily	124.399	8.610	124.784	46.55	126.224	272.8	127.512	765.6	125.382	119.7	124.584	27.96
II Ten-Daily	124.346	7.274	125.148	81.66	127.841	1002	126.090	245.8	125.003	68.63	124.509	22.34
III Ten-Daily	124.592	23.20	125.487	115.8	126.584	404.1	125.993	242.1	124.669	37.34	124.461	18.66
Monthly												
Min.	124.250	5.800	124.470	18.65	125.120	75.28	125.010	73.70	124.620	33.16	124.440	17.72
Max.	124.990	49.28	126.000	215.8	131.400	3496	130.750	2324	125.760	178.2	124.610	32.57
Mean	124.446	13.03	125.151	82.45	126.873	554.7	126.532	417.8	125.007	74	124.518	22.99

Annual Runoff in MCM = 3181 Annual Runoff in mm = 504

Peak Observed Discharge = 3496 cumecs on 18/08/2016 Corres. Water Level :131.4 m

Lowest Observed Discharge = 2.811 cumecs on 02/05/2017 Corres. Water Level :124.2 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2016 - 2017

Station Name : ADITYAPUR (ESB00D5)

Division : E.E., Bhubaneswar

Local River : Kharkhai

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	124.440	17.94	124.340	9.000 *	124.290	6.117	124.240	3.423	124.220	3.243	124.200	2.821
2	124.430	17.77	124.340	9.092	124.290	6.104	124.240	3.486	124.220	3.200 *	124.200	2.811
3	124.430	17.77	124.340	9.016	124.300	6.029	124.240	3.423	124.220	3.211	124.220	3.309
4	124.420	16.60 *	124.330	8.677	124.290	5.838	124.240	3.458	124.220	3.193	124.220	3.281
5	124.420	16.69	124.330	8.891	124.280	5.600 *	124.240	3.460 *	124.220	3.188	124.210	3.037
6	124.410	16.66	124.330	8.599	124.270	4.785	124.240	3.463	124.230	3.396	124.210	3.011
7	124.410	16.16	124.330	8.464	124.270	5.597	124.230	3.413	124.230	3.382	124.210	3.010 *
8	124.410	16.13	124.330	8.400 *	124.270	5.591	124.230	3.395	124.230	3.328	124.200	2.840
9	124.400	15.71	124.330	8.525	124.270	5.537	124.230	3.386	124.230	3.320 *	124.230	3.401
10	124.400	15.74	124.330	8.522	124.270	5.555	124.230	3.348	124.230	3.395	124.220	3.310 *
11	124.400	15.70 *	124.330	8.469	124.270	5.530	124.230	3.358	124.220	3.380	124.190	3.840
12	124.400	15.70 *	124.320	8.178	124.260	5.100 *	124.230	3.360 *	124.220	3.322	124.210	4.513
13	124.400	15.67	124.320	8.132	124.260	5.158	124.230	3.360 *	124.220	3.307	124.210	4.504
14	124.390	14.87	124.320	8.124	124.260	4.445	124.230	3.297	124.220	3.290 *	124.200	2.810 *
15	124.390	14.84	124.320	8.100 *	124.260	5.113	124.230	3.371	124.220	3.295	124.200	3.823
16	124.390	13.93	124.320	8.082	124.260	5.086	124.230	3.351	124.220	3.280 *	124.240	4.766
17	124.380	14.30	124.320	8.023	124.260	5.118	124.230	3.284	124.220	3.276	124.230	4.732
18	124.380	14.30 *	124.320	7.536	124.250	4.530	124.230	3.278	124.210	3.193	124.230	4.711
19	124.370	12.83	124.310	7.576	124.250	4.500 *	124.230	3.280 *	124.210	3.143	124.240	4.757
20	124.370	12.83	124.310	7.499	124.250	4.094	124.240	3.466	124.210	3.149	124.260	4.819
21	124.370	12.21	124.300	6.374	124.240	3.460	124.240	3.463	124.210	3.154	124.250	4.250 *
22	124.360	10.52	124.300	6.300 *	124.240	3.446	124.240	3.487	124.210	3.147	124.240	4.725
23	124.360	10.50	124.300	6.293	124.240	3.450	124.240	3.505	124.210	3.100 *	124.270	5.086
24	124.360	10.27	124.300	6.270	124.240	3.400 *	124.240	3.518	124.210	3.124	124.250	4.251
25	124.350	9.900 *	124.300	6.203	124.240	3.455	124.230	3.395	124.210	3.111	124.220	3.410
26	124.350	9.982	124.300	6.200 *	124.240	3.400 *	124.230	3.400 *	124.210	3.080	124.220	3.428
27	124.350	8.355	124.300	6.191	124.240	3.436	124.230	3.394	124.200	2.884	124.280	5.653
28	124.350	9.386	124.290	6.036	124.240	3.476	124.230	3.397	124.200	2.867	124.240	4.760 *
29	124.340	9.216	124.290	6.000 *			124.230	3.356	124.200	2.827	124.370	13.64
30	124.340	9.185	124.290	6.068			124.220	3.308	124.200	2.820 *	124.490	23.64
31	124.340	9.171	124.290	6.167			124.220	3.279			124.510	25.01
Ten-Daily Mean												
I Ten-Daily	124.417	16.72	124.333	8.719	124.280	5.675	124.236	3.426	124.225	3.286	124.212	3.083
II Ten-Daily	124.387	14.50	124.319	7.972	124.258	4.867	124.231	3.341	124.217	3.264	124.221	4.328
III Ten-Daily	124.352	9.881	124.296	6.191	124.240	3.440	124.232	3.409	124.206	3.011	124.304	8.896
Monthly												
Min.	124.340	8.355	124.290	6.000	124.240	3.400	124.220	3.278	124.200	2.820	124.190	2.810
Max.	124.440	17.94	124.340	9.092	124.300	6.117	124.240	3.518	124.230	3.396	124.510	25.01
Mean	124.384	13.57	124.315	7.581	124.261	4.748	124.233	3.392	124.216	3.187	124.247	5.547

Peak Computed Discharge = 708.0 cumecs on 04/09/2016

Corres. Water Level :127 m

Lowest Computed Discharge = 2.810 cumecs on 14/05/2017

Corres. Water Level :124.2 m

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

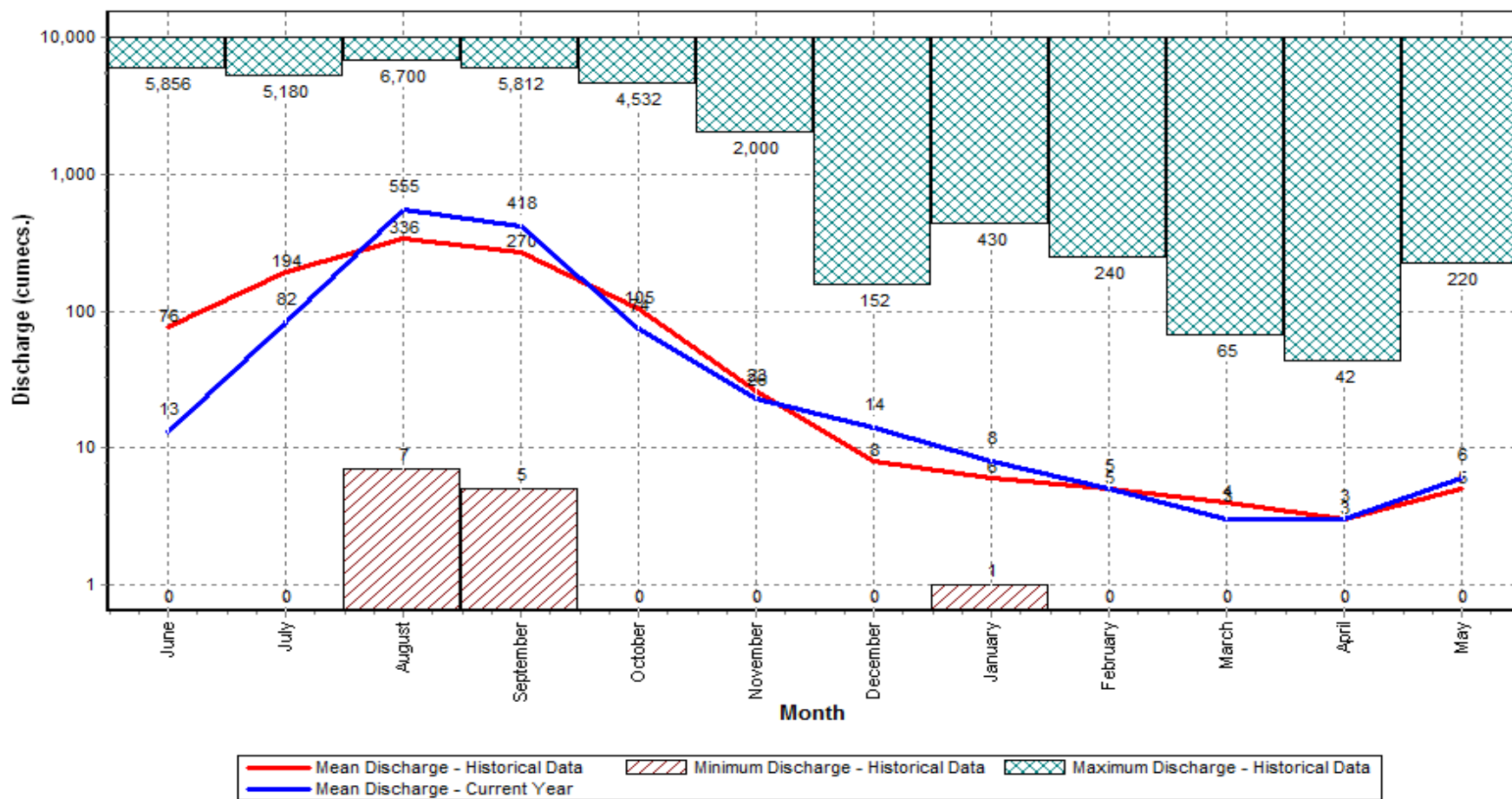
Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Data considered : 1972-2017

Division : E.E., Bhubaneswar

Sub-Division : Balasore



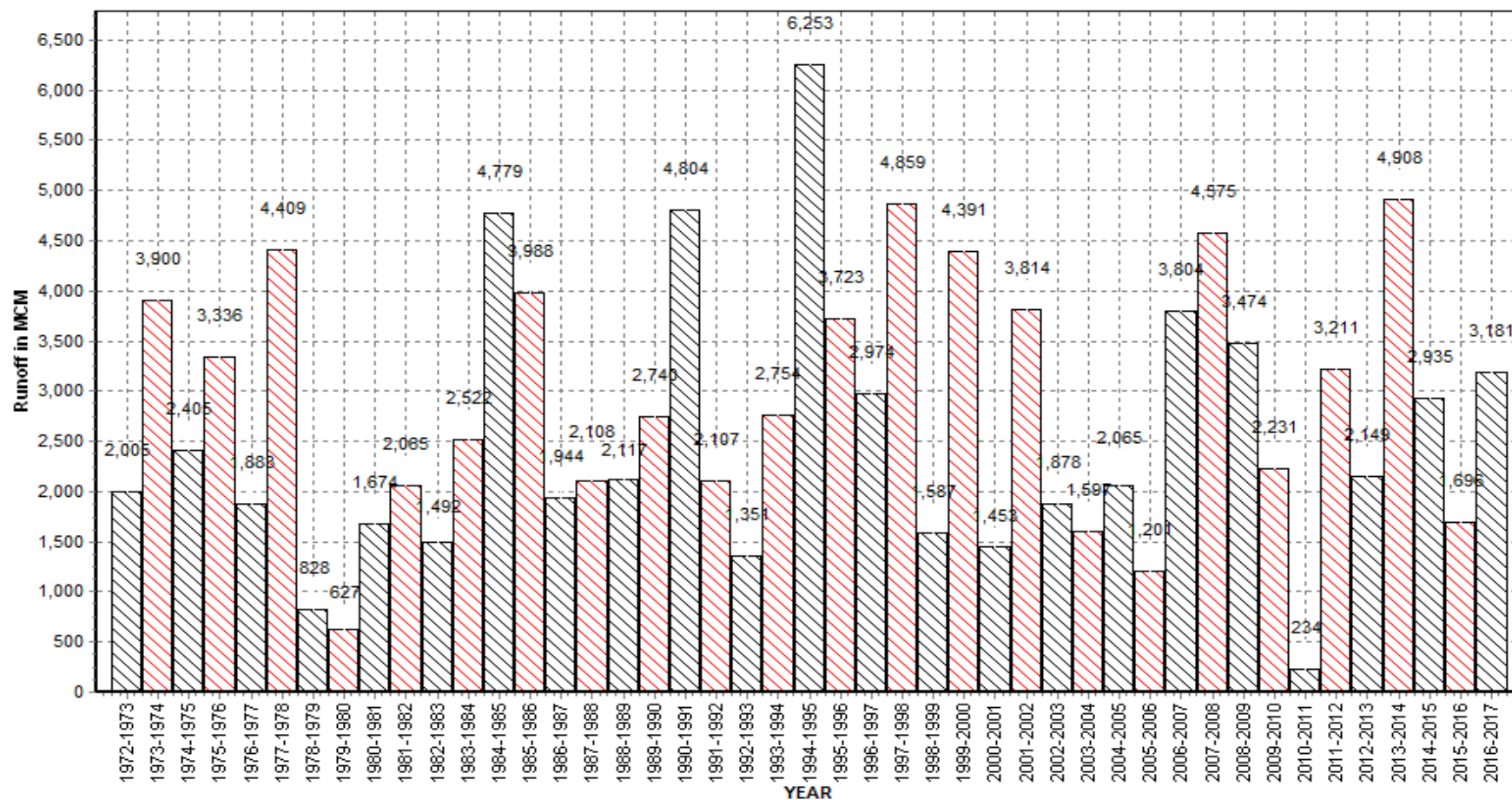
Annual Runoff Values for the period: 1972 - 2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Note: Missing values have not been considered while arriving at Annual Runoff

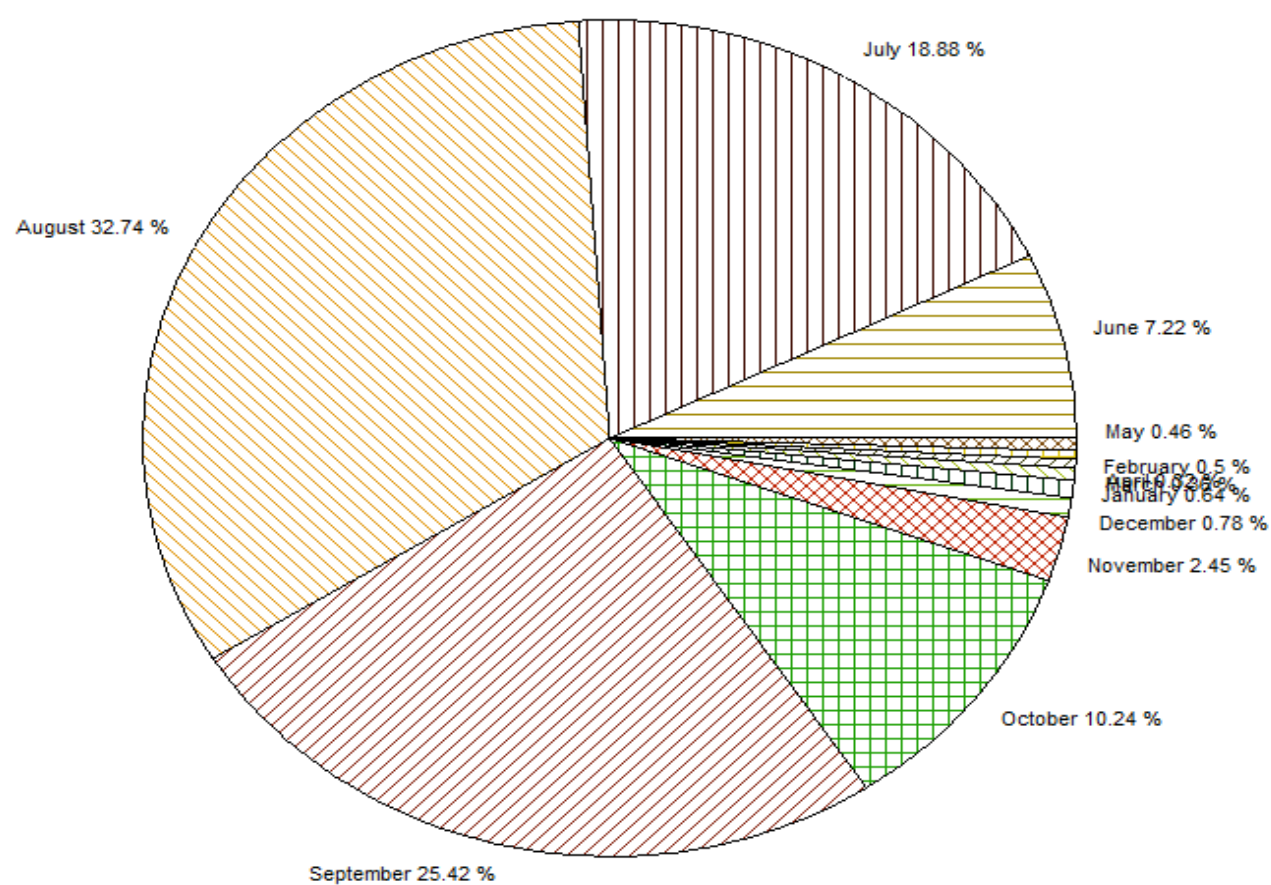
Monthly Average Runoff based on period : 1972-2016

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore

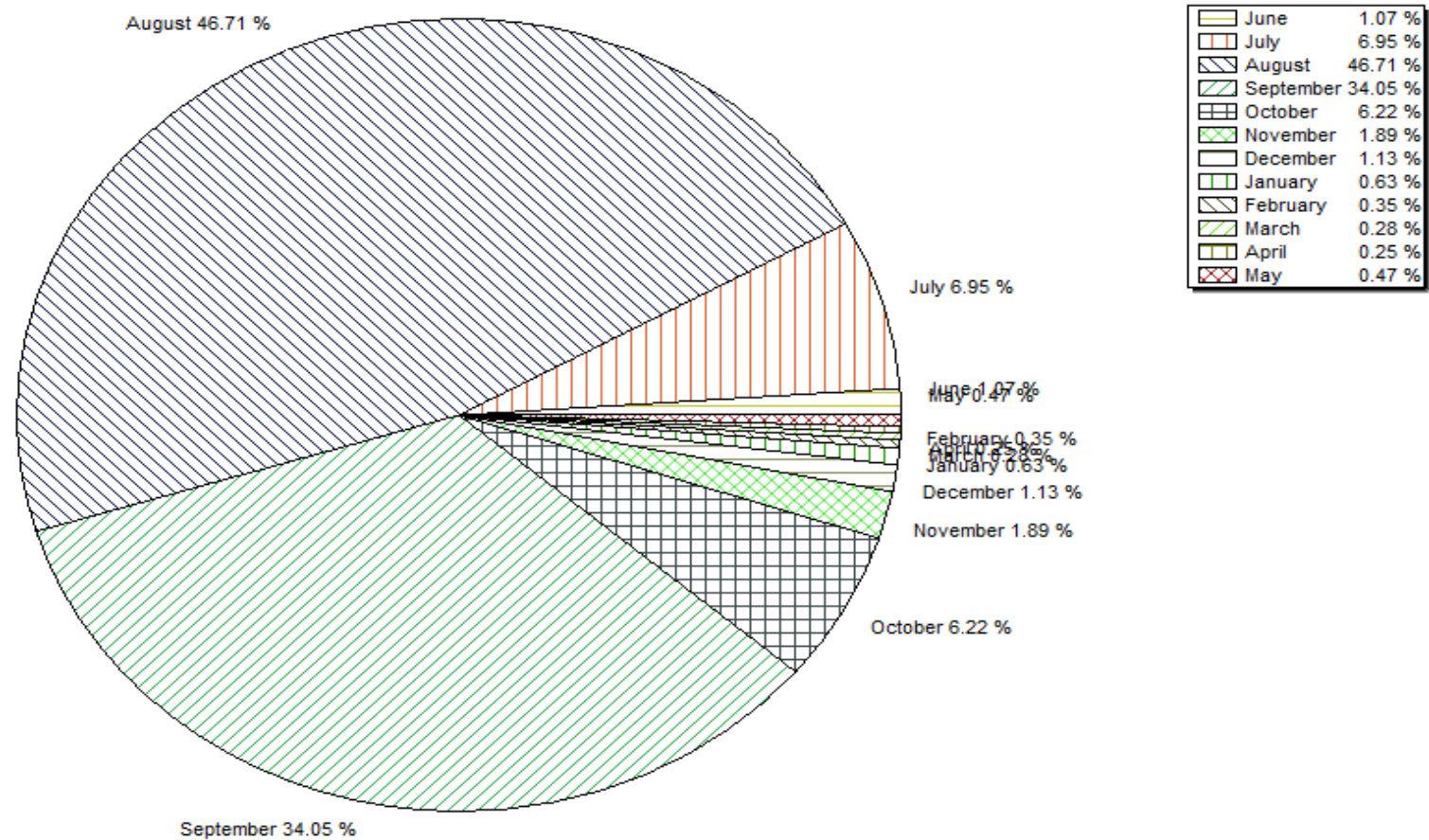


June	7.22 %
July	18.88 %
August	32.74 %
September	25.42 %
October	10.24 %
November	2.45 %
December	0.78 %
January	0.64 %
February	0.5 %
March	0.36 %
April	0.32 %
May	0.46 %

Monthly Runoff for the Year : 2016-2017

Station Name : ADITYAPUR (ESB00D5)
Local River : Kharkhai

Division : E.E., Bhubaneswar
Sub-Division : Balasore



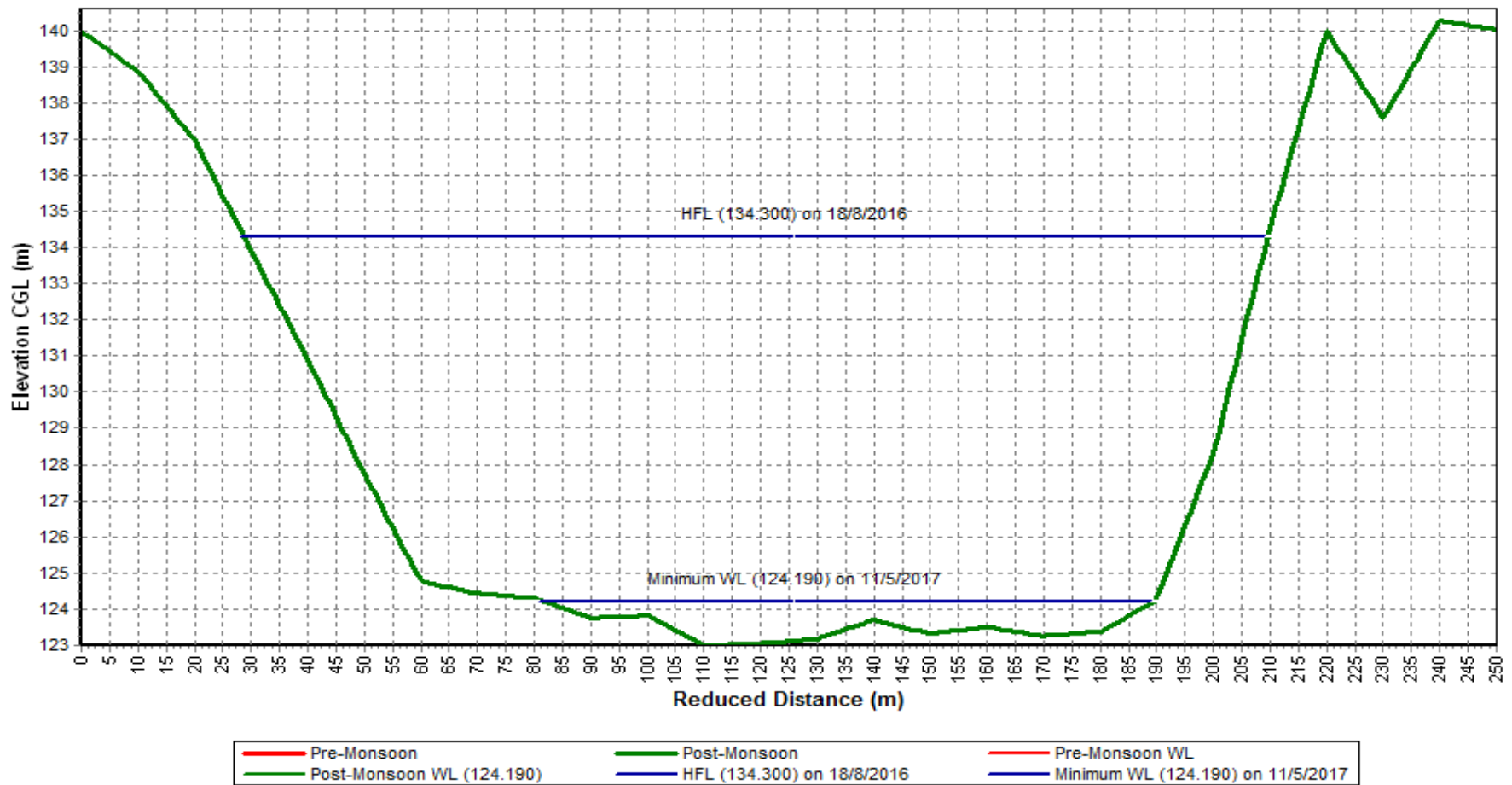
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore



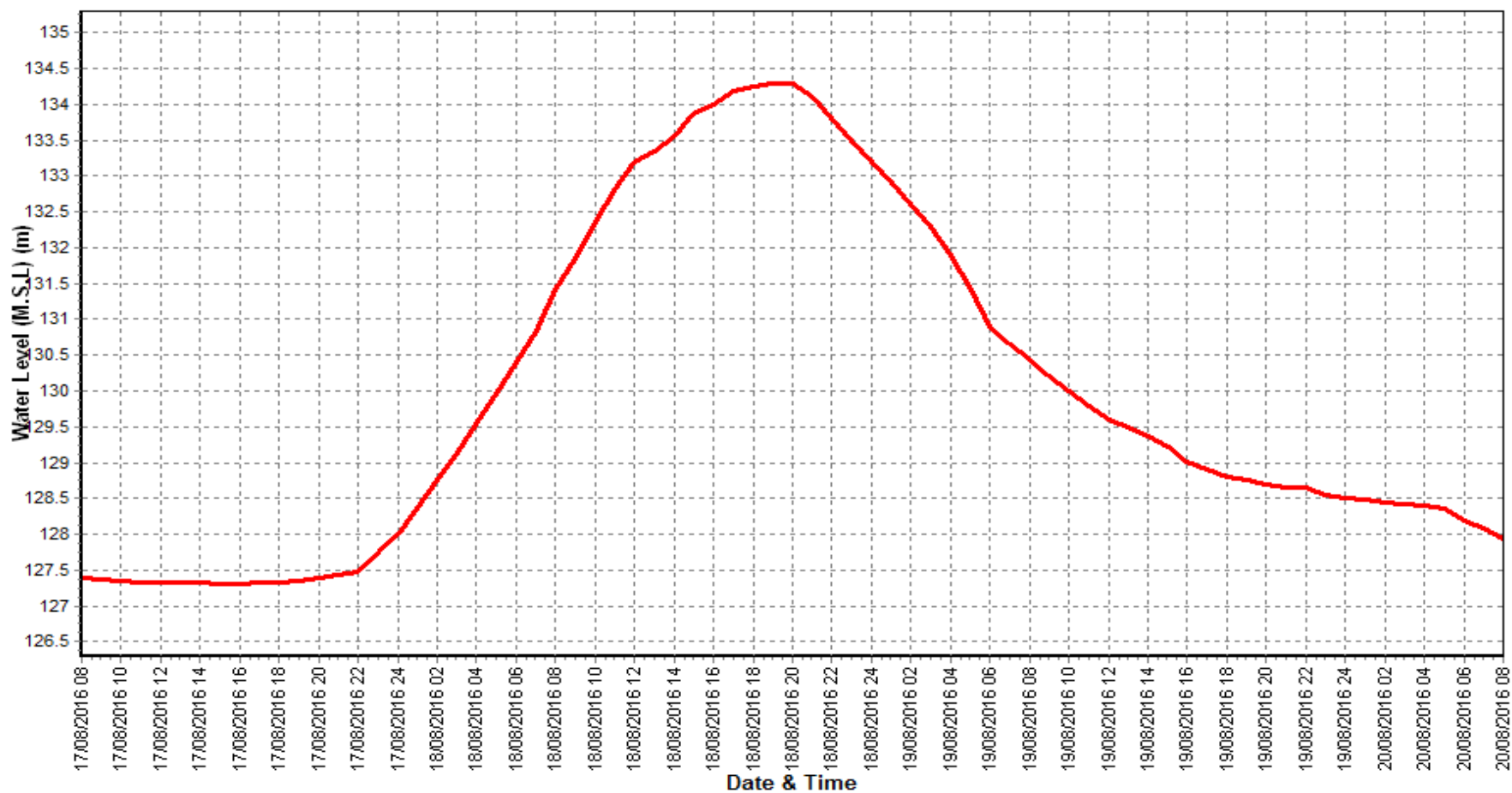
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore



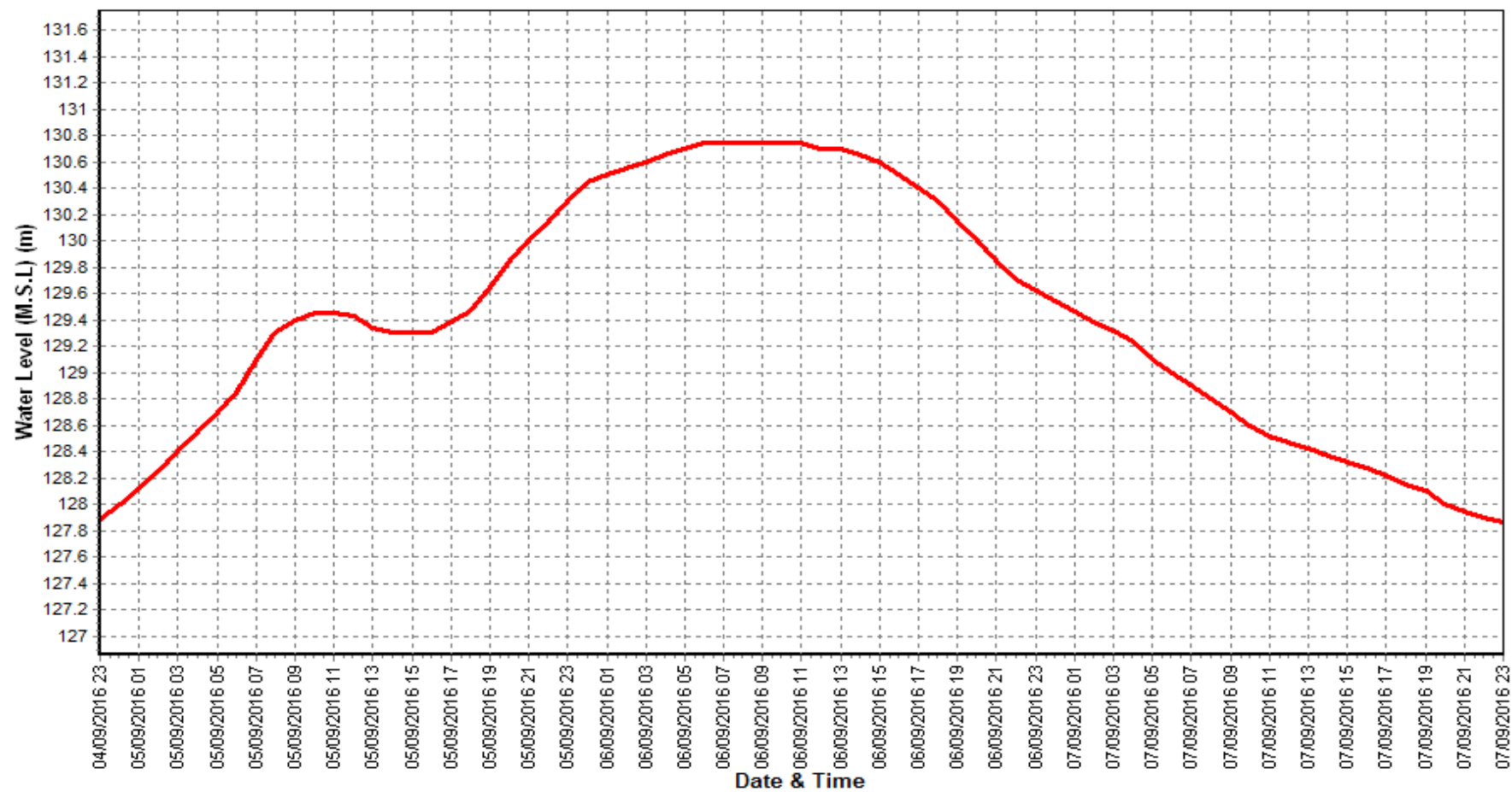
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore



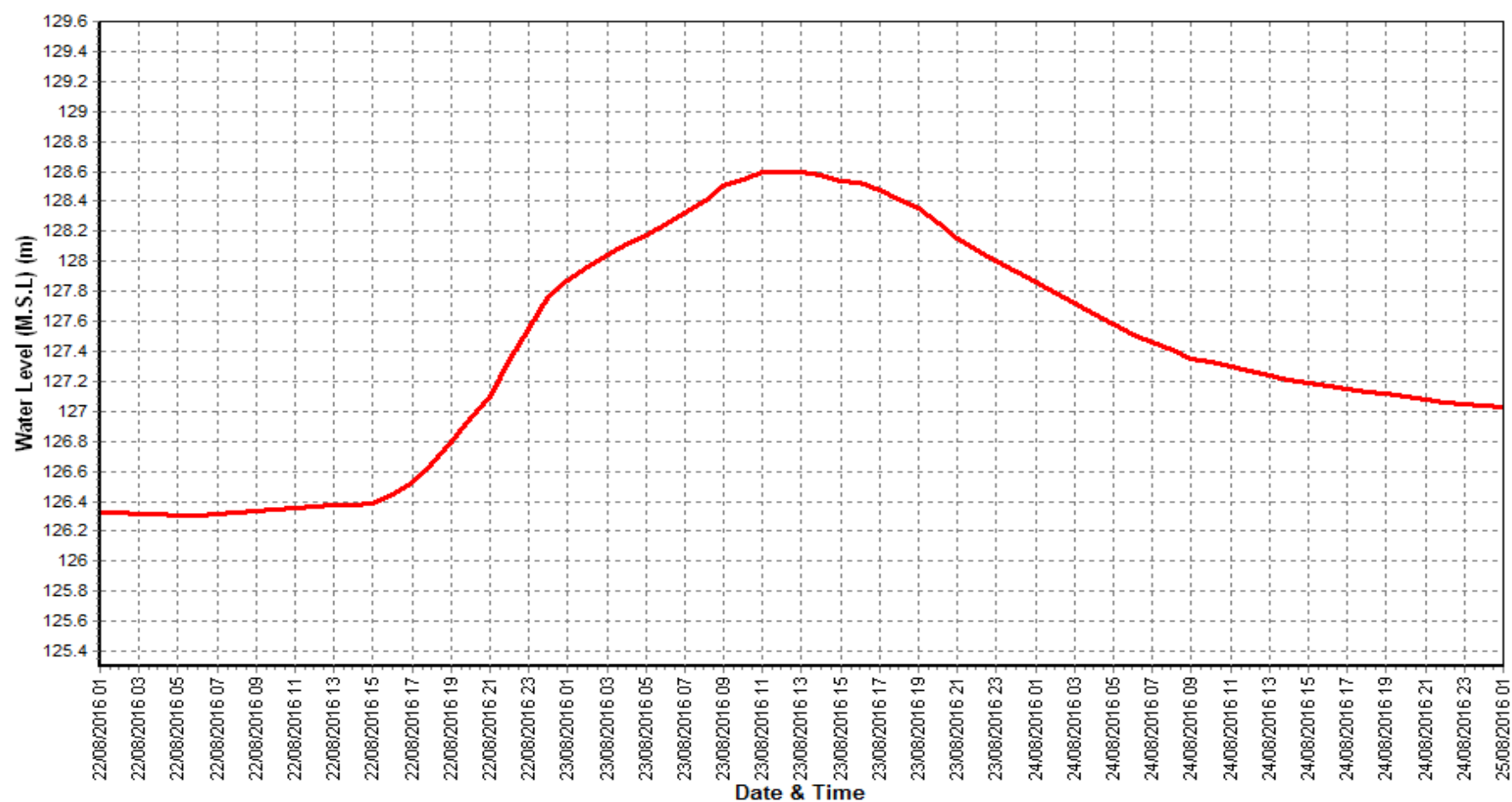
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	15.72	0.000	0.000	0.330	0.330	448	21.36	0.000	0.000	0.160	0.160	295	75.28	0.000	0.000	0.308	0.308	2003
2	9.204	0.000	0.000	0.100	0.100	80	34.71	0.000	0.000	0.156	0.156	468	246.6	0.000	0.000	0.332	0.332	7074
3	9.032	0.000	0.000	0.210	0.210	164	21.00	0.000	0.000	0.152	0.152	276	378.3	0.000	0.000	0.540	0.540	17651
4	7.398	0.000	0.000	0.206	0.206	132	139.2	0.000	0.000	0.258	0.258	3102	281.2	0.000	0.000	0.340	0.340	8261
5	8.100	0.000	0.000	0.200	0.200	140	73.02	0.000	0.000	0.264	0.264	1666	244.9	0.000	0.000	0.592	0.592	12528
6	8.127	0.000	0.000	0.094	0.094	66	48.24	0.000	0.000	0.122	0.122	509	218.1	0.000	0.000	0.250	0.250	4712
7	7.524	0.000	0.000	0.110	0.110	72	36.00	0.000	0.000	0.120	0.120	373	210.0	0.000	0.000	0.240	0.240	4355
8	6.680	0.000	0.000	0.090	0.090	52	35.58	0.000	0.000	0.150	0.150	461	371.2	0.000	0.000	0.354	0.354	11353
9	6.097	0.000	0.000	0.216	0.216	114	32.65	0.000	0.000	0.180	0.180	508	269.2	0.000	0.000	0.360	0.360	8373
10	8.219	0.000	0.000	0.090	0.090	64	23.80	0.000	0.000	0.180	0.180	370	433.4	0.000	0.000	0.238	0.238	8912
11	6.656	0.000	0.000	0.440	0.440	253	23.83	0.000	0.000	1.140	1.140	2347	778.2	0.000	0.000	0.642	0.642	43166
12	7.400	0.000	0.000	0.420	0.420	269	18.65	0.000	0.000	0.158	0.158	255	659.3	0.000	0.000	0.362	0.362	20620
13	8.255	0.000	0.000	0.270	0.270	193	41.65	0.000	0.000	0.044	0.044	158	554.1	0.000	0.000	0.536	0.536	25661
14	7.603	0.000	0.000	0.092	0.092	60	53.24	0.000	0.000	0.142	0.142	653	540.0	0.000	0.000	0.208	0.208	9704
15	7.598	0.000	0.000	0.202	0.202	133	57.88	0.000	0.000	0.128	0.128	640	520.0	0.000	0.000	0.460	0.460	20667
16	6.702	0.000	0.000	0.128	0.128	74	215.8	0.000	0.000	0.420	0.420	7830	342.9	0.000	0.000	0.208	0.208	6162
17	8.285	0.000	0.000	0.176	0.176	126	106.0	0.000	0.000	0.242	0.242	2216	598.6	0.000	0.000	0.460	0.460	23790
18	5.973	0.000	0.000	0.228	0.228	118	110.5	0.000	0.000	0.234	0.234	2234	3496	0.000	0.000	1.604	1.604	484505
19	5.800	0.000	0.000	0.106	0.106	53	72.57	0.000	0.000	0.174	0.174	1091	1843	0.000	0.000	0.636	0.636	101263
20	8.471	0.000	0.000	0.158	0.158	116	116.6	0.000	0.000	0.164	0.164	1652	689.5	0.000	0.000	0.272	0.272	16203
21	15.55	0.000	0.000	0.186	0.186	250	108.1	0.000	0.000	0.340	0.340	3175	580.0	0.000	0.000	0.270	0.270	13530
22	9.785	0.000	0.000	0.106	0.106	90	72.33	0.000	0.000	0.272	0.272	1700	337.1	0.000	0.000	0.190	0.190	5534
23	8.478	0.000	0.000	0.074	0.074	54	214.3	0.000	0.000	0.334	0.334	6185	873.4	0.000	0.000	0.288	0.288	21733
24	8.765	0.000	0.000	0.232	0.232	176	140.0	0.000	0.000	0.334	0.334	4040	598.2	0.000	0.000	0.182	0.182	9406
25	8.760	0.000	0.000	0.112	0.112	85	122.9	0.000	0.000	0.394	0.394	4183	430.6	0.000	0.000	0.174	0.174	6473
26	49.22	0.000	0.000	0.112	0.112	476	72.70	0.000	0.000	0.248	0.248	1558	553.8	0.000	0.000	0.306	0.306	14642
27	49.28	0.000	0.000	0.100	0.100	426	119.3	0.000	0.000	0.434	0.434	4472	356.0	0.000	0.000	0.212	0.212	6520
28	36.37	0.000	0.000	0.198	0.198	622	153.7	0.000	0.000	0.378	0.378	5020	320.0	0.000	0.000	0.210	0.210	5806
29	24.11	0.000	0.000	0.192	0.192	400	122.3	0.000	0.000	0.378	0.378	3993	184.5	0.000	0.000	0.242	0.242	3858
30	21.65	0.000	0.000	0.192	0.192	359	73.08	0.000	0.000	0.278	0.278	1755	119.5	0.000	0.000	0.212	0.212	2189
31							75.00	0.000	0.000	0.278	0.278	1803	92.18	0.000	0.000	0.202	0.202	1609
Ten Daily Mean																		
Ten Daily I	8.610	0.000	0.000	0.165	0.165	133	46.55	0.000	0.000	0.174	0.174	803	272.8	0.000	0.000	0.355	0.355	8522
Ten Daily II	7.274	0.000	0.000	0.222	0.222	139	81.66	0.000	0.000	0.285	0.285	1908	1002	0.000	0.000	0.539	0.539	75174
Ten Daily III	23.20	0.000	0.000	0.150	0.150	294	115.8	0.000	0.000	0.333	0.333	3444	404.1	0.000	0.000	0.226	0.226	8300
Monthly																		
Total						5662						64988						928265

Annual Sediment Load (Metric Tonnes) : 1210812

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	74.36	0.000	0.000	0.150	0.150	964	178.2	0.000	0.000	0.158	0.158	2433	32.57	0.000	0.000	0.112	0.112	315
2	73.70	0.000	0.000	0.166	0.166	1057	160.0	0.000	0.000	0.156	0.156	2157	30.83	0.000	0.000	0.056	0.056	149
3	75.11	0.000	0.000	0.080	0.080	519	147.9	0.000	0.000	0.110	0.110	1406	28.13	0.000	0.000	0.070	0.070	170
4	708.0	0.000	0.000	0.060	0.060	3670	138.2	0.000	0.000	0.116	0.116	1385	29.28	0.000	0.000	0.082	0.082	207
5	1194	0.000	0.000	0.074	0.074	7612	98.10	0.000	0.000	0.412	0.412	3492	29.06	0.000	0.000	0.066	0.066	166
6	2324	0.000	0.000	0.048	0.048	9599	80.19	0.000	0.000	0.176	0.176	1219	29.00	0.000	0.000	0.090	0.090	226
7	965.5	0.000	0.000	0.290	0.290	24192	96.47	0.000	0.000	0.116	0.116	967	26.06	0.000	0.000	0.090	0.090	203
8	708.3	0.000	0.000	0.276	0.276	16891	99.95	0.000	0.000	0.102	0.102	881	25.14	0.000	0.000	0.048	0.048	104
9	780.6	0.000	0.000	0.240	0.240	16187	98.00	0.000	0.000	0.100	0.100	847	25.06	0.000	0.000	0.076	0.076	165
10	752.2	0.000	0.000	0.144	0.144	9358	100.0	0.000	0.000	0.088	0.088	760	24.50	0.000	0.000	0.096	0.096	203
11	520.0	0.000	0.000	0.122	0.122	5481	96.00	0.000	0.000	0.086	0.086	713	24.04	0.000	0.000	0.134	0.134	278
12	290.0	0.000	0.000	0.128	0.128	3207	96.00	0.000	0.000	0.084	0.084	697	23.87	0.000	0.000	0.098	0.098	202
13	240.0	0.000	0.000	0.126	0.126	2613	77.31	0.000	0.000	0.088	0.088	588	22.00	0.000	0.000	0.096	0.096	182
14	236.1	0.000	0.000	0.134	0.134	2733	74.24	0.000	0.000	0.078	0.078	500	22.40	0.000	0.000	0.096	0.096	186
15	269.4	0.000	0.000	0.204	0.204	4748	72.19	0.000	0.000	0.116	0.116	724	22.58	0.000	0.000	0.074	0.074	144
16	238.5	0.000	0.000	0.356	0.356	7335	70.00	0.000	0.000	0.110	0.110	665	22.63	0.000	0.000	0.054	0.054	106
17	201.3	0.000	0.000	0.088	0.088	1530	54.83	0.000	0.000	0.160	0.160	758	22.45	0.000	0.000	0.092	0.092	178
18	200.0	0.000	0.000	0.138	0.138	2385	50.42	0.000	0.000	0.226	0.226	985	21.32	0.000	0.000	0.094	0.094	173
19	147.1	0.000	0.000	0.060	0.060	763	49.00	0.000	0.000	0.144	0.144	610	21.17	0.000	0.000	0.076	0.076	139
20	115.3	0.000	0.000	0.110	0.110	1096	46.29	0.000	0.000	0.060	0.060	240	21.00	0.000	0.000	0.076	0.076	138
21	142.8	0.000	0.000	0.140	0.140	1728	42.61	0.000	0.000	0.040	0.040	147	19.68	0.000	0.000	0.012	0.012	21
22	151.3	0.000	0.000	0.114	0.114	1490	41.74	0.000	0.000	0.152	0.152	548	20.12	0.000	0.000	0.080	0.080	139
23	144.4	0.000	0.000	0.172	0.172	2147	40.00	0.000	0.000	0.200	0.200	691	19.01	0.000	0.000	0.060	0.060	99
24	183.8	0.000	0.000	0.212	0.212	3366	40.08	0.000	0.000	0.142	0.142	492	18.93	0.000	0.000	0.064	0.064	105
25	180.0	0.000	0.000	0.200	0.200	3110	39.31	0.000	0.000	0.142	0.142	482	18.52	0.000	0.000	0.026	0.026	42
26	300.1	0.000	0.000	0.354	0.354	9178	37.02	0.000	0.000	0.192	0.192	614	18.57	0.000	0.000	0.011	0.011	17
27	553.8	0.000	0.000	0.256	0.256	12248	35.42	0.000	0.000	0.102	0.102	312	18.00	0.000	0.000	0.011	0.011	17
28	278.0	0.000	0.000	0.296	0.296	7111	34.15	0.000	0.000	0.168	0.168	496	18.05	0.000	0.000	0.086	0.086	134
29	246.0	0.000	0.000	0.096	0.096	2040	33.67	0.000	0.000	0.136	0.136	396	18.04	0.000	0.000	0.116	0.116	181
30	240.4	0.000	0.000	0.148	0.148	3074	33.64	0.000	0.000	0.180	0.180	523	17.72	0.000	0.000	0.072	0.072	110
31							33.16	0.000	0.000									
Ten Daily Mean																		
Ten Daily I	765.6	0.000	0.000	0.153	0.153	9005	119.7	0.000	0.000	0.153	0.153	1555	27.96	0.000	0.000	0.079	0.079	191
Ten Daily II	245.8	0.000	0.000	0.147	0.147	3189	68.63	0.000	0.000	0.115	0.115	648	22.34	0.000	0.000	0.089	0.089	173
Ten Daily III	242.1	0.000	0.000	0.199	0.199	4549	37.34	0.000	0.000	0.145	0.145	470	18.66	0.000	0.000	0.054	0.054	86
Monthly																		
Total						167431						26726						4499

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	17.94	0.000	0.000	0.174	0.174	270	9.000	0.000	0.000	0.104	0.104	81	6.117	0.000	0.000	0.098	0.098	52
2	17.77	0.000	0.000	0.174	0.174	267	9.092	0.000	0.000	0.104	0.104	82	6.104	0.000	0.000	0.098	0.098	52
3	17.77	0.000	0.000	0.174	0.174	267	9.016	0.000	0.000	0.104	0.104	81	6.029	0.000	0.000	0.098	0.098	51
4	16.60	0.000	0.000	0.174	0.174	250	8.677	0.000	0.000	0.104	0.104	78	5.838	0.000	0.000	0.098	0.098	49
5	16.69	0.000	0.000	0.174	0.174	251	8.891	0.000	0.000	0.104	0.104	80	5.600	0.000	0.000	0.098	0.098	47
6	16.66	0.000	0.000	0.174	0.174	250	8.599	0.000	0.000	0.152	0.152	113	4.785	0.000	0.000	0.098	0.098	41
7	16.16	0.000	0.000	0.174	0.174	243	8.464	0.000	0.000	0.152	0.152	111	5.597	0.000	0.000	0.098	0.098	47
8	16.13	0.000	0.000	0.174	0.174	242	8.400	0.000	0.000	0.152	0.152	110	5.591	0.000	0.000	0.098	0.098	47
9	15.71	0.000	0.000	0.174	0.174	236	8.525	0.000	0.000	0.152	0.152	112	5.537	0.000	0.000	0.098	0.098	47
10	15.74	0.000	0.000	0.178	0.178	242	8.522	0.000	0.000	0.152	0.152	112	5.555	0.000	0.000	0.104	0.104	50
11	15.70	0.000	0.000	0.178	0.178	241	8.469	0.000	0.000	0.152	0.152	111	5.530	0.000	0.000	0.104	0.104	50
12	15.70	0.000	0.000	0.178	0.178	241	8.178	0.000	0.000	0.152	0.152	107	5.100	0.000	0.000	0.104	0.104	46
13	15.67	0.000	0.000	0.178	0.178	241	8.132	0.000	0.000	0.048	0.048	34	5.158	0.000	0.000	0.104	0.104	46
14	14.87	0.000	0.000	0.178	0.178	229	8.124	0.000	0.000	0.048	0.048	34	4.445	0.000	0.000	0.104	0.104	40
15	14.84	0.000	0.000	0.178	0.178	228	8.100	0.000	0.000	0.048	0.048	34	5.113	0.000	0.000	0.104	0.104	46
16	13.93	0.000	0.000	0.178	0.178	214	8.082	0.000	0.000	0.048	0.048	34	5.086	0.000	0.000	0.104	0.104	46
17	14.30	0.000	0.000	0.112	0.112	138	8.023	0.000	0.000	0.048	0.048	33	5.118	0.000	0.000	0.092	0.092	41
18	14.30	0.000	0.000	0.112	0.112	138	7.536	0.000	0.000	0.048	0.048	31	4.530	0.000	0.000	0.092	0.092	36
19	12.83	0.000	0.000	0.112	0.112	124	7.576	0.000	0.000	0.116	0.116	76	4.500	0.000	0.000	0.092	0.092	36
20	12.83	0.000	0.000	0.112	0.112	124	7.499	0.000	0.000	0.116	0.116	75	4.094	0.000	0.000	0.092	0.092	33
21	12.21	0.000	0.000	0.112	0.112	118	6.374	0.000	0.000	0.116	0.116	64	3.460	0.000	0.000	0.092	0.092	27
22	10.52	0.000	0.000	0.112	0.112	102	6.300	0.000	0.000	0.116	0.116	63	3.446	0.000	0.000	0.092	0.092	27
23	10.50	0.000	0.000	0.104	0.104	94	6.293	0.000	0.000	0.116	0.116	63	3.450	0.000	0.000	0.196	0.196	58
24	10.27	0.000	0.000	0.104	0.104	92	6.270	0.000	0.000	0.116	0.116	63	3.400	0.000	0.000	0.196	0.196	58
25	9.900	0.000	0.000	0.104	0.104	89	6.203	0.000	0.000	0.116	0.116	62	3.455	0.000	0.000	0.196	0.196	59
26	9.982	0.000	0.000	0.104	0.104	90	6.200	0.000	0.000	0.114	0.114	61	3.400	0.000	0.000	0.196	0.196	58
27	8.355	0.000	0.000	0.104	0.104	75	6.191	0.000	0.000	0.114	0.114	61	3.436	0.000	0.000	0.196	0.196	58
28	9.386	0.000	0.000	0.104	0.104	84	6.036	0.000	0.000	0.114	0.114	59	3.476	0.000	0.000	0.196	0.196	59
29	9.216	0.000	0.000	0.104	0.104	83	6.000	0.000	0.000	0.114	0.114	59						
30	9.185	0.000	0.000	0.104	0.104	83	6.068	0.000	0.000	0.114	0.114	60						
31	9.171	0.000	0.000	0.104	0.104	82	6.167	0.000	0.000	0.114	0.114	61						
Ten Daily Mean																		
Ten Daily I	16.72	0.000	0.000	0.174	0.174	252	8.719	0.000	0.000	0.128	0.128	96	5.675	0.000	0.000	0.099	0.099	48
Ten Daily II	14.50	0.000	0.000	0.152	0.152	192	7.972	0.000	0.000	0.082	0.082	57	4.867	0.000	0.000	0.099	0.099	42
Ten Daily III	9.882	0.000	0.000	0.105	0.105	90	6.191	0.000	0.000	0.115	0.115	61	3.440	0.000	0.000	0.170	0.170	51
Monthly																		
Total						5431						2205						1306

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	3.423	0.000	0.000	0.104	0.104	31	3.243	0.000	0.000	0.140	0.140	39	2.821	0.000	0.000	0.160	0.160	39
2	3.486	0.000	0.000	0.104	0.104	31	3.200	0.000	0.000	0.140	0.140	39	2.811	0.000	0.000	0.160	0.160	39
3	3.423	0.000	0.000	0.104	0.104	31	3.211	0.000	0.000	0.140	0.140	39	3.309	0.000	0.000	0.160	0.160	46
4	3.458	0.000	0.000	0.104	0.104	31	3.193	0.000	0.000	0.140	0.140	39	3.281	0.000	0.000	0.160	0.160	45
5	3.460	0.000	0.000	0.104	0.104	31	3.188	0.000	0.000	0.140	0.140	39	3.037	0.000	0.000	0.160	0.160	42
6	3.463	0.000	0.000	0.104	0.104	31	3.396	0.000	0.000	0.158	0.158	46	3.011	0.000	0.000	0.160	0.160	42
7	3.413	0.000	0.000	0.104	0.104	31	3.382	0.000	0.000	0.158	0.158	46	3.010	0.000	0.000	0.160	0.160	42
8	3.395	0.000	0.000	0.104	0.104	31	3.328	0.000	0.000	0.158	0.158	45	2.840	0.000	0.000	0.160	0.160	39
9	3.386	0.000	0.000	0.104	0.104	30	3.320	0.000	0.000	0.158	0.158	45	3.401	0.000	0.000	0.160	0.160	47
10	3.348	0.000	0.000	0.080	0.080	23	3.395	0.000	0.000	0.158	0.158	46	3.310	0.000	0.000	0.160	0.160	46
11	3.358	0.000	0.000	0.080	0.080	23	3.380	0.000	0.000	0.158	0.158	46	3.840	0.000	0.000	0.146	0.146	48
12	3.360	0.000	0.000	0.080	0.080	23	3.322	0.000	0.000	0.158	0.158	45	4.513	0.000	0.000	0.146	0.146	57
13	3.360	0.000	0.000	0.080	0.080	23	3.307	0.000	0.000	0.158	0.158	45	4.504	0.000	0.000	0.146	0.146	57
14	3.297	0.000	0.000	0.080	0.080	23	3.290	0.000	0.000	0.192	0.192	55	2.810	0.000	0.000	0.146	0.146	35
15	3.371	0.000	0.000	0.080	0.080	23	3.295	0.000	0.000	0.192	0.192	55	3.823	0.000	0.000	0.146	0.146	48
16	3.351	0.000	0.000	0.166	0.166	48	3.280	0.000	0.000	0.192	0.192	54	4.766	0.000	0.000	0.146	0.146	60
17	3.284	0.000	0.000	0.166	0.166	47	3.276	0.000	0.000	0.192	0.192	54	4.732	0.000	0.000	0.146	0.146	60
18	3.278	0.000	0.000	0.166	0.166	47	3.193	0.000	0.000	0.192	0.192	53	4.711	0.000	0.000	0.146	0.146	59
19	3.280	0.000	0.000	0.166	0.166	47	3.143	0.000	0.000	0.192	0.192	52	4.757	0.000	0.000	0.116	0.116	48
20	3.466	0.000	0.000	0.166	0.166	50	3.149	0.000	0.000	0.192	0.192	52	4.819	0.000	0.000	0.116	0.116	48
21	3.463	0.000	0.000	0.166	0.166	50	3.154	0.000	0.000	0.086	0.086	23	4.250	0.000	0.000	0.116	0.116	43
22	3.487	0.000	0.000	0.166	0.166	50	3.147	0.000	0.000	0.086	0.086	23	4.725	0.000	0.000	0.116	0.116	47
23	3.505	0.000	0.000	0.166	0.166	50	3.100	0.000	0.000	0.086	0.086	23	5.086	0.000	0.000	0.116	0.116	51
24	3.518	0.000	0.000	0.166	0.166	50	3.124	0.000	0.000	0.086	0.086	23	4.251	0.000	0.000	0.116	0.116	43
25	3.395	0.000	0.000	0.166	0.166	49	3.111	0.000	0.000	0.086	0.086	23	3.410	0.000	0.000	0.116	0.116	34
26	3.400	0.000	0.000	0.166	0.166	49	3.080	0.000	0.000	0.086	0.086	23	3.428	0.000	0.000	0.176	0.176	52
27	3.394	0.000	0.000	0.166	0.166	49	2.884	0.000	0.000	0.086	0.086	21	5.653	0.000	0.000	0.116	0.116	57
28	3.397	0.000	0.000	0.166	0.166	49	2.867	0.000	0.000	0.086	0.086	21	4.760	0.000	0.000	0.116	0.116	48
29	3.356	0.000	0.000	0.166	0.166	48	2.827	0.000	0.000	0.086	0.086	21	13.64	0.000	0.000	0.116	0.116	137
30	3.308	0.000	0.000	0.166	0.166	47	2.820	0.000	0.000	0.086	0.086	21	23.64	0.000	0.000	0.116	0.116	237
31	3.279	0.000	0.000	0.166	0.166	47							25.01	0.000	0.000	0.116	0.116	251
Ten Daily Mean																		
Ten Daily I	3.426	0.000	0.000	0.102	0.102	30	3.286	0.000	0.000	0.149	0.149	42	3.083	0.000	0.000	0.160	0.160	43
Ten Daily II	3.341	0.000	0.000	0.123	0.123	35	3.264	0.000	0.000	0.182	0.182	51	4.328	0.000	0.000	0.140	0.140	52
Ten Daily III	3.409	0.000	0.000	0.166	0.166	49	3.011	0.000	0.000	0.086	0.086	22	8.896	0.000	0.000	0.121	0.121	91
Monthly																		
Total						1193						1159						1946

Annual Sediment Load for period : 1975-2017

Station Name : ADITYAPUR (ESB00D5)

Division : E.E., Bhubaneswar

Local River : Kharkhai

Sub-Division : Balasore

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1975-1976	1151131	1494	1152626	3336
1976-1977	1256133	823	1256956	1883
1977-1978	4835077	6078	4841155	4409
1978-1979	288002	340	288342	828
1979-1980	524423	3776	528199	627
1980-1981	928082	45479	973560	1674
1981-1982	2043532	23682	2067214	2065
1982-1983	606944	5103	612047	1492
1983-1984	2014081	3792	2017872	2522
1984-1985	4573074	681	4573755	4779
1985-1986	2756086	13046	2769133	3988
1986-1987	864289	10743	875032	1944
1987-1988	1122440	2354	1124794	2108
1988-1989	737224	22272	759495	2117
1989-1990	1831524	12668	1844192	2740
1990-1991	1543769	5419	1549187	4804
1991-1992	438272	1940	440211	2107
1992-1993	222561	1742	224302	1351
1993-1994	765125	2578	767703	2754
1994-1995	3535876	43063	3578939	6253
1995-1996	873616	1403	875019	3716
1996-1997	614582	139	614722	2974
1997-1998	1805168	18218	1823387	4859
1998-1999	301871	813	302684	1587
1999-2000	1745055	1979	1747034	4391
2000-2001	190605	406	191011	1453
2001-2002	944168	956	945124	3814
2002-2003	433997	2854	436851	1878
2003-2004	232565	1772	234337	1597
2004-2005	732934	2823	735757	2065
2005-2006	345089	4394	349484	1201
2006-2007	2151212	1839	2153051	3804
2007-2008	1527750	1819	1529569	4575
2008-2009	1203124	1399	1204523	3474
2009-2010	1054676	582	1055257	2231
2010-2011	12288	523	12811	234
2011-2012	43578	366	43944	3211
2012-2013	33992	827	34820	2149
2013-2014	809099	13496	822595	4908
2014-2015	772606	7117	779724	2935
2015-2016	369441	7013	376454	1696
2016-2017	1197572	13240	1210812	3181

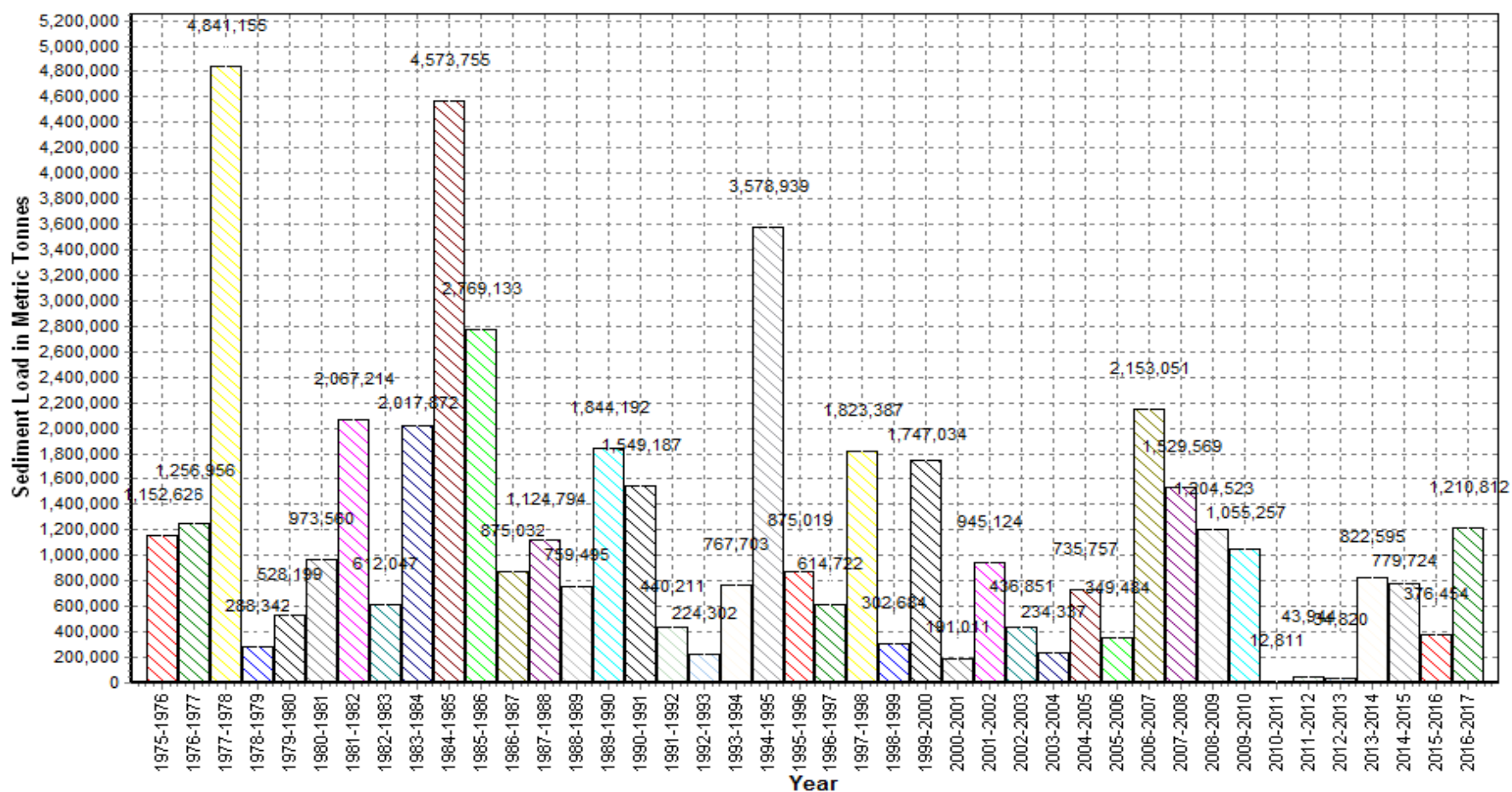
Annual Sediment Load for the period: 1975-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

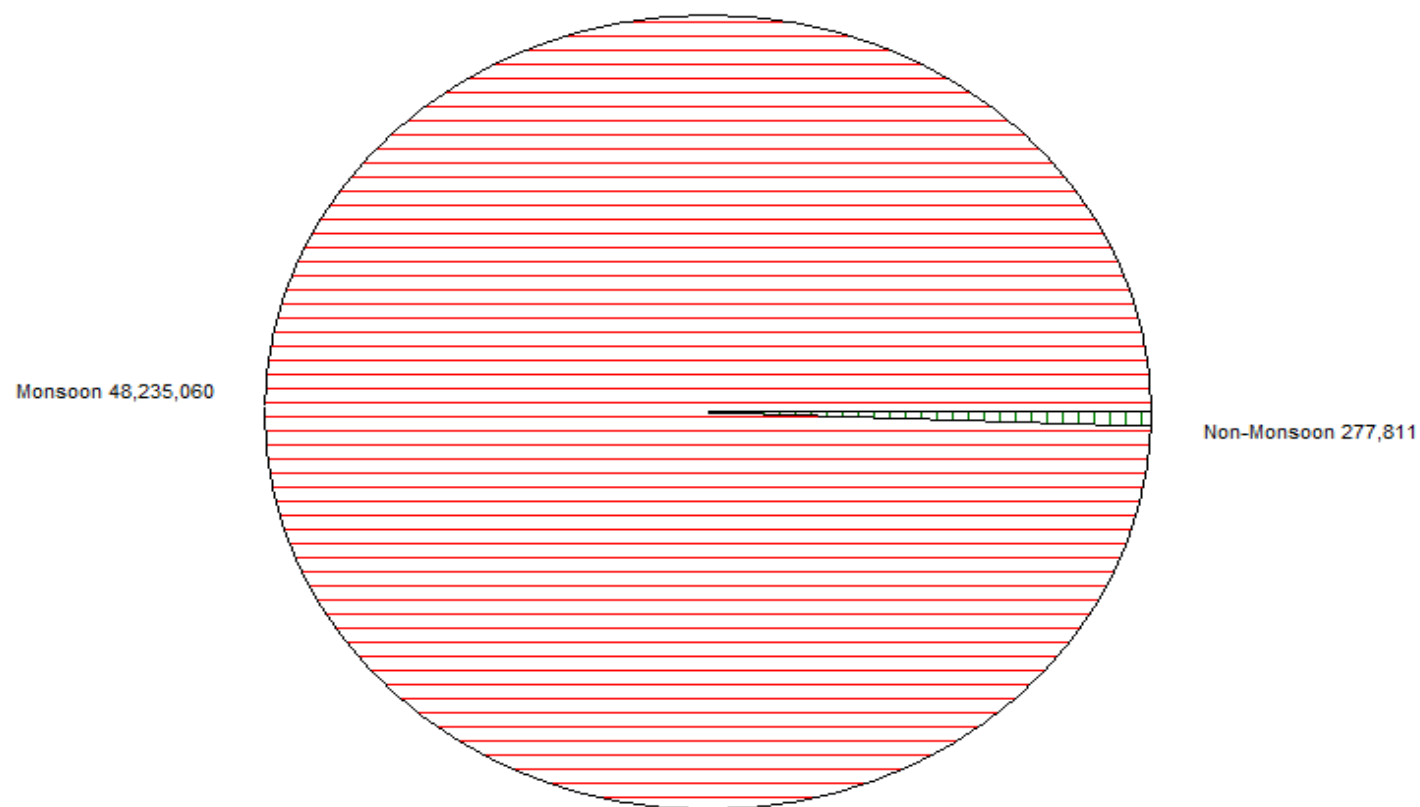
Sub-Division : Balasore



Seasonal Sediment Load for the period : 1975-2016

Station Name : ADITYAPUR (ESB00D5)
Local River : Kharkhai

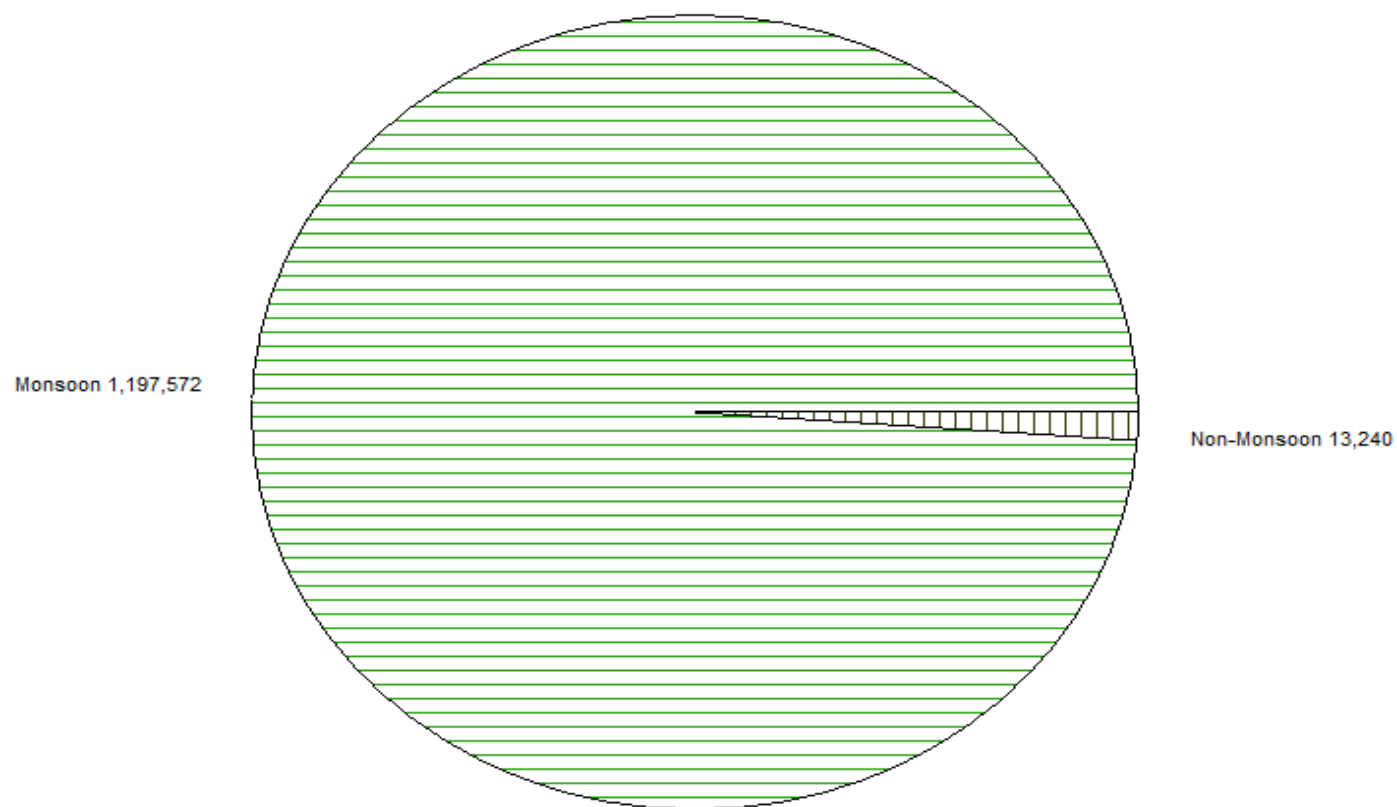
Division : E.E., Bhubaneswar
Sub-Division : Balasore



Seasonal Sediment Load for the Year: 2016-2017

Station Name : ADITYAPUR (ESB00D5)
Local River : Kharkhai

Division : E.E., Bhubaneswar
Sub-Division : Balasore



Water Quality Datasheet for the period : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore

River Water Analysis

S.No	Parameters	6/1/2016 A	7/2/2016 A	8/1/2016 A	9/1/2016 A	10/1/2016 A	11/1/2016 A	12/1/2016 A	1/2/2017 A	2/1/2017 A	3/1/2017 A	4/1/2017 A	5/1/2017 A
PHYSICAL													
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	599	291	212	222	243	612	868	560	648	891	242	945
4	EC_GEN (µmho/cm)	602	295	217	227	246	616	870	561	650	892	249	840
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.3	7.7	7.6	7.9	7.8	7.8	7.8	7.7	7.4	7.4	7.6	7.9
7	pH_GEN (pH units)	7.4	7.7	7.7	8.0	7.9	8.0	7.9	7.8	7.5	7.5	7.7	8.0
8	Temp (deg C)	29.5	31.0	30.5	31.5	30.0	26.0	21.0	18.0	18.5	23.0	28.0	30.5
CHEMICAL													
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	111	92	97	97	88	92	88	92	83	134	139	108
3	B (mg/L)	0.02	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01
4	Ca (mg/L)	67	64	63	61	53	48	55	56	56	55	51	45
5	Cl (mg/L)	50.9	17.0	50.9	49.0	9.4	13.2	13.2	22.6	24.5	77.3	66.0	56.6
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	1.0	0.4	0.1	0.4	0.5	0.8	0.8	0.6	0.4	0.4	0.4
9	HCO3 (mg/L)	135	113	118	118	107	113	107	113	101	163	169	132
10	K (mg/L)	7.5	8.7	7.2	7.3	3.7	17.0	20.1	45.0	2.4	4.6	2.9	12.0
11	Mg (mg/L)	23.3	22.4	23.3	22.4	21.3	20.4	19.4	20.4	20.4	21.4	21.4	15.6
12	Na (mg/L)	40.1	38.0	35.4	30.6	26.3	60.3	62.5	54.5	48.0	68.6	62.1	64.2
13	NO2+NO3 (mg N/L)	0.88	0.84	1.08	0.85	1.12	0.95	1.35	1.08	1.11	1.12	1.08	1.06
14	NO2-N (mgN/L)	0.01	0.01	0.00	0.07	0.01	0.03	0.00	0.03	0.01	0.03	0.03	0.01
15	NO3-N (mgN/L)	0.87	0.83	1.08	0.78	1.11	0.92	1.35	1.05	1.09	1.09	1.05	1.05
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	7.0	7.0	6.0	6.0	7.0	7.0	6.0	7.0	8.0	8.0	8.0	8.0
18	SO4 (mg/L)	56.5	58.7	59.4	60.0	1.3	17.0	17.0	16.8	17.3	74.7	75.4	67.8
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	99.0	2.4	1.2	1.2	0.4	0.8	0.2	0.2	39.0	19.0	79.0	1.4
2	DO (mg/L)	8.1	12.7	4.6	7.2	8.7	6.6	5.4	4.4	10.7	8.5	1.2	1.6
3	DO_SAT% (%)	106	171	61	96	116	81	60	46	113	100	15	21
4	FCol-MPN (MPN/100mL)						60	270	90	40	60	90	90
5	Tcol-MPN (MPN/100mL)						340	340	170	170	90	140	140
TRACE & TOXIC													
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO3/L)	168	160	156	152	132	120	136	140	140	137	128	112
2	HAR_Total (mgCaCO3/L)	266	253	254	245	221	205	217	225	225	226	217	177
3	Na% (%)	24	24	23	21	20	37	36	30	31	39	38	42
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.1	1.0	1.0	0.9	0.8	1.8	1.8	1.6	1.4	2.0	1.8	2.1
PESTICIDES													

Water Quality Summary for the period : 2016-2017

Station Name : ADITYAPUR (ESB00D5)

Division : E.E., Bhubaneswar

Local River : Kharkhai

Sub-Division : Balasore

River Water Summary					
S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	12	945	212	528
3	EC_GEN (μmho/cm)	12	892	217	522
4	pH_FLD (pH units)	12	7.9	7.3	7.7
5	pH_GEN (pH units)	12	8.0	7.4	7.7
6	Temp (deg C)	12	31.5	18.0	26.5
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	139	83	102
3	B (mg/L)	12	0.03	0.01	0.01
4	Ca (mg/L)	12	67	45	56
5	Cl (mg/L)	12	77.3	9.4	37.6
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	1.0	0.1	0.5
9	HCO3 (mg/L)	12	169	101	124
10	K (mg/L)	12	45.0	2.4	11.5
11	Mg (mg/L)	12	23.3	15.6	21
12	Na (mg/L)	12	68.6	26.3	49.2
13	NO2+NO3 (mg N/L)	12	1.35	0.84	1.04
14	NO2-N (mgN/L)	12	0.07	0.00	0.02
15	NO3-N (mgN/L)	12	1.35	0.78	1.02
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	8.0	6.0	7.1
18	SO4 (mg/L)	12	75.4	1.3	43.5
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	99.0	0.2	20.3
2	DO (mg/L)	12	12.7	1.2	6.6
3	DO_SAT% (%)	12	171	15	82
4	FCol-MPN (MPN/100mL)	7	270	40	100
5	Tcol-MPN (MPN/100mL)	7	340	90	199
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	168	112	140
2	HAR_Total (mgCaCO3/L)	12	266	177	228
3	Na% (%)	12	42	20	30
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	2.1	0.8	1.4
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

River Water

Division : E.E., Bhubaneswar

Sub-Division : Balasore

S.No	Parameters	Flood Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	267	274	270	224	199	233		243	302	266	324	160	257	510	313	268	240	253	272	288	302
3	EC_GEN (µmho/cm)	267	274	270	219	195	227		243	302	266	324	160	257	507	317	268	240	253	268	290	298
4	pH_FLD (pH units)	7.7	7.7	7.9	7.9	8.0	7.9		7.9	8.0	8.3	7.8	7.6	8.0	7.6	7.7	7.9	7.7	8.2	8.1	8.0	8.4
5	pH_GEN (pH units)	7.7	7.7	7.9	7.9	8.1	8.0		7.9	8.0	8.3	7.8	7.6	8.0	7.5	7.7	7.9	7.7	8.2	8.2	8.1	8.4
6	Temp (deg C)	28.8	28.6	28.9	28.6	28.4	28.1		27.5	29.3	28.0	30.4	24.5	30.5	30.4	30.5	21.6	20.0	17.5	17.8	18.3	15.3
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0		2.4	0.8	11.0		0.0	0.0	0.0	0.0					0.0	
2	ALK-TOT (mgCaCO3/L)						69		64	90	101		79	74	88	97					95	
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	
4	Ca (mg/L)	29	30	26	26	22	23		23	29	21	27	21	21	34	62	30	26	25	28	33	28
5	Cl (mg/L)	22.2	17.4	24.8	18.6	15.7	17.9		18.3	24.5	21.5	25.6	23.8	21.5	23.0	35.5	16.1	19.1	15.7	23.5	25.6	21.7
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		2.9	1.0	13.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
7	F (mg/L)	0.13	0.20	0.60	0.00	0.00	0.19		0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.00	0.52	0.00	0.00	0.30
8	Fe (mg/L)			0.1	0.1	0.2	0.1		0.2	0.1	0.0	1.3	0.1	0.4	0.4	0.5			0.1	0.2	0.2	0.2
9	HCO3 (mg/L)	102	112	113	85	86	84		72	108	96	99	88	96	107	118	123	101	122	113	110	116
10	K (mg/L)	3.0	1.9	4.6	2.2	1.7	2.0		1.9	3.7	1.7	2.9	1.7	1.7	2.1	6.9	3.5	2.1	1.4	2.6	1.9	3.4
11	Mg (mg/L)	8.2	8.2	7.8	5.9	5.1	6.6		8.7	9.7	7.8	8.4	23.9	7.8	7.8	22.5	7.3	4.9	9.5	5.8	5.4	9.9
12	Na (mg/L)	13.9	12.1	16.7	11.6	10.6	12.5		10.5	15.3	12.9	14.3	13.1	12.9	13.0	34.1	12.1	14.2	10.3	16.0	18.0	14.8
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	1.95	1.00	0.63	2.49	0.95	2.44		1.14	0.69	0.40	0.76	0.83	1.17	0.94	0.96	2.18	0.56	0.59	1.03	3.87	0.74
15	NO2-N (mgN/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.07	0.00	0.01	0.02	0.02	0.02	0.00	0.00	0.00	0.00	0.00	
16	NO3-N (mgN/L)	1.95	1.00	0.63	2.49	0.95	2.44		1.14	0.69	0.33	0.76	0.82	1.15	0.92	0.93	2.18	0.56	0.59	1.03	3.87	0.74
17	o-PO4-P (mg P/L)				0.000	0.000	0.000		0.020											0.000	0.013	0.000
18	P-Tot (mgP/L)	0.001	0.001	0.041	0.001	0.001	0.001		0.003	0.002	0.010	0.001	0.001	0.001	0.003	0.010	0.001	0.001	0.001	0.001	0.014	0.001
19	SiO2 (mg/L)	14.6	15.8	30.1	28.3	10.2	10.5		9.0	7.6	9.0	11.6	9.5	6.8	5.6	6.6	15.1	12.9	31.9	21.8	14.6	10.5
20	SO4 (mg/L)	9.1	13.8	6.2	10.6	3.2	9.9		18.2	19.0	12.7	22.7	28.1	38.9	8.0	47.2	4.6	1.7	3.2	1.5	3.1	20.3
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.5	1.0	1.1	1.2	1.0	1.3		1.5	1.9	2.1	8.7	0.7	0.6	12.7	20.8	1.3	1.7	1.4	1.3	1.5	1.5
2	DO (mg/L)	6.1	5.6	5.5	6.7	6.6	6.6		6.2	5.6	6.2	5.3	6.7	5.5	4.9	8.3	7.4	8.2	8.2	7.8	8.0	8.6
3	DO_SAT% (%)	80	72	71	86	85	85		79	73	79	70	79	73	65	110	84	90	86	81	84	84
4	Fcol-MPN (MPN/100mL)																					
5	Tcol-MPN (MPN/100mL)																					
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	72	74	64	64	55	58		57	71	52	67	53	52	85	154	75	64	63	70	82	71
2	HAR_Total (mgCaCO3/L)	106	108	93	89	76	86		93	112	84	101	152	84	117	248	105	84	111	94	105	112
3	Na% (%)	25	21	24	23	22	24		19	22	22	19	24	22	18	22	19	26	18	26	27	24
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.4	0.1	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0
5	SAR (-)	0.6	0.5	0.7	0.5	0.5	0.6		0.5	0.6	0.6	0.6	0.6	0.6	0.5	0.9	0.5	0.7	0.4	0.7	0.8	0.7
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ADITYAPUR (ESB00D5)

Local River : Kharkhai

River Water

Division : E.E., Bhubaneswar

Sub-Division : Balasore

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		368	623	308	328	272	440	959	672	503	357	343	483	358	390		943	1723	623	740	453
3	EC_GEN (µmho/cm)		368	623	308	328	272	440	957	674	503	357	347	480	357	403		943	1723	623	740	453
4	pH_FLD (pH units)		7.9	7.6	8.0	7.5	8.1	8.3	7.6	7.7	7.9	7.7	7.5	7.6	8.1	8.2		7.8	8.4	7.5	7.3	7.6
5	pH_GEN (pH units)		7.9	7.6	8.0	7.5	8.1	8.3	7.6	7.8	7.9	7.7	7.7	7.7	8.1	8.2		7.8	8.4	7.5	7.3	7.6
6	Temp (deg C)		18.6	20.3	19.8	18.9	21.6	20.5	21.6	20.9	25.7	24.7	26.3	27.3	23.3	24.7		28.7	24.7	27.3	27.8	27.0
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	0.0			0.0	0.0	0.0					0.0	0.0		5.3	41.0	0.0		
2	ALK-TOT (mgCaCO3/L)		84	129	128			111	88	89					194	132		176	265	143		
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00
4	Ca (mg/L)		37	50	34	29	25	31	31	54	60	40	38	46	42	49		67	100	53	42	38
5	Cl (mg/L)		22.8	53.7	18.4	26.4	24.9	16.5	15.1	18.4	36.2	30.0	22.7	35.7	24.2	26.2		90.4	171.0	44.0	38.4	36.4
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		6.4	32.9	0.0	0.0	0.0
7	F (mg/L)		0.18	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.59	0.00	0.17	0.00	0.22	0.05		0.12	0.05	0.05	0.06	0.05
8	Fe (mg/L)		0.2	0.1	0.0	1.3	0.1	0.2	0.4	0.7			0.1	0.1	0.3	0.1		0.3	0.1	0.0	1.4	0.1
9	HCO3 (mg/L)		107	152	156	144	121	135	107	108	203	103	165	183	143	161		202	299	175	106	149
10	K (mg/L)		2.1	4.0	1.9	2.5	2.4	1.6	2.4	21.1	4.8	2.3	2.1	4.2	3.2	3.9		12.5	19.4	7.0	3.6	5.2
11	Mg (mg/L)		12.4	20.7	12.6	13.1	6.4	9.2	8.0	20.2	10.7	7.1	11.7	17.7	9.5	9.4		27.9	49.3	18.1	16.9	15.0
12	Na (mg/L)		15.3	37.9	15.1	20.5	18.7	13.3	16.6	56.3	26.2	19.5	14.4	23.9	16.8	16.2		69.3	125.1	38.1	30.9	27.7
13	NH3-N (mg N/L)															0.05						
14	NO2+NO3 (mg N/L)		4.03	0.79	0.39	0.83	0.99	0.98	0.97	1.12	4.90	7.48	0.71	4.00	5.52	2.49		9.44	1.93	0.38	0.94	0.96
15	NO2-N (mgN/L)		0.00	0.00	0.07	0.00	0.00	0.00	0.01	0.02	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.07	0.00	0.00
16	NO3-N (mgN/L)		4.03	0.79	0.33	0.83	0.99	0.98	0.96	1.10	4.90	7.48	0.71	4.00	5.52	2.49		9.44	1.93	0.31	0.94	0.95
17	o-PO4-P (mg P/L)		0.035										0.005	0.038	0.003			0.180				
18	P-Tot (mgP/L)		0.001	0.001	0.010	0.001	0.001	0.001	0.010	0.010	0.001	0.001	0.001	0.038	0.004	0.050		0.001	0.001	0.010	0.001	0.001
19	SiO2 (mg/L)		9.5	7.4	9.0	11.3	9.5	5.3	5.5	7.0	23.4	18.7	27.2	29.7	16.3	12.3		9.9	7.9	9.3	12.7	11.1
20	SO4 (mg/L)		34.8	82.3	14.8	16.9	35.1	45.3	10.9	17.0	20.9	13.1	2.3	22.6	8.5	12.7		108.4	228.3	50.0	54.4	45.5
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		2.0	1.9	2.7	1.8	0.5	7.4	0.9	10.0	1.4	13.7	1.6	17.3	1.4	2.1		20.0	8.7	18.0	0.9	0.8
2	DO (mg/L)		7.6	6.2	6.7	7.5	8.1	7.6	5.7	6.8	3.2	6.9	6.1	5.8	6.6	5.4		0.0	2.5	1.9	5.3	4.3
3	DO_SAT% (%)		81	69	73	81	92	84	64	75	40	83	76	74	76	64		0	28	21	68	54
4	Fcol-MPN (MPN/100mL)									115												
5	Tcol-MPN (MPN/100mL)									255												
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		93	124	86	73	62	78	77	134	149	100	94	114	106	122		167	250	132	105	96
2	HAR_Total (mgCaCO3/L)		145	210	139	128	88	117	111	218	194	130	132	188	145	161		283	455	208	175	158
3	Na% (%)		18	26	19	25	31	19	24	33	22	25	17	21	20	19		34	37	28	27	27
4	RSC (-)		0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
5	SAR (-)		0.5	1.1	0.6	0.8	0.9	0.5	0.7	1.7	0.8	0.7	0.5	0.8	0.6	0.6		1.8	2.6	1.2	1.0	1.0
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : ADITYAPUR (ESB00D5)

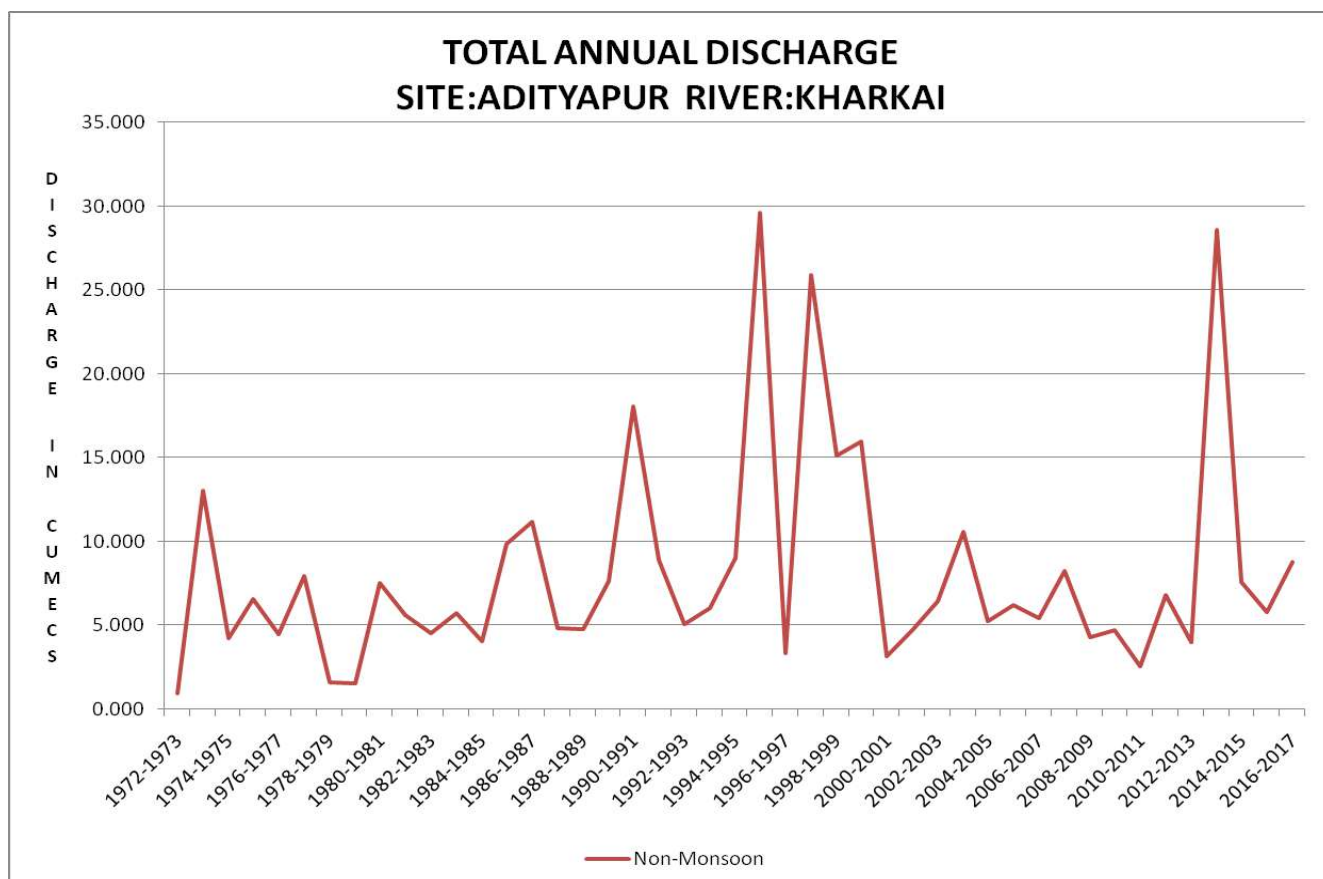
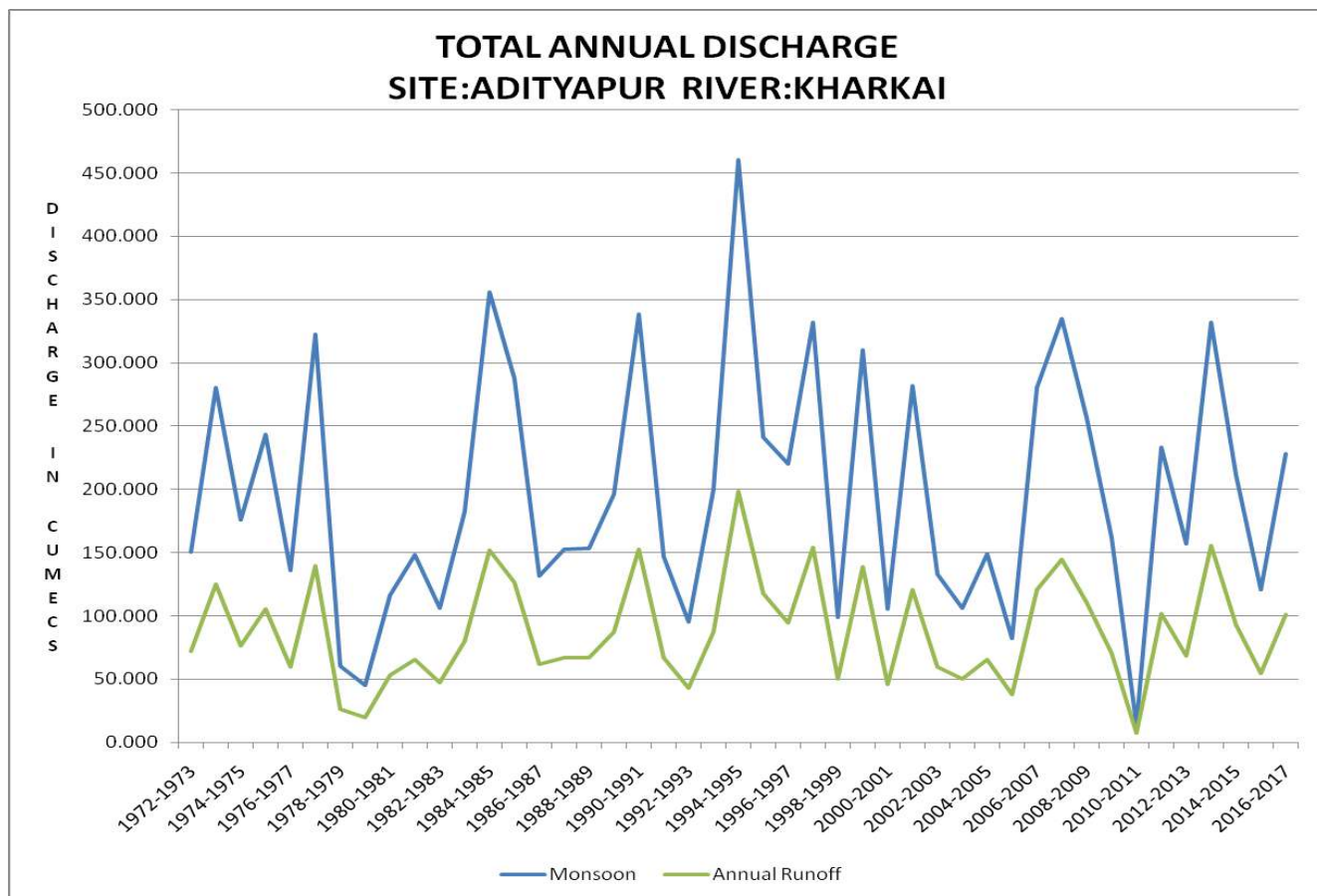
Local River : Kharkhai

Division : E.E., Bhubaneswar

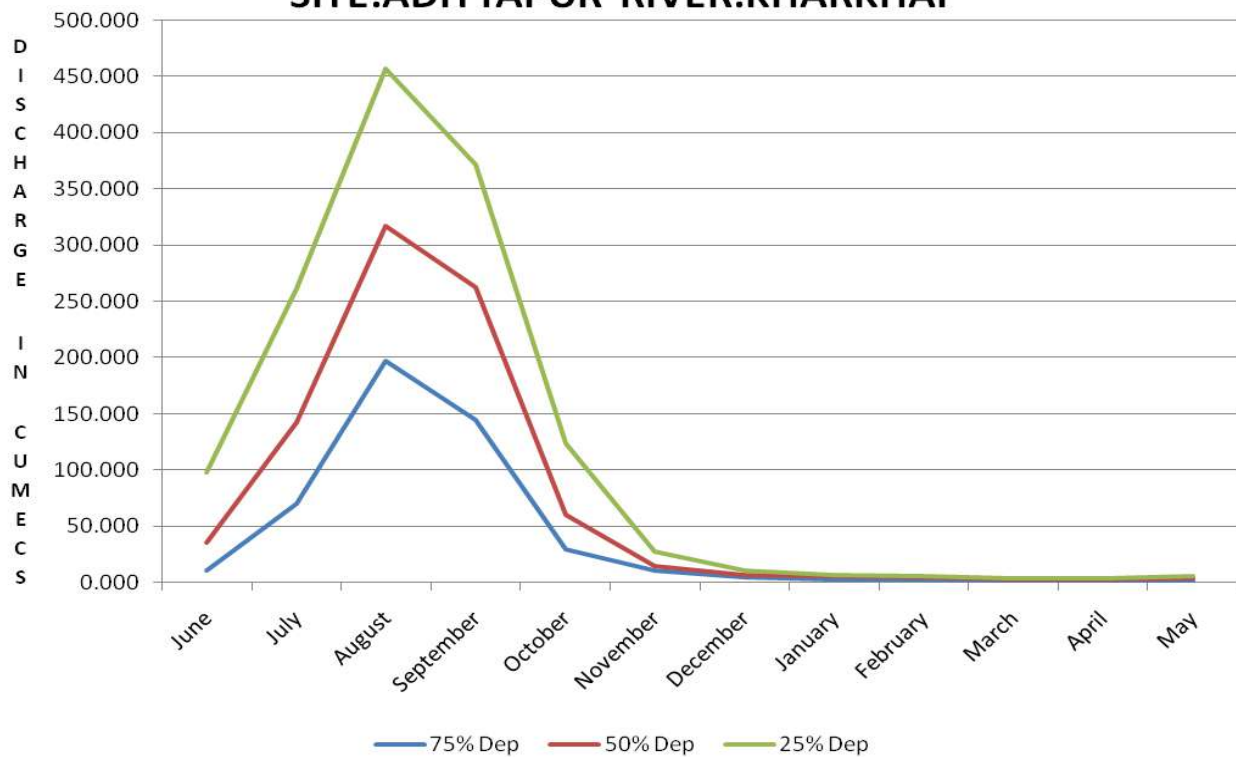
Sub-Division : Balasore

River Water

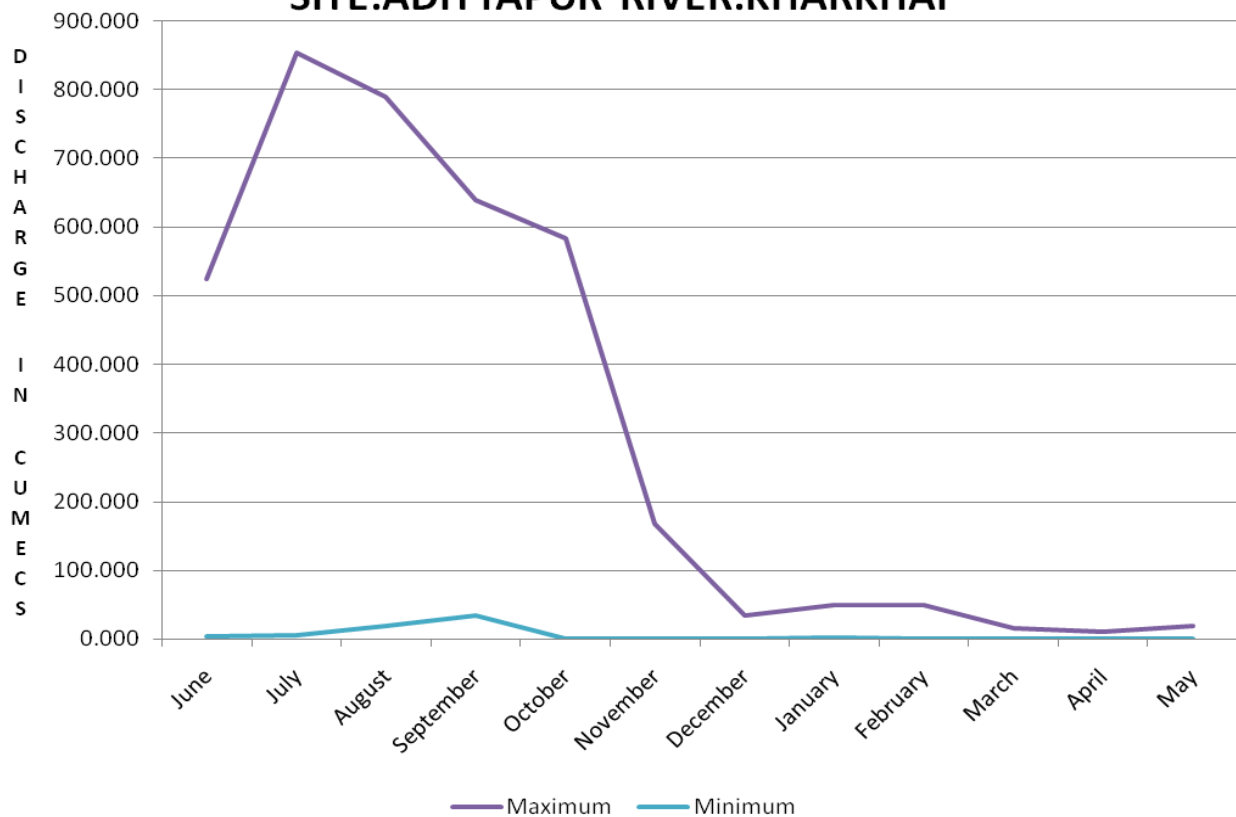
S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	1078	997	693
3	EC_GEN (µmho/cm)	1060	996	660
4	pH_FLD (pH units)	7.5	7.8	7.6
5	pH_GEN (pH units)	7.5	7.8	7.7
6	Temp (deg C)	26.7	26.8	27.2
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	6.1	0.0
2	ALK-TOT (mgCaCO3/L)	80	203	127
3	B (mg/L)	0.00	0.01	0.02
4	Ca (mg/L)	42	66	50
5	Cl (mg/L)	26.8	96.2	66.6
6	CO3 (mg/L)	0.0	7.4	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.5	0.4
9	HCO3 (mg/L)	116	233	155
10	K (mg/L)	3.2	14.8	6.5
11	Mg (mg/L)	15.9	35.0	19.4
12	Na (mg/L)	23.9	83.5	65.0
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	0.86	0.87	1.09
15	NO2-N (mgN/L)	0.00	0.00	0.02
16	NO3-N (mgN/L)	0.86	0.86	1.06
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.010	0.010
19	SiO2 (mg/L)	6.7	6.0	8.0
20	SO4 (mg/L)	45.0	15.6	72.6
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	33.5	40.0	33.1
2	DO (mg/L)	1.9	4.6	3.8
3	DO_SAT% (%)	24	58	45
4	FCol-MPN (MPN/100mL)			80
5	Tcol-MPN (MPN/100mL)			123
	TRACE & TOXIC			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	105	166	126
2	HAR_Total (mgCaCO3/L)	171	311	207
3	Na% (%)	22	37	40
4	RSC (-)	0.0	0.3	0.0
5	SAR (-)	0.8	2.5	2.0
	PESTICIDES			

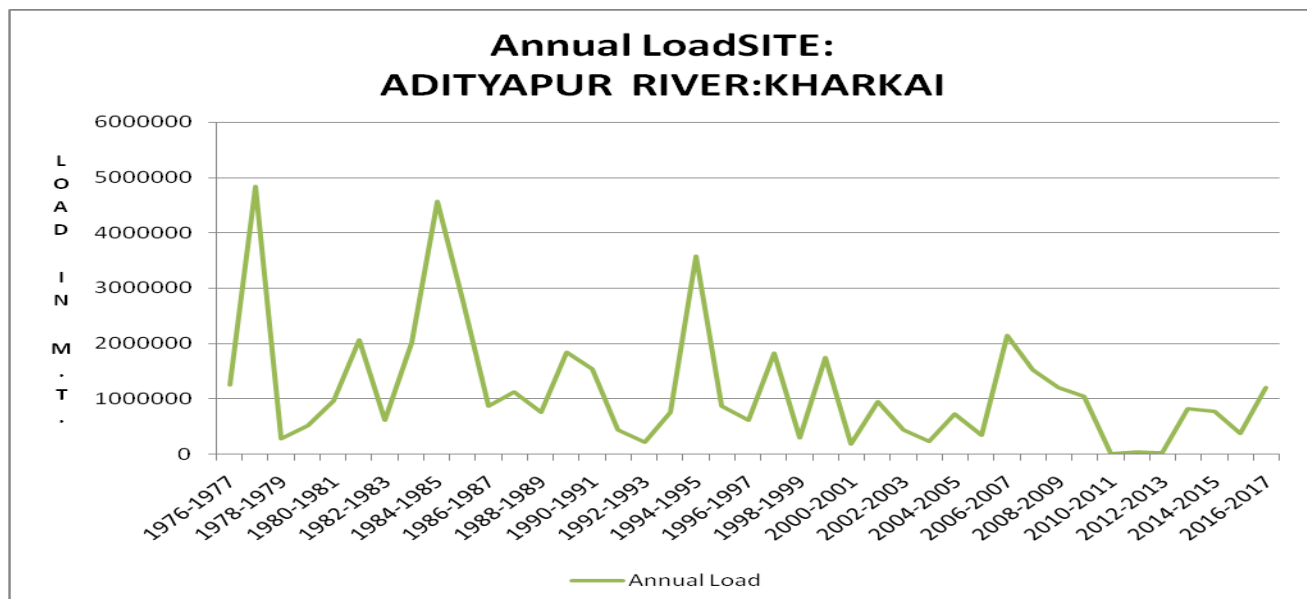
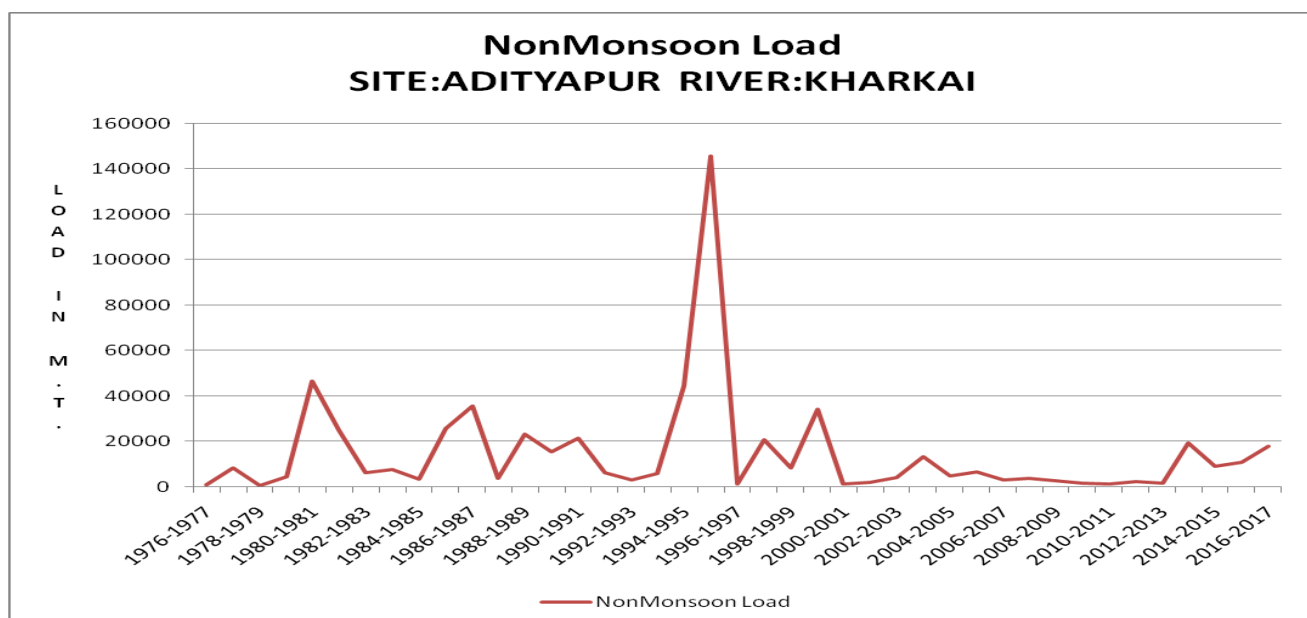
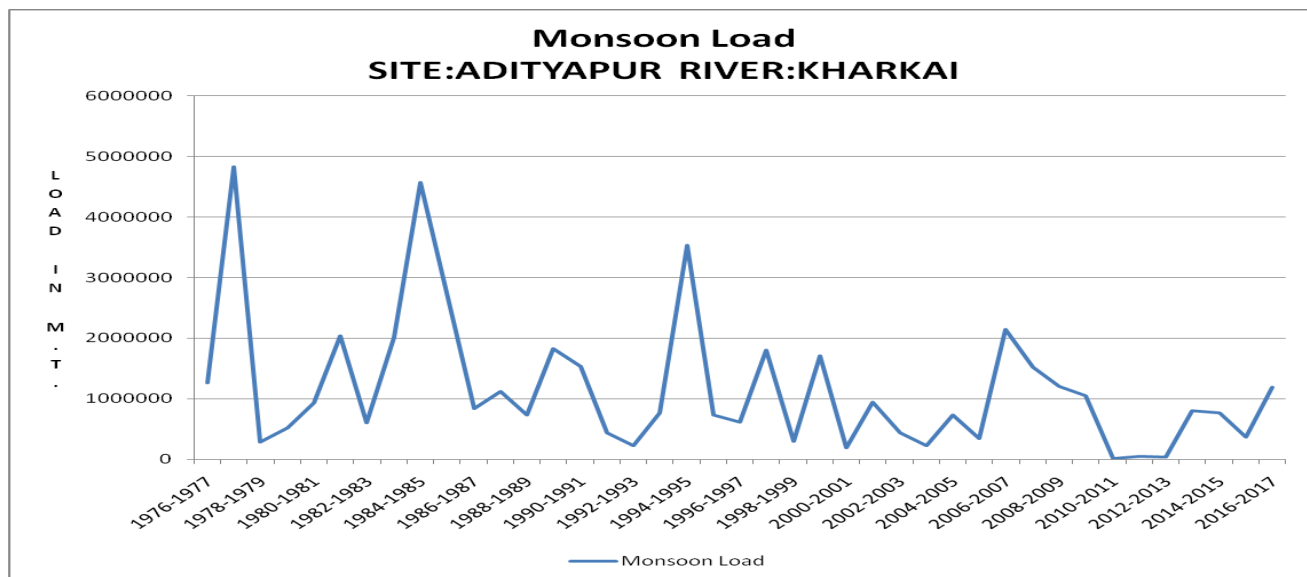


DEPENDIBILITY FLOW FROM JUNE TO MAY SITE:ADITYAPUR RIVER:KHARKHAI

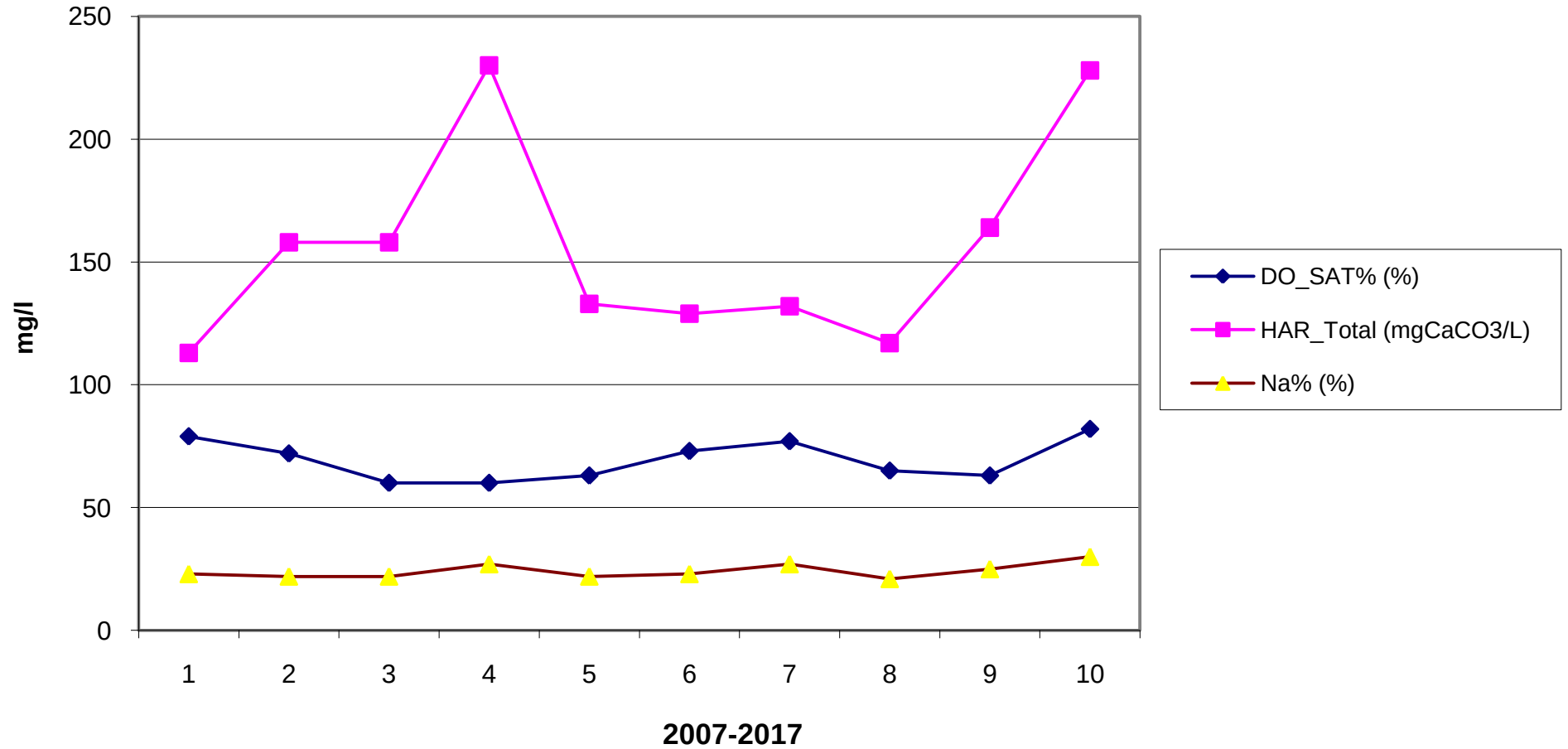


MAXIMUM-MINIMUM FLOW FROM JUNE TO MAY SITE:ADITYAPUR RIVER:KHARKHAI

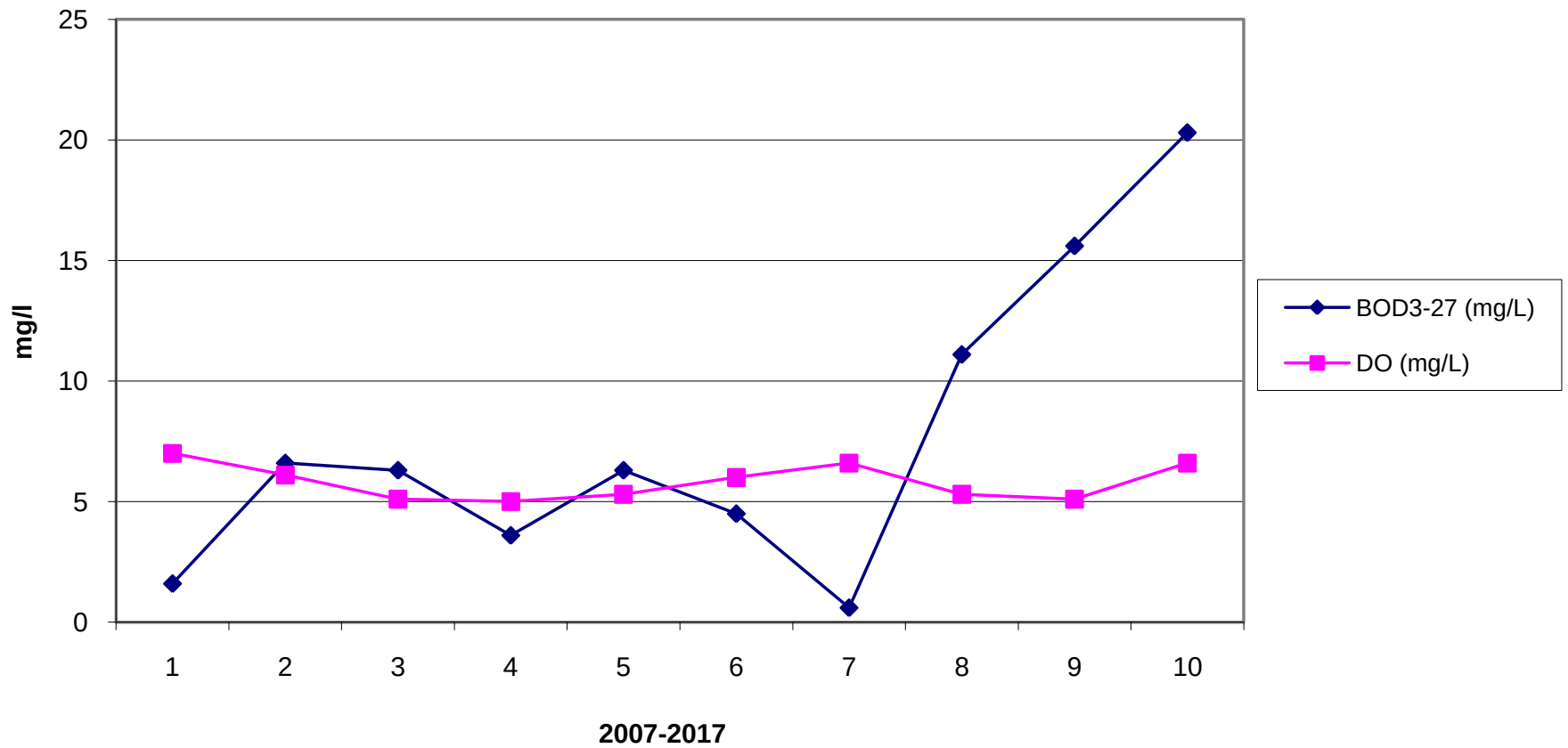


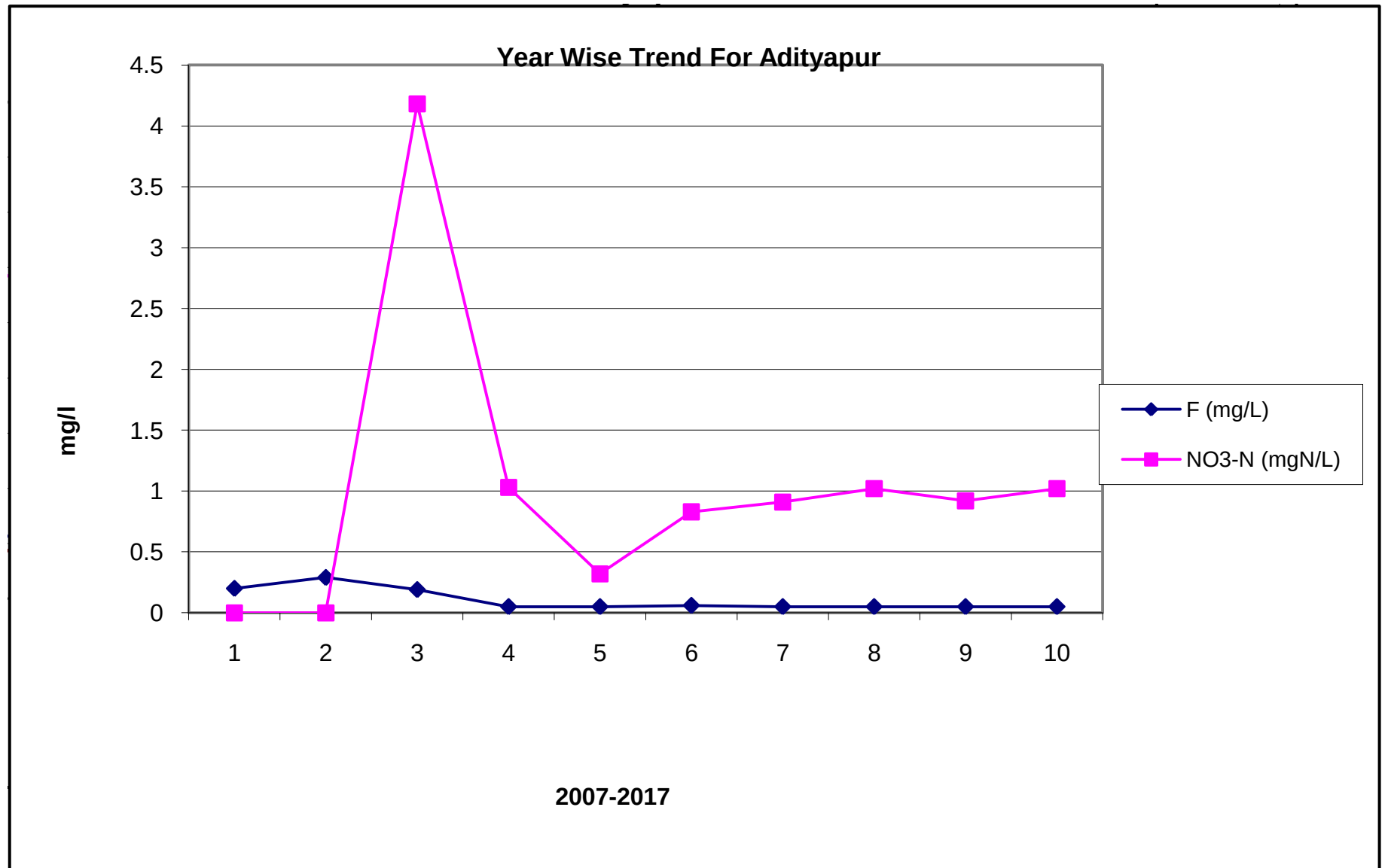


Year Wise Trend For Adityapur

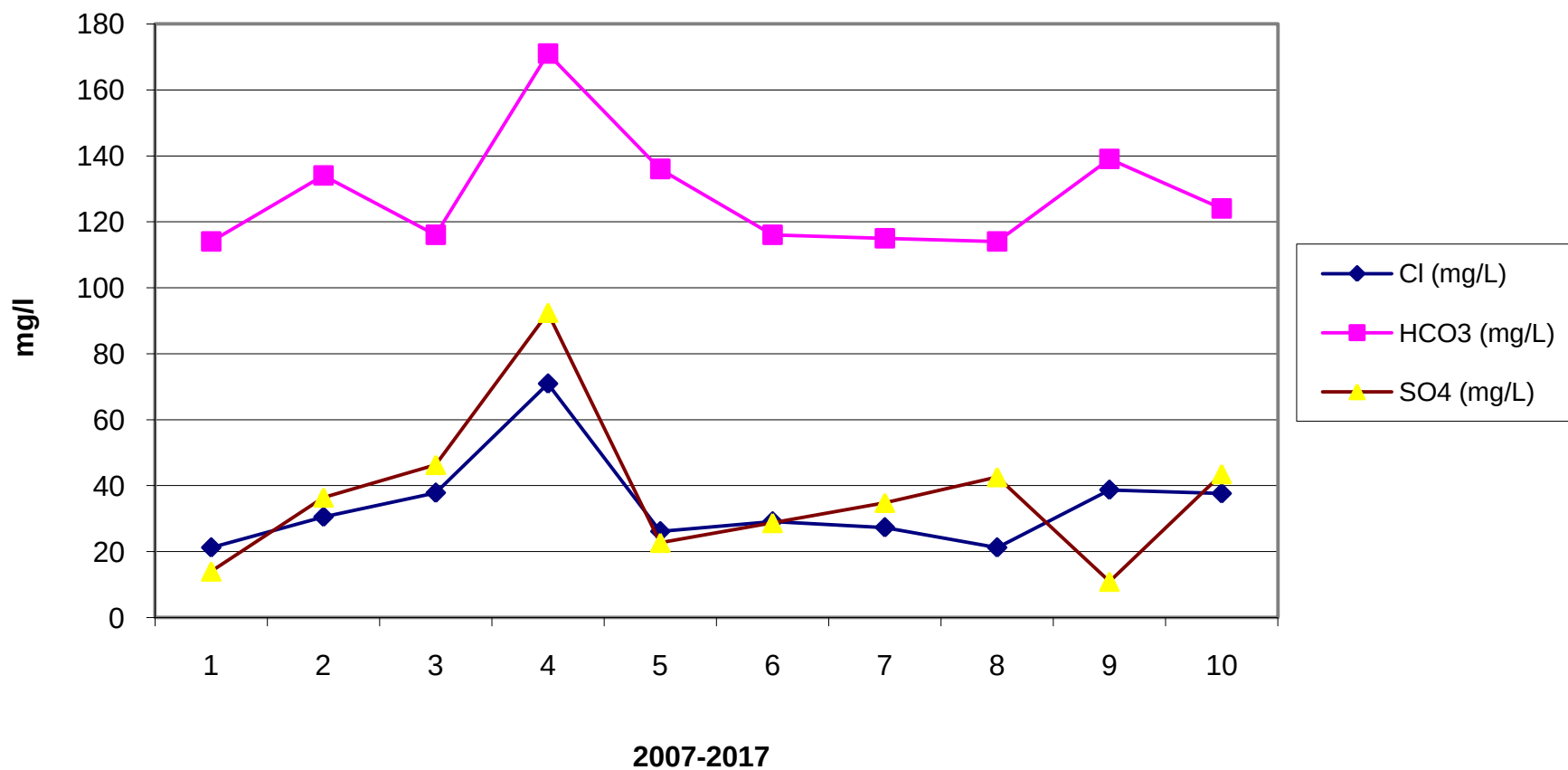


Year Wise Trend For Adityapur

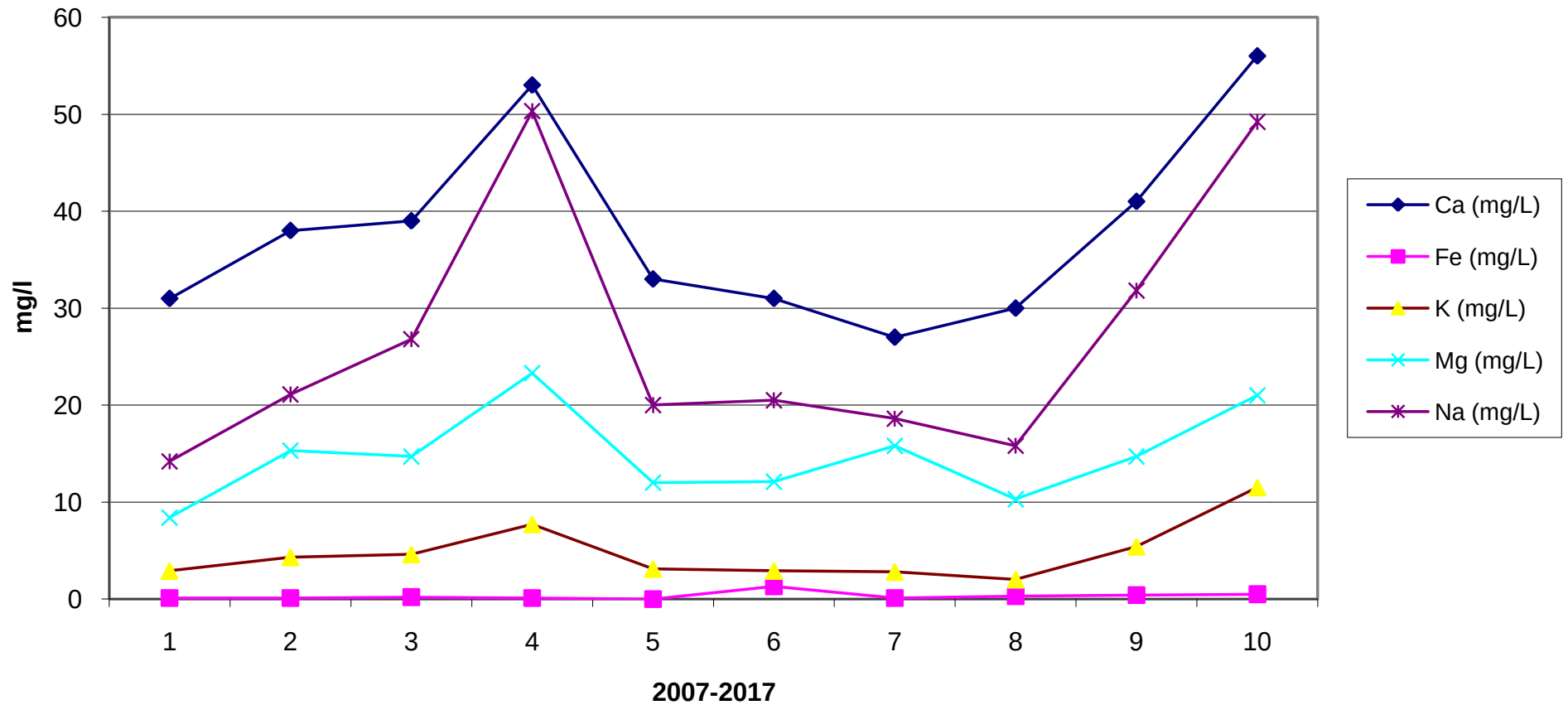




Year Wise Trend for Adityapur



Year-wise trend of Adityapur



HISTORY SHEET

Water Year : 2016-2017

Site : JAMSHEDPUR

Code : ES000N5

State : Jharkhand	District : Purba Singhbhum
Basin : Subarnarekha	Independent River : Subarnarekha
Tributary : -	Sub Tributary :
Sub-Sub Tributary :	Local River : Subarnarekha
Division : E.E., Bhubaneswar	Sub-Division : Balasore
Drainage Area : 12649 Sq. Km.	Bank : Right
Latitude : 22°47'00"	Longitude : 86°12'00"
Zero of Gauge (m) : 111 (m.s.l)	6/24/1971 - 6/24/2021
Opening Date	Closing Date
Gauge : 6/24/1971	6/24/2011
Discharge : 2/1/1972	2/1/2012
Sediment : 11/27/1972	2/1/2012
Water Quality : 9/1/1972	6/24/2011

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1972-1973	2533	120.850	9/12/1972	0.000	114.625	6/15/1972
1973-1974	7674	126.255	9/3/1973	1.100	114.730	3/17/1974
1974-1975	7695	124.755	9/30/1974	0.661	114.500	4/14/1975
1975-1976	8367	125.500	8/20/1975	0.230	114.725	2/28/1976
1976-1977	7908	124.700	9/18/1976	0.086	114.780	2/12/1977
1977-1978	6830	123.150	8/7/1977	0.067	114.730	4/14/1978
1978-1979	4122	124.465	9/3/1978	1.350	114.780	5/29/1979
1979-1980	1949	119.650	8/9/1979	0.076	114.950	2/22/1980
1980-1981	960.3	118.050	6/24/1980	2.420	114.800	3/25/1981
1981-1982	1697	119.600	6/22/1981	0.365	114.700	5/12/1982
1982-1983	1172	119.000	8/21/1982	0.420	114.690	6/4/1982
1983-1984	2408	119.850	9/5/1983	2.100	114.770	5/6/1984
1984-1985	3654	122.850	8/9/1984	1.670	114.795	6/4/1984
1985-1986	4593	124.390	10/17/1985	0.225	114.875	4/21/1986
1986-1987	1117	119.720	8/5/1986	0.870	114.820	6/12/1986
1987-1988	2956	121.875	8/28/1987	0.990	114.875	5/25/1988
1988-1989	3051	123.150	6/28/1988	0.001	114.990	5/21/1989
1989-1990	2780	121.727	8/5/1989	0.977	114.815	5/2/1990
1990-1991	2280	120.700	7/15/1990	0.900	114.815	5/19/1991
1991-1992	3451	122.625	8/23/1991	4.812	114.860	4/11/1992
1992-1993	1680	118.300	9/27/1992	0.219	114.765	2/9/1993
1993-1994	1524	118.270	9/15/1993	1.814	114.840	6/16/1993

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1994-1995	4836	122.650	8/4/1994	0.680	114.695	5/10/1995
1995-1996	3464	120.575	11/10/1995	1.159	114.830	4/19/1996
1996-1997	4436	121.350	8/7/1996	0.400	114.780	3/14/1997
1997-1998	6254	124.575	8/6/1997	14.43	115.410	6/12/1997
1998-1999	2362	120.080	9/13/1998	2.681	114.450	5/31/1999
1999-2000	3785	121.870	8/8/1999	6.356	114.990	6/10/1999
2000-2001	2270	119.650	7/26/2000	4.500	114.920	5/13/2001
2001-2002	4092	121.700	7/12/2001	6.039	115.000	5/14/2002
2002-2003	1625	119.020	9/12/2002	7.058	115.000	6/6/2002
2003-2004	1212	118.180	10/10/2003	4.122	114.860	3/30/2004
2004-2005	3201	120.145	8/21/2004	6.080	114.810	5/27/2005
2005-2006	1150	118.250	6/30/2005	5.739	114.800	6/3/2005
2006-2007	3320	120.950	8/23/2006	7.082	114.830	5/31/2007
2007-2008	3856	122.650	7/6/2007	4.500	114.800	4/14/2008
2008-2009	7382	124.950	6/18/2008	7.680	114.520	4/18/2009
2009-2010	3578	121.165	9/8/2009	7.196	115.070	4/26/2010
2010-2011	240.0	116.250	9/19/2010	6.000	114.800	4/3/2011
2011-2012	4548	122.270	9/23/2011	8.500	115.080	5/30/2012
2012-2013	2020	120.400	8/15/2012	7.155	115.030	6/18/2012
2013-2014	8770	123.300	8/21/2013	9.895	115.150	5/26/2014
2014-2015	3686	121.300	8/5/2014	8.217	115.020	12/27/2014
2015-2016	4107	122.250	7/29/2015	9.233	115.060	4/29/2016
2016-2017	6468	122.960	8/19/2016	10.69	114.980	4/17/2017

Stage-Discharge Data for the period 2016 - 2017

Station Name : JAMSHEDPUR (ES000N5)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	115.100	11.25	115.240	25.98	115.600	232.8	115.900	370.8	116.200	395.5	115.420	188.9
2	115.110	12.04	115.250	26.81	115.740	301.3	115.860	322.8	116.180	410.0 *	115.420	189.2
3	115.110	12.32	115.240	25.90 *	116.780	616.9	115.840	315.1	116.160	408.5	115.420	188.9
4	115.110	12.61	115.820	387.7	116.400	465.8	117.200	1400 *	116.060	321.2	115.420	189.6
5	115.110	12.60 *	115.600	223.0	116.200	406.4	119.360	2385	115.660	228.6	115.500	204.8
6	115.110	12.70	115.530	200.9	116.380	450.9	121.560	3721	115.600	216.8	115.480	198.0 *
7	115.110	12.76	115.380	126.0 *	116.200	406.0 *	120.200	2888	115.680	242.5	115.480	198.8
8	115.110	12.90	115.300	107.0	116.600	542.7	118.340	1979	116.440	485.9	115.400	103.1
9	115.110	12.47	115.260	28.77	116.380	435.8	120.160	2785	115.980	360.0 *	115.400	99.03
10	115.120	13.24	115.220	26.00 *	117.200	809.2	119.660	2569	115.860	340.0 *	115.400	97.23
11	115.120	13.23	115.200	24.61	117.700	1341	117.540	1200 *	115.840	320.0 *	115.400	97.07
12	115.120	12.60 *	115.200	25.40	117.740	1258	117.700	1174	115.820	310.0 *	115.380	95.71
13	115.120	13.08	115.380	126.9	117.380	974.7	117.400	1050 *	115.600	223.6	115.380	97.00 *
14	115.120	12.29	115.540	206.7	116.800	540.0 *	116.920	690.9	115.500	202.9	115.380	97.00 *
15	115.120	12.20	115.640	240.2	116.400	520.0 *	117.200	790.8	115.460	194.7	115.380	97.32
16	115.130	12.51	116.600	516.1	116.300	393.8	117.080	703.0	115.440	180.0 *	115.360	95.19
17	115.130	12.41	116.000	400.0 *	117.960	1625	115.860	313.4	115.420	186.5	115.360	93.01
18	115.130	12.02	115.620	233.2	121.800	5429	115.820	310.0 *	115.420	178.4	115.360	103.8
19	115.130	12.02 *	115.600	220.9	122.960	6468	116.000	362.8	115.400	180.8	115.360	95.05
20	115.140	12.23	115.560	209.3	120.420	3165	115.980	333.6	115.420	188.0	115.360	95.00 *
21	115.140	12.21	115.600	253.9	116.600	542.0 *	116.860	681.0	115.420	188.2	115.340	92.95
22	115.140	12.00	115.600	225.0	116.540	349.4	116.440	465.7	115.420	188.0	115.340	93.58
23	115.160	12.34	115.900	419.4	120.800	3909	116.340	441.1	115.420	186.0 *	115.340	92.66
24	115.170	12.68	115.820	360.0 *	117.900	1402	116.380	445.4	115.420	187.0	115.340	92.40
25	115.180	13.22	115.800	361.7	117.540	1069	116.340	440.0 *	115.420	188.3	115.340	92.07
26	115.220	13.40 *	115.620	240.7	117.980	1617	117.600	1110	115.400	183.4	115.340	92.34
27	115.240	24.84	115.640	240.8	117.000	717.0	117.980	1682	115.400	182.4	115.340	92.00 *
28	115.260	26.30	115.920	376.9	116.420	520.0 *	117.000	771.3	115.460	194.4	115.320	90.90
29	115.260	27.22	115.780	322.2	115.960	362.3	116.420	450.4	115.460	194.7	115.320	90.53
30	115.250	25.64	115.620	245.7	115.760	309.5	116.280	416.1	115.460	194.0 *	115.320	90.10
31			115.660		115.820	330.4			115.420	188.3		
Ten-Daily Mean												
I Ten-Daily	115.110	12.49	115.384	117.8	116.348	466.8	118.408	1874	115.982	340.9	115.434	165.8
II Ten-Daily	115.126	12.46	115.634	220.3	118.546	2171	116.750	692.8	115.532	216.5	115.372	96.62
III Ten-Daily	115.202	17.99	115.724	304.6	117.120	1012	116.764	690.3	115.427	188.6	115.334	91.95
Monthly												
Min.	115.100	11.25	115.200	24.61	115.600	232.8	115.820	310.0	115.400	178.4	115.320	90.10
Max.	115.260	27.22	116.600	516.1	122.960	6468	121.560	3721	116.440	485.9	115.500	204.8
Mean	115.146	14.31	115.585	214.3	117.331	1210	117.307	1086	115.640	246.7	115.380	118.1

Annual Runoff in MCM = 8042 Annual Runoff in mm = 636

Peak Observed Discharge = 6468 cumecs on 19/08/2016 Corres. Water Level :122.96 m

Lowest Observed Discharge = 10.69 cumecs on 17/04/2017 Corres. Water Level :114.98 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2016 - 2017

Station Name : JAMSHEDPUR (ES000N5)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	115.320	89.70	115.200	44.00 *	115.090	24.20	115.050	16.20	115.000	12.81	115.050	14.34
2	115.320	90.28	115.180	42.93	115.090	24.01	115.050	16.15	115.000	12.80 *	115.050	14.45
3	115.320	89.01	115.180	42.72	115.090	23.59	115.050	15.71	115.000	12.58	115.050	14.07
4	115.320	89.00 *	115.180	42.15	115.090	22.92	115.050	15.87	115.000	12.45	115.050	14.26
5	115.300	79.20	115.180	41.88	115.090	22.90 *	115.050	15.80 *	115.000	12.25	115.050	14.18
6	115.300	76.71	115.180	41.35	115.080	21.22	115.040	15.50	115.000	12.40	115.050	14.26
7	115.300	75.09	115.180	40.23	115.080	20.67	115.040	15.48	115.000	12.00	115.050	14.26 *
8	115.300	72.02	115.180	40.20 *	115.080	20.30	115.040	15.29	115.000	12.01	115.050	14.36
9	115.300	68.32	115.170	38.21	115.080	19.58	115.040	15.22	115.000	12.00 *	115.050	14.32
10	115.300	67.60	115.170	38.10	115.080	19.92	115.040	15.16	114.980	11.19	115.050	14.32 *
11	115.300	68.30 *	115.160	35.99	115.080	19.38	115.040	15.15	114.980	11.11	115.050	14.20
12	115.300	68.30 *	115.160	35.86	115.080	19.40 *	115.040	15.10 *	114.980	11.18	115.050	14.34
13	115.280	70.34	115.160	34.48	115.060	18.60	115.040	15.10 *	114.980	11.06	115.050	14.30
14	115.280	68.51	115.160	33.88	115.060	18.28	115.040	15.01	114.980	11.00 *	115.050	14.30 *
15	115.280	67.63	115.160	33.80 *	115.060	17.90	115.040	14.93	114.980	10.95	115.050	14.23
16	115.280	68.13	115.150	32.68	115.060	18.03	115.030	14.88	114.980	11.00 *	115.070	14.58
17	115.280	66.36	115.150	32.36	115.060	17.54	115.030	14.67	114.980	10.69	115.100	16.81
18	115.280	66.00 *	115.150	32.12	115.060	17.46	115.030	14.56	114.980	10.71	115.100	16.75
19	115.240	58.81	115.150	31.81	115.060	17.40 *	115.030	14.50 *	114.980	11.84	115.100	16.49
20	115.240	59.01	115.150	31.18	115.060	17.32	115.030	14.44	114.980	11.56	115.100	16.72
21	115.240	58.02	115.130	29.06	115.060	17.22	115.030	14.44	115.000	12.70	115.100	16.70 *
22	115.240	57.08	115.130	29.00 *	115.060	17.17	115.020	14.42	115.000	12.81	115.120	17.32
23	115.240	55.54	115.110	26.95	115.050	16.74	115.020	14.22	115.020	13.00 *	115.140	18.40
24	115.240	55.79	115.110	26.31	115.050	16.60 *	115.020	14.03	115.040	14.08	115.150	18.61
25	115.220	48.80 *	115.110	26.20	115.050	16.64	115.020	13.93	115.040	14.15	115.150	18.43
26	115.220	48.97	115.110	26.00 *	115.050	16.60 *	115.020	13.90 *	115.040	14.07	115.140	19.33
27	115.220	48.78	115.110	26.10	115.050	16.45	115.000	13.42	115.040	14.08	115.220	21.93
28	115.200	48.29	115.110	27.94	115.050	16.34	115.000	13.34	115.040	14.13	115.250	21.90 *
29	115.200	46.22	115.110	26.00 *			115.000	13.17	115.040	13.99	115.320	27.00
30	115.200	47.42	115.090	25.92			115.000	13.61	115.040	13.90 *	115.380	29.51
31	115.200	45.81	115.085	24.31			115.000	12.91			115.380	30.41
Ten-Daily Mean												
I Ten-Daily	115.308	79.69	115.180	41.18	115.085	21.93	115.045	15.64	114.998	12.25	115.050	14.28
II Ten-Daily	115.276	66.14	115.155	33.41	115.064	18.13	115.035	14.83	114.980	11.11	115.072	15.27
III Ten-Daily	115.220	50.97	115.110	26.71	115.052	16.72	115.012	13.76	115.030	13.69	115.214	21.78
Monthly												
Min.	115.200	45.81	115.085	24.31	115.050	16.34	115.000	12.91	114.980	10.69	115.050	14.07
Max.	115.320	90.28	115.200	44.00	115.090	24.20	115.050	16.20	115.040	14.15	115.380	30.41
Mean	115.266	65.13	115.147	33.54	115.068	19.08	115.030	14.71	115.003	12.35	115.115	17.26

Peak Computed Discharge = 1400 cumecs on 04/09/2016

Corres. Water Level :117.2 m

Lowest Computed Discharge = 11.00 cumecs on 14/04/2017

Corres. Water Level :114.98 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

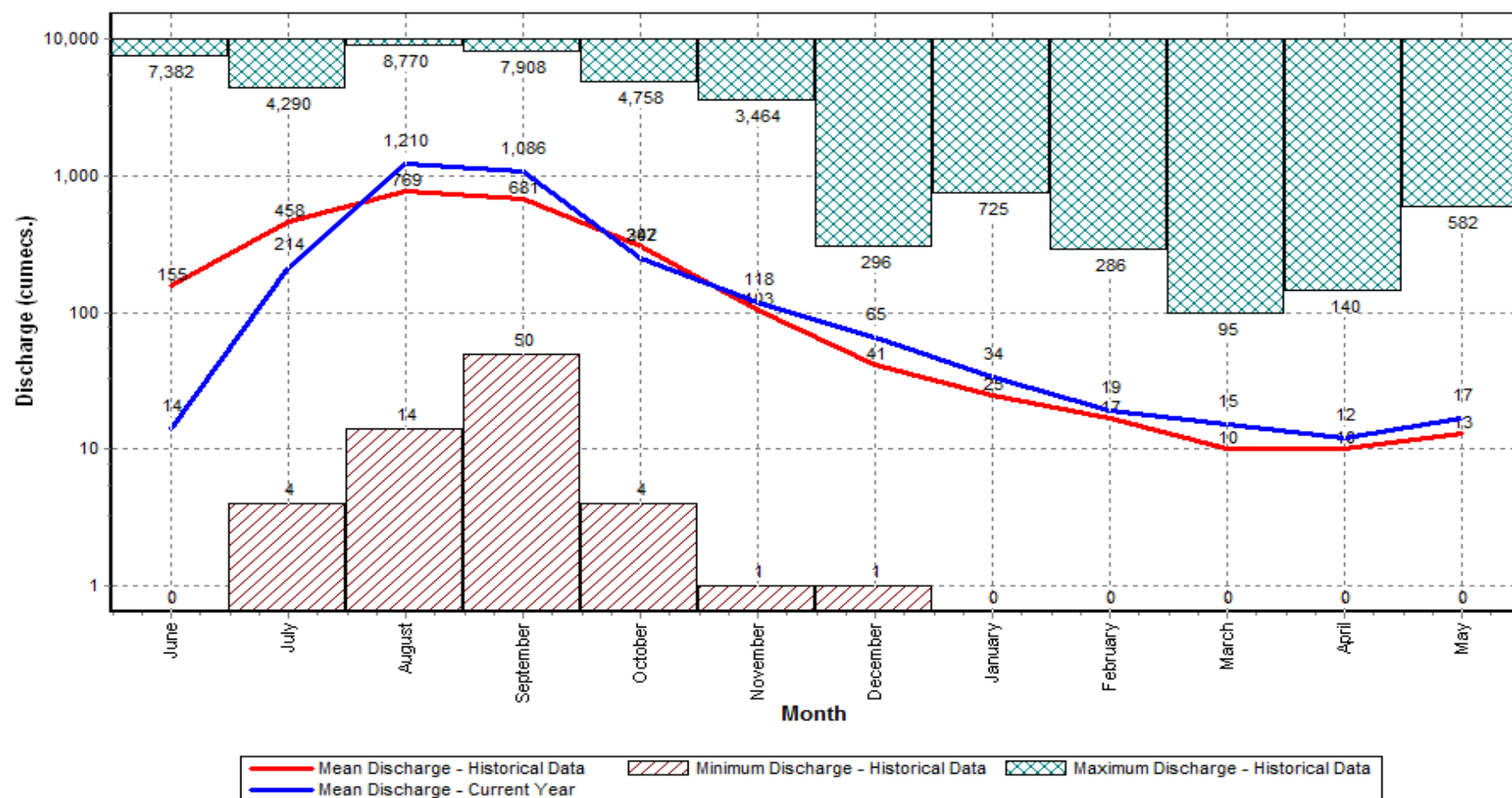
Station Name : JAMSHEDPUR (ES000N5)

Data considered : 1972-2017

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore



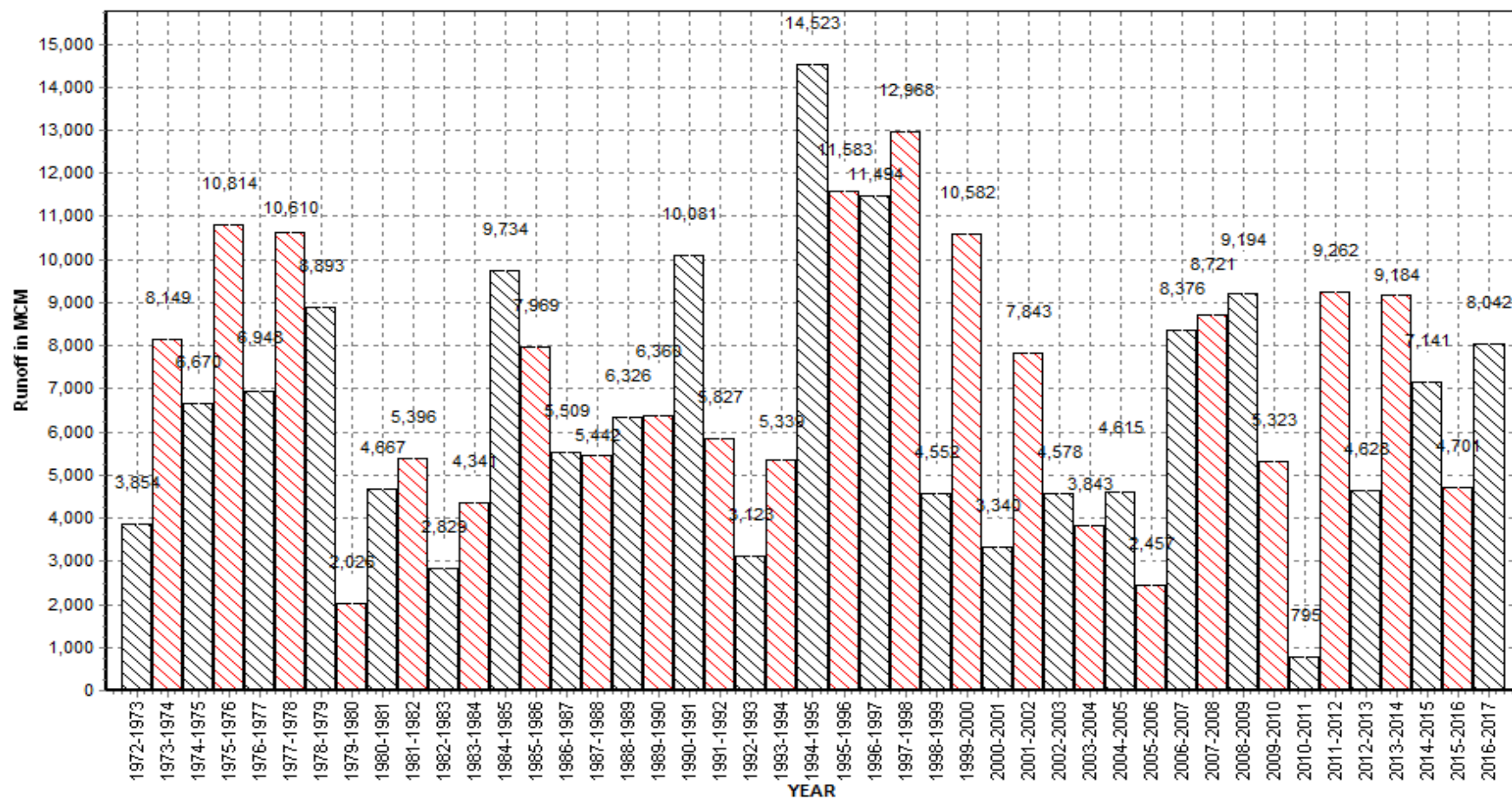
Annual Runoff Values for the period: 1972 - 2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

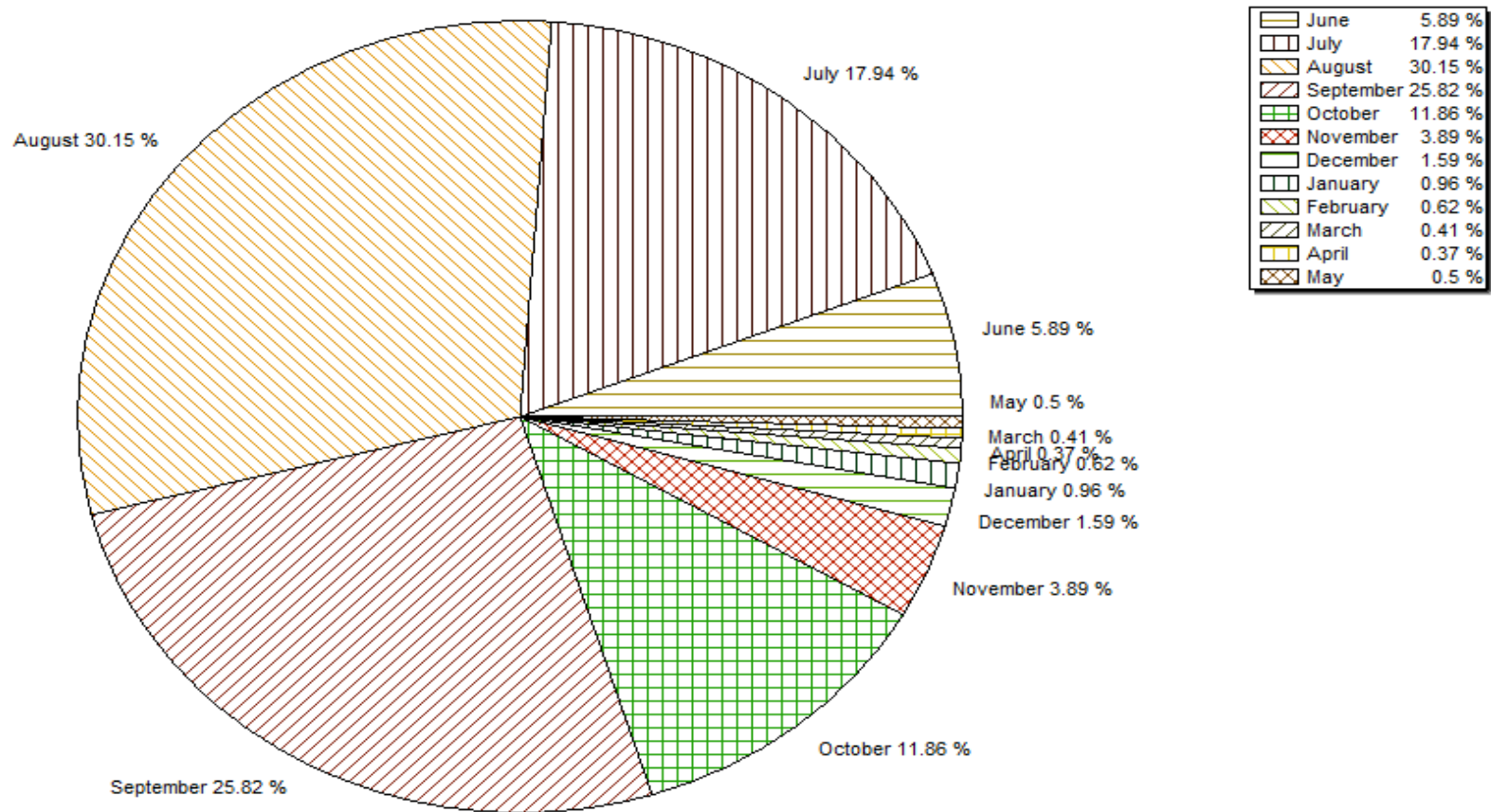


Note: Missing values have not been considered while arriving at Annual Runoff

Monthly Average Runoff based on period : 1972-2016

Station Name : JAMSHEDPUR (ES000N5)
Local River : Subarnarekha

Division : E.E., Bhubaneswar
Sub-Division : Balasore



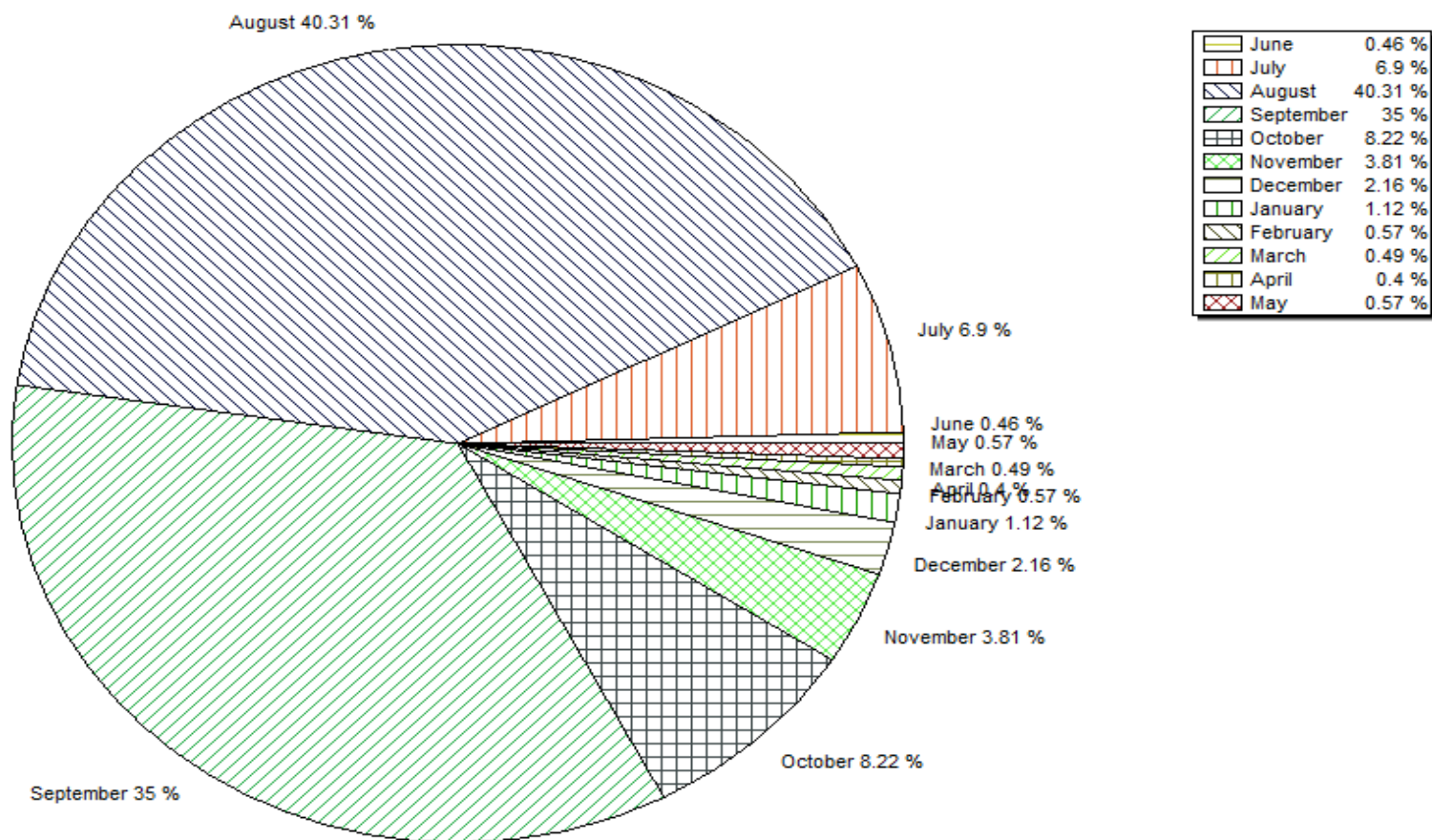
Monthly Runoff for the Year : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



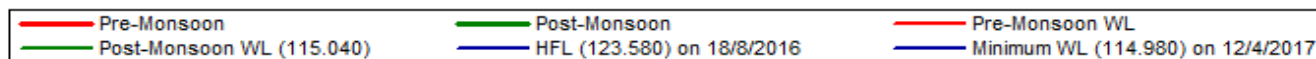
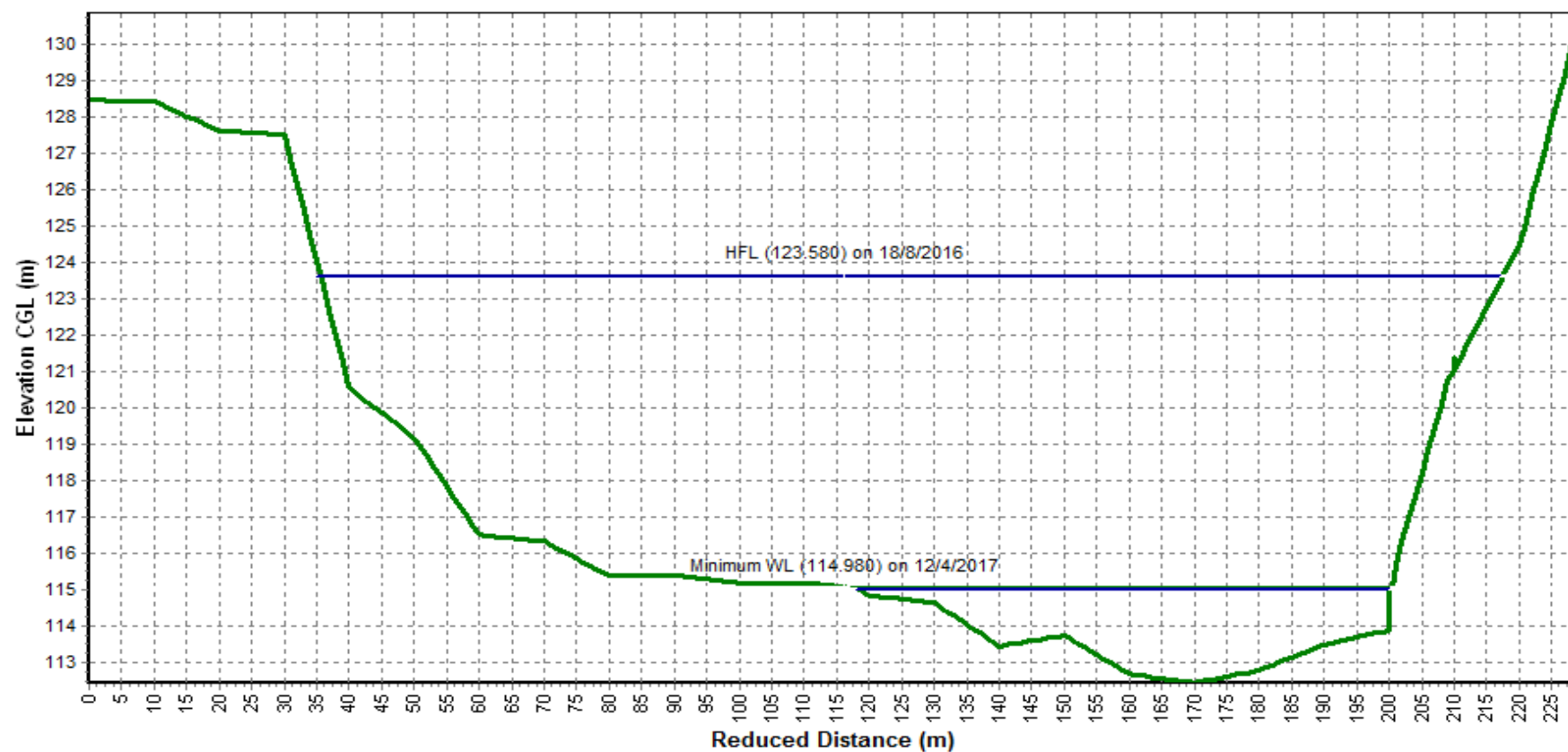
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



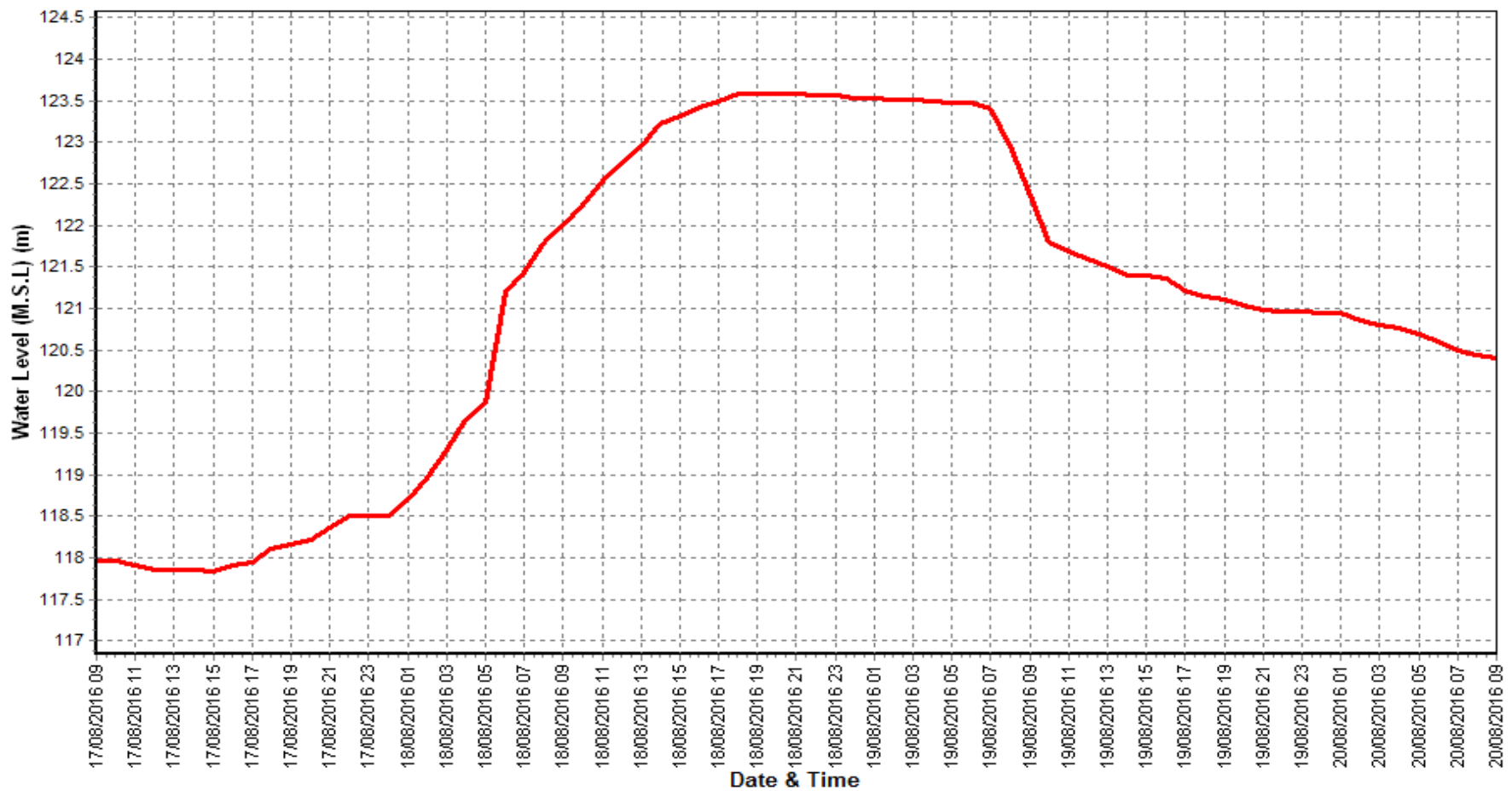
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

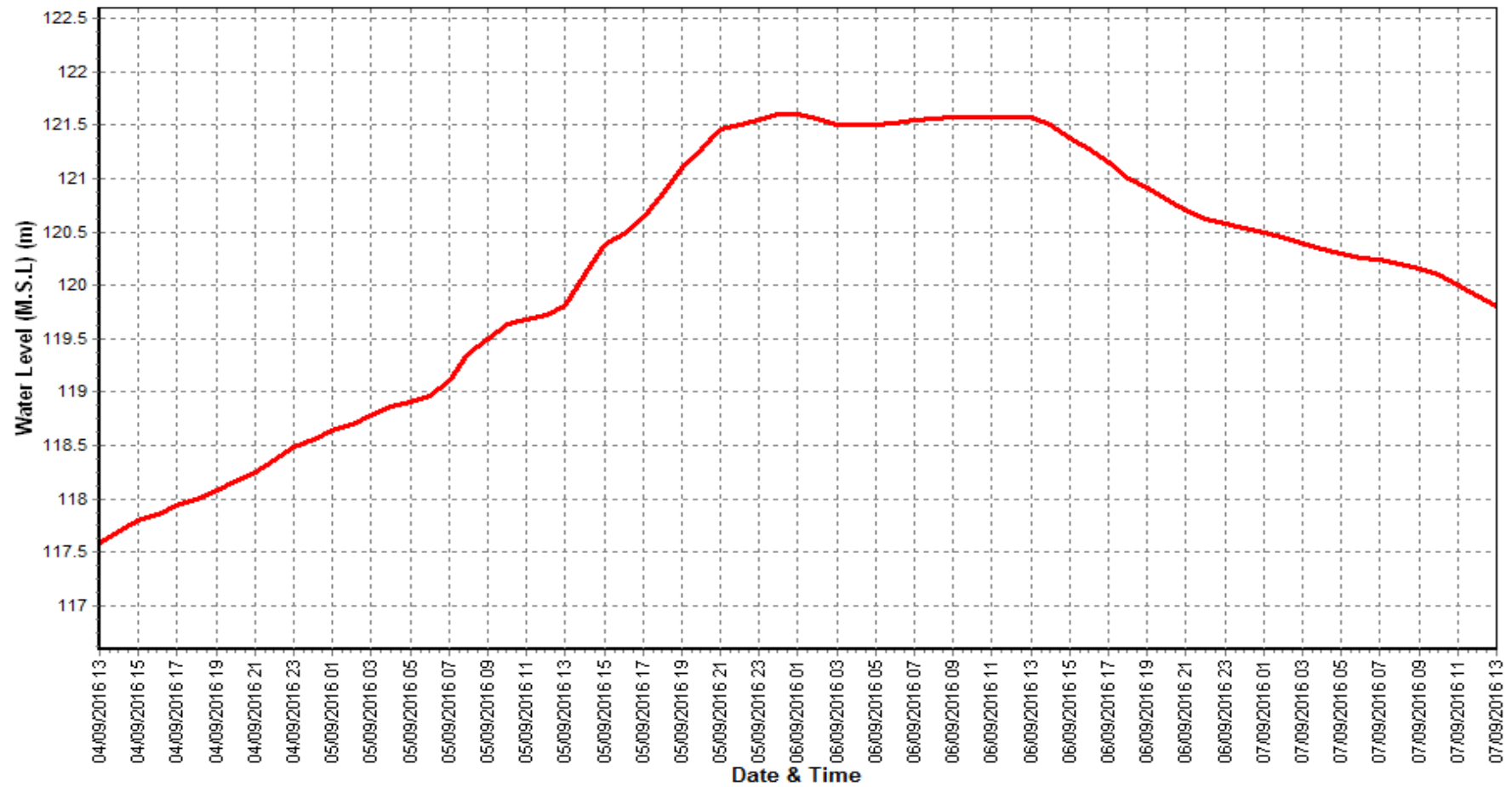
Sub-Division : Balasore



Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)
Local River : Subarnarekha

Division : E.E., Bhubaneswar
Sub-Division : Balasore



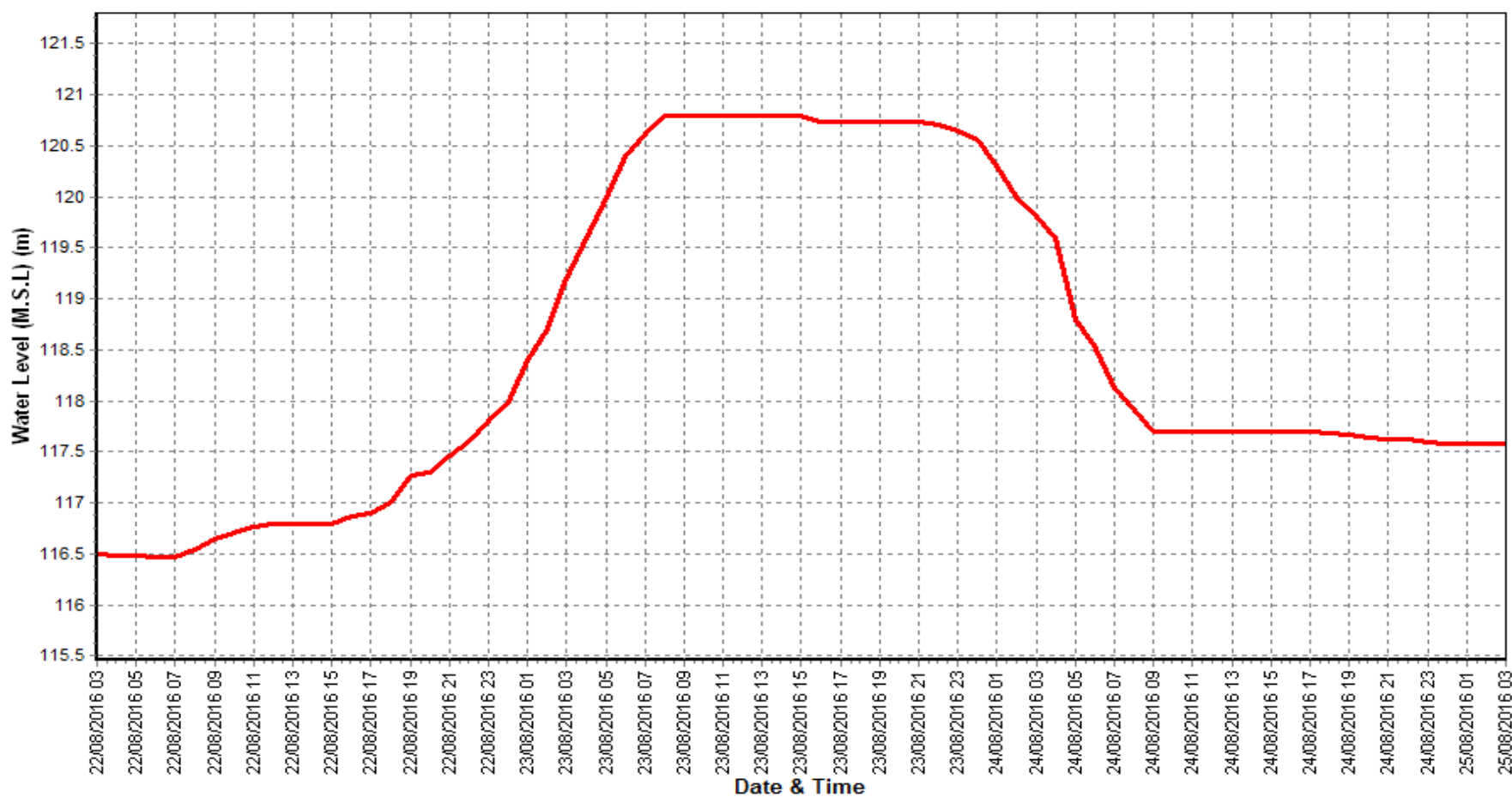
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	11.25	0.000	0.000	0.089	0.089	87	25.98	0.000	0.000	0.048	0.048	107	232.8	0.000	0.000	0.077	0.077	1543
2	12.04	0.000	0.000	0.027	0.027	28	26.81	0.000	0.000	0.067	0.067	154	301.3	0.000	0.000	0.087	0.087	2257
3	12.32	0.000	0.000	0.079	0.079	84	25.90	0.000	0.000	0.066	0.066	148	616.9	0.000	0.000	0.157	0.157	8352
4	12.61	0.000	0.000	0.068	0.068	74	387.7	0.000	0.000	0.013	0.013	445	465.8	0.000	0.000	0.150	0.150	6037
5	12.60	0.000	0.000	0.062	0.062	67	223.0	0.000	0.000	0.085	0.085	1638	406.4	0.000	0.000	0.150	0.150	5268
6	12.70	0.000	0.000	0.058	0.058	64	200.9	0.000	0.000	0.082	0.082	1418	450.9	0.000	0.000	0.137	0.137	5325
7	12.76	0.000	0.000	0.054	0.054	60	126.0	0.000	0.000	0.026	0.026	283	406.0	0.000	0.000	0.130	0.130	4560
8	12.90	0.000	0.000	0.050	0.050	56	107.0	0.000	0.000	0.038	0.038	353	542.7	0.000	0.000	0.153	0.153	7188
9	12.47	0.000	0.000	0.046	0.046	49	28.77	0.000	0.000	0.056	0.056	140	435.8	0.000	0.000	0.140	0.140	5272
10	13.24	0.000	0.000	0.028	0.028	32	26.00	0.000	0.000	0.065	0.065	146	809.2	0.000	0.000	0.163	0.163	11417
11	13.23	0.000	0.000	0.029	0.029	33	24.61	0.000	0.000	0.065	0.065	138	1341	0.000	0.000	0.178	0.178	20655
12	12.60	0.000	0.000	0.029	0.029	32	25.40	0.000	0.000	0.075	0.075	165	1258	0.000	0.000	0.165	0.165	17937
13	13.08	0.000	0.000	0.042	0.042	47	126.9	0.000	0.000	0.063	0.063	694	974.7	0.000	0.000	0.150	0.150	12632
14	12.29	0.000	0.000	0.045	0.045	48	206.7	0.000	0.000	0.135	0.135	2411	540.0	0.000	0.000	0.145	0.145	6765
15	12.20	0.000	0.000	0.053	0.053	56	240.2	0.000	0.000	0.078	0.078	1625	520.0	0.000	0.000	0.150	0.150	6739
16	12.51	0.000	0.000	0.039	0.039	42	516.1	0.000	0.000	0.073	0.073	3268	393.8	0.000	0.000	0.135	0.135	4594
17	12.41	0.000	0.000	0.215	0.215	230	400.0	0.000	0.000	0.067	0.067	2305	1625	0.000	0.000	0.198	0.198	27841
18	12.02	0.000	0.000	0.037	0.037	39	233.2	0.000	0.000	0.067	0.067	1344	5429	0.000	0.000	0.352	0.352	164957
19	12.02	0.000	0.000	0.037	0.037	39	220.9	0.000	0.000	0.083	0.083	1590	6468	0.000	0.000	0.365	0.365	203975
20	12.23	0.000	0.000	0.048	0.048	50	209.3	0.000	0.000	0.088	0.088	1597	3165	0.000	0.000	0.293	0.293	80194
21	12.21	0.000	0.000	0.037	0.037	39	253.9	0.000	0.000	0.120	0.120	2632	542.0	0.000	0.000	0.142	0.142	6636
22	12.00	0.000	0.000	0.034	0.034	35	225.0	0.000	0.000	0.100	0.100	1944	349.4	0.000	0.000	0.142	0.142	4278
23	12.34	0.000	0.000	0.052	0.052	55	419.4	0.000	0.000	0.088	0.088	3200	3909	0.000	0.000	0.302	0.302	101890
24	12.68	0.000	0.000	0.044	0.044	48	360.0	0.000	0.000	0.083	0.083	2591	1402	0.000	0.000	0.183	0.183	22197
25	13.22	0.000	0.000	0.044	0.044	50	361.7	0.000	0.000	0.083	0.083	2603	1069	0.000	0.000	0.015	0.015	1416
26	13.40	0.000	0.000	0.044	0.044	51	240.7	0.000	0.000	0.127	0.127	2641	1617	0.000	0.000	0.163	0.163	22816
27	24.84	0.000	0.000	0.059	0.059	127	240.8	0.000	0.000	0.093	0.093	1942	717.0	0.000	0.000	0.138	0.138	8567
28	26.30	0.000	0.000	0.051	0.051	115	376.9	0.000	0.000	0.082	0.082	2661	520.0	0.000	0.000	0.183	0.183	8231
29	27.22	0.000	0.000	0.038	0.038	90	322.2	0.000	0.000	0.817	0.817	22743	362.3	0.000	0.000	0.133	0.133	4173
30	25.64	0.000	0.000	0.046	0.046	101	245.7	0.000	0.000	0.817	0.817	17344	309.5	0.000	0.000	0.132	0.132	3521
31								0.000	0.000				330.4	0.000	0.000	0.133	0.133	3805
Ten Daily Mean																		
Ten Daily I	12.49	0.000	0.000	0.056	0.056	60	117.8	0.000	0.000	0.055	0.055	483	466.8	0.000	0.000	0.134	0.134	5722
Ten Daily II	12.46	0.000	0.000	0.058	0.058	62	220.3	0.000	0.000	0.079	0.079	1514	2171	0.000	0.000	0.213	0.213	54629
Ten Daily III	17.99	0.000	0.000	0.045	0.045	71	304.6	0.000	0.000	0.241	0.241	6030	1012	0.000	0.000	0.152	0.152	17048
Monthly																		
Total						1929						80269						791036

Annual Sediment Load (Metric Tonnes) : 1485837

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	370.8	0.000	0.000	0.132	0.132	4219	395.5	0.000	0.000	0.080	0.080	2733	188.9	0.000	0.000	0.043	0.043	707
2	322.8	0.000	0.000	0.130	0.130	3626	410.0	0.000	0.000	0.007	0.007	248	189.2	0.000	0.000	0.042	0.042	682
3	315.1	0.000	0.000	0.135	0.135	3676	408.5	0.000	0.000	0.078	0.078	2764	188.9	0.000	0.000	0.043	0.043	707
4	1400	0.000	0.000	0.130	0.130	15725	321.2	0.000	0.000	0.072	0.072	1990	189.6	0.000	0.000	0.040	0.040	655
5	2385	0.000	0.000	0.135	0.135	27823	228.6	0.000	0.000	0.068	0.068	1349	204.8	0.000	0.000	0.042	0.042	738
6	3721	0.000	0.000	0.270	0.270	86809	216.8	0.000	0.000	0.063	0.063	1186	198.0	0.000	0.000	0.417	0.417	7134
7	2888	0.000	0.000	0.332	0.332	82774	242.5	0.000	0.000	0.065	0.065	1362	198.8	0.000	0.000	0.037	0.037	630
8	1979	0.000	0.000	0.293	0.293	50157	485.9	0.000	0.000	0.063	0.063	2657	103.1	0.000	0.000	0.027	0.027	242
9	2785	0.000	0.000	0.218	0.218	52377	360.0	0.000	0.000	0.063	0.063	1966	99.03	0.000	0.000	0.026	0.026	224
10	2569	0.000	0.000	0.225	0.225	49939	340.0	0.000	0.000	0.060	0.060	1763	97.23	0.000	0.000	0.026	0.026	219
11	1200	0.000	0.000	0.220	0.220	22810	320.0	0.000	0.000	0.060	0.060	1659	97.07	0.000	0.000	0.023	0.023	190
12	1174	0.000	0.000	0.217	0.217	21980	310.0	0.000	0.000	0.058	0.058	1553	95.71	0.000	0.000	0.021	0.021	176
13	1050	0.000	0.000	0.205	0.205	18598	223.6	0.000	0.000	0.062	0.062	1192	97.00	0.000	0.000	0.020	0.020	168
14	690.9	0.000	0.000	0.165	0.165	9850	202.9	0.000	0.000	0.060	0.060	1052	97.00	0.000	0.000	0.020	0.020	168
15	790.8	0.000	0.000	0.133	0.133	9108	194.7	0.000	0.000	0.058	0.058	981	97.32	0.000	0.000	0.021	0.021	174
16	703.0	0.000	0.000	0.138	0.138	8400	180.0	0.000	0.000	0.059	0.059	911	95.19	0.000	0.000	0.019	0.019	155
17	313.4	0.000	0.000	0.118	0.118	3203	186.5	0.000	0.000	0.055	0.055	886	93.01	0.000	0.000	0.018	0.018	148
18	310.0	0.000	0.000	0.118	0.118	3161	178.4	0.000	0.000	0.057	0.057	874	103.8	0.000	0.000	0.019	0.019	170
19	362.8	0.000	0.000	0.108	0.108	3394	180.8	0.000	0.000	0.055	0.055	859	95.05	0.000	0.000	0.018	0.018	149
20	333.6	0.000	0.000	0.102	0.102	2931	188.0	0.000	0.000	0.053	0.053	866	95.00	0.000	0.000	0.018	0.018	148
21	681.0	0.000	0.000	0.128	0.128	7548	188.2	0.000	0.000	0.055	0.055	894	92.95	0.000	0.000	0.019	0.019	150
22	465.7	0.000	0.000	0.127	0.127	5098	188.0	0.000	0.000	0.051	0.051	832	93.58	0.000	0.000	0.018	0.018	142
23	441.1	0.000	0.000	0.117	0.117	4447	186.0	0.000	0.000	0.050	0.050	804	92.66	0.000	0.000	0.018	0.018	141
24	445.4	0.000	0.000	0.120	0.120	4618	187.0	0.000	0.000	0.050	0.050	808	92.40	0.000	0.000	0.018	0.018	140
25	440.0	0.000	0.000	0.120	0.120	4562	188.3	0.000	0.000	0.052	0.052	841	92.07	0.000	0.000	0.017	0.017	133
26	1110	0.000	0.000	0.130	0.130	12466	183.4	0.000	0.000	0.050	0.050	792	92.34	0.000	0.000	0.016	0.016	130
27	1682	0.000	0.000	0.135	0.135	19619	182.4	0.000	0.000	0.053	0.053	840	92.00	0.000	0.000	0.016	0.016	127
28	771.3	0.000	0.000	0.127	0.127	8443	194.4	0.000	0.000	0.052	0.052	868	90.90	0.000	0.000	0.017	0.017	134
29	450.4	0.000	0.000	0.098	0.098	3826	194.7	0.000	0.000	0.048	0.048	812	90.53	0.000	0.000	0.016	0.016	126
30	416.1	0.000	0.000	0.085	0.085	3056	194.0	0.000	0.000	0.048	0.048	810	90.10	0.000	0.000	0.016	0.016	122
31							188.3	0.000	0.000	0.048	0.048	786						
Ten Daily Mean																		
Ten Daily I	1874	0.000	0.000	0.200	0.200	37712	340.9	0.000	0.000	0.062	0.062	1802	165.8	0.000	0.000	0.074	0.074	1194
Ten Daily II	692.8	0.000	0.000	0.152	0.152	10343	216.5	0.000	0.000	0.058	0.058	1083	96.62	0.000	0.000	0.020	0.020	165
Ten Daily III	690.3	0.000	0.000	0.119	0.119	7368	188.6	0.000	0.000	0.051	0.051	826	91.95	0.000	0.000	0.017	0.017	135
Monthly																		
Total						554240						37937						14931

Annual Sediment Load (Metric Tonnes) : 1485837

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	89.70	0.000	0.000	0.016	0.016	121	44.00	0.000	0.000	0.015	0.015	58	24.20	0.000	0.000	0.012	0.012	24
2	90.28	0.000	0.000	0.016	0.016	122	42.93	0.000	0.000	0.015	0.015	56	24.01	0.000	0.000	0.012	0.012	24
3	89.01	0.000	0.000	0.016	0.016	120	42.72	0.000	0.000	0.015	0.015	56	23.59	0.000	0.000	0.012	0.012	23
4	89.00	0.000	0.000	0.016	0.016	120	42.15	0.000	0.000	0.015	0.015	55	22.92	0.000	0.000	0.012	0.012	23
5	79.20	0.000	0.000	0.016	0.016	107	41.88	0.000	0.000	0.015	0.015	55	22.90	0.000	0.000	0.012	0.012	23
6	76.71	0.000	0.000	0.016	0.016	103	41.35	0.000	0.000	0.015	0.015	53	21.22	0.000	0.000	0.012	0.012	21
7	75.09	0.000	0.000	0.016	0.016	101	40.23	0.000	0.000	0.015	0.015	51	20.67	0.000	0.000	0.012	0.012	21
8	72.02	0.000	0.000	0.016	0.016	97	40.20	0.000	0.000	0.015	0.015	51	20.30	0.000	0.000	0.012	0.012	20
9	68.32	0.000	0.000	0.016	0.016	92	38.21	0.000	0.000	0.015	0.015	49	19.58	0.000	0.000	0.012	0.012	19
10	67.60	0.000	0.000	0.015	0.015	90	38.10	0.000	0.000	0.015	0.015	48	19.92	0.000	0.000	0.010	0.010	17
11	68.30	0.000	0.000	0.015	0.015	91	35.99	0.000	0.000	0.015	0.015	46	19.38	0.000	0.000	0.010	0.010	17
12	68.30	0.000	0.000	0.015	0.015	91	35.86	0.000	0.000	0.015	0.015	46	19.40	0.000	0.000	0.010	0.010	17
13	70.34	0.000	0.000	0.015	0.015	94	34.48	0.000	0.000	0.014	0.014	41	18.60	0.000	0.000	0.010	0.010	16
14	68.51	0.000	0.000	0.015	0.015	91	33.88	0.000	0.000	0.014	0.014	41	18.28	0.000	0.000	0.010	0.010	16
15	67.63	0.000	0.000	0.015	0.015	90	33.80	0.000	0.000	0.014	0.014	41	17.90	0.000	0.000	0.010	0.010	15
16	68.13	0.000	0.000	0.015	0.015	89	32.68	0.000	0.000	0.014	0.014	39	18.03	0.000	0.000	0.010	0.010	15
17	66.36	0.000	0.000	0.015	0.015	87	32.36	0.000	0.000	0.014	0.014	39	17.54	0.000	0.000	0.010	0.010	15
18	66.00	0.000	0.000	0.015	0.015	87	32.12	0.000	0.000	0.014	0.014	39	17.46	0.000	0.000	0.011	0.011	17
19	58.81	0.000	0.000	0.015	0.015	77	31.81	0.000	0.000	0.014	0.014	38	17.40	0.000	0.000	0.011	0.011	17
20	59.01	0.000	0.000	0.015	0.015	77	31.18	0.000	0.000	0.013	0.013	34	17.32	0.000	0.000	0.011	0.011	17
21	58.02	0.000	0.000	0.015	0.015	76	29.06	0.000	0.000	0.013	0.013	31	17.22	0.000	0.000	0.011	0.011	17
22	57.08	0.000	0.000	0.015	0.015	75	29.00	0.000	0.000	0.013	0.013	31	17.17	0.000	0.000	0.011	0.011	17
23	55.54	0.000	0.000	0.015	0.015	73	26.95	0.000	0.000	0.013	0.013	29	16.74	0.000	0.000	0.011	0.011	16
24	55.79	0.000	0.000	0.015	0.015	73	26.31	0.000	0.000	0.013	0.013	28	16.60	0.000	0.000	0.011	0.011	15
25	48.80	0.000	0.000	0.015	0.015	64	26.20	0.000	0.000	0.013	0.013	28	16.64	0.000	0.000	0.011	0.011	15
26	48.97	0.000	0.000	0.015	0.015	64	26.00	0.000	0.000	0.013	0.013	28	16.60	0.000	0.000	0.011	0.011	15
27	48.78	0.000	0.000	0.015	0.015	64	26.10	0.000	0.000	0.010	0.010	23	16.45	0.000	0.000	0.011	0.011	15
28	48.29	0.000	0.000	0.015	0.015	63	27.94	0.000	0.000	0.010	0.010	25	16.34	0.000	0.000	0.011	0.011	15
29	46.22	0.000	0.000	0.015	0.015	61	26.00	0.000	0.000	0.010	0.010	23						
30	47.42	0.000	0.000	0.015	0.015	62	25.92	0.000	0.000	0.010	0.010	23						
31	45.81	0.000	0.000	0.015	0.015	60	24.31	0.000	0.000	0.010	0.010	21						
Ten Daily Mean																		
Ten Daily I	79.69	0.000	0.000	0.016	0.016	107	41.18	0.000	0.000	0.015	0.015	53	21.93	0.000	0.000	0.011	0.011	22
Ten Daily II	66.14	0.000	0.000	0.015	0.015	87	33.41	0.000	0.000	0.014	0.014	40	18.13	0.000	0.000	0.010	0.010	16
Ten Daily III	50.97	0.000	0.000	0.015	0.015	67	26.71	0.000	0.000	0.011	0.011	26	16.72	0.000	0.000	0.011	0.011	16
Monthly																		
Total						2684						1226						501

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	16.20	0.000	0.000	0.008	0.008	11	12.81	0.000	0.000	0.011	0.011	12	14.34	0.000	0.000	0.009	0.009	11
2	16.15	0.000	0.000	0.008	0.008	11	12.80	0.000	0.000	0.011	0.011	12	14.45	0.000	0.000	0.009	0.009	11
3	15.71	0.000	0.000	0.008	0.008	11	12.58	0.000	0.000	0.011	0.011	11	14.07	0.000	0.000	0.009	0.009	11
4	15.87	0.000	0.000	0.008	0.008	11	12.45	0.000	0.000	0.011	0.011	11	14.26	0.000	0.000	0.009	0.009	11
5	15.80	0.000	0.000	0.008	0.008	11	12.25	0.000	0.000	0.011	0.011	11	14.18	0.000	0.000	0.007	0.007	9
6	15.50	0.000	0.000	0.008	0.008	11	12.40	0.000	0.000	0.011	0.011	11	14.26	0.000	0.000	0.007	0.007	9
7	15.48	0.000	0.000	0.008	0.008	11	12.00	0.000	0.000	0.009	0.009	9	14.26	0.000	0.000	0.007	0.007	9
8	15.29	0.000	0.000	0.008	0.008	11	12.01	0.000	0.000	0.009	0.009	9	14.36	0.000	0.000	0.007	0.007	9
9	15.22	0.000	0.000	0.008	0.008	11	12.00	0.000	0.000	0.009	0.009	9	14.32	0.000	0.000	0.007	0.007	9
10	15.16	0.000	0.000	0.011	0.011	14	11.19	0.000	0.000	0.009	0.009	9	14.32	0.000	0.000	0.007	0.007	9
11	15.15	0.000	0.000	0.011	0.011	14	11.11	0.000	0.000	0.009	0.009	9	14.20	0.000	0.000	0.007	0.007	9
12	15.10	0.000	0.000	0.011	0.011	14	11.18	0.000	0.000	0.009	0.009	9	14.34	0.000	0.000	0.009	0.009	11
13	15.10	0.000	0.000	0.011	0.011	14	11.06	0.000	0.000	0.005	0.005	5	14.30	0.000	0.000	0.009	0.009	11
14	15.01	0.000	0.000	0.011	0.011	14	11.00	0.000	0.000	0.005	0.005	5	14.30	0.000	0.000	0.009	0.009	11
15	14.93	0.000	0.000	0.011	0.011	14	10.95	0.000	0.000	0.005	0.005	5	14.23	0.000	0.000	0.009	0.009	11
16	14.88	0.000	0.000	0.011	0.011	13	11.00	0.000	0.000	0.005	0.005	5	14.58	0.000	0.000	0.009	0.009	11
17	14.67	0.000	0.000	0.011	0.011	13	10.69	0.000	0.000	0.005	0.005	5	16.81	0.000	0.000	0.009	0.009	13
18	14.56	0.000	0.000	0.011	0.011	13	10.71	0.000	0.000	0.005	0.005	5	16.75	0.000	0.000	0.009	0.009	13
19	14.50	0.000	0.000	0.011	0.011	13	11.84	0.000	0.000	0.005	0.005	5	16.49	0.000	0.000	0.009	0.009	13
20	14.44	0.000	0.000	0.011	0.011	13	11.56	0.000	0.000	0.005	0.005	5	16.72	0.000	0.000	0.009	0.009	13
21	14.44	0.000	0.000	0.011	0.011	13	12.70	0.000	0.000	0.005	0.005	5	16.70	0.000	0.000	0.009	0.009	13
22	14.42	0.000	0.000	0.008	0.008	10	12.81	0.000	0.000	0.010	0.010	12	17.32	0.000	0.000	0.009	0.009	13
23	14.22	0.000	0.000	0.008	0.008	10	13.00	0.000	0.000	0.010	0.010	12	18.40	0.000	0.000	0.009	0.009	14
24	14.03	0.000	0.000	0.008	0.008	9	14.08	0.000	0.000	0.010	0.010	13	18.61	0.000	0.000	0.009	0.009	14
25	13.93	0.000	0.000	0.008	0.008	9	14.15	0.000	0.000	0.010	0.010	13	18.43	0.000	0.000	0.009	0.009	14
26	13.90	0.000	0.000	0.008	0.008	9	14.07	0.000	0.000	0.010	0.010	13	19.33	0.000	0.000	0.009	0.009	15
27	13.42	0.000	0.000	0.008	0.008	9	14.08	0.000	0.000	0.010	0.010	13	21.93	0.000	0.000	0.009	0.009	17
28	13.34	0.000	0.000	0.008	0.008	9	14.13	0.000	0.000	0.010	0.010	13	21.90	0.000	0.000	0.015	0.015	28
29	13.17	0.000	0.000	0.008	0.008	9	13.99	0.000	0.000	0.010	0.010	13	27.00	0.000	0.000	0.015	0.015	35
30	13.61	0.000	0.000	0.008	0.008	9	13.90	0.000	0.000	0.010	0.010	12	29.51	0.000	0.000	0.015	0.015	38
31	12.91	0.000	0.000	0.008	0.008	9							30.41	0.000	0.000	0.015	0.015	39
Ten Daily Mean																		
Ten Daily I	15.64	0.000	0.000	0.008	0.008	11	12.25	0.000	0.000	0.010	0.010	11	14.28	0.000	0.000	0.008	0.008	10
Ten Daily II	14.83	0.000	0.000	0.011	0.011	13	11.11	0.000	0.000	0.006	0.006	6	15.27	0.000	0.000	0.009	0.009	12
Ten Daily III	13.76	0.000	0.000	0.008	0.008	10	13.69	0.000	0.000	0.010	0.010	12	21.78	0.000	0.000	0.011	0.011	22
Monthly																		
Total						351						278						455

Annual Sediment Load for period : 1973-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1973-1974	1068248	211	1068459	8149
1974-1975	1537923	0	1537923	6670
1975-1976	1111859	0	1111859	10814
1976-1977	8274424	94715	8369139	6948
1977-1978	7090119	4957	7095076	10610
1978-1979	3525517	8964	3534482	8893
1979-1980	1229436	4101	1233537	2026
1980-1981	2573679	75437	2649117	4667
1981-1982	3534712	11538	3546250	5396
1982-1983	469706	5201	474907	2829
1983-1984	4508651	1695	4510345	4341
1984-1985	13783405	3607	13787012	9734
1985-1986	2230948	52265	2283213	7969
1986-1987	1197523	467705	1665228	5509
1987-1988	3618081	9742	3627824	5442
1988-1989	2653330	8566	2661896	6326
1989-1990	4572461	7096	4579557	6331
1990-1991	5858316	20773	5879089	10081
1991-1992	780902	12814	793716	5824
1992-1993	510889	1307	512196	3123
1993-1994	3243095	6618	3249713	5339
1994-1995	6124335	60501	6184836	14523
1995-1996	4050479	64851	4115330	11583
1996-1997	4062817	4643	4067461	11494
1997-1998	4286352	79046	4365398	12968
1998-1999	743811	18933	762743	4552
1999-2000	3174341	9158	3183500	10582
2000-2001	470089	2307	472396	3340
2001-2002	2383840	26325	2410165	7843
2002-2003	685114	53200	738314	4578
2003-2004	970631	24399	995031	3843
2004-2005	2152535	6325	2158861	4615
2005-2006	849622	17730	867352	2457
2006-2007	5800155	38002	5838157	8376
2007-2008	2651605	10458	2662062	8720
2008-2009	2803252	28355	2831607	9194
2009-2010	1153452	58115	1211567	5322
2010-2011	53147	5332	58479	795
2011-2012	2996260	24235	3020495	9262
2012-2013	796162	23362	819523	4628
2013-2014	2375509	16112	2391621	9184
2014-2015	1242693	7789	1250482	7133
2015-2016	1086878	3524	1090403	4657
2016-2017	1480342	5495	1485837	8042

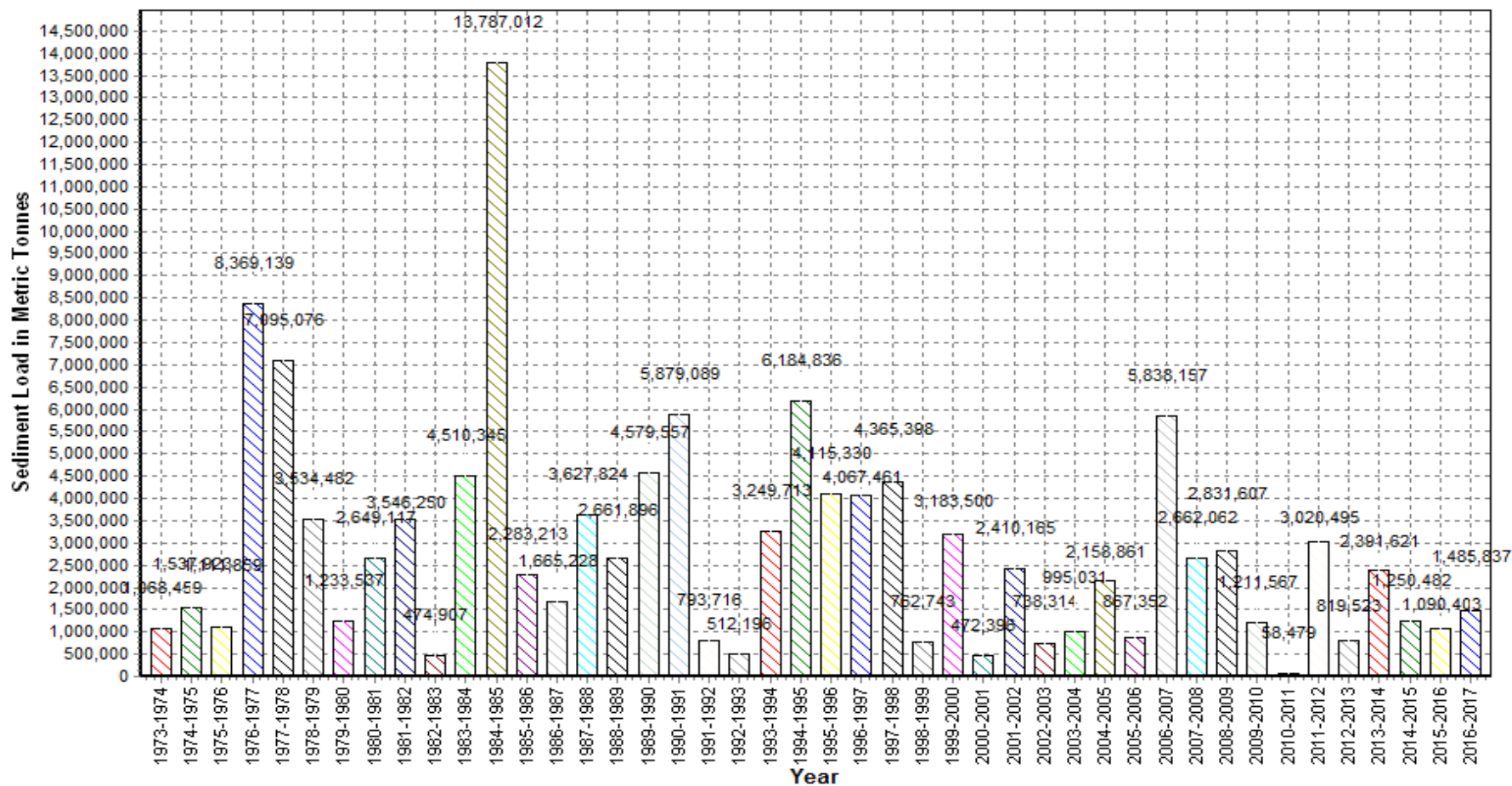
Annual Sediment Load for the period: 1973-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



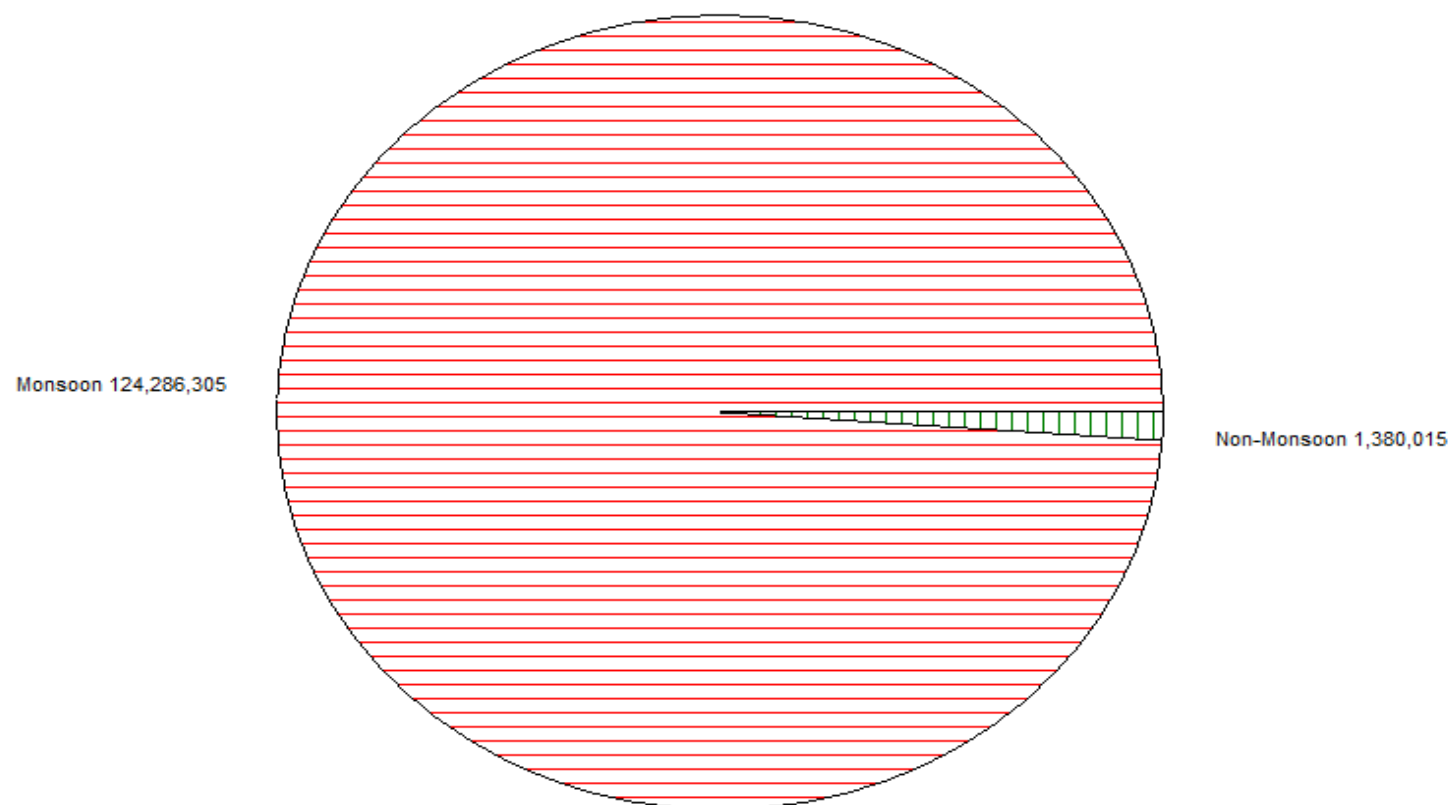
Seasonal Sediment Load for the period : 1973-2016

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

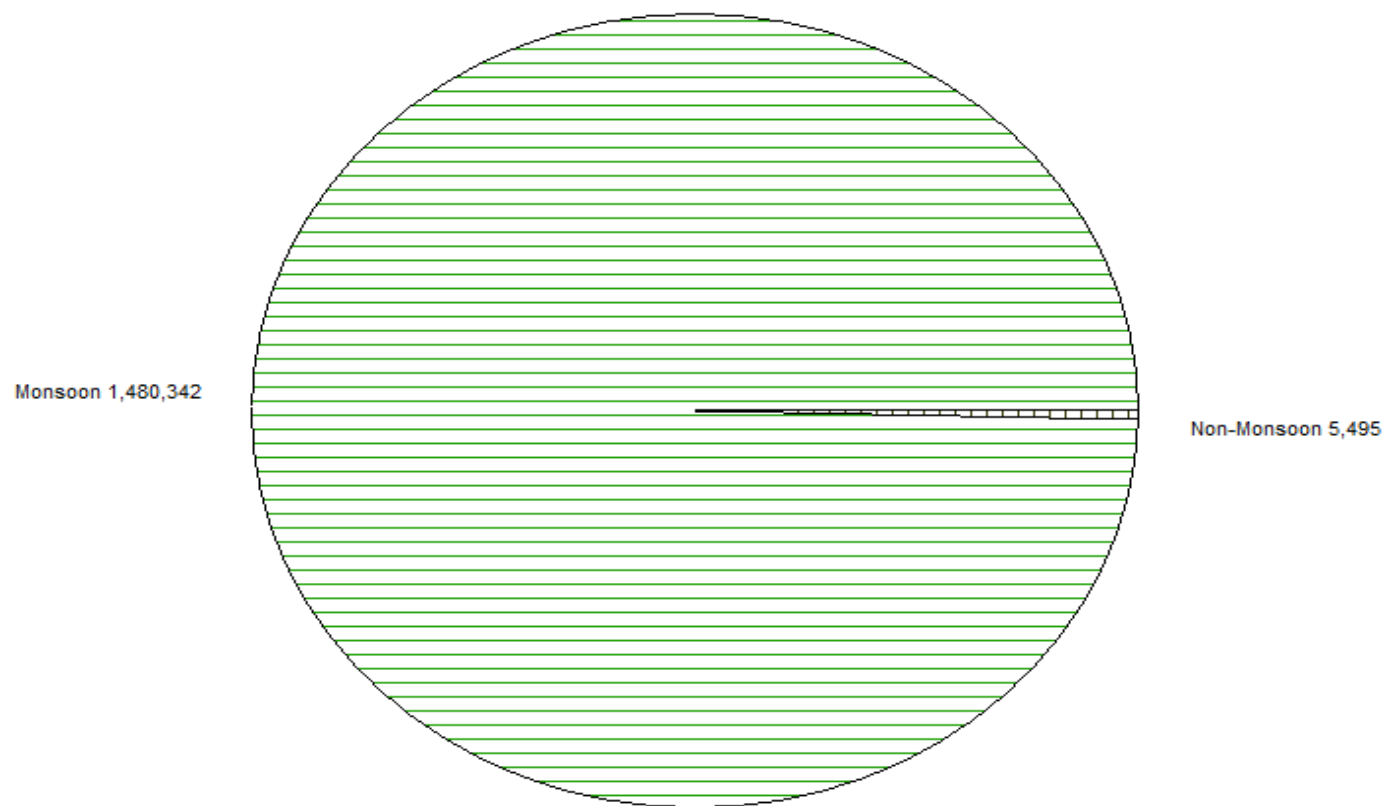
Sub-Division : Balasore



Seasonal Sediment Load for the Year: 2016-2017

Station Name : JAMSHEDPUR (ES000N5)
Local River : Subarnarekha

Division : E.E., Bhubaneswar
Sub-Division : Balasore



Water Quality Datasheet for the period : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

River Water Analysis

S.No	Parameters	6/1/2016 A	7/2/2016 A	8/1/2016 A	9/1/2016 A	10/1/2016 A	11/1/2016 A	12/1/2016 A	1/2/2017 A	2/1/2017 A	3/1/2017 A	4/1/2017 A	5/1/2017 A
PHYSICAL													
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	498	309	220	196	220	618	708	311	402	312	300	285
4	EC_GEN (µmho/cm)	502	311	224	198	225	620	710	315	406	314	305	260
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.0	7.4	7.1	7.6	8.0	7.6	7.6	7.6	7.5	7.2	7.2	7.7
7	pH_GEN (pH units)	7.0	7.5	7.2	7.7	8.1	7.7	7.7	7.6	7.6	7.3	7.4	7.8
8	Temp (deg C)	26.0	24.0	28.0	27.0	27.5	21.0	17.5	18.5	20.0	19.0	28.5	28.0
CHEMICAL													
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	157	97	102	92	92	75	92	97	88	97	102	83
3	B (mg/L)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.01	0.01
4	Ca (mg/L)	75	75	77	64	66	61	67	48	69	64	58	51
5	Cl (mg/L)	30.2	20.8	32.1	34.0	13.2	13.2	15.1	33.8	13.2	22.6	20.8	20.8
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.6	0.4	0.3	0.8	1.0	0.3	0.8	0.9	0.6	0.3	0.4	0.3
9	HCO3 (mg/L)	192	118	124	113	113	91	113	118	107	118	124	101
10	K (mg/L)	0.2	11.7	7.3	7.4	7.4	7.6	8.3	21.9	15.9	16.2	16.0	17.1
11	Mg (mg/L)	24.3	25.3	26.2	20.4	24.3	25.3	25.3	19.4	26.2	25.3	20.4	21.4
12	Na (mg/L)	25.8	45.1	34.5	34.8	33.7	35.4	38.9	58.0	98.0	46.9	91.2	92.4
13	NO2+NO3 (mg N/L)	1.19	0.84	0.95	1.27	1.25	0.97	1.23	1.13	1.02	1.30	1.13	1.11
14	NO2-N (mgN/L)	0.00	0.00	0.03	0.03	0.00	0.00	0.01	0.03	0.07	0.00	0.03	0.01
15	NO3-N (mgN/L)	1.19	0.84	0.92	1.25	1.25	0.97	1.22	1.11	0.95	1.30	1.11	1.09
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	6.0	7.0	7.0	6.0	6.0	6.0	6.0	8.0	6.0	7.5	9.7
18	SO4 (mg/L)	42.6	31.6	31.6	31.4	14.2	22.3	26.2	25.5	26.0	23.8	20.5	13.1
BIOLOGICAL/BACTERIOLOGICAL													
1	BOD3-27 (mg/L)	0.4	1.2	0.8	2.4	0.2	1.0	4.0	2.2	0.6	59.0	59.0	0.6
2	DO (mg/L)	1.8	8.1	4.0	7.4	6.8	7.0	6.0	5.0	7.6	1.2	1.8	2.2
3	DO_SAT% (%)	22	97	51	92	85	78	62	53	83	13	23	28
4	FCol-MPN (MPN/100mL)						90	170	70	140	110	40	60
5	Tcol-MPN (MPN/100mL)						220	260	90	210	210	120	120
TRACE & TOXIC													
CHEMICAL INDICES													
1	HAR_Ca (mgCaCO3/L)	188	188	192	160	164	152	168	120	172	160	144	128
2	HAR_Total (mgCaCO3/L)	290	294	302	245	266	258	274	201	282	266	229	217
3	Na% (%)	16	24	20	23	21	22	23	36	42	26	44	46
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.7	1.1	0.9	1.0	0.9	1.0	1.0	1.8	2.5	1.3	2.6	2.7
PESTICIDES													

Water Quality Summary for the period : 2016-2017

Station Name : JAMSHEDPUR (ES000N5)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	12	708	196	365
3	EC_GEN (μmho/cm)	12	710	198	366
4	pH_FLD (pH units)	12	8.0	7.0	7.5
5	pH_GEN (pH units)	12	8.1	7.0	7.5
6	Temp (deg C)	12	28.5	17.5	23.8
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	157	75	98
3	B (mg/L)	12	0.03	0.01	0.01
4	Ca (mg/L)	12	77	48	65
5	Cl (mg/L)	12	34.0	13.2	22.5
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	1.0	0.3	0.6
9	HCO3 (mg/L)	12	192	91	119
10	K (mg/L)	12	21.9	0.2	11.4
11	Mg (mg/L)	12	26.2	19.4	23.6
12	Na (mg/L)	12	98.0	25.8	52.9
13	NO2+NO3 (mg N/L)	12	1.30	0.84	1.12
14	NO2-N (mgN/L)	12	0.07	0.00	0.02
15	NO3-N (mgN/L)	12	1.30	0.84	1.1
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	9.7	6.0	6.8
18	SO4 (mg/L)	12	42.6	13.1	25.7
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	59.0	0.2	10.9
2	DO (mg/L)	12	8.1	1.2	4.9
3	DO_SAT% (%)	12	97	13	57
4	FCol-MPN (MPN/100mL)	7	170	40	97
5	Tcol-MPN (MPN/100mL)	7	260	90	176
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	192	120	162
2	HAR_Total (mgCaCO3/L)	12	302	201	260
3	Na% (%)	12	46	16	29
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	2.7	0.7	1.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

River Water

Division : E.E., Bhubaneswar

Sub-Division : Balasore

S.No	Parameters	Flood Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	206	225	250	255	199	233		242	368	290	218	177	256	470	289	333	229	222	264	299	247
3	EC_GEN (µmho/cm)	206	225	250	249	195	228		242	368	290	218	177	256	477	292	333	229	222	260	295	243
4	pH_FLD (pH units)	7.9	7.7	7.9	7.6	7.8	7.9		7.8	8.1	8.1	7.6	7.6	7.8	7.2	7.4	7.6	7.6	8.0	8.2	8.1	7.9
5	pH_GEN (pH units)	7.9	7.7	7.9	7.7	7.9	7.9		7.8	8.1	8.1	7.6	7.5	7.8	7.4	7.5	7.6	7.6	8.0	8.2	8.1	8.0
6	Temp (deg C)	30.6	29.6	30.5	29.1	29.7	29.4		30.2	29.3	29.5	31.0	28.7	29.4	28.2	26.5	22.8	22.2	22.9	20.4	20.8	20.3
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0		0.0	4.0	5.5			0.0	0.0	0.0						0.0
2	ALK-TOT (mgCaCO3/L)						74		60	113	99			189	66	108						86
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	22	23	21	25	21	20		22	33	26	24	27	20	35	72	18	26	19	25	29	23
5	Cl (mg/L)	19.5	20.9	20.6	25.5	16.5	21.1		16.7	26.4	37.0	18.5	29.7	37.0	15.5	26.0	30.1	14.8	19.3	24.6	24.4	18.9
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	6.7	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.04	0.04	0.46	0.19	0.04	0.03		0.08	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.04	0.52	0.07	0.08	0.00
8	Fe (mg/L)			0.1	0.1	0.2	0.2		0.2	0.2	0.0	0.7	0.2	0.3	0.4	0.6		0.0	0.1	0.1	0.1	0.2
9	HCO3 (mg/L)	84	91	108	98	85	90		73	119	107	95	110	107	80	132	71	94	95	102	110	105
10	K (mg/L)	2.5	2.4	4.5	4.4	2.2	2.7		1.8	4.6	1.5	1.9	1.6	1.5	2.2	6.8	2.8	2.4	1.9	3.1	2.6	2.2
11	Mg (mg/L)	4.9	4.3	8.0	7.3	5.0	7.0		7.8	12.8	8.2	6.8	3.8	8.2	11.7	24.1	4.4	5.7	8.0	6.8	6.7	8.2
12	Na (mg/L)	13.8	15.6	14.5	17.0	10.9	14.9		10.3	16.2	10.9	8.1	13.8	10.9	10.4	34.8	20.0	11.0	12.5	16.4	17.7	12.9
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	0.85	0.61	0.97	2.23	1.01	0.66		0.82	0.92	0.39	0.85	0.80	1.16	1.19	1.10	0.74	1.08	0.66	0.86	1.22	1.03
15	NO2-N (mgN/L)	0.00	0.00	0.00	0.01	0.00	0.00		0.00	0.00	0.07	0.00	0.02	0.02	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.85	0.61	0.97	2.22	1.01	0.66		0.82	0.92	0.32	0.85	0.78	1.14	1.19	1.09	0.74	1.08	0.66	0.86	1.22	1.03
17	o-PO4-P (mg P/L)		0.134	0.000	0.025	0.000	0.000		0.038	0.083									0.000	0.010	0.000	
18	P-Tot (mgP/L)	0.001	0.001	0.017	0.025	0.001	0.001		0.001	0.053	0.010	0.001	0.003	0.001	0.001	0.010	0.001	0.001	0.001	0.001	0.011	0.001
19	SiO2 (mg/L)	11.3	11.6	22.0	21.9	11.2	9.7		9.2	9.2	9.2	12.2	10.9	5.2	6.2	6.4	10.8	16.4	22.0	23.8	12.2	9.5
20	SO4 (mg/L)	3.1	7.2	7.2	9.4	5.0	11.5		15.9	19.9	36.6	50.5	37.3	36.6	11.9	30.3	3.6	8.5	5.1	4.8	7.6	8.2
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.3	1.0	1.1	1.7	1.8	1.8		2.5	17.6	9.7	1.3	0.9	1.3	8.6	1.0	1.4	1.7	1.9	2.3	6.4	1.9
2	DO (mg/L)	6.2	5.0	5.7	6.0	6.4	6.4		5.9	4.8	5.4	6.0	6.4	5.4	4.1	5.6	4.8	7.7	7.1	8.0	4.8	7.6
3	DO_SAT% (%)	83	66	76	78	84	84		78	62	72	80	83	70	52	69	55	87	82	88	54	83
4	FCol-MPN (MPN/100mL)																					
5	Tcol-MPN (MPN/100mL)																					
	TRACE & TOXIC																					
1	Al (mg/L)					4.72																
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	54	57	54	63	52	50		55	83	65	60	68	51	88	179	44	64	48	62	72	57
2	HAR_Total (mgCaCO3/L)	75	75	84	93	72	79		87	137	99	88	84	85	137	279	62	88	80	90	100	91
3	Na% (%)	28	31	23	25	25	27		20	20	18	16	26	19	14	21	40	21	25	27	27	24
4	RSC (-)	0.0	0.1	0.1	0.0	0.1	0.0		0.0	0.0	0.2	0.0	0.2	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.7	0.8	0.7	0.7	0.6	0.7		0.5	0.6	0.4	0.4	0.7	0.5	0.4	0.9	1.1	0.5	0.6	0.8	0.8	0.6
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : JAMSHEDPUR (ES000N5)

Local River : Subarnarekha

River Water

Division : E.E., Bhubaneswar

Sub-Division : Balasore

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		258	353	330	265	208	333	703	510	230	247	512	294	296	338		673	397	243	257	260
3	EC_GEN (µmho/cm)		258	353	330	265	208	333	709	513	263	247	507	290	293	333		673	397	243	257	243
4	pH_FLD (pH units)		7.9	7.4	7.9	7.3	7.7	7.6	7.7	7.6	7.7	7.6	7.7	7.6	7.7	7.9		7.4	8.1	7.5	7.4	7.3
5	pH_GEN (pH units)		7.8	7.4	7.9	7.3	7.7	7.6	7.6	7.6	7.7	7.6	7.9	7.6	7.8	7.9		7.4	8.1	7.5	7.4	7.3
6	Temp (deg C)		19.8	21.0	21.8	20.1	19.3	19.4	21.1	19.3	26.0	26.8	26.3	26.7	26.3	25.7		26.3	24.1	27.0	26.8	26.5
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	0.0				3.5	0.0					0.0	0.0		0.0	20.5	0.0		
2	ALK-TOT (mgCaCO3/L)		69	94	91				73	88					153	111		193	165	85		
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.02		0.00	0.00	0.01	0.00	0.00
4	Ca (mg/L)		21	28	27	20	23	24	32	61	20	26	54	31	23	35		48	38	38	20	40
5	Cl (mg/L)		19.4	24.5	28.3	21.2	27.7	28.8	16.0	18.8	23.9	21.0	39.0	25.0	37.5	19.7		44.6	25.1	34.6	21.1	43.7
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	4.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	30.6	0.0	0.0	0.0
7	F (mg/L)		0.09	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.03	0.16	0.17	0.06	0.08	0.05		0.35	0.05	0.05	0.05	0.05
8	Fe (mg/L)		0.2	0.2	0.0	0.8	0.1	0.2	0.3	0.7				0.1	0.1	0.3		0.2	0.2	0.0	1.4	0.1
9	HCO3 (mg/L)		84	126	111	104	111	106	80	107	94	95	212	114	94	136		236	112	103	91	168
10	K (mg/L)		1.7	2.9	1.9	2.6	2.0	1.9	3.4	13.4	2.6	2.4	8.0	2.6	2.3	3.2		5.2	3.2	2.6	2.6	3.0
11	Mg (mg/L)		10.2	14.1	9.5	9.0	6.4	5.3	8.5	24.1	5.8	5.7	12.6	6.5	6.0	11.1		27.9	14.3	7.8	4.8	10.3
12	Na (mg/L)		13.2	18.1	10.3	13.8	16.0	9.8	18.2	57.6	18.8	14.5	25.0	18.6	23.6	12.5		27.3	16.1	16.8	14.0	22.1
13	NH3-N (mg N/L)															0.05						0.00
14	NO2+NO3 (mg N/L)		1.13	0.65	0.39	0.82	1.09	1.06	1.03	1.09	0.78	0.72	0.77	0.97	0.51	1.00		3.04	0.78	0.40	0.85	1.04
15	NO2-N (mgN/L)		0.00	0.00	0.07	0.00	0.02	0.02	0.01	0.03	0.00	0.00	0.00	0.00	0.00	0.00		0.03	0.00	0.07	0.29	0.03
16	NO3-N (mgN/L)		1.13	0.65	0.32	0.82	1.06	1.04	1.02	1.06	0.78	0.72	0.77	0.97	0.51	1.00		3.00	0.77	0.33	0.85	1.01
17	o-PO4-P (mg P/L)		0.025										0.067	0.045	0.007			0.253				
18	P-Tot (mgP/L)		0.001	0.001	0.010	0.001	0.002	0.001	0.010	0.010	0.004	0.001	0.001	0.046	0.024	0.050		0.001	0.001	0.010	0.001	0.005
19	SiO2 (mg/L)		9.0	5.3	11.3	13.0	11.2	5.1	6.0	6.5	16.8	12.7	22.2	17.5	18.0	9.5		9.5	8.0	11.3	13.0	12.5
20	SO4 (mg/L)		17.1	26.3	9.2	13.4	35.7	8.8	15.3	25.0	2.3	8.7	20.2	8.7	2.3	14.9		33.9	15.5	31.7	18.4	75.8
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		2.8	2.3	7.1	0.8	1.0	10.6	0.7	1.9	1.8	13.7	52.0	9.0	6.8	20.0		2.4	3.4	2.6	1.1	2.0
2	DO (mg/L)		6.7	5.5	5.4	6.1	6.9	5.8	5.7	6.4	5.1	3.3	1.5	3.4	4.3	2.4		4.6	4.3	4.9	5.8	3.8
3	DO_SAT% (%)		73	62	61	67	75	62	63	69	63	42	19	42	53	29		54	50	61	71	45
4	FCol-MPN (MPN/100mL)									118												
5	Tcol-MPN (MPN/100mL)									195												
	TRACE & TOXIC																					
1	Al (mg/L)																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		53	71	67	50	58	59	79	153	51	65	135	78	58	89		120	95	95	50	101
2	HAR_Total (mgCaCO3/L)		96	130	107	88	85	81	115	254	75	88	162	105	83	135		236	154	127	70	144
3	Na% (%)		23	23	17	26	29	20	25	31	35	26	22	27	39	17		23	19	22	30	25
4	RSC (-)		0.0	0.0	0.0	0.2	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.1	0.3
5	SAR (-)		0.6	0.7	0.4	0.7	0.8	0.5	0.7	1.6	1.0	0.7	0.8	0.8	1.2	0.5		0.8	0.6	0.7	0.7	0.8
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : JAMSHEDPUR (ES000N5)

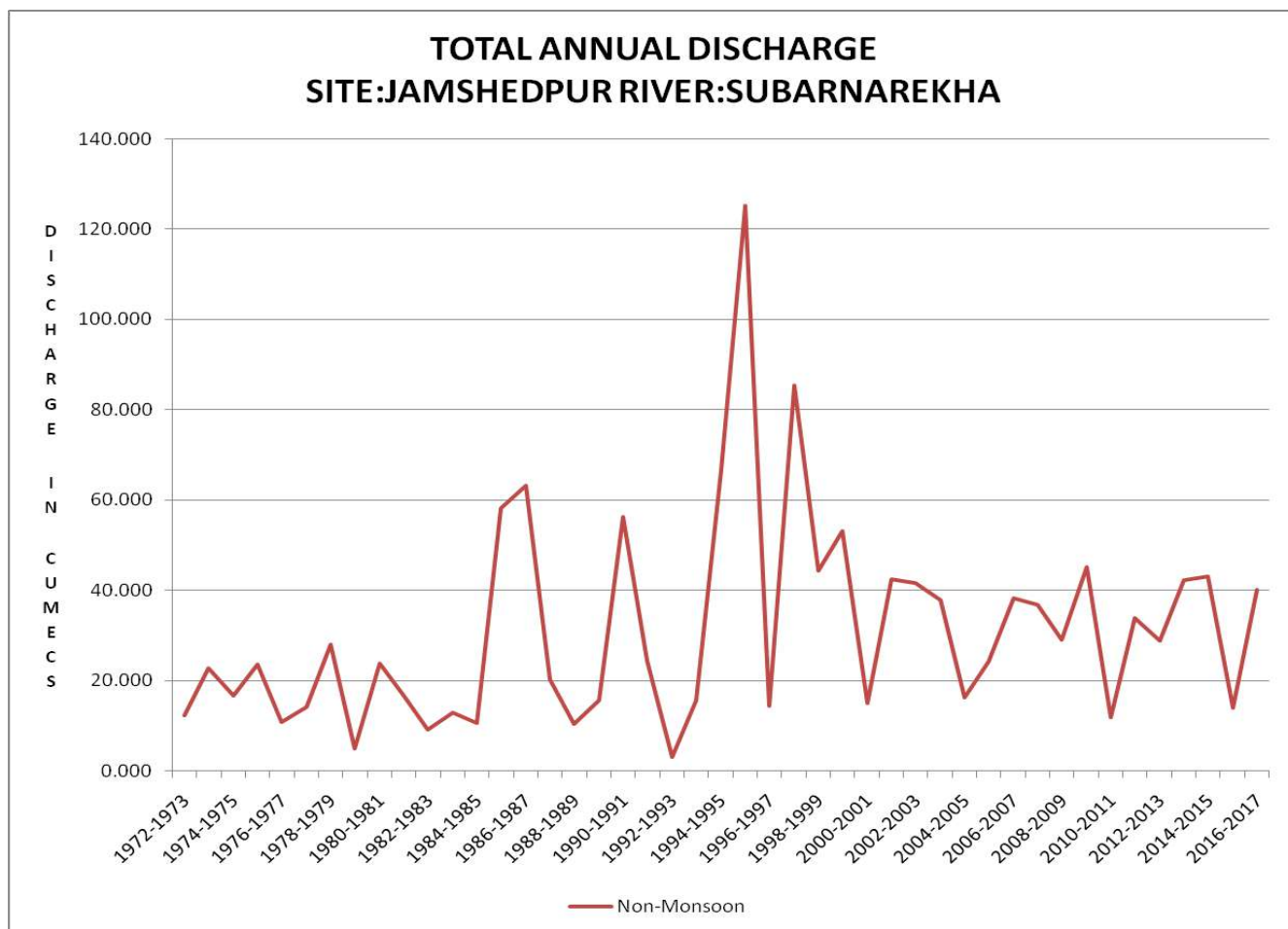
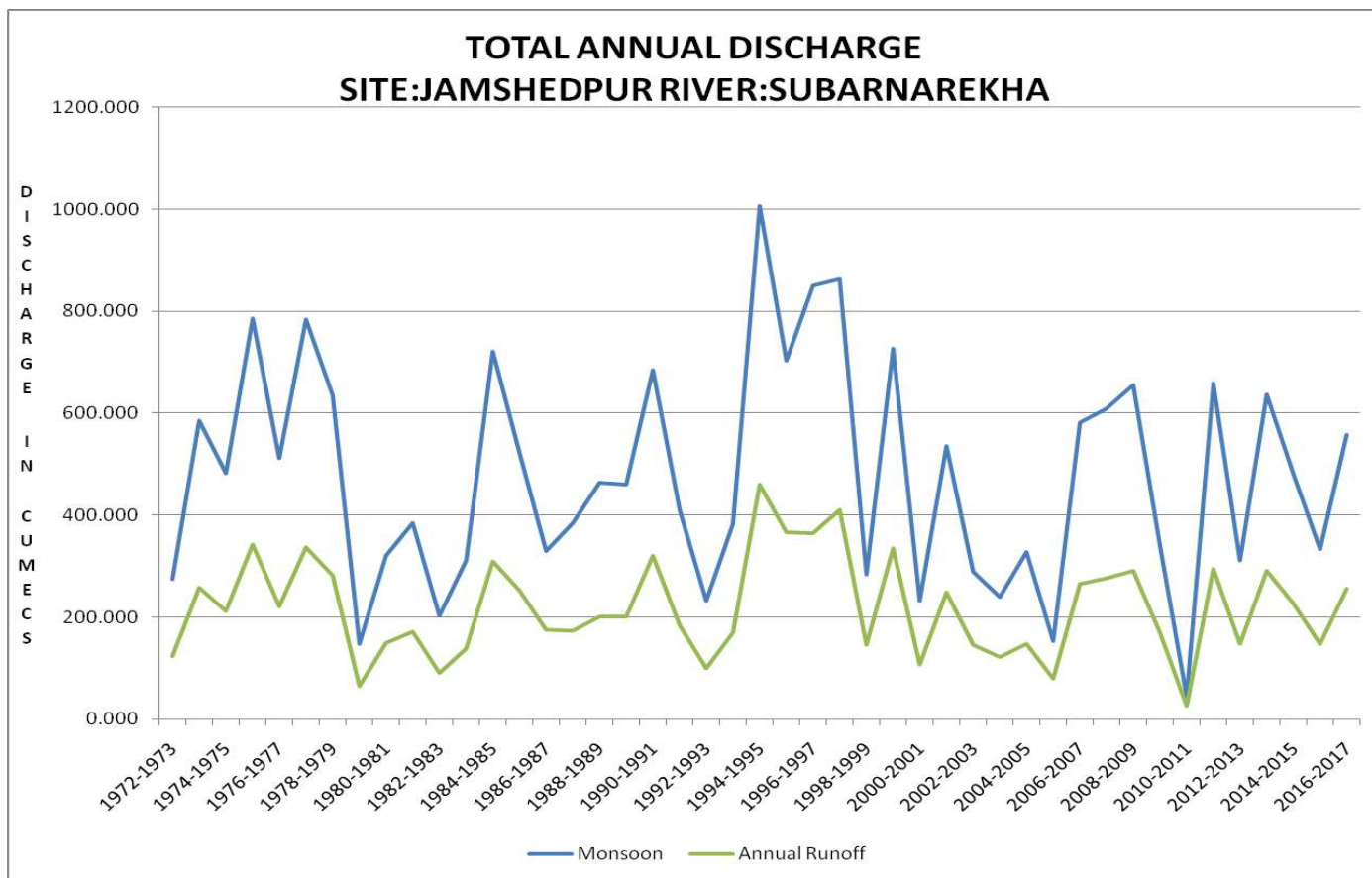
Local River : Subarnarekha

Division : E.E., Bhubaneswar

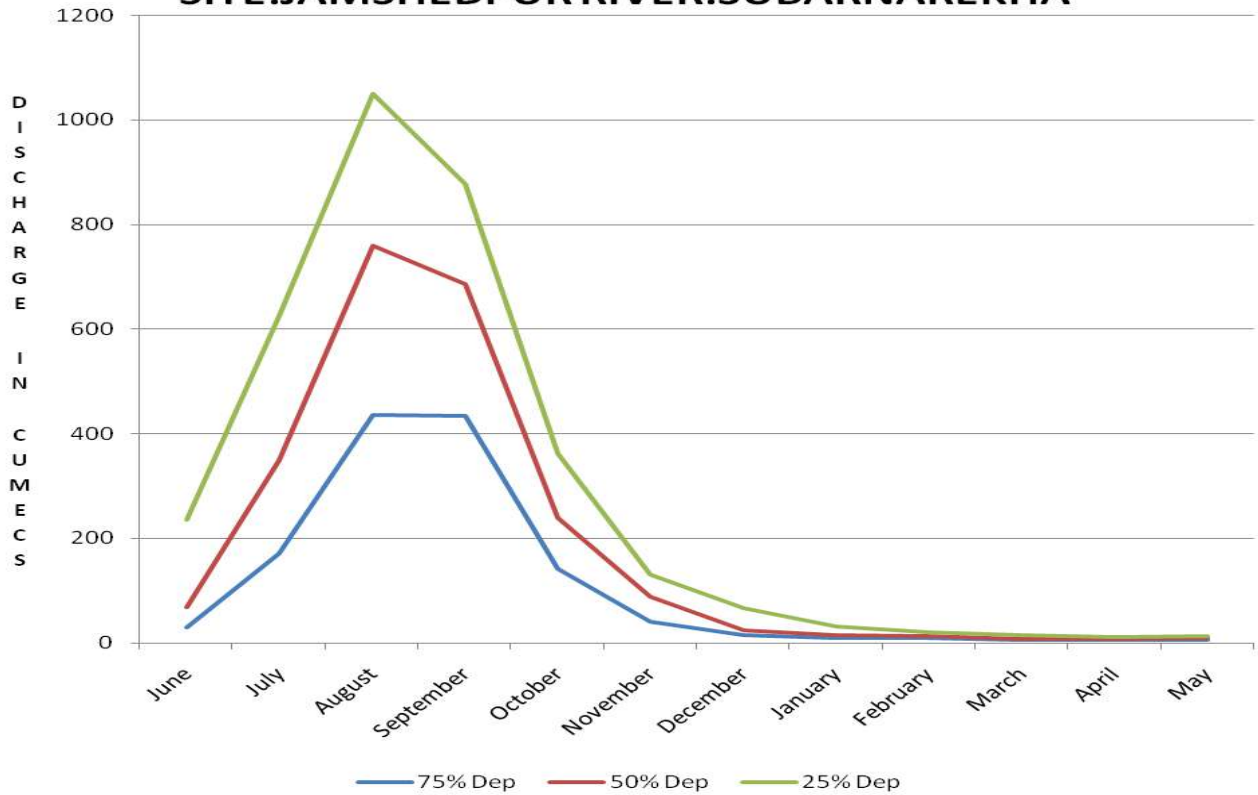
Sub-Division : Balasore

River Water

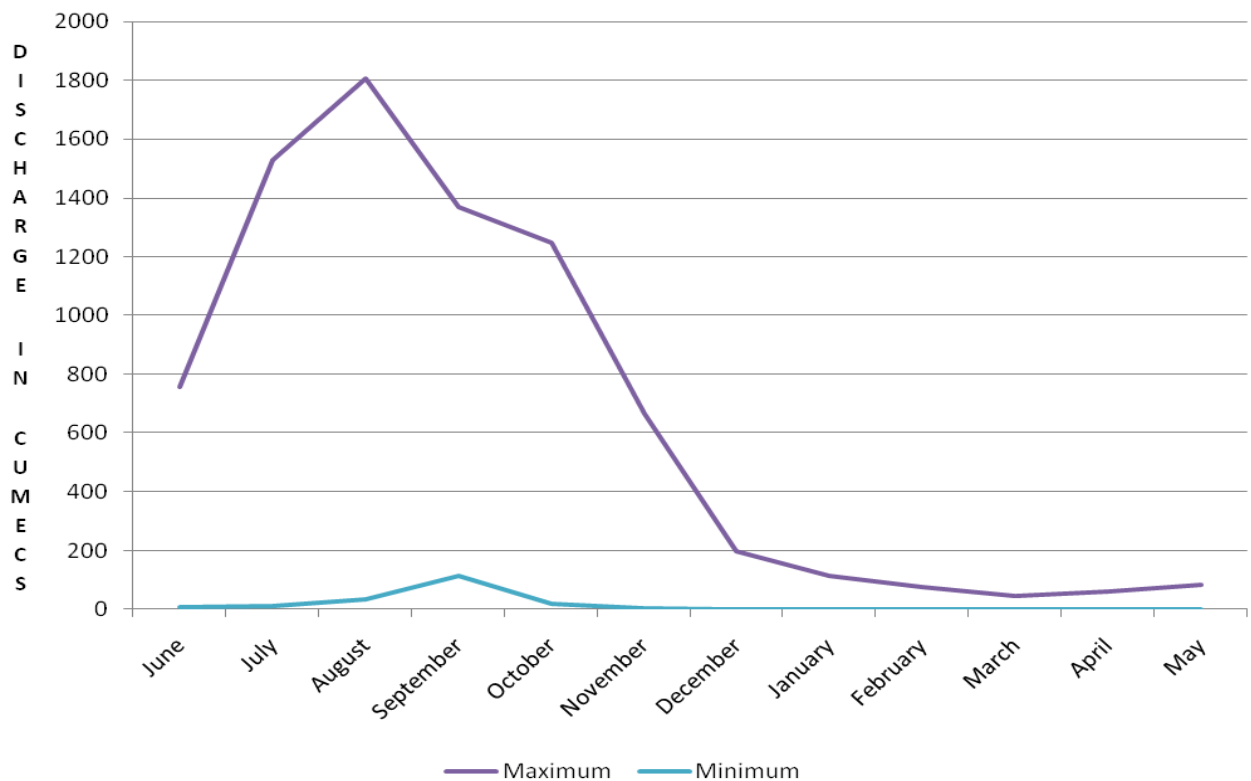
S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	503	719	299
3	EC_GEN (µmho/cm)	503	723	293
4	pH_FLD (pH units)	7.9	7.8	7.4
5	pH_GEN (pH units)	7.9	7.8	7.5
6	Temp (deg C)	27.7	29.2	25.2
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)		6.1	0.0
2	ALK-TOT (mgCaCO3/L)		132	94
3	B (mg/L)	0.00	0.01	0.02
4	Ca (mg/L)	40	60	58
5	Cl (mg/L)	32.2	25.8	21.4
6	CO3 (mg/L)	0.0	7.4	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.2	0.4	0.3
9	HCO3 (mg/L)	81	147	115
10	K (mg/L)	2.4	3.0	16.4
11	Mg (mg/L)	10.4	25.0	22.4
12	Na (mg/L)	16.8	30.7	76.8
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	1.25	0.94	1.18
15	NO2-N (mgN/L)	0.00	0.00	0.01
16	NO3-N (mgN/L)	1.25	0.94	1.17
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.010	0.010
19	SiO2 (mg/L)	4.3	5.7	7.7
20	SO4 (mg/L)	32.9	9.8	19.1
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	1.2	39.7	39.5
2	DO (mg/L)	4.4	1.8	1.7
3	DO_SAT% (%)	55	24	21
4	FCol-MPN (MPN/100mL)			70
5	Tcol-MPN (MPN/100mL)			150
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	100	151	144
2	HAR_Total (mgCaCO3/L)	143	255	237
3	Na% (%)	20	22	39
4	RSC (-)	0.0	0.0	0.0
5	SAR (-)	0.6	0.9	2.2
	PESTICIDES			

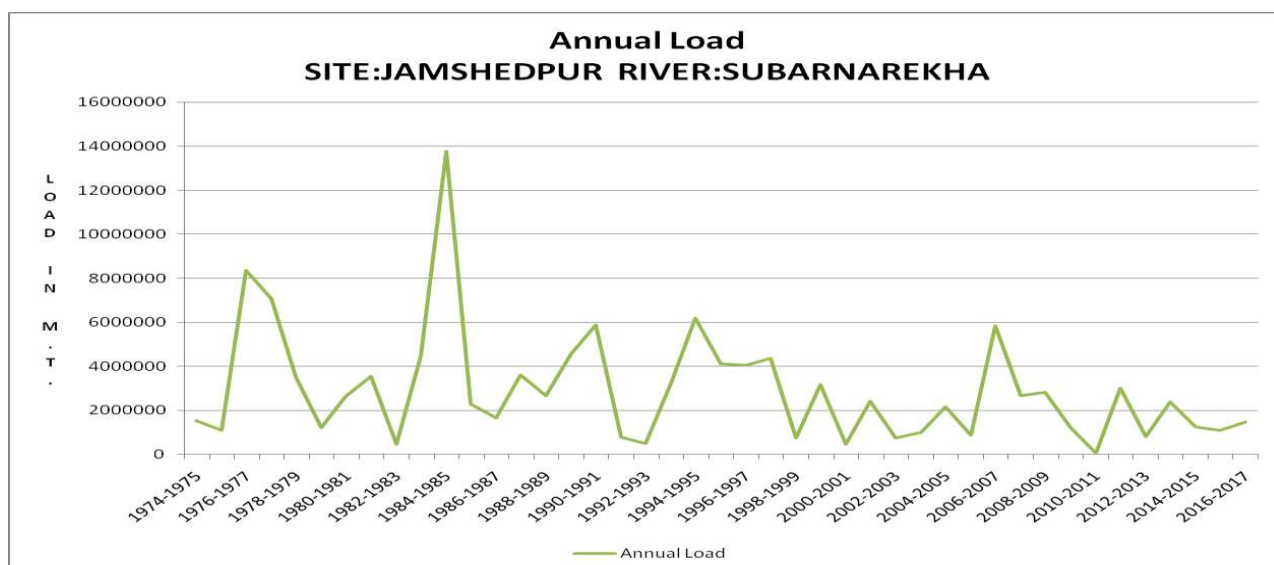
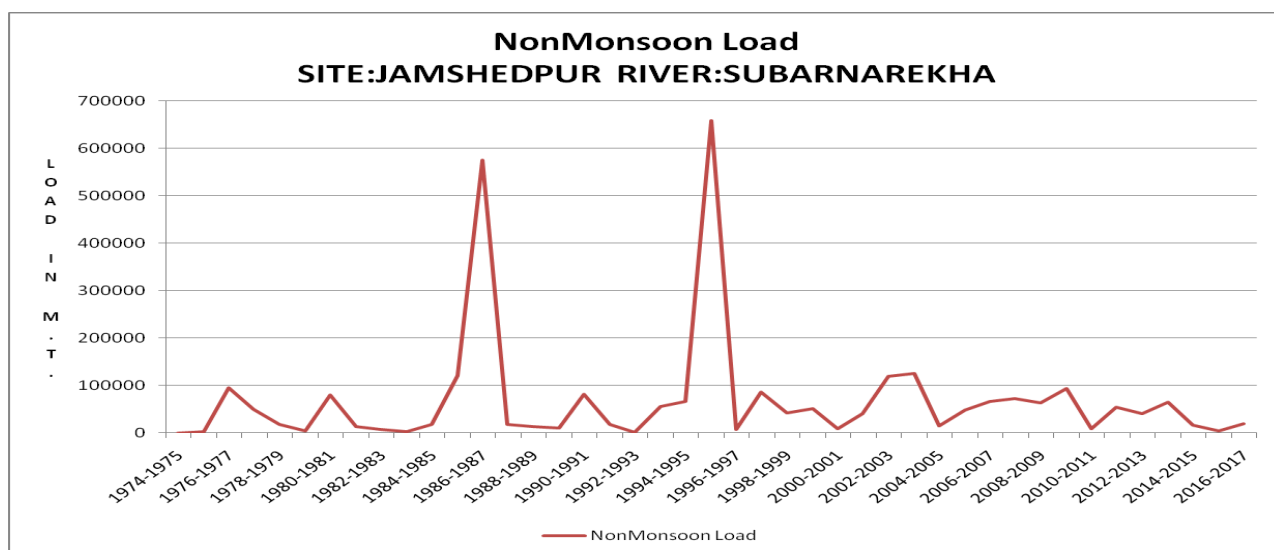
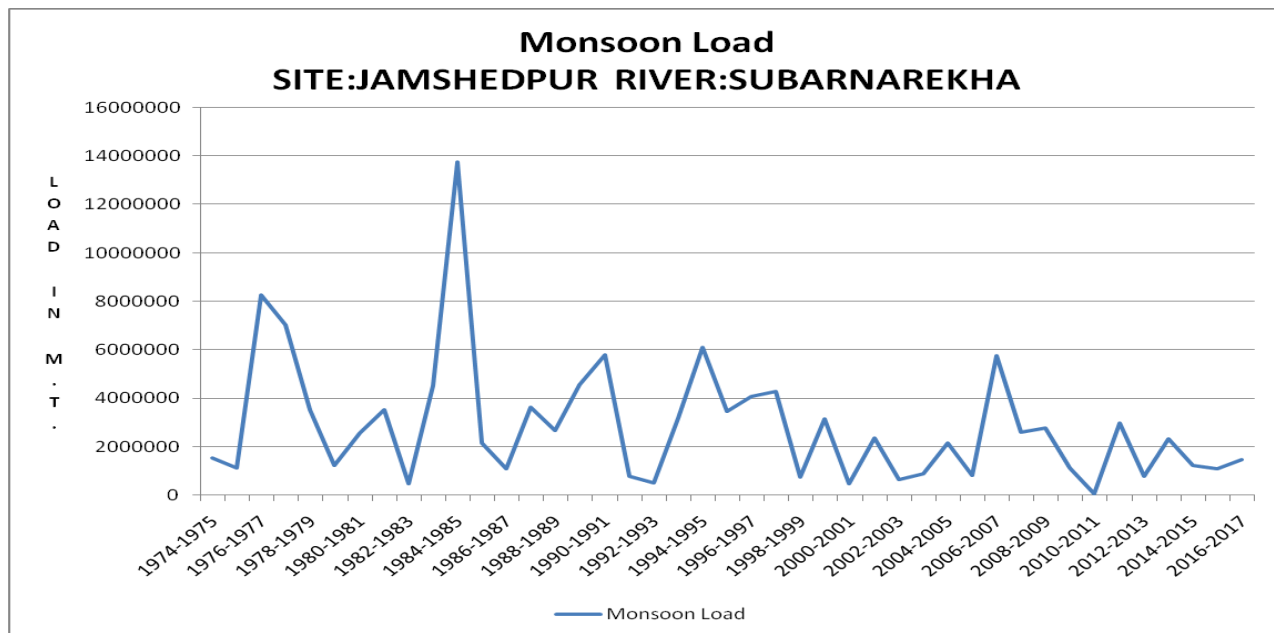


DEPENDIBILITY FLOW FROM JUNE TO MAY SITE:JAMSHEDPUR RIVER:SUBARNAREKHA

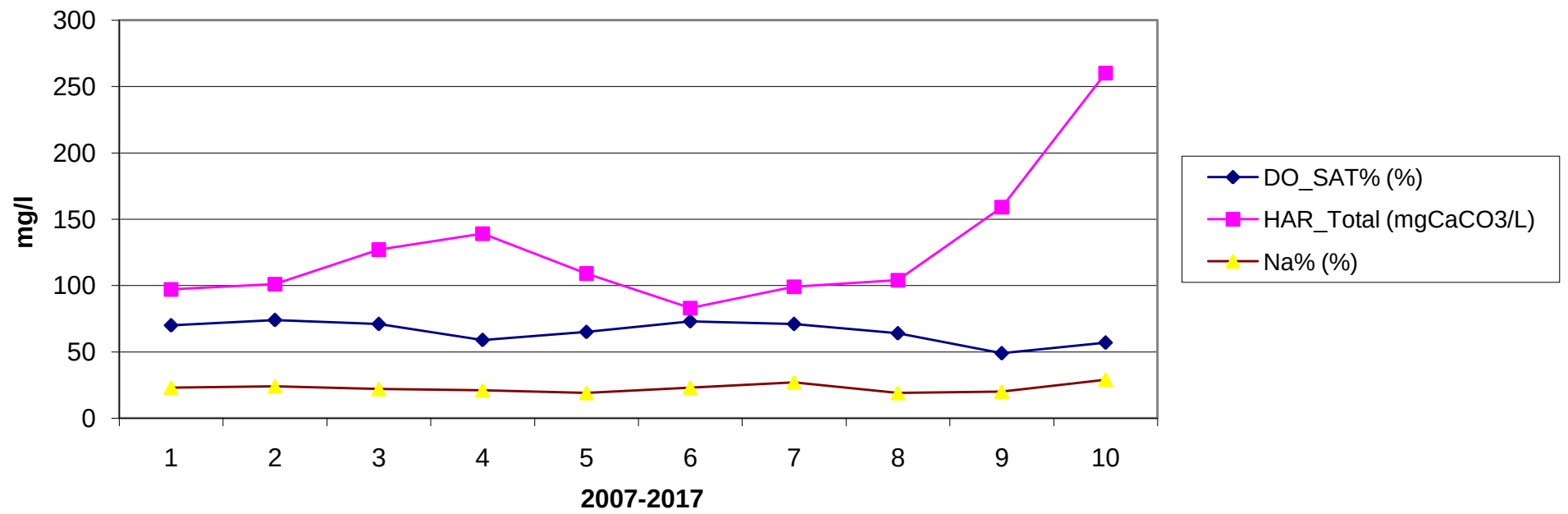


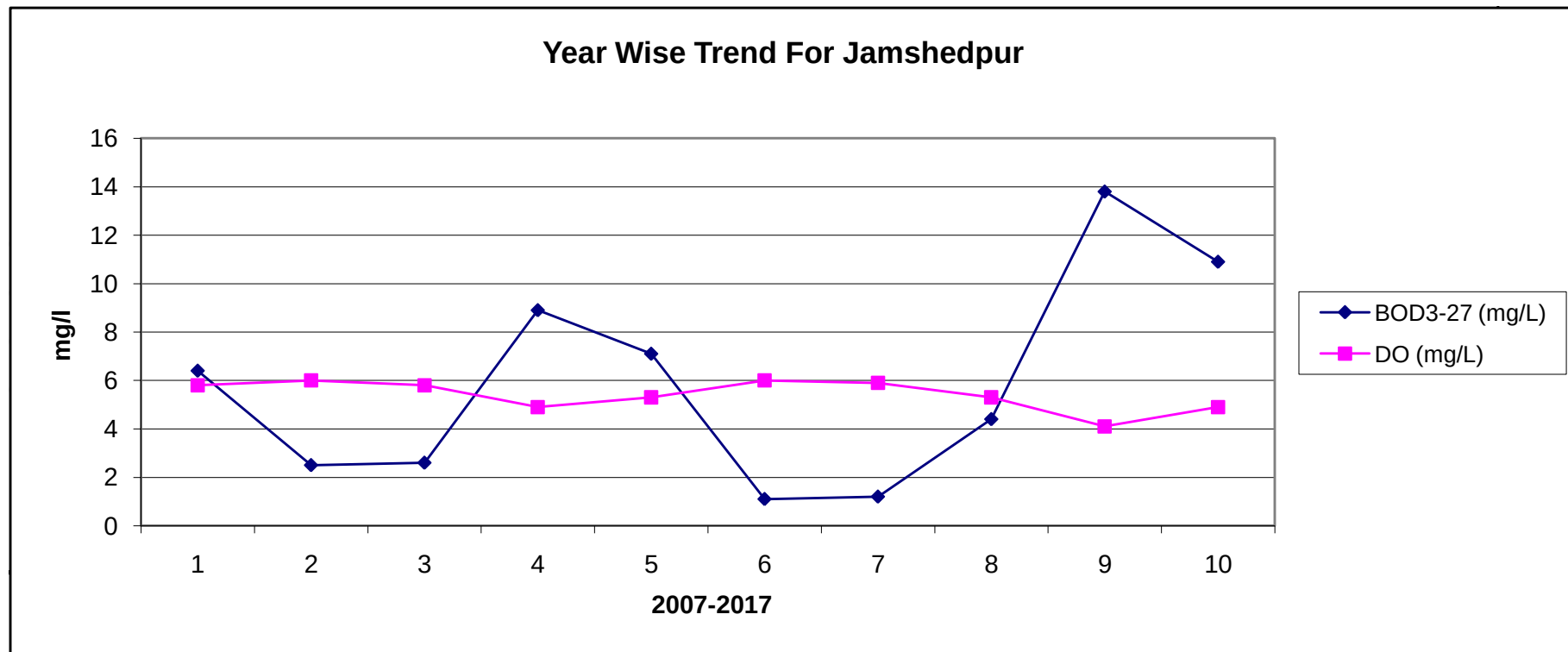
MAXIMUM-MINIMUM FLOW FROM JUNE TO MAY SITE:JAMSHEDPUR RIVER:SUBARNAREKHA



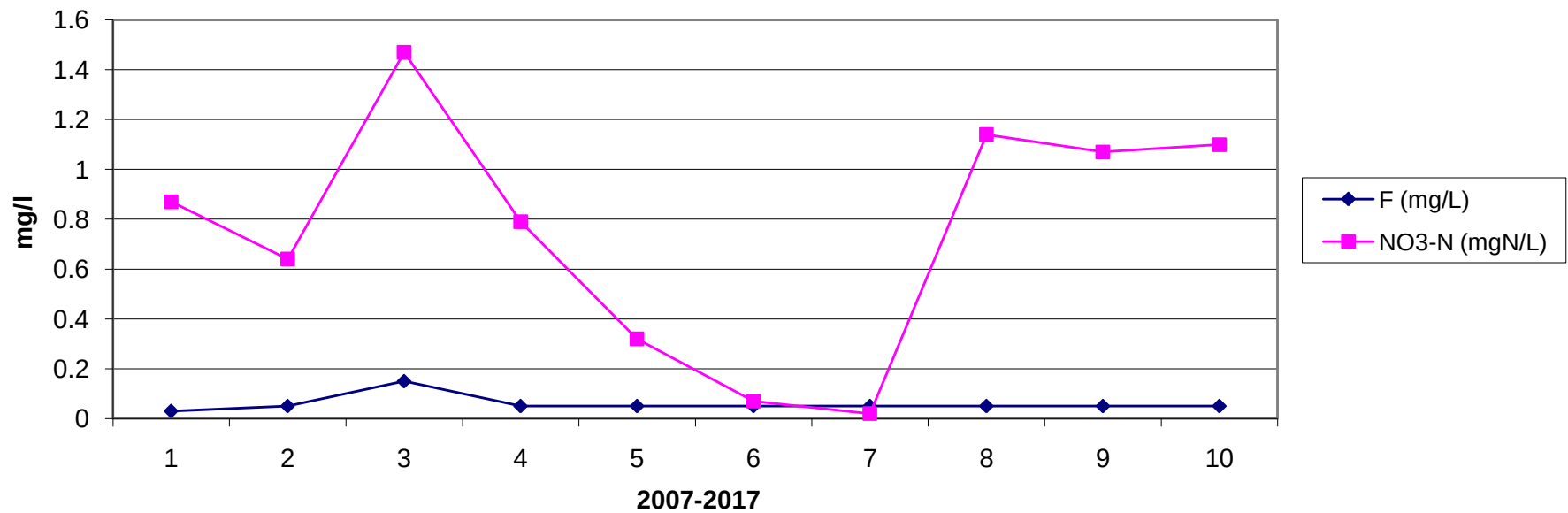


Year Wise Trend For Jamshedpur

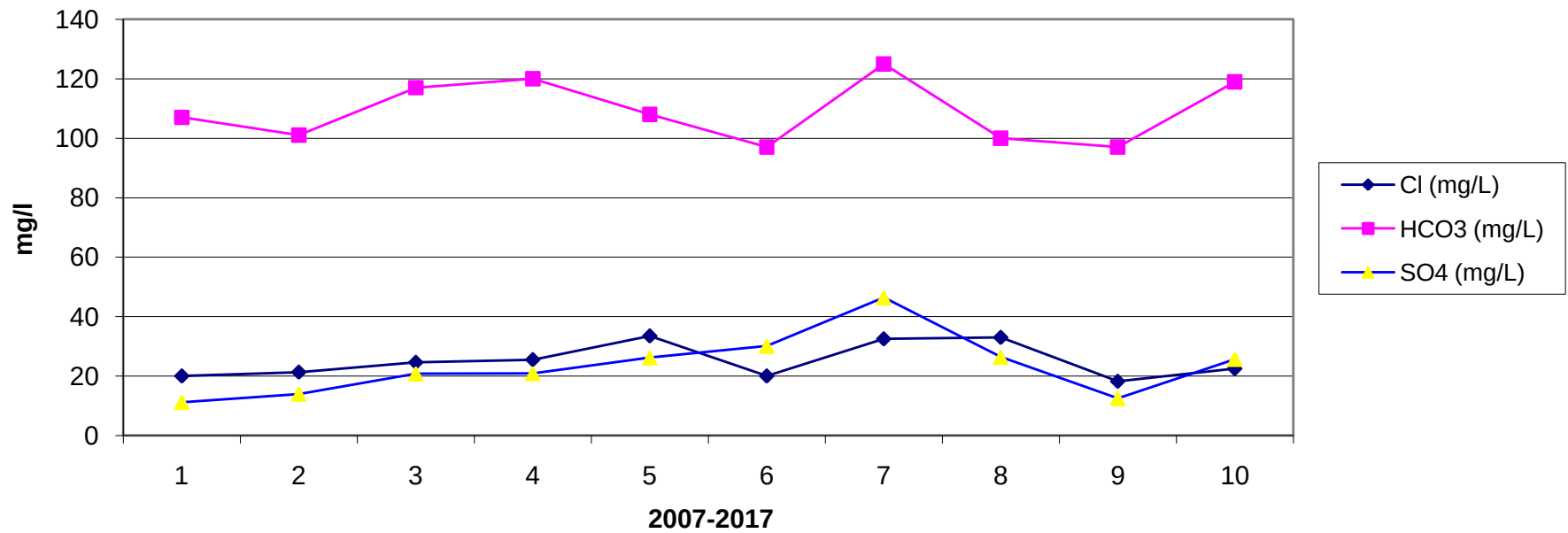




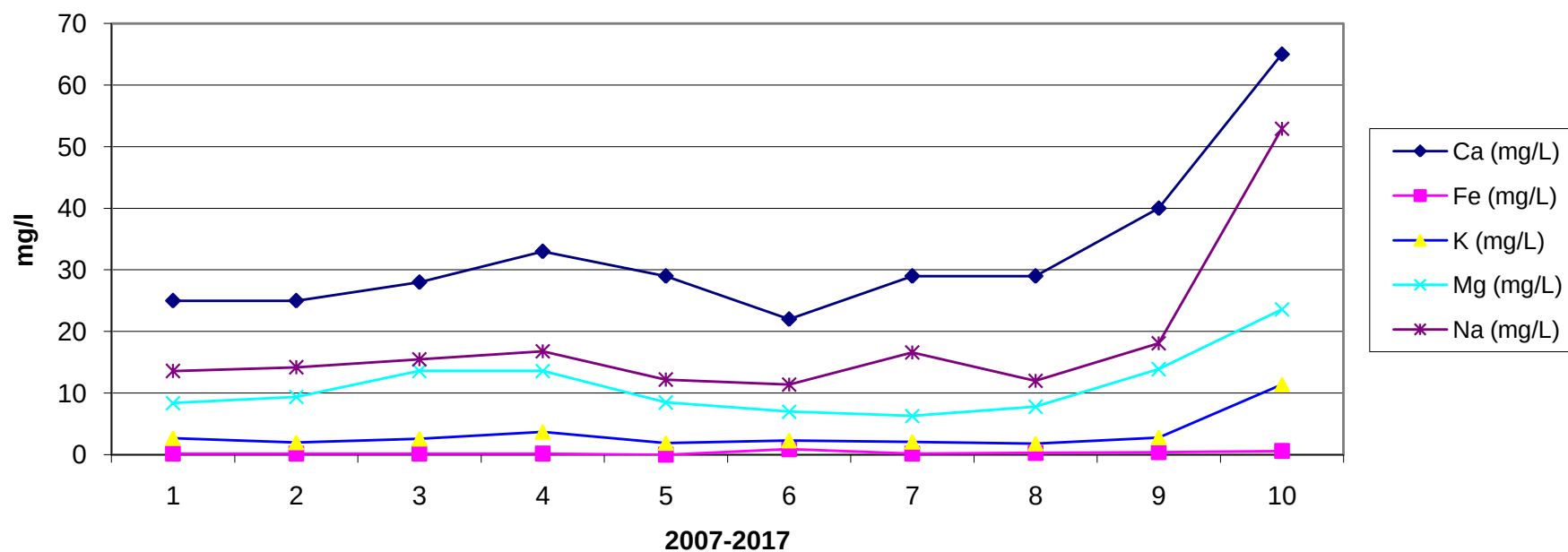
Year Wise Trend For Jamshedpur



Year Wise Trend For Jamshedpur



Year Wise Trend For Jamshedpur



HISTORY SHEET

Water Year : 2016-2017

Site : GHATSHILA

Code : ES000K7

State : Jharkhand

District : Purba Singhbhum

Basin : Subarnarekha

Independent River : Subarnarekha

Tributary : -

Sub Tributary :

Sub-Sub Tributary :

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Drainage Area : 14176 Sq. Km.

Bank : Left

Latitude : 22°34'49"

Longitude : 86°10'06"

Zero of Gauge (m) : 45 (m.s.l)
72 (m.s.l)

16.03.1971 - 20.04.1972
21.04.1972 - 16.03.2031

Opening Date

Closing Date

Gauge : 16.03.1971

16.03.2011

Discharge : 16.03.1971

16.03.2011

Sediment : 30.12.1972

16.03.2011

Water Quality : 01.09.1972

16.03.2011

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1971-1972	5820	54.825	10.08.1971	1.000	74.363	22.05.1972
1972-1973	1968	80.360	12.09.1972	0.600	74.418	03.06.1972
1973-1974	8102	84.915	13.10.1973	1.000	74.340	07.05.1974
1974-1975	9580	85.050	17.08.1974	1.100	74.310	15.04.1975
1975-1976	8424	83.695	20.08.1975	0.900	74.338	10.05.1976
1976-1977	8792	82.450	18.09.1976	1.032	74.000	04.06.1976
1977-1978	5560	82.200	07.08.1977	1.890	74.105	17.04.1978
1978-1979	9210	84.680	03.09.1978	2.280	74.055	31.05.1979
1979-1980	2386	79.140	09.08.1979	1.280	74.020	06.06.1979
1980-1981	910.7	77.920	07.09.1980	5.110	74.230	14.04.1981
1981-1982	972.5	78.510	21.08.1981	1.080	74.295	16.05.1982
1982-1983	1474	78.950	21.08.1982	0.730	74.255	13.04.1983
1983-1984	1686	79.105	07.09.1983	1.830	74.395	08.05.1984
1984-1985	3845	81.730	09.08.1984	1.386	74.135	02.05.1985
1985-1986	8630	82.450	17.10.1985	0.500	74.280	11.05.1986
1986-1987	1480	79.050	08.07.1986	1.100	74.230	31.05.1987
1987-1988	5086	80.800	28.08.1987	1.220	74.220	01.06.1987
1988-1989	6666	82.685	28.06.1988	1.100	73.945	26.05.1989
1989-1990	5400	81.560	05.08.1989	1.900	74.040	27.04.1990
1990-1991	3068	79.955	03.08.1990	2.000	74.125	19.05.1991
1991-1992	3776	80.410	23.08.1991	2.000	74.200	24.05.1992

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1992-1993	2020	79.120	27.09.1992	0.679	74.180	22.02.1993
1993-1994	1761	78.705	15.09.1993	3.080	74.315	10.05.1994
1994-1995	5989	81.860	04.08.1994	1.219	74.030	09.05.1995
1995-1996	3745	80.370	18.09.1995	2.777	74.470	23.04.1996
1996-1997	5867	80.590	23.06.1996	1.238	74.100	15.03.1997
1997-1998	10582	83.650	06.08.1997	15.68	74.460	12.06.1997
1998-1999	3015	79.850	13.09.1998	9.500	74.280	30.04.1999
1999-2000	5400	81.560	08.08.1999	4.728	74.230	22.03.2000
2000-2001	2521	79.080	26.07.2000	5.921	74.260	24.02.2001
2001-2002	4699	81.280	12.07.2001	11.29	74.530	07.05.2002
2002-2003	2037	79.000	12.09.2002	11.33	74.300	30.05.2003
2003-2004	1703	78.440	28.10.2003	7.697	74.320	24.04.2004
2004-2005	4000	80.260	22.08.2004	5.113	74.240	03.05.2005
2005-2006	1602	78.210	30.06.2005	4.238	74.130	30.03.2006
2006-2007	4600	81.220	30.07.2006	14.50	74.130	15.04.2007
2007-2008	6061	82.315	07.07.2007	16.30	73.920	23.03.2008
2008-2009	9609	84.590	18.06.2008	21.40	74.010	13.02.2009
2009-2010	4192	80.555	08.09.2009	0.399	73.600	12.03.2010
2010-2011	410.9	75.800	20.09.2010	20.12	73.770	04.01.2011
2011-2012	5580	80.890	23.09.2011	40.51	74.180	10.06.2011
2012-2013	2300	79.080	15.08.2012	18.07	74.180	19.03.2013
2013-2014	4886	81.650	21.08.2013	16.94	73.600	01.07.2013
2014-2015	5619	76.980	03.09.2014	30.00	74.280	01.06.2014
2015-2016	1747	81.350	29.07.2015	17.00	74.300	17.04.2016
2016-2017	4012	80.940	06.09.2016	14.40	74.190	19.06.2016

Stage-Discharge Data for the period 2016 - 2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	74.600	22.08	74.680	51.40	75.120	83.51	75.470	229.6	76.820	238.9	74.840	129.8
2	74.560	21.94	74.560	49.90	75.020	76.19	75.180	216.1	76.540	240.0 *	74.780	129.1
3	74.560	21.92	74.580	48.00 *	75.840	122.7	75.470	224.1	76.470	233.5	74.980	173.4
4	74.560	21.96	74.610	51.48	76.520	158.4	76.400	220.0 *	76.380	226.3	74.900	144.2
5	74.560	21.90 *	75.240	125.3	76.100	127.4	78.200	1458	76.000	201.6	74.840	125.1
6	74.570	22.00	75.160	115.9	76.540	156.3	80.940	4012	75.400	193.8	74.840	125.1 *
7	74.570	21.98	74.850	100.0 *	75.940	142.0 *	79.600	2970	75.240	186.4	74.860	123.0
8	74.570	22.02	74.630	56.47	76.180	135.3	78.140	2205	75.170	185.5	74.920	129.7
9	74.560	21.94	74.640	61.37	76.320	141.5	79.200	3064	75.520	200.0 *	74.820	115.7
10	74.520	21.89	74.720	68.00 *	76.320	169.1	78.800	2469	75.360	190.0 *	74.800	114.1
11	74.510	21.85	74.650	54.77	78.120	792.2	77.860	510.0 *	75.320	180.0 *	74.800	113.0
12	74.480	21.80 *	74.340	30.88	77.900	577.3	77.220	518.6	75.320	180.0 *	74.780	108.8
13	74.480	21.81	74.560	41.32	77.160	420.1	77.250	516.0 *	75.260	189.2	74.780	108.0 *
14	74.480	21.84	74.700	42.19	76.880	380.0 *	77.030	436.1	75.040	171.6	74.780	108.0 *
15	74.500	21.90	74.840	45.04	76.030	320.0 *	77.120	507.0	74.930	165.7	74.760	105.4
16	74.540	21.94	75.940	129.5	75.780	143.4	76.790	251.2	74.830	160.0 *	74.750	103.3
17	74.560	21.97	76.200	142.0 *	76.320	140.4	76.340	223.0	74.810	142.5	74.750	101.1
18	74.560	21.98	75.350	107.3	81.230	3838	75.760	240.0 *	74.810	141.5	74.740	101.9
19	74.190	14.40 *	75.280	87.05	81.480	3741	75.300	235.0	74.720	129.9	74.740	101.7
20	74.210	14.72	75.120	79.32	78.860	1377	75.420	238.5	74.720	128.0	74.750	104.3 *
21	74.200	16.04	75.230	96.78	77.180	420.0 *	75.640	250.6	74.720	126.7	74.750	104.4
22	74.200	16.03	75.220	84.74	76.440	160.9	75.860	263.1	74.780	126.2	74.750	104.2
23	74.230	17.53	75.200	79.09	77.800	853.3	75.900	260.9	74.760	127.0 *	74.760	105.4
24	74.340	17.58	75.560	90.00 *	78.790	982.3	75.960	273.6	74.780	120.1	74.740	102.5
25	74.400	21.51	75.440	118.0	77.360	511.4	76.070	300.0 *	74.760	127.9	74.740	101.8
26	74.450	21.60 *	75.520	113.4	77.460	588.0	76.500	297.6	74.780	129.2	74.780	106.7
27	74.320	17.45	75.160	87.07	77.200	489.0	77.240	496.5	74.800	129.5	74.780	108.0 *
28	74.860	58.82	75.280	100.9	76.370	480.0 *	77.180	494.0	74.820	130.6	74.760	104.3
29	74.900	59.27	75.720	109.4	75.400	253.9	76.460	228.6	75.150	159.1	74.750	103.2
30	74.780	58.87	75.150	88.86	75.260	227.1	76.380	230.7	75.160	150.0 *	74.750	103.3
31			75.280	92.00 *	75.240	226.8			75.120	155.7		
Ten-Daily Mean												
I Ten-Daily	74.563	21.96	74.767	72.78	75.990	131.2	77.740	1707	75.890	209.6	74.858	130.9
II Ten-Daily	74.451	20.42	75.098	75.94	77.976	1173	76.609	367.6	74.976	158.8	74.763	105.6
III Ten-Daily	74.468	30.47	75.342	96.39	76.773	472.1	76.319	309.6	74.875	134.7	74.756	104.4
Monthly												
Min.	74.190	14.40	74.340	30.88	75.020	76.19	75.180	216.1	74.720	120.1	74.740	101.1
Max.	74.900	59.27	76.200	142.0	81.480	3838	80.940	4012	76.820	240.0	74.980	173.4
Mean	74.494	24.28	75.078	82.18	76.908	588.2	76.889	794.7	75.235	166.7	74.792	113.6

Annual Runoff in MCM = 5441 Annual Runoff in mm = 384

Peak Observed Discharge = 4012 cumecs on 06/09/2016 Corres. Water Level :80.94 m

Lowest Observed Discharge = 14.72 cumecs on 20/06/2016 Corres. Water Level :74.21 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2016 - 2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	74.740	103.4	74.600	87.50 *	74.530	47.42	74.560	47.36	74.520	33.10	74.540	31.62
2	74.740	102.3	74.600	87.57	74.530	47.49	74.560	47.12	74.520	33.00 *	74.540	31.53
3	74.700	95.33	74.580	71.85	74.520	47.24	74.560	46.96	74.520	30.45	74.530	31.35
4	74.700	96.00 *	74.570	66.84	74.520	47.20	74.560	47.11	74.510	30.24	74.530	31.31
5	74.700	98.13	74.570	65.31	74.520	47.20 *	74.550	46.80 *	74.510	32.90	74.550	31.93
6	74.680	94.00	74.570	65.33	74.520	47.14	74.550	46.92	74.510	32.77	74.550	31.83
7	74.680	94.13	74.560	64.79	74.510	47.01	74.550	46.70	74.520	32.95	74.550	31.93 *
8	74.670	93.47	74.560	64.60 *	74.510	47.03	74.540	43.14	74.520	32.87	74.560	32.02
9	74.670	93.19	74.560	64.70	74.500	46.95	74.540	42.66	74.520	32.80 *	74.570	32.23
10	74.660	92.75	74.520	50.00	74.530	47.31	74.530	38.27	74.520	32.65	74.580	32.30 *
11	74.660	92.00 *	74.500	47.95	74.560	47.90	74.530	38.00	74.510	32.39	74.590	32.36
12	74.650	92.00 *	74.500	47.94	74.560	47.90 *	74.530	38.00 *	74.510	32.15	74.600	32.44
13	74.650	92.24	74.490	47.24	74.560	47.93	74.530	38.00 *	74.510	31.95	74.600	32.28
14	74.650	92.08	74.490	47.21	74.570	48.05	74.530	37.22	74.510	31.80 *	74.600	32.28 *
15	74.650	91.75	74.490	47.00 *	74.570	47.92	74.540	36.84	74.510	31.74	74.600	32.21
16	74.640	91.14	74.510	47.72	74.570	47.96	74.540	42.47	74.520	31.90 *	74.610	32.32
17	74.640	91.22	74.510	47.72	74.580	48.09	74.540	36.36	74.520	31.93	74.610	32.35
18	74.630	90.40 *	74.510	44.38	74.580	47.69	74.540	35.66	74.520	31.88	74.610	32.09
19	74.630	90.43	74.500	47.40	74.580	47.60 *	74.540	35.60 *	74.520	31.79	74.620	32.37
20	74.630	90.47	74.500	47.08	74.570	47.93	74.530	35.47	74.530	31.96	74.620	32.26
21	74.630	90.36	74.500	46.91	74.570	47.79	74.530	35.31	74.530	31.96	74.610	32.09 *
22	74.630	90.46	74.500	46.90 *	74.560	47.54	74.540	35.49	74.530	30.83	74.610	32.21
23	74.640	91.54	74.500	46.72	74.560	47.68	74.540	35.80	74.540	31.00 *	74.620	32.39
24	74.640	91.58	74.510	47.07	74.560	47.60 *	74.540	35.15	74.550	32.10	74.640	31.46
25	74.640	91.00 *	74.510	47.30	74.560	47.79	74.530	34.82	74.560	32.16	74.650	32.68
26	74.630	90.45	74.510	47.30 *	74.570	47.70 *	74.530	34.80 *	74.560	31.82	74.660	32.75
27	74.620	88.82	74.510	47.18	74.570	47.77	74.530	35.62	74.560	32.14	74.700	33.15
28	74.620	88.83	74.520	47.47	74.570	48.21	74.530	34.31	74.550	31.87	74.740	33.30 *
29	74.620	88.79	74.520	47.40 *			74.520	33.88	74.550	31.85	74.760	33.64
30	74.620	88.77	74.520	47.44			74.520	33.65	74.550	31.80 *	74.760	33.49
31	74.600	87.82	74.530	47.61			74.520	33.55			74.780	33.81
Ten-Daily Mean												
I Ten-Daily	74.694	96.27	74.569	68.85	74.519	47.20	74.550	45.30	74.517	32.37	74.550	31.80
II Ten-Daily	74.643	91.37	74.500	47.16	74.570	47.90	74.535	37.36	74.516	31.95	74.606	32.29
III Ten-Daily	74.626	89.86	74.512	47.21	74.565	47.76	74.530	34.76	74.548	31.75	74.685	32.82
Monthly												
Min.	74.600	87.82	74.490	44.38	74.500	46.95	74.520	33.55	74.510	30.24	74.530	31.31
Max.	74.740	103.4	74.600	87.57	74.580	48.21	74.560	47.36	74.560	33.10	74.780	33.81
Mean	74.654	92.42	74.526	54.18	74.550	47.61	74.538	39	74.527	32.02	74.616	32.32

Peak Computed Discharge = 516.0 cumecs on 13/09/2016

Corres. Water Level :77.25 m

Lowest Computed Discharge = 14.40 cumecs on 19/06/2016

Corres. Water Level :74.19 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

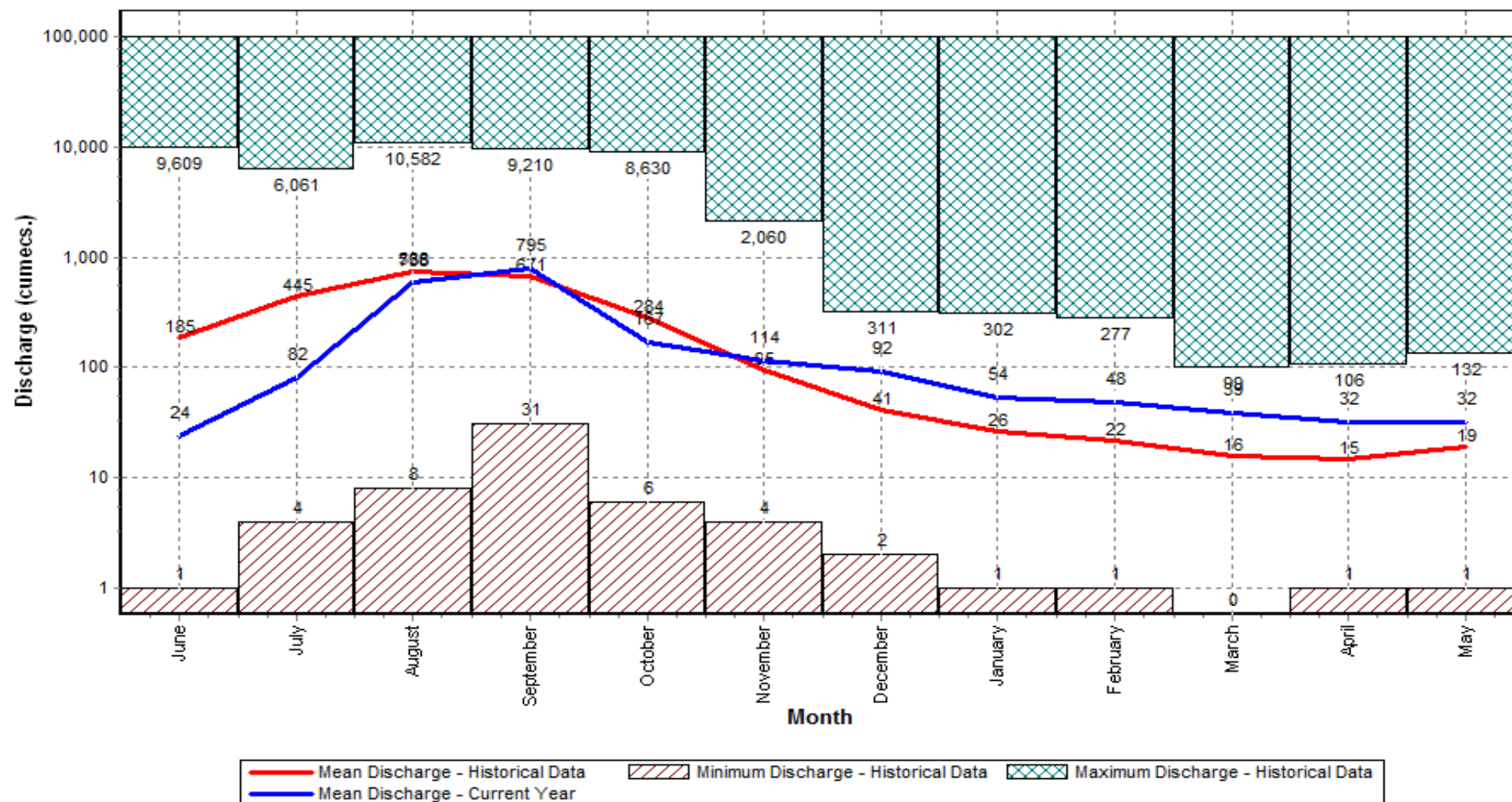
Station Name : GHATSHILA (ES000K7)

Data considered : 1971-2017

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore



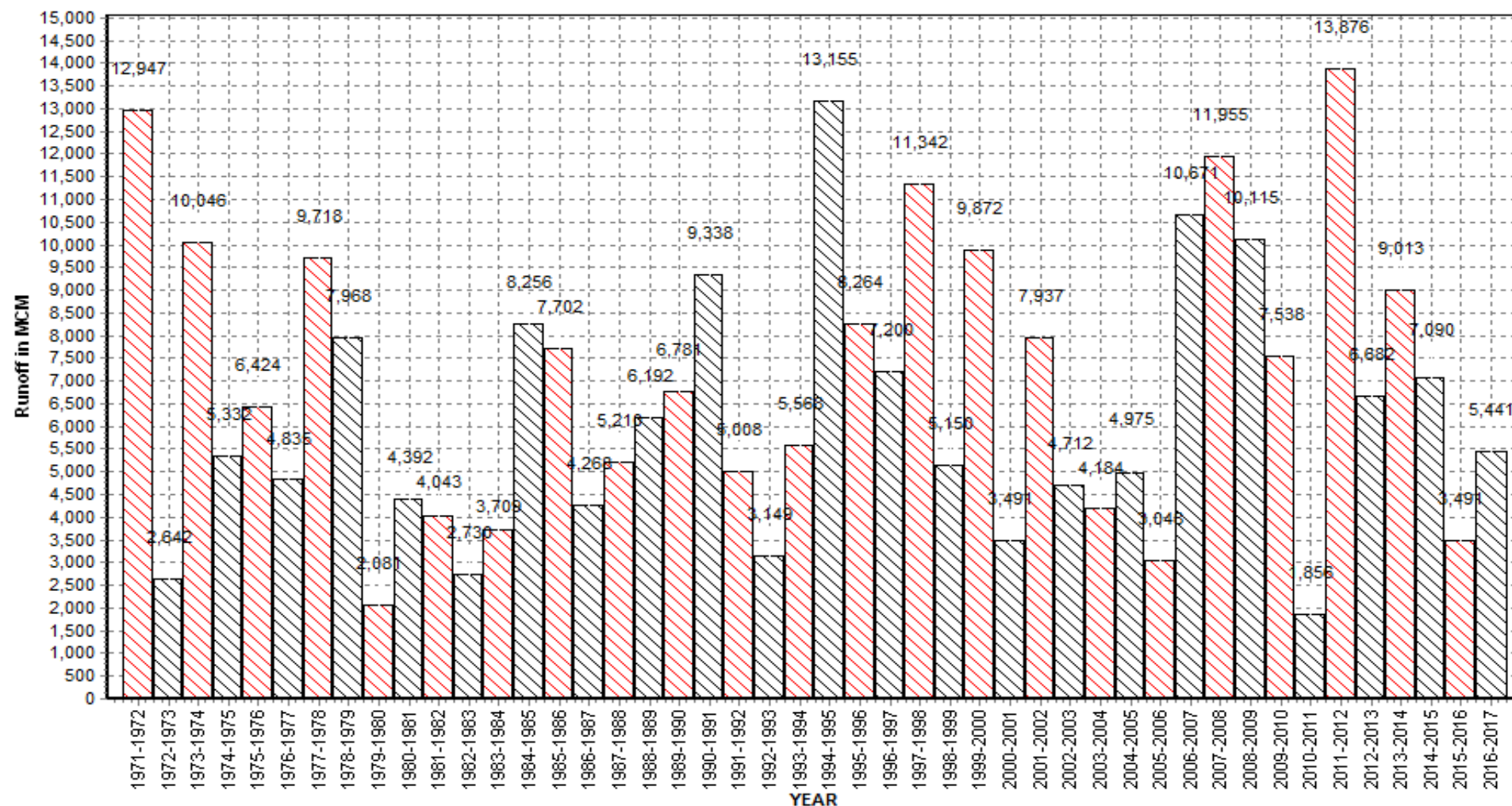
Annual Runoff Values for the period: 1971 - 2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Note: Missing values have not been considered while arriving at Annual Runoff

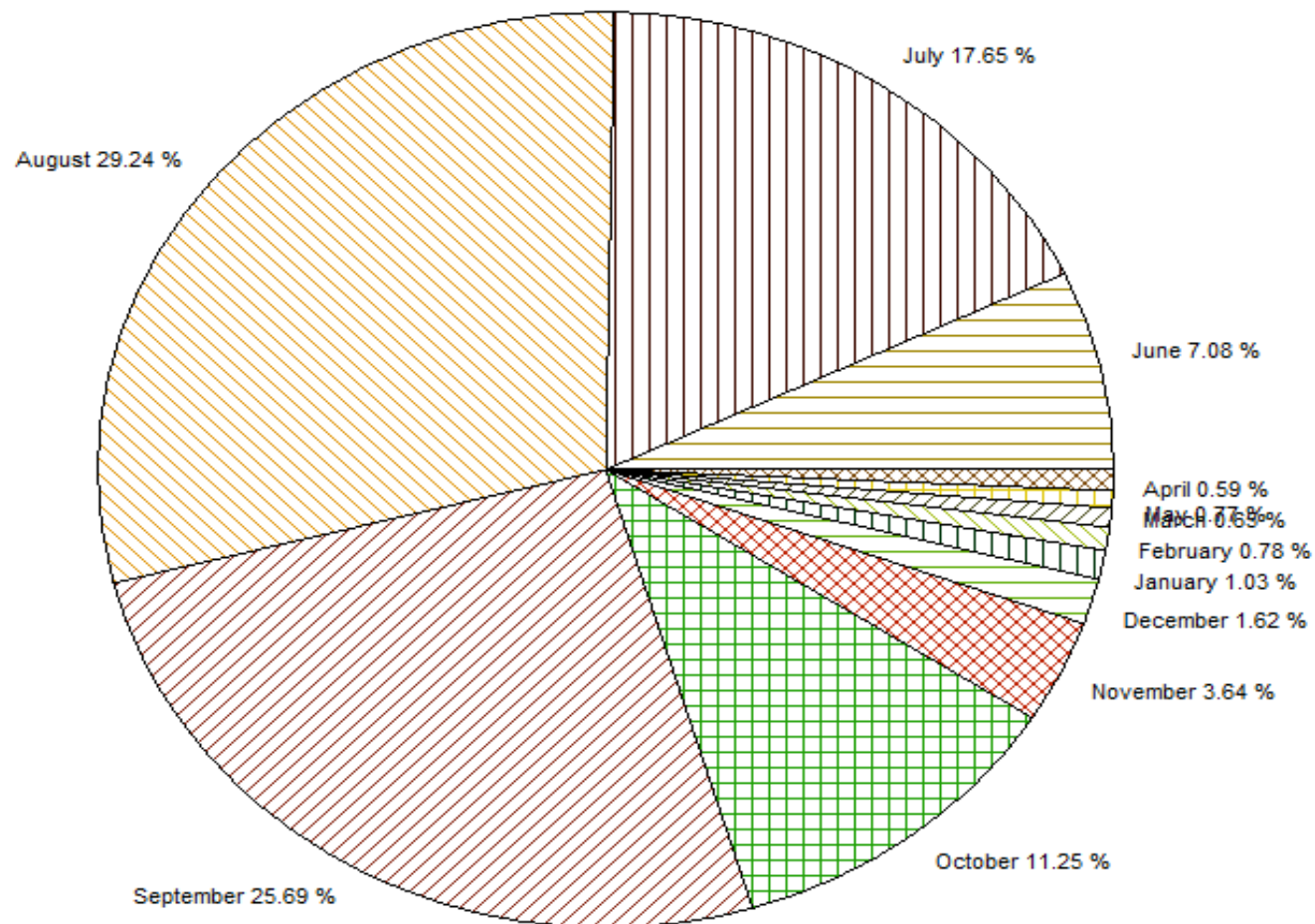
Monthly Average Runoff based on period : 1971-2016

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



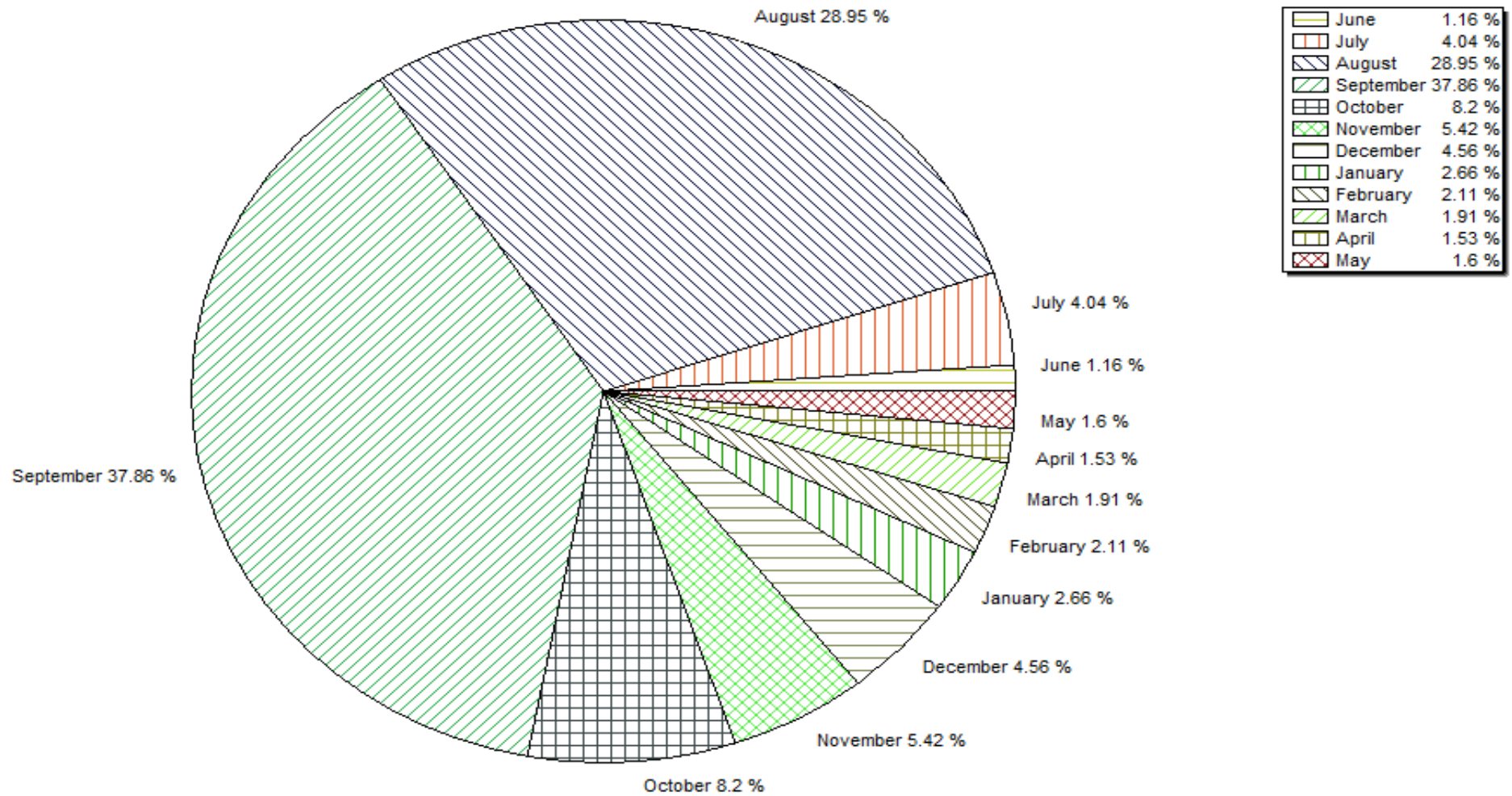
Monthly Runoff for the Year : 2016-2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



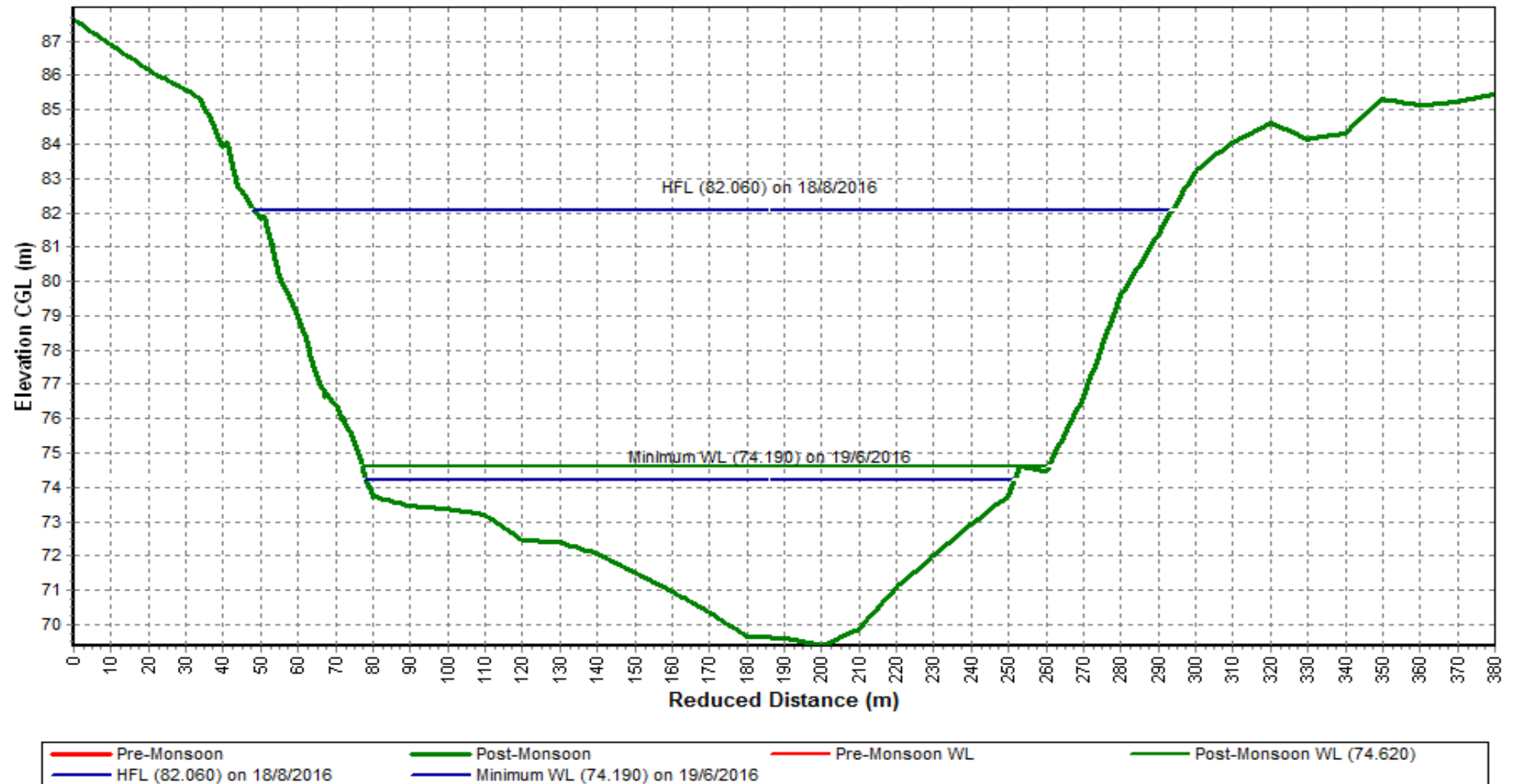
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



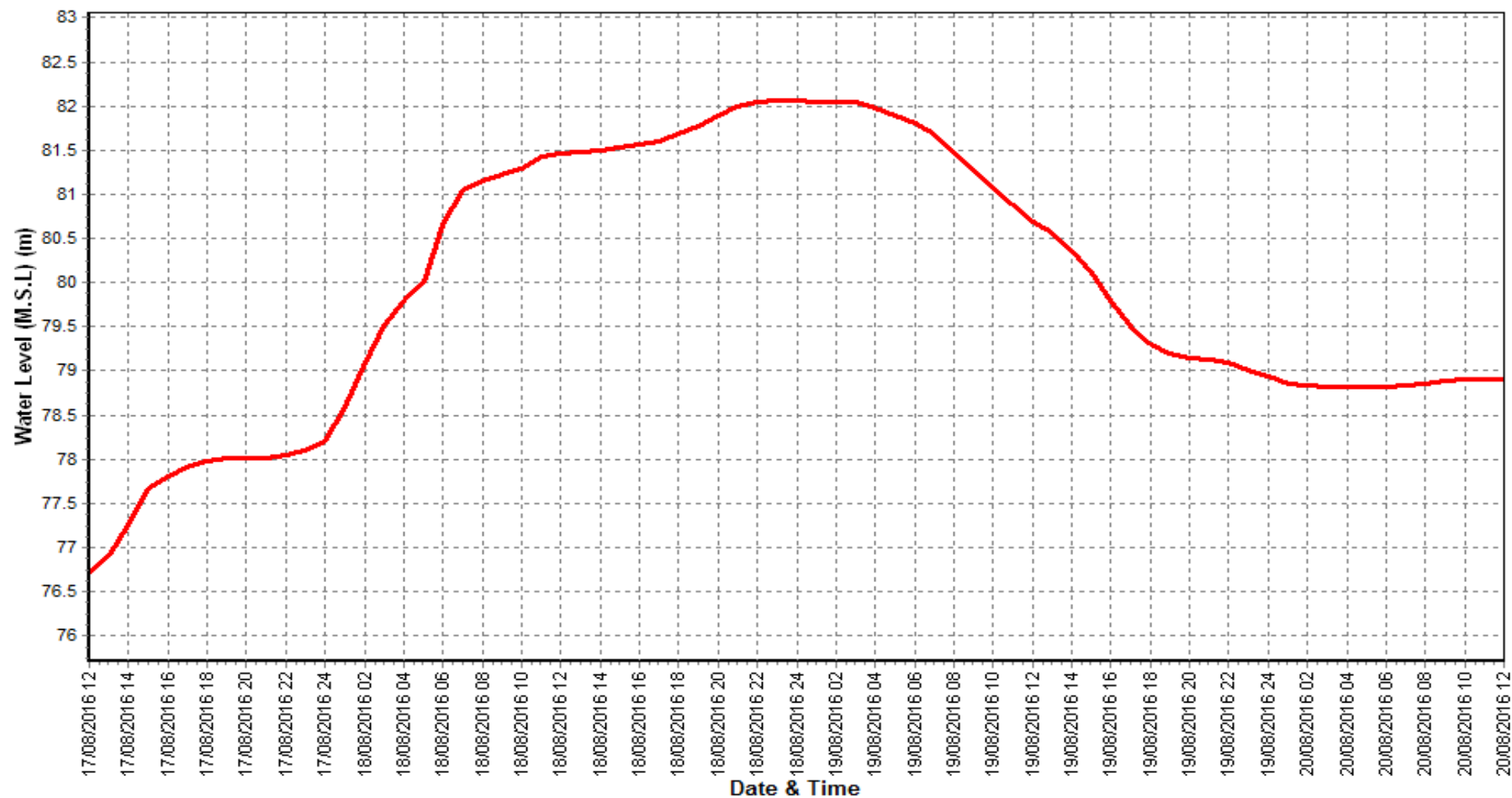
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



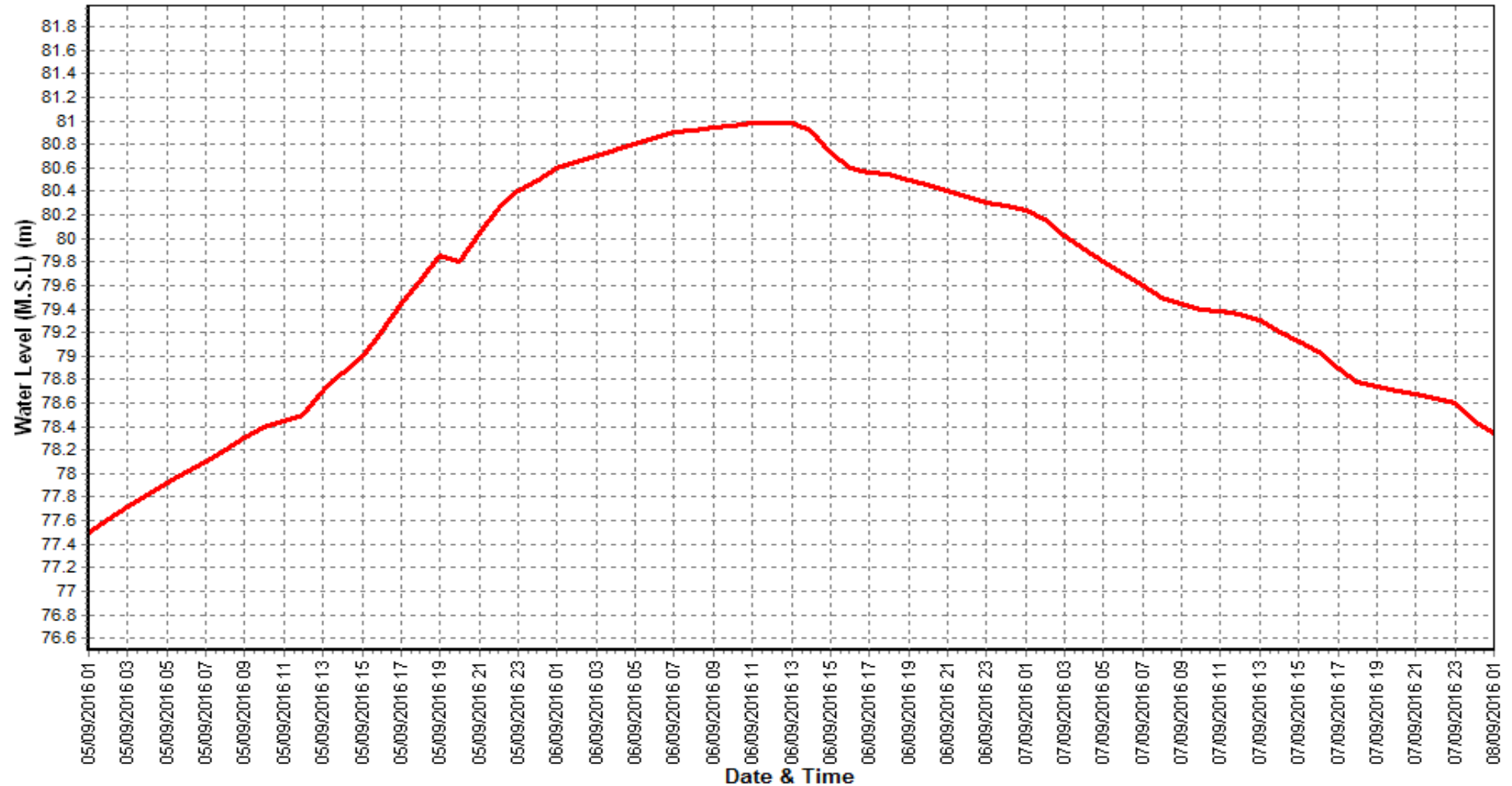
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



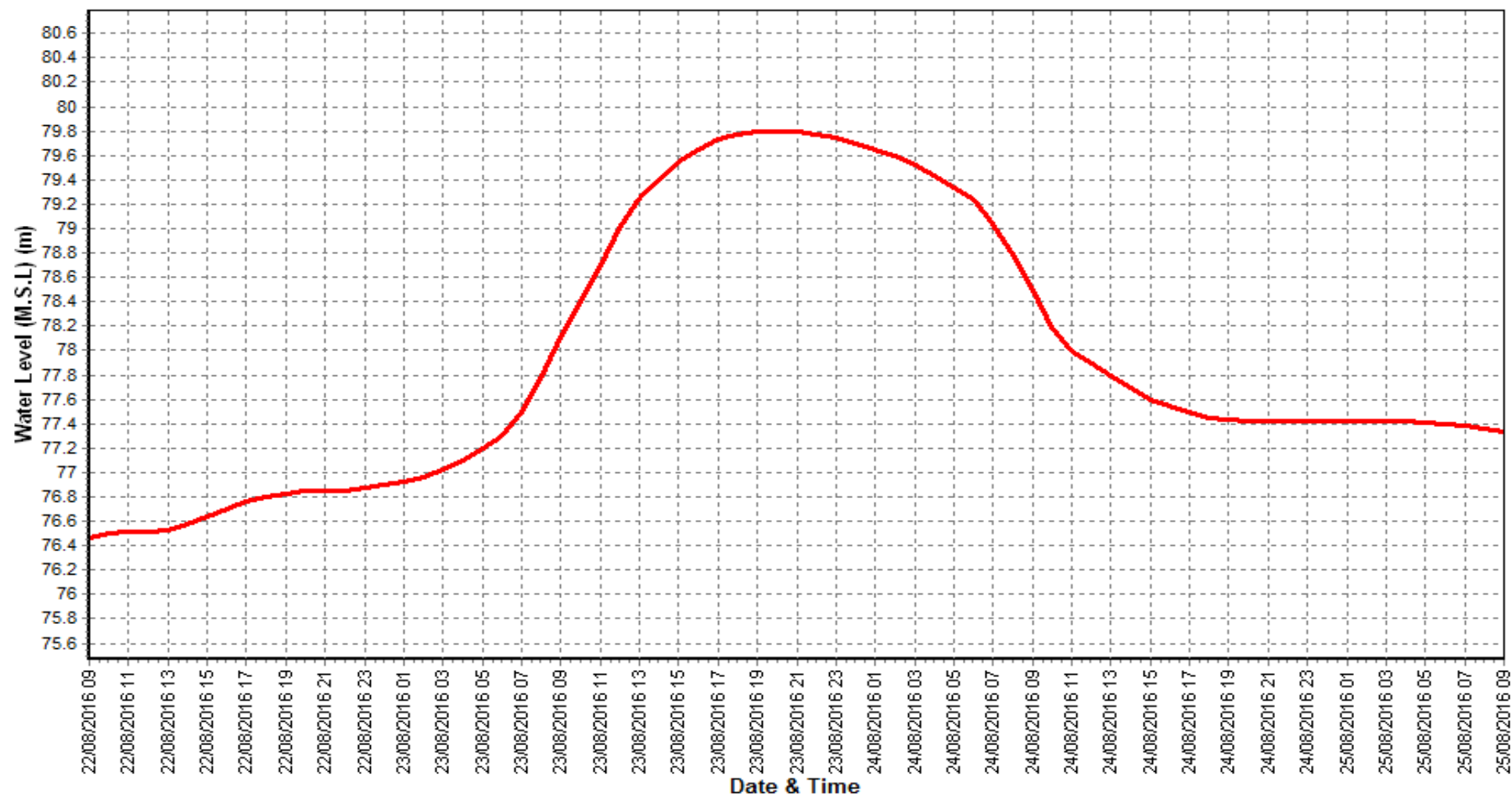
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	22.08	0.000	0.000	0.006	0.006	11	51.40	0.000	0.000	0.040	0.040	178	83.51	0.000	0.000	0.024	0.024	176
2	21.94	0.000	0.000	0.006	0.006	11	49.90	0.000	0.000	0.007	0.007	28	76.19	0.000	0.000	0.022	0.022	146
3	21.92	0.000	0.000	0.006	0.006	11	48.00	0.000	0.000	0.004	0.004	17	122.7	0.000	0.000	0.033	0.033	353
4	21.96	0.000	0.000	0.006	0.006	11	51.48	0.000	0.000	0.007	0.007	29	158.4	0.000	0.000	0.038	0.038	517
5	21.90	0.000	0.000	0.006	0.006	11	125.3	0.000	0.000	0.005	0.005	54	127.4	0.000	0.000	0.031	0.031	342
6	22.00	0.000	0.000	0.006	0.006	11	115.9	0.000	0.000	0.005	0.005	47	156.3	0.000	0.000	0.042	0.042	570
7	21.98	0.000	0.000	0.006	0.006	11	100.0	0.000	0.000	0.005	0.005	41	142.0	0.000	0.000	0.040	0.040	491
8	22.02	0.000	0.000	0.006	0.006	11	56.47	0.000	0.000	0.007	0.007	33	135.3	0.000	0.000	0.378	0.378	4418
9	21.94	0.000	0.000	0.006	0.006	11	61.37	0.000	0.000	0.006	0.006	32	141.5	0.000	0.000	0.038	0.038	462
10	21.89	0.000	0.000	0.006	0.006	11	68.00	0.000	0.000	0.007	0.007	39	169.1	0.000	0.000	0.036	0.036	519
11	21.85	0.000	0.000	0.006	0.006	11	54.77	0.000	0.000	0.007	0.007	31	792.2	0.000	0.000	0.049	0.049	3347
12	21.80	0.000	0.000	0.006	0.006	11	30.88	0.000	0.000	0.006	0.006	17	577.3	0.000	0.000	0.044	0.044	2214
13	21.81	0.000	0.000	0.006	0.006	11	41.32	0.000	0.000	0.008	0.008	27	420.1	0.000	0.000	0.040	0.040	1452
14	21.84	0.000	0.000	0.006	0.006	11	42.19	0.000	0.000	0.008	0.008	27	380.0	0.000	0.000	0.033	0.033	1093
15	21.90	0.000	0.000	0.006	0.006	11	45.04	0.000	0.000	0.008	0.008	29	320.0	0.000	0.000	0.031	0.031	860
16	21.94	0.000	0.000	0.006	0.006	11	129.5	0.000	0.000	0.050	0.050	560	143.4	0.000	0.000	0.033	0.033	412
17	21.97	0.000	0.000	0.006	0.006	11	142.0	0.000	0.000	0.050	0.050	613	140.4	0.000	0.000	0.031	0.031	377
18	21.98	0.000	0.000	0.006	0.006	11	107.3	0.000	0.000	0.038	0.038	348	3838	0.000	0.000	0.060	0.060	19897
19	14.40	0.000	0.000	0.006	0.006	7	87.05	0.000	0.000	0.045	0.045	338	3741	0.000	0.000	0.058	0.058	18684
20	14.72	0.000	0.000	0.007	0.007	9	79.32	0.000	0.000	0.030	0.030	206	1377	0.000	0.000	0.053	0.053	6341
21	16.04	0.000	0.000	0.007	0.007	10	96.78	0.000	0.000	0.033	0.033	272	420.0	0.000	0.000	0.031	0.031	1129
22	16.03	0.000	0.000	0.007	0.007	10	84.74	0.000	0.000	0.028	0.028	201	160.9	0.000	0.000	0.031	0.031	432
23	17.53	0.000	0.000	0.008	0.008	11	79.09	0.000	0.000	0.027	0.027	182	853.3	0.000	0.000	0.031	0.031	2293
24	17.58	0.000	0.000	0.007	0.007	11	90.00	0.000	0.000	0.031	0.031	242	982.3	0.000	0.000	0.038	0.038	3208
25	21.51	0.000	0.000	0.006	0.006	10	118.0	0.000	0.000	0.031	0.031	317	511.4	0.000	0.000	0.031	0.031	1374
26	21.60	0.000	0.000	0.006	0.006	10	113.4	0.000	0.000	0.033	0.033	326	588.0	0.000	0.000	0.033	0.033	1692
27	17.45	0.000	0.000	0.007	0.007	11	87.07	0.000	0.000	0.029	0.029	217	489.0	0.000	0.000	0.029	0.029	1221
28	58.82	0.000	0.000	0.006	0.006	30	100.9	0.000	0.000	0.031	0.031	271	480.0	0.000	0.000	0.029	0.029	1182
29	59.27	0.000	0.000	0.006	0.006	31	109.4	0.000	0.000	0.033	0.033	315	253.9	0.000	0.000	0.029	0.029	634
30	58.87	0.000	0.000	0.006	0.006	31	88.86	0.000	0.000	0.029	0.029	222	227.1	0.000	0.000	0.033	0.033	650
31							92.00	0.000	0.000	0.028	0.028	226	226.8	0.000	0.000	0.032	0.032	617
Ten Daily Mean																		
Ten Daily I	21.96	0.000	0.000	0.006	0.006	11	72.78	0.000	0.000	0.009	0.009	50	131.2	0.000	0.000	0.068	0.068	799
Ten Daily II	20.42	0.000	0.000	0.006	0.006	10	75.94	0.000	0.000	0.025	0.025	220	1173	0.000	0.000	0.043	0.043	5468
Ten Daily III	30.47	0.000	0.000	0.007	0.007	17	96.39	0.000	0.000	0.030	0.030	254	472.1	0.000	0.000	0.031	0.031	1312
Monthly																		
Total							373						5485					77104

Annual Sediment Load (Metric Tonnes) : 226443

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	229.6	0.000	0.000	0.029	0.029	577	238.9	0.000	0.000	0.024	0.024	504	129.8	0.000	0.000	0.021	0.021	231
2	216.1	0.000	0.000	0.029	0.029	540	240.0	0.000	0.000	0.022	0.022	460	129.1	0.000	0.000	0.021	0.021	230
3	224.1	0.000	0.000	0.029	0.029	563	233.5	0.000	0.000	0.026	0.026	520	173.4	0.000	0.000	0.023	0.023	349
4	220.0	0.000	0.000	0.029	0.029	551	226.3	0.000	0.000	0.025	0.025	487	144.2	0.000	0.000	0.020	0.020	253
5	1458	0.000	0.000	0.056	0.056	6992	201.6	0.000	0.000	0.027	0.027	463	125.1	0.000	0.000	0.020	0.020	219
6	4012	0.000	0.000	0.064	0.064	22324	193.8	0.000	0.000	0.027	0.027	444	125.1	0.000	0.000	0.020	0.020	219
7	2970	0.000	0.000	0.062	0.062	15963	186.4	0.000	0.000	0.026	0.026	414	123.0	0.000	0.000	0.019	0.019	206
8	2205	0.000	0.000	0.058	0.058	11014	185.5	0.000	0.000	0.026	0.026	413	129.7	0.000	0.000	0.019	0.019	217
9	3064	0.000	0.000	0.060	0.060	15886	200.0	0.000	0.000	0.025	0.025	439	115.7	0.000	0.000	0.019	0.019	194
10	2469	0.000	0.000	0.053	0.053	11371	190.0	0.000	0.000	0.025	0.025	414	114.1	0.000	0.000	0.019	0.019	191
11	510.0	0.000	0.000	0.031	0.031	1370	180.0	0.000	0.000	0.025	0.025	389	113.0	0.000	0.000	0.019	0.019	183
12	518.6	0.000	0.000	0.031	0.031	1394	180.0	0.000	0.000	0.024	0.024	373	108.8	0.000	0.000	0.020	0.020	187
13	516.0	0.000	0.000	0.030	0.030	1337	189.2	0.000	0.000	0.024	0.024	392	108.0	0.000	0.000	0.019	0.019	177
14	436.1	0.000	0.000	0.029	0.029	1089	171.6	0.000	0.000	0.023	0.023	334	108.0	0.000	0.000	0.020	0.020	186
15	507.0	0.000	0.000	0.031	0.031	1362	165.7	0.000	0.000	0.023	0.023	334	105.4	0.000	0.000	0.019	0.019	173
16	251.2	0.000	0.000	0.029	0.029	627	160.0	0.000	0.000	0.025	0.025	348	103.3	0.000	0.000	0.020	0.020	178
17	223.0	0.000	0.000	0.028	0.028	543	142.5	0.000	0.000	0.025	0.025	312	101.1	0.000	0.000	0.021	0.021	183
18	240.0	0.000	0.000	0.280	0.280	5806	141.5	0.000	0.000	0.026	0.026	320	101.9	0.000	0.000	0.021	0.021	184
19	235.0	0.000	0.000	0.024	0.024	489	129.9	0.000	0.000	0.024	0.024	273	101.7	0.000	0.000	0.021	0.021	184
20	238.5	0.000	0.000	0.025	0.025	513	128.0	0.000	0.000	0.025	0.025	279	104.3	0.000	0.000	0.021	0.021	188
21	250.6	0.000	0.000	0.025	0.025	539	126.7	0.000	0.000	0.025	0.025	276	104.4	0.000	0.000	0.019	0.019	171
22	263.1	0.000	0.000	0.027	0.027	605	126.2	0.000	0.000	0.026	0.026	286	104.2	0.000	0.000	0.020	0.020	179
23	260.9	0.000	0.000	0.026	0.026	579	127.0	0.000	0.000	0.026	0.026	285	105.4	0.000	0.000	0.021	0.021	190
24	273.6	0.000	0.000	0.057	0.057	1338	120.1	0.000	0.000	0.025	0.025	261	102.5	0.000	0.000	0.020	0.020	177
25	300.0	0.000	0.000	0.028	0.028	731	127.9	0.000	0.000	0.025	0.025	280	101.8	0.000	0.000	0.020	0.020	176
26	297.6	0.000	0.000	0.028	0.028	725	129.2	0.000	0.000	0.024	0.024	271	106.7	0.000	0.000	0.022	0.022	202
27	496.5	0.000	0.000	0.027	0.027	1145	129.5	0.000	0.000	0.025	0.025	283	108.0	0.000	0.000	0.022	0.022	204
28	494.0	0.000	0.000	0.024	0.024	1041	130.6	0.000	0.000	0.026	0.026	289	104.3	0.000	0.000	0.022	0.022	197
29	228.6	0.000	0.000	0.021	0.021	409	159.1	0.000	0.000	0.026	0.026	352	103.2	0.000	0.000	0.023	0.023	204
30	230.7	0.000	0.000	0.022	0.022	446	150.0	0.000	0.000	0.026	0.026	332	103.3	0.000	0.000	0.022	0.022	196
31							155.7	0.000	0.000									
Ten Daily Mean																		
Ten Daily I	1707	0.000	0.000	0.047	0.047	8578	209.6	0.000	0.000	0.025	0.025	456	130.9	0.000	0.000	0.039	0.039	428
Ten Daily II	367.6	0.000	0.000	0.054	0.054	1453	158.8	0.000	0.000	0.025	0.025	335	105.6	0.000	0.000	0.020	0.020	182
Ten Daily III	309.6	0.000	0.000	0.028	0.028	756	134.7	0.000	0.000	0.025	0.025	291	104.4	0.000	0.000	0.021	0.021	190
Monthly																		
Total						107873						10827						8005

Annual Sediment Load (Metric Tonnes) : 226443

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	103.4	0.000	0.000	0.021	0.021	190	87.50	0.000	0.000	0.018	0.018	139	47.42	0.000	0.000	0.021	0.021	84
2	102.3	0.000	0.000	0.021	0.021	188	87.57	0.000	0.000	0.018	0.018	139	47.49	0.000	0.000	0.021	0.021	85
3	95.33	0.000	0.000	0.021	0.021	175	71.85	0.000	0.000	0.018	0.018	114	47.24	0.000	0.000	0.021	0.021	84
4	96.00	0.000	0.000	0.021	0.021	177	66.84	0.000	0.000	0.018	0.018	106	47.20	0.000	0.000	0.021	0.021	84
5	98.13	0.000	0.000	0.021	0.021	181	65.31	0.000	0.000	0.018	0.018	104	47.20	0.000	0.000	0.021	0.021	84
6	94.00	0.000	0.000	0.021	0.021	173	65.33	0.000	0.000	0.022	0.022	126	47.14	0.000	0.000	0.021	0.021	84
7	94.13	0.000	0.000	0.021	0.021	173	64.79	0.000	0.000	0.022	0.022	125	47.01	0.000	0.000	0.021	0.021	84
8	93.47	0.000	0.000	0.021	0.021	172	64.60	0.000	0.000	0.022	0.022	125	47.03	0.000	0.000	0.021	0.021	84
9	93.19	0.000	0.000	0.021	0.021	171	64.70	0.000	0.000	0.022	0.022	125	46.95	0.000	0.000	0.021	0.021	84
10	92.75	0.000	0.000	0.020	0.020	157	50.00	0.000	0.000	0.022	0.022	97	47.31	0.000	0.000	0.021	0.021	85
11	92.00	0.000	0.000	0.020	0.020	156	47.95	0.000	0.000	0.022	0.022	93	47.90	0.000	0.000	0.021	0.021	86
12	92.00	0.000	0.000	0.020	0.020	156	47.94	0.000	0.000	0.022	0.022	93	47.90	0.000	0.000	0.021	0.021	86
13	92.24	0.000	0.000	0.020	0.020	156	47.24	0.000	0.000	0.022	0.022	91	47.93	0.000	0.000	0.021	0.021	86
14	92.08	0.000	0.000	0.020	0.020	156	47.21	0.000	0.000	0.021	0.021	84	48.05	0.000	0.000	0.021	0.021	86
15	91.75	0.000	0.000	0.020	0.020	155	47.00	0.000	0.000	0.021	0.021	83	47.92	0.000	0.000	0.021	0.021	86
16	91.14	0.000	0.000	0.020	0.020	154	47.72	0.000	0.000	0.021	0.021	85	47.96	0.000	0.000	0.021	0.021	86
17	91.22	0.000	0.000	0.018	0.018	145	47.72	0.000	0.000	0.021	0.021	85	48.09	0.000	0.000	0.021	0.021	86
18	90.40	0.000	0.000	0.018	0.018	144	44.38	0.000	0.000	0.021	0.021	79	47.69	0.000	0.000	0.019	0.019	80
19	90.43	0.000	0.000	0.018	0.018	144	47.40	0.000	0.000	0.021	0.021	84	47.60	0.000	0.000	0.019	0.019	80
20	90.47	0.000	0.000	0.018	0.018	144	47.08	0.000	0.000	0.019	0.019	79	47.93	0.000	0.000	0.019	0.019	80
21	90.36	0.000	0.000	0.018	0.018	144	46.91	0.000	0.000	0.019	0.019	79	47.79	0.000	0.000	0.019	0.019	80
22	90.46	0.000	0.000	0.018	0.018	144	46.90	0.000	0.000	0.019	0.019	79	47.54	0.000	0.000	0.019	0.019	80
23	91.54	0.000	0.000	0.020	0.020	155	46.72	0.000	0.000	0.019	0.019	78	47.68	0.000	0.000	0.019	0.019	80
24	91.58	0.000	0.000	0.020	0.020	155	47.07	0.000	0.000	0.019	0.019	79	47.60	0.000	0.000	0.019	0.019	80
25	91.00	0.000	0.000	0.020	0.020	154	47.30	0.000	0.000	0.019	0.019	79	47.79	0.000	0.000	0.019	0.019	80
26	90.45	0.000	0.000	0.020	0.020	153	47.30	0.000	0.000	0.019	0.019	79	47.70	0.000	0.000	0.019	0.019	80
27	88.82	0.000	0.000	0.020	0.020	150	47.18	0.000	0.000	0.019	0.019	78	47.77	0.000	0.000	0.020	0.020	80
28	88.83	0.000	0.000	0.020	0.020	150	47.47	0.000	0.000	0.019	0.019	79	48.21	0.000	0.000	0.019	0.019	81
29	88.79	0.000	0.000	0.020	0.020	150	47.40	0.000	0.000	0.019	0.019	79						
30	88.77	0.000	0.000	0.020	0.020	150	47.44	0.000	0.000	0.019	0.019	79						
31	87.82	0.000	0.000	0.020	0.020	149	47.61	0.000	0.000	0.019	0.019	79						
Ten Daily Mean																		
Ten Daily I	96.27	0.000	0.000	0.021	0.021	176	68.85	0.000	0.000	0.020	0.020	120	47.20	0.000	0.000	0.021	0.021	84
Ten Daily II	91.37	0.000	0.000	0.019	0.019	151	47.16	0.000	0.000	0.021	0.021	85	47.90	0.000	0.000	0.020	0.020	84
Ten Daily III	89.86	0.000	0.000	0.019	0.019	150	47.21	0.000	0.000	0.019	0.019	79	47.76	0.000	0.000	0.019	0.019	80
Monthly																		
Total						4923						2922						2322

Annual Sediment Load (Metric Tonnes) : 226443

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	47.36	0.000	0.000	0.020	0.020	80	33.10	0.000	0.000	0.025	0.025	71	31.62	0.000	0.000	0.027	0.027	73
2	47.12	0.000	0.000	0.020	0.020	79	33.00	0.000	0.000	0.025	0.025	70	31.53	0.000	0.000	0.000	0.000	0
3	46.96	0.000	0.000	0.020	0.020	79	30.45	0.000	0.000	0.025	0.025	65	31.35	0.000	0.000	0.027	0.027	72
4	47.11	0.000	0.000	0.020	0.020	79	30.24	0.000	0.000	0.025	0.025	65	31.31	0.000	0.000	0.000	0.000	0
5	46.80	0.000	0.000	0.020	0.020	79	32.90	0.000	0.000	0.025	0.025	70	31.93	0.000	0.000	0.027	0.027	73
6	46.92	0.000	0.000	0.020	0.020	79	32.77	0.000	0.000	0.025	0.025	70	31.83	0.000	0.000	0.027	0.027	73
7	46.70	0.000	0.000	0.020	0.020	79	32.95	0.000	0.000	0.025	0.025	70	31.93	0.000	0.000	0.027	0.027	73
8	43.14	0.000	0.000	0.020	0.020	73	32.87	0.000	0.000	0.025	0.025	70	32.02	0.000	0.000	0.027	0.027	74
9	42.66	0.000	0.000	0.020	0.020	72	32.80	0.000	0.000	0.025	0.025	69	32.23	0.000	0.000	0.027	0.027	74
10	38.27	0.000	0.000	0.024	0.024	78	32.65	0.000	0.000	0.025	0.025	69	32.30	0.000	0.000	0.027	0.027	74
11	38.00	0.000	0.000	0.024	0.024	78	32.39	0.000	0.000	0.025	0.025	69	32.36	0.000	0.000	0.027	0.027	74
12	38.00	0.000	0.000	0.024	0.024	78	32.15	0.000	0.000	0.025	0.025	68	32.44	0.000	0.000	0.026	0.026	74
13	38.00	0.000	0.000	0.024	0.024	78	31.95	0.000	0.000	0.025	0.025	68	32.28	0.000	0.000	0.026	0.026	74
14	37.22	0.000	0.000	0.024	0.024	76	31.80	0.000	0.000	0.024	0.024	67	32.28	0.000	0.000	0.026	0.026	74
15	36.84	0.000	0.000	0.024	0.024	75	31.74	0.000	0.000	0.024	0.024	67	32.21	0.000	0.000	0.026	0.026	73
16	42.47	0.000	0.000	0.024	0.024	87	31.90	0.000	0.000	0.024	0.024	67	32.32	0.000	0.000	0.026	0.026	74
17	36.36	0.000	0.000	0.024	0.024	74	31.93	0.000	0.000	0.024	0.024	67	32.35	0.000	0.000	0.026	0.026	74
18	35.66	0.000	0.000	0.024	0.024	73	31.88	0.000	0.000	0.024	0.024	67	32.09	0.000	0.000	0.026	0.026	73
19	35.60	0.000	0.000	0.024	0.024	73	31.79	0.000	0.000	0.024	0.024	67	32.37	0.000	0.000	0.028	0.028	79
20	35.47	0.000	0.000	0.024	0.024	73	31.96	0.000	0.000	0.024	0.024	67	32.26	0.000	0.000	0.028	0.028	78
21	35.31	0.000	0.000	0.024	0.024	72	31.96	0.000	0.000	0.024	0.024	67	32.09	0.000	0.000	0.028	0.028	78
22	35.49	0.000	0.000	0.024	0.024	73	30.83	0.000	0.000	0.026	0.026	70	32.21	0.000	0.000	0.028	0.028	78
23	35.80	0.000	0.000	0.024	0.024	73	31.00	0.000	0.000	0.026	0.026	70	32.39	0.000	0.000	0.028	0.028	79
24	35.15	0.000	0.000	0.024	0.024	72	32.10	0.000	0.000	0.026	0.026	73	31.46	0.000	0.000	0.028	0.028	76
25	34.82	0.000	0.000	0.024	0.024	71	32.16	0.000	0.000	0.026	0.026	73	32.68	0.000	0.000	0.028	0.028	79
26	34.80	0.000	0.000	0.024	0.024	71	31.82	0.000	0.000	0.026	0.026	72	32.75	0.000	0.000	0.028	0.028	80
27	35.62	0.000	0.000	0.024	0.024	73	32.14	0.000	0.000	0.026	0.026	73	33.15	0.000	0.000	0.028	0.028	80
28	34.31	0.000	0.000	0.024	0.024	70	31.87	0.000	0.000	0.026	0.026	72	33.30	0.000	0.000	0.028	0.028	81
29	33.88	0.000	0.000	0.024	0.024	69	31.85	0.000	0.000	0.026	0.026	72	33.64	0.000	0.000	0.028	0.028	82
30	33.65	0.000	0.000	0.024	0.024	69	31.80	0.000	0.000	0.026	0.026	72	33.49	0.000	0.000	0.028	0.028	81
31	33.55	0.000	0.000	0.024	0.024	69							33.81	0.000	0.000	0.028	0.028	82
Ten Daily Mean																		
Ten Daily I	45.30	0.000	0.000	0.020	0.020	78	32.37	0.000	0.000	0.025	0.025	69	31.80	0.000	0.000	0.021	0.021	59
Ten Daily II	37.36	0.000	0.000	0.024	0.024	77	31.95	0.000	0.000	0.024	0.024	67	32.29	0.000	0.000	0.027	0.027	75
Ten Daily III	34.76	0.000	0.000	0.024	0.024	71	31.75	0.000	0.000	0.026	0.026	71	32.82	0.000	0.000	0.028	0.028	80
Monthly																		
Total						2325						2075						2210

Annual Sediment Load (Metric Tonnes) : 226443

Annual Sediment Load for period : 1973-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
1973-1974	3710541	9724	3720264	10046
1974-1975	11216411	5500	11221911	5332
1975-1976	4835503	21868	4857371	6424
1976-1977	9534127	63973	9598100	4835
1977-1978	8023490	12710	8036199	9718
1978-1979	5729988	20207	5750195	7873
1979-1980	1522045	8042	1530088	2081
1980-1981	2781916	65661	2847577	4392
1981-1982	2072685	9345	2082031	4043
1982-1983	2043672	10935	2054607	2730
1983-1984	1968814	2993	1971807	3709
1984-1985	6093516	3527	6097043	8256
1985-1986	4413784	3758	4417542	7702
1986-1987	1487648	9471	1497118	4268
1987-1988	5750036	13958	5763993	5210
1988-1989	5355921	4862	5360784	6192
1989-1990	7554215	13133	7567348	6781
1990-1991	6158738	14592	6173331	9337
1991-1992	2530789	36926	2567715	5007
1992-1993	2568006	2184	2570190	3148
1993-1994	2075188	7102	2082290	5568
1994-1995	6712243	17769	6730012	13155
1995-1996	2454144	4397	2458541	8264
1996-1997	2502298	8384	2510682	7110
1997-1998	6520952	139862	6660814	11342
1998-1999	1083889	36343	1120232	5150
1999-2000	1172898	14424	1187322	9872
2000-2001	248389	0	248389	3491
2001-2002	2115624	21580	2137204	7937
2002-2003	590640	7968	598608	4711
2003-2004	674002	27539	701540	4184
2004-2005	1810346	8686	1819033	4975
2005-2006	293790	590	294380	3048
2006-2007	6156100	90552	6246652	10671
2007-2008	11146331	25956	11172287	11955
2008-2009	2009046	996	2010043	10115
2009-2010	862365	424	862789	7538
2010-2011	48318	16585	64903	1856
2011-2012	2505608	2942	2508550	13876
2012-2013	852447	42323	894770	6682
2013-2014	2325630	27211	2352841	9013
2014-2015	531207	5337	536543	7090
2015-2016	178117	4852	182969	3491
2016-2017	209666	16776	226443	5441

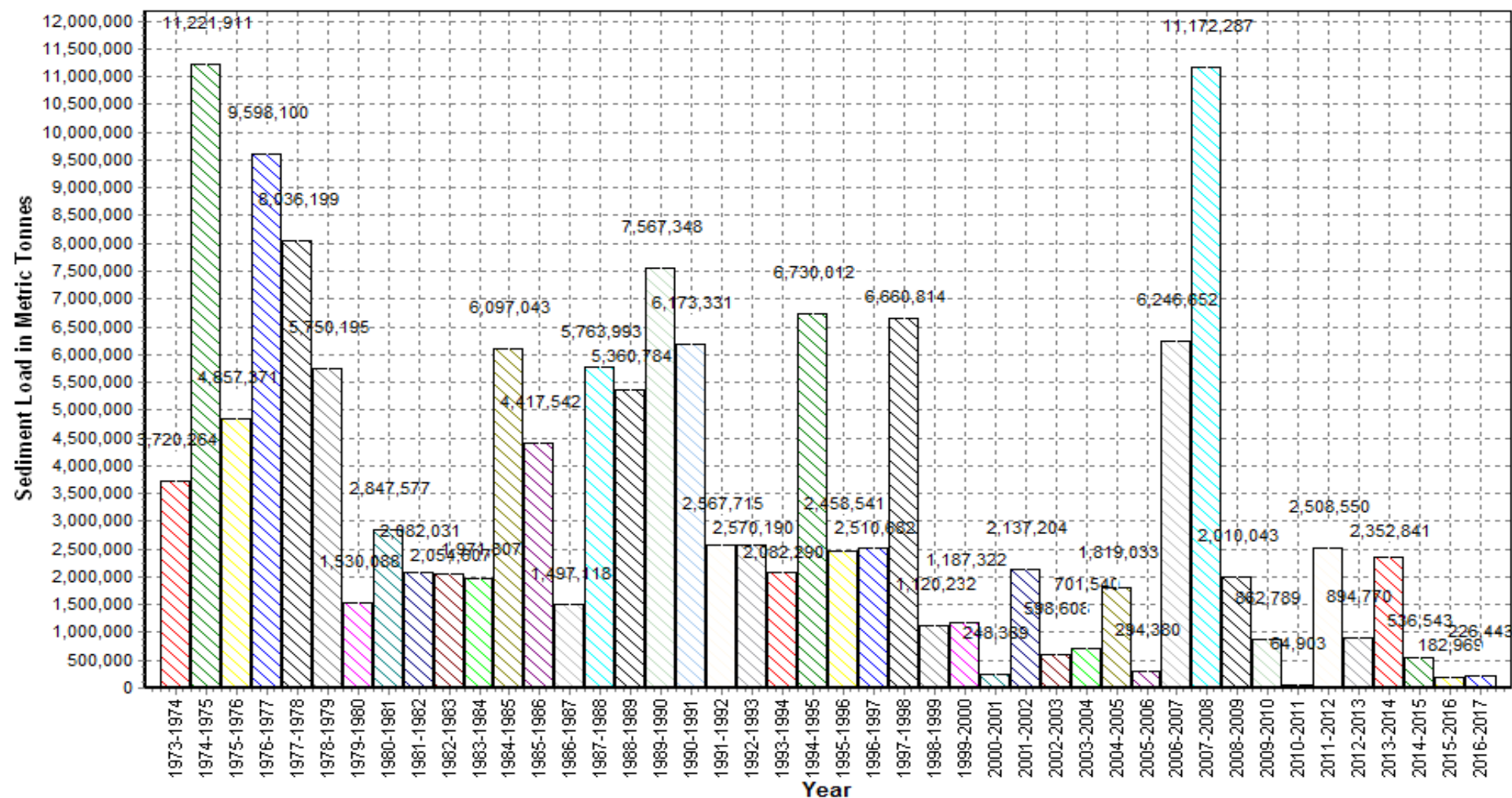
Annual Sediment Load for the period: 1973-2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

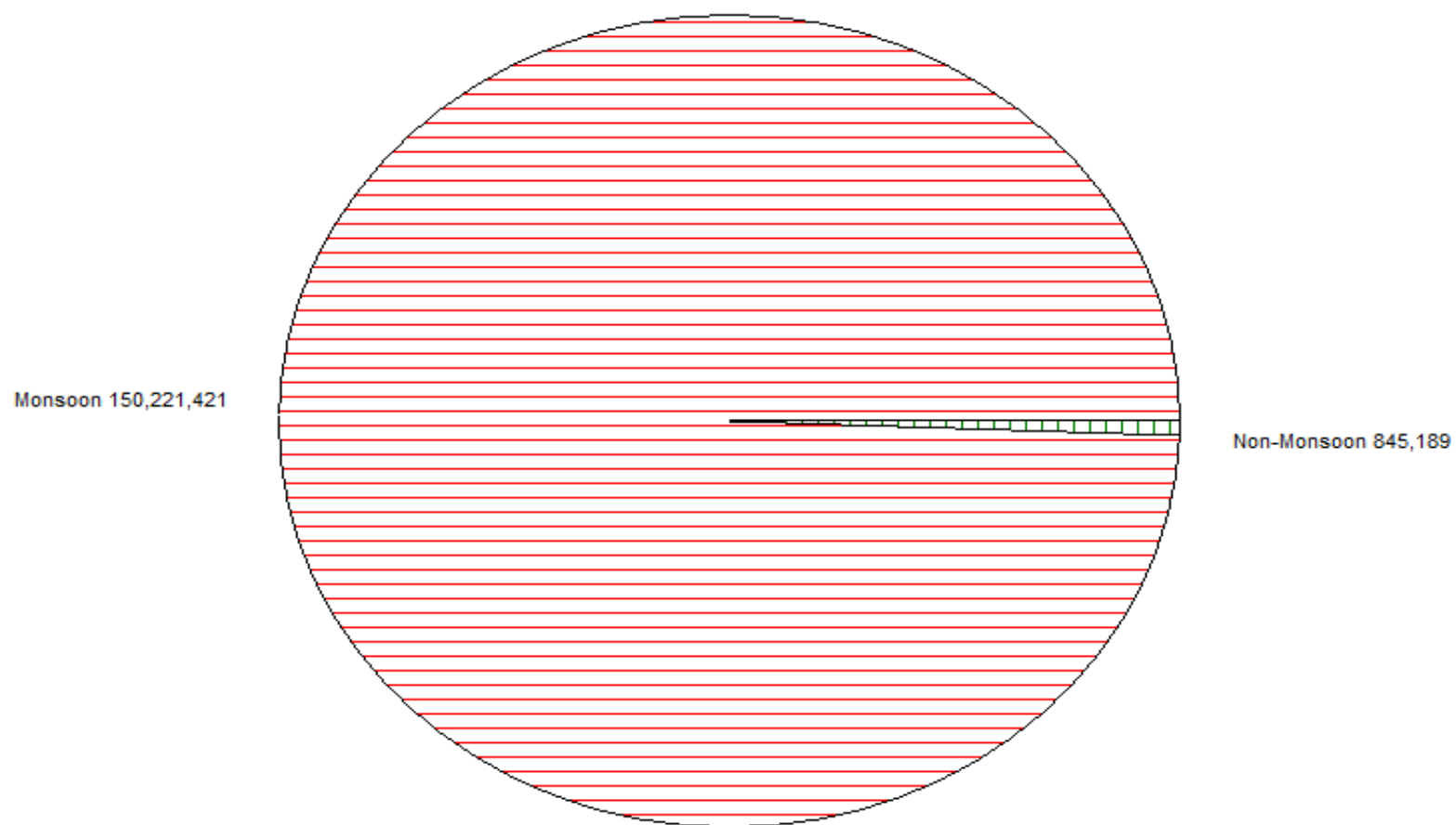
Sub-Division : Balasore



Station Name : GHATSHILA (ES000K7)
Local River : Subarnarekha

Seasonal Sediment Load for the period : 1973-2016

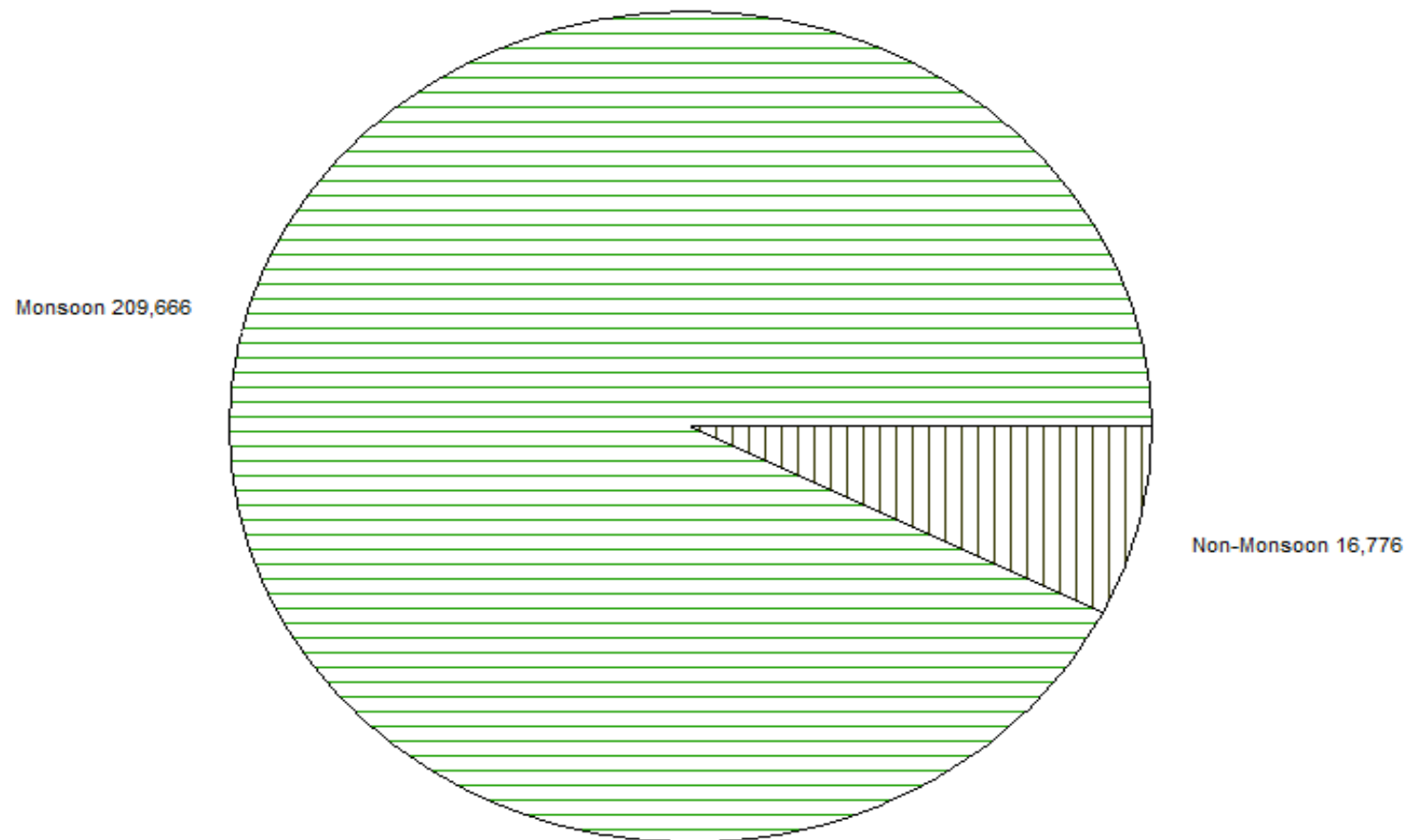
Division : E.E., Bhubaneswar
Sub-Division : Balasore



Seasonal Sediment Load for the Year: 2016-2017

Station Name : GHATSHILA (ES000K7)
Local River : Subarnarekha

Division : E.E., Bhubaneswar
Sub-Division : Balasore



Water Quality Datasheet for the period : 2016-2017

Station Name : GHATSHILA (ES000K7)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

River Water Analysis

S.No	Parameters	01.06.2016	02.07.2016	01.08.2016	01.09.2016	01.10.2016	01.11.2016	01.12.2016	02.01.2017	01.02.2017	01.03.2017	01.04.2017	01.05.2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	382	487	238	229	215	691	811	396	426	465	425	438
4	EC_GEN (µmho/cm)	384	491	240	232	218	693	815	400	430	467	429	446
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.5	7.6	7.3	7.5	7.6	7.9	8.5	8.1	8.1	7.7	7.6	8.4
7	pH_GEN (pH units)	7.6	7.7	7.4	7.6	7.7	8.1	8.5	8.2	8.2	7.8	7.7	8.0
8	Temp (deg C)	27.5	26.0	22.0	24.0	23.0	22.0	18.5	16.5	16.5	21.0	23.5	29.5
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	97	106	111	106	79	79	74	60	74	79	83	79
3	B (mg/L)	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.03	0.01
4	Ca (mg/L)	53	56	58	59	61	63	63	45	64	66	67	64
5	Cl (mg/L)	41.5	39.6	45.3	47.2	11.3	11.3	13.2	15.1	15.1	26.4	34.0	28.3
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.5	0.2	0.2	0.7	0.1	0.4	0.3	0.5	0.5	0.6	0.5
9	HCO3 (mg/L)	118	130	135	130	96	96	90	73	90	96	101	96
10	K (mg/L)	5.5	16.3	21.7	21.8	5.4	2.6	8.3	27.7	29.3	30.1	30.1	31.0
11	Mg (mg/L)	21.4	22.4	23.3	24.3	26.2	27.2	27.2	13.6	28.2	28.2	27.2	24.3
12	Na (mg/L)	35.9	71.3	82.6	82.8	30.2	21.6	30.1	70.2	60.0	39.9	48.6	49.1
13	NO2+NO3 (mg N/L)	0.88	0.76	0.90	0.97	1.26	0.80	1.30	1.35	1.08	1.30	1.19	1.12
14	NO2-N (mgN/L)	0.01	0.07	0.07	0.01	0.03	0.00	0.01	0.00	0.03	0.07	0.01	0.00
15	NO3-N (mgN/L)	0.87	0.69	0.83	0.95	1.23	0.80	1.29	1.35	1.05	1.23	1.18	1.12
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	7.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0	8.0	8.0	8.0	7.5
18	SO4 (mg/L)	42.6	115.6	46.5	50.6	19.9	32.2	32.4	32.9	32.3	30.1	30.4	32.9
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	1.8	1.6	0.4	0.8	0.4	1.0	1.4	0.4	1.8	1.8	0.8	0.8
2	DO (mg/L)	7.0	8.5	5.0	5.2	8.7	7.0	9.3	8.1	11.3	6.6	6.0	5.8
3	DO_SAT% (%)	87	105	57	61	102	79	99	83	115	73	70	75
4	FCol-MPN (MPN/100mL)						40	170	20	40	80	80	110
5	Tcol-MPN (MPN/100mL)						60	260	40	140	170	110	270
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	132	140	144	148	152	156	156	112	160	164	168	160
2	HAR_Total (mgCaCO3/L)	221	233	242	250	262	270	270	169	278	282	282	262
3	Na% (%)	26	38	40	39	20	15	19	43	29	21	25	26
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.1	2.0	2.3	2.3	0.8	0.6	0.8	2.4	1.6	1.0	1.3	1.3
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	12	811	215	434
3	EC_GEN (μmho/cm)	12	815	218	437
4	pH_FLD (pH units)	12	8.5	7.3	7.8
5	pH_GEN (pH units)	12	8.5	7.4	7.9
6	Temp (deg C)	12	29.5	16.5	22.5
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	111	60	85
3	B (mg/L)	12	0.03	0.01	0.01
4	Ca (mg/L)	12	67	45	60
5	Cl (mg/L)	12	47.2	11.3	27.3
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.7	0.1	0.4
9	HCO3 (mg/L)	12	135	73	104
10	K (mg/L)	12	31.0	2.6	19.2
11	Mg (mg/L)	12	28.2	13.6	24.5
12	Na (mg/L)	12	82.8	21.6	51.9
13	NO2+NO3 (mg N/L)	12	1.35	0.76	1.08
14	NO2-N (mgN/L)	12	0.07	0.00	0.03
15	NO3-N (mgN/L)	12	1.35	0.69	1.05
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	8.0	6.0	6.8
18	SO4 (mg/L)	12	115.6	19.9	41.5
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	1.8	0.4	1.1
2	DO (mg/L)	12	11.3	5.0	7.4
3	DO_SAT% (%)	12	115	57	84
4	FCol-MPN (MPN/100mL)	7	170	20	77
5	Tcol-MPN (MPN/100mL)	7	270	40	150
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	168	112	150
2	HAR_Total (mgCaCO3/L)	12	282	169	252
3	Na% (%)	12	43	15	28
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	2.4	0.6	1.5
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

River Water

Sub-Division : Balasore

S.No	Parameters	Flood Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	247	326	310	248	236	279		245	377	259	246	212	302	492	310	250	438	268	349	328	274
3	EC_GEN (µmho/cm)	247	326	310	246	231	273		245	377	259	246	212	302	493	313	250	438	268	348	328	270
4	pH_FLD (pH units)	7.8	7.6	7.8	7.7	7.8	7.8		7.8	8.0	8.2	7.2	7.3	7.6	7.4	7.5	7.8	7.6	7.8	7.9	7.9	8.0
5	pH_GEN (pH units)	7.8	7.6	7.8	7.7	7.8	7.9		7.8	8.0	8.2	7.5	7.3	7.6	7.4	7.6	7.8	7.6	7.8	7.9	7.9	8.1
6	Temp (deg C)	29.4	30.0	29.1	29.1	30.1	27.4		27.7	27.2	28.0	27.6	27.6	28.8	27.8	24.5	20.4	19.0	22.3	19.8	19.9	16.9
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0		0.0	7.2	10.8				0.0	0.0						0.0
2	ALK-TOT (mgCaCO3/L)						89		58	99	85				77	100						89
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	28	33	38	24	24	28		21	33	21	25	25	21	34	57	35	42	28	37	35	27
5	Cl (mg/L)	12.7	24.1	14.5	16.7	16.4	17.0		18.7	21.9	20.7	20.7	26.9	20.7	20.4	37.0	25.7	36.3	15.6	26.2	23.9	21.2
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	8.6	13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.00	0.11	0.67	0.00	0.51	0.57		0.12	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.46	0.13	0.61	0.52	0.30	0.57
8	Fe (mg/L)			0.1	0.3	0.4	0.3		0.4	0.5	0.0	1.2	0.3	3.1	0.4	0.4			0.1	0.2	0.3	0.5
9	HCO3 (mg/L)	102	109	103	98	89	108		61	103	78	82	91	78	94	122	90	149	117	148	121	109
10	K (mg/L)	3.0	2.6	5.7	3.8	2.3	3.1		2.5	4.2	3.3	2.8	4.2	3.3	3.4	14.1	5.3	4.6	3.2	3.8	3.8	3.4
11	Mg (mg/L)	8.4	8.9	7.7	7.0	6.7	9.3		9.1	15.6	9.3	6.8	7.5	9.3	9.9	23.5	9.2	12.0	9.2	9.7	8.0	8.0
12	Na (mg/L)	7.9	17.3	10.0	12.1	11.9	11.8		12.2	14.1	10.9	10.5	17.0	10.9	14.2	60.6	17.1	25.5	10.8	18.6	16.5	14.8
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	0.83	2.57	1.47	1.97	2.40	1.30		2.01	1.80	0.41	0.84	1.01	1.41	0.99	0.95	3.16	1.23	1.04	1.98	1.41	1.37
15	NO2-N (mgN/L)	0.00	0.00	0.02	0.00	0.00	0.00		0.00	0.00	0.07	0.00	0.02	0.02	0.03	0.04	0.00	0.00	0.00	0.00	0.00	0.00
16	NO3-N (mgN/L)	0.83	2.57	1.44	1.97	2.40	1.30		2.01	1.80	0.34	0.84	0.99	1.40	0.96	0.91	3.16	1.23	1.04	1.98	1.41	1.37
17	o-PO4-P (mg P/L)		0.062		0.012	0.000	0.000		0.012											0.000	0.000	0.005
18	P-Tot (mgP/L)	0.003	0.001	0.013	0.003	0.001	0.001		0.011	0.001	0.010	0.001	0.001	0.001	0.001	0.010	0.001	0.001	0.001	0.001	0.001	0.005
19	SiO2 (mg/L)	14.0	14.0	22.3	23.4	8.5	9.1		8.2	8.1	9.4	11.8	11.4	5.6	5.6	6.4	11.4	19.8	22.1	23.3	12.9	9.4
20	SO4 (mg/L)	15.6	18.6	44.8	8.3	11.4	17.2		26.7	36.7	22.4	64.0	32.7	21.6	27.0	55.0	43.2	23.0	12.6	10.8	20.9	14.5
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	0.8	0.8	1.7	0.9	1.0	1.0		1.2	5.2	1.2	0.8	0.8	0.5	0.8	1.0	1.0	1.0	1.3	0.9	1.1	1.1
2	DO (mg/L)	6.6	6.4	7.0	6.4	6.9	7.1		6.4	6.5	6.3	5.5	6.4	5.3	5.5	6.9	7.9	7.8	8.0	8.6	8.2	8.4
3	DO_SAT% (%)	87	84	91	83	92	89		81	82	81	70	81	69	70	82	87	84	91	93	90	83
4	FCol-MPN (MPN/100mL)																					
5	Tcol-MPN (MPN/100mL)																					
	TRACE & TOXIC																					
1	Al (mg/L)			0.90	2.20																5.26	
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	70	83	95	60	60	69		54	83	52	62	62	52	86	143	87	105	70	93	87	68
2	HAR_Total (mgCaCO3/L)	105	120	106	90	88	108		92	148	91	90	93	91	127	241	125	155	104	133	120	101
3	Na% (%)	15	23	15	22	23	20		23	18	19	20	27	19	19	33	21	25	18	23	22	23
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.6	0.4	0.5	0.5	0.5		0.6	0.5	0.5	0.5	0.8	0.5	0.6	1.7	0.6	0.8	0.5	0.7	0.7	0.6
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : GHATSHILA (ES000K7)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

River Water

Sub-Division : Balasore

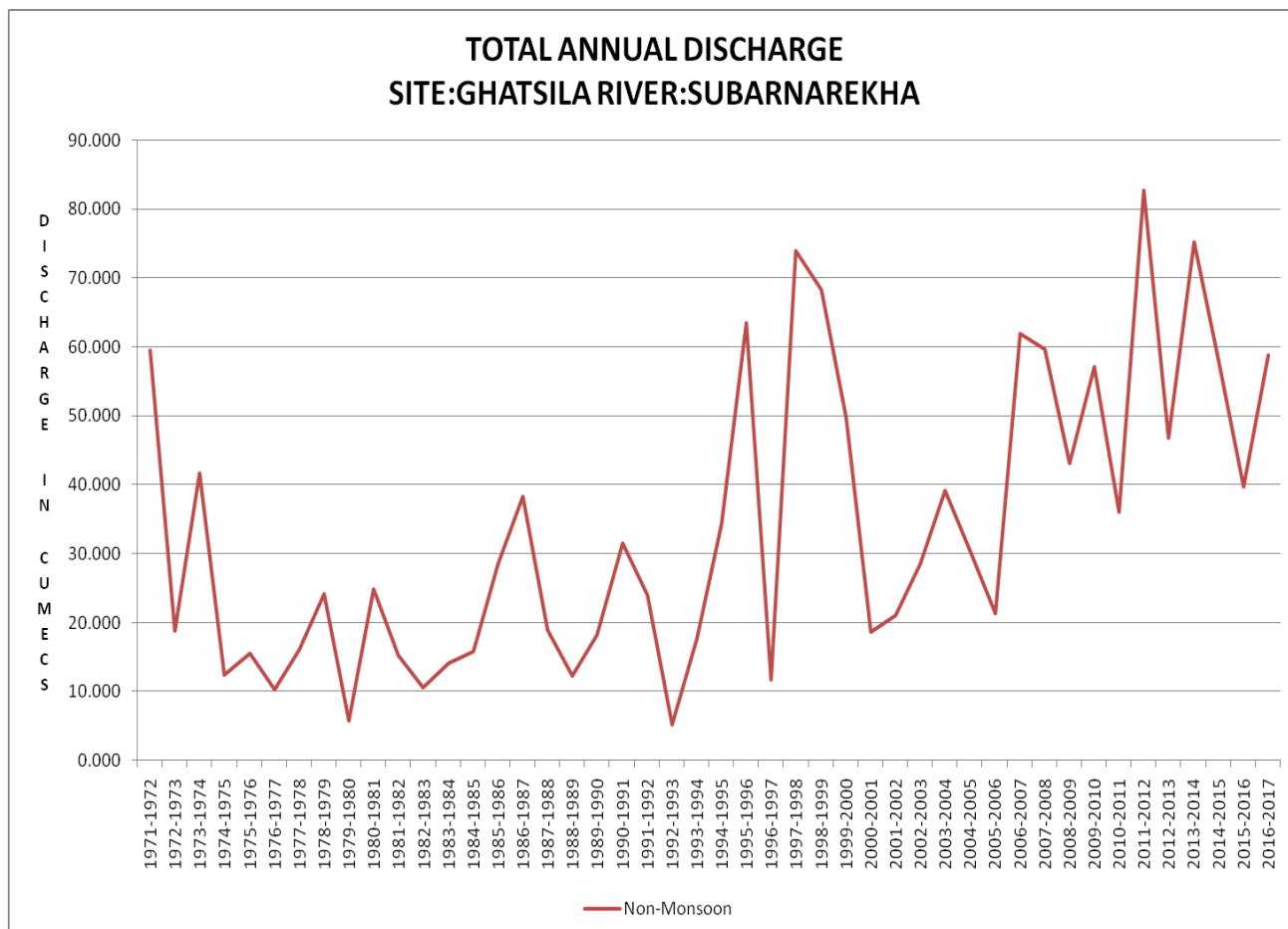
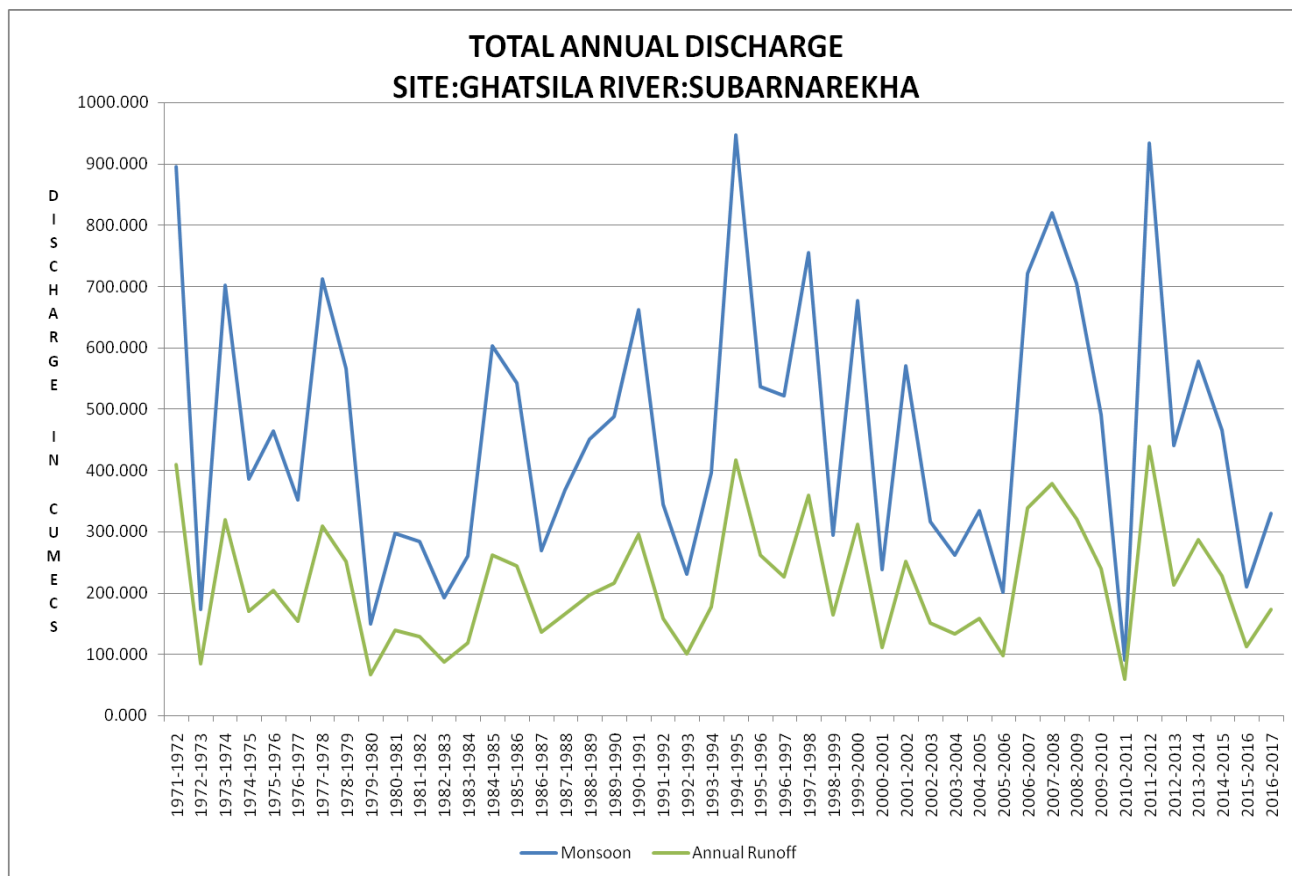
S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		333	503	275	301	265	470	765	581	333	493	402	421	439	455		403	540	310	537	333
3	EC_GEN (µmho/cm)		333	503	275	301	265	470	766	585	333	493	397	413	437	467		403	540	310	537	333
4	pH_FLD (pH units)		7.9	7.5	7.6	7.8	7.8	7.7	7.6	8.2	7.9	8.0	7.6	7.5	7.9	8.1		8.1	8.1	7.7	7.7	7.6
5	pH_GEN (pH units)		7.9	7.5	7.6	7.8	7.8	7.7	7.7	8.2	7.9	7.8	7.4	7.5	8.0	8.2		8.1	8.1	7.7	7.7	7.6
6	Temp (deg C)		17.6	18.1	18.8	17.3	21.4	18.9	19.9	18.4	23.5	27.5	25.7	26.5	24.2	24.5		26.7	23.0	25.3	25.7	26.8
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	0.0				2.3	0.0					0.0	0.0		0.0	15.6	0.0	0.0	
2	ALK-TOT (mgCaCO3/L)		73	106	83				115	72					231	170		97	129	77	83	
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00
4	Ca (mg/L)		22	39	31	31	22	28	36	59	42	53	39	44	40	49		28	45	34	21	24
5	Cl (mg/L)		26.2	42.0	27.3	32.1	27.3	25.0	17.4	13.7	16.7	25.5	32.4	30.0	32.9	26.4		39.0	46.5	25.8	23.5	28.4
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	18.8	0.0	0.0	0.0
7	F (mg/L)		0.36	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.49	0.97	0.40	0.49	0.55	0.05		0.99	0.05	0.05	0.06	0.05
8	Fe (mg/L)		0.3	0.5	0.0	1.3	0.1	0.3	0.3	0.3			0.1	0.1	0.6	0.8		0.1	0.6	0.0	1.2	0.4
9	HCO3 (mg/L)		89	129	101	96	96	96	135	87	95	187	115	153	149	208		119	120	94	81	96
10	K (mg/L)		3.0	4.9	2.9	5.9	3.0	2.8	6.1	17.0	6.4	2.4	3.6	4.4	5.6	3.9		5.5	5.8	13.1	8.5	2.9
11	Mg (mg/L)		17.0	19.9	7.8	11.4	6.2	7.8	9.0	24.1	8.1	14.9	12.0	10.6	18.1	17.5		15.9	16.8	9.1	9.4	7.9
12	Na (mg/L)		17.4	29.5	12.3	23.6	14.1	12.6	26.4	45.5	10.0	19.1	20.3	20.4	22.0	16.9		26.9	29.9	26.1	30.5	15.3
13	NH3-N (mg N/L)															0.05						
14	NO2+NO3 (mg N/L)		1.24	2.73	0.42	0.82	1.08	0.81	1.05	1.13	4.95	0.78	0.78	2.29	2.25	1.15		0.89	5.42	0.38	0.78	1.23
15	NO2-N (mgN/L)		0.00	0.02	0.07	0.00	0.02	0.03	0.02	0.01	0.03	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.07	0.00	0.03
16	NO3-N (mgN/L)		1.24	2.71	0.35	0.82	1.05	0.78	1.04	1.12	4.92	0.78	0.78	2.29	2.25	1.15		0.89	5.42	0.31	0.78	1.20
17	o-PO4-P (mg P/L)		0.005											0.000	0.007			0.023				
18	P-Tot (mgP/L)		0.002	0.001	0.010	0.001	0.001	0.001	0.010	0.010	0.001	0.001	0.001	0.001	0.007	0.050		0.001	0.001	0.010	0.001	0.001
19	SiO2 (mg/L)		9.2	5.7	9.3	12.0	11.3	4.4	5.8	6.5	13.2	18.2	22.9	24.5	16.5	9.6		9.1	8.2	10.3	11.3	11.1
20	SO4 (mg/L)		42.5	61.4	30.8	42.3	32.5	25.7	30.5	32.4	44.3	31.8	51.9	19.8	42.3	14.8		44.0	44.9	22.0	46.2	35.4
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		1.9	1.6	1.4	0.7	0.7	0.6	0.9	1.1	1.4	1.2	0.8	0.9	1.1	1.1		1.0	1.9	1.7	0.9	1.5
2	DO (mg/L)		8.9	7.9	7.2	8.7	7.5	8.9	8.8	8.9	6.7	7.3	5.9	7.6	6.7	6.1		7.2	6.9	6.4	5.0	5.9
3	DO_SAT% (%)		93	84	77	91	84	95	96	94	78	92	72	94	79	72		89	80	78	62	73
4	FCol-MPN (MPN/100mL)									68												
5	Tcol-MPN (MPN/100mL)									125												
	TRACE & TOXIC																					
1	Al (mg/L)																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		54	97	77	78	56	69	90	146	105	133	97	110	100	121		71	112	84	53	61
2	HAR_Total (mgCaCO3/L)		125	180	110	126	82	101	128	247	139	195	147	154	176	194		137	182	122	92	94
3	Na% (%)		23	26	19	28	27	20	30	27	13	18	24	22	20	16		29	26	28	39	26
4	RSC (-)		0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0		0.0	0.0	0.0	0.0	0.0
5	SAR (-)		0.7	1.0	0.5	0.9	0.7	0.5	1.0	1.3	0.4	0.6	0.8	0.7	0.7	0.5		1.0	1.0	1.0	1.4	0.7
	PESTICIDES																					

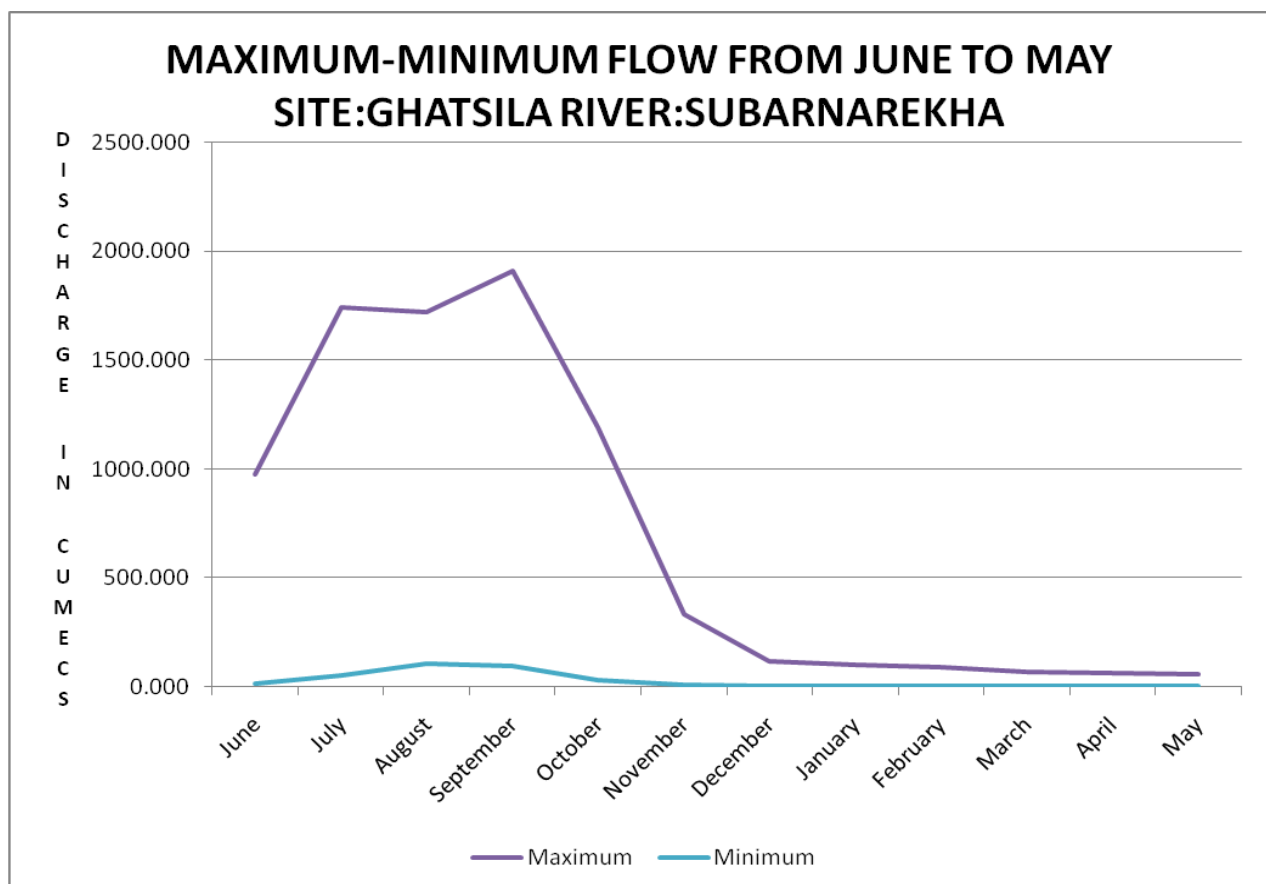
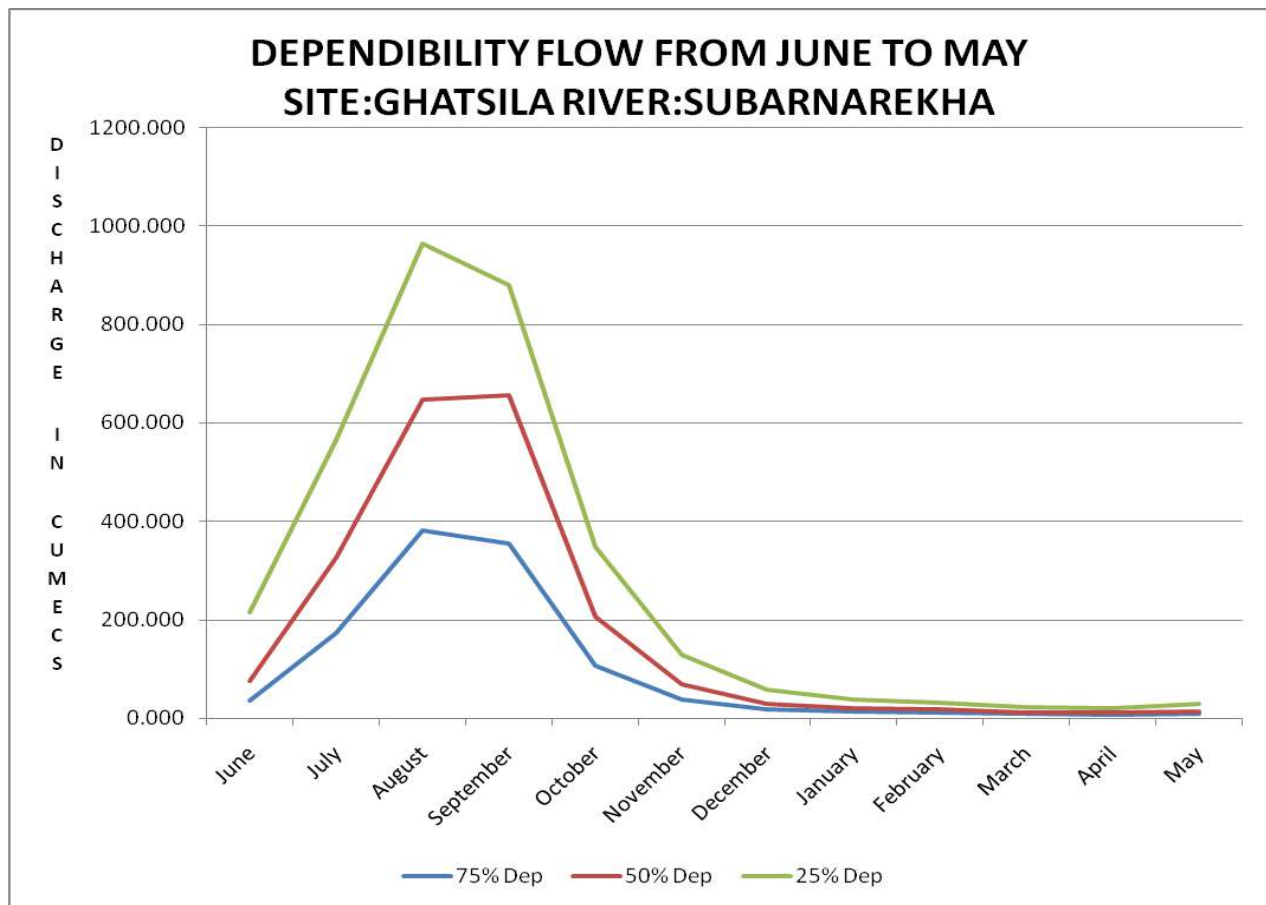
Water Quality Seasonal Average for the period: 2002-2017

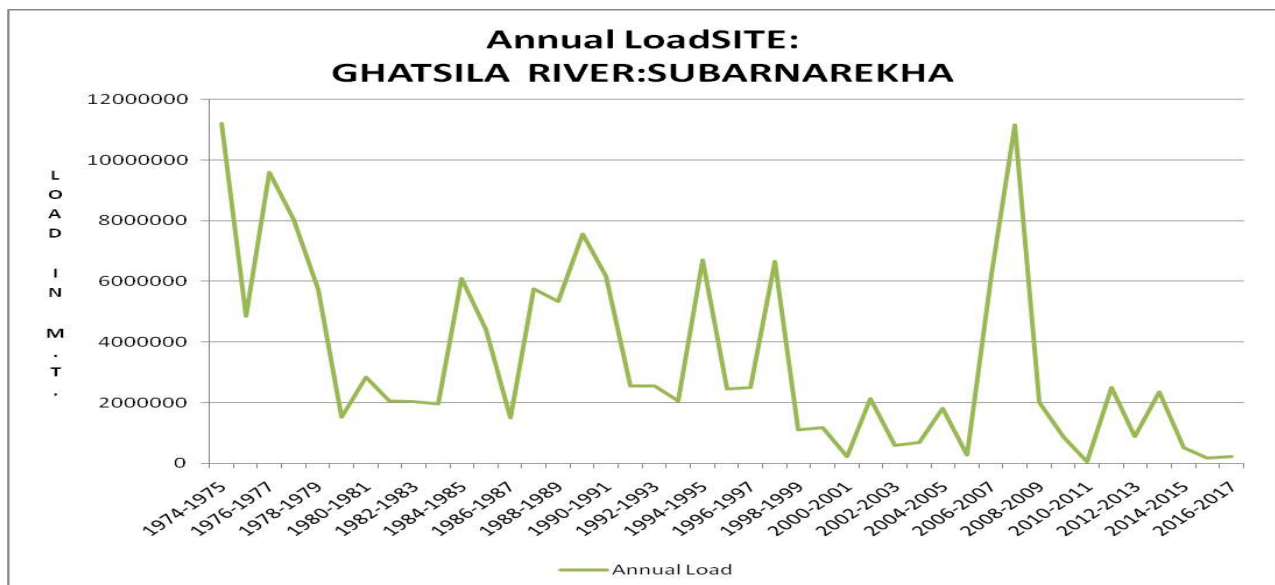
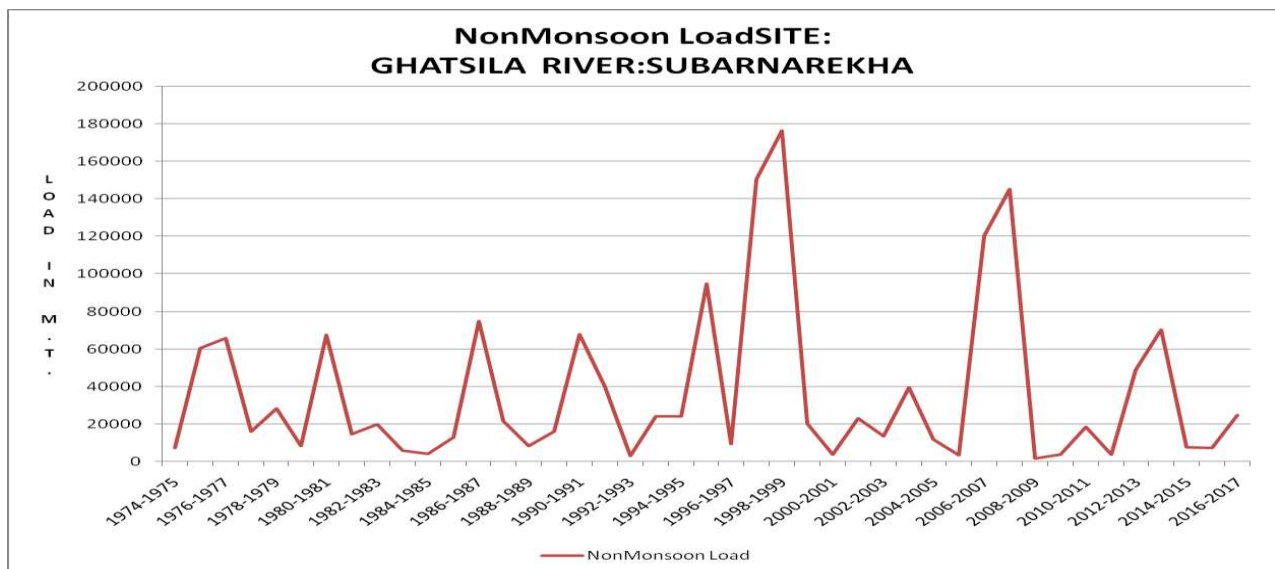
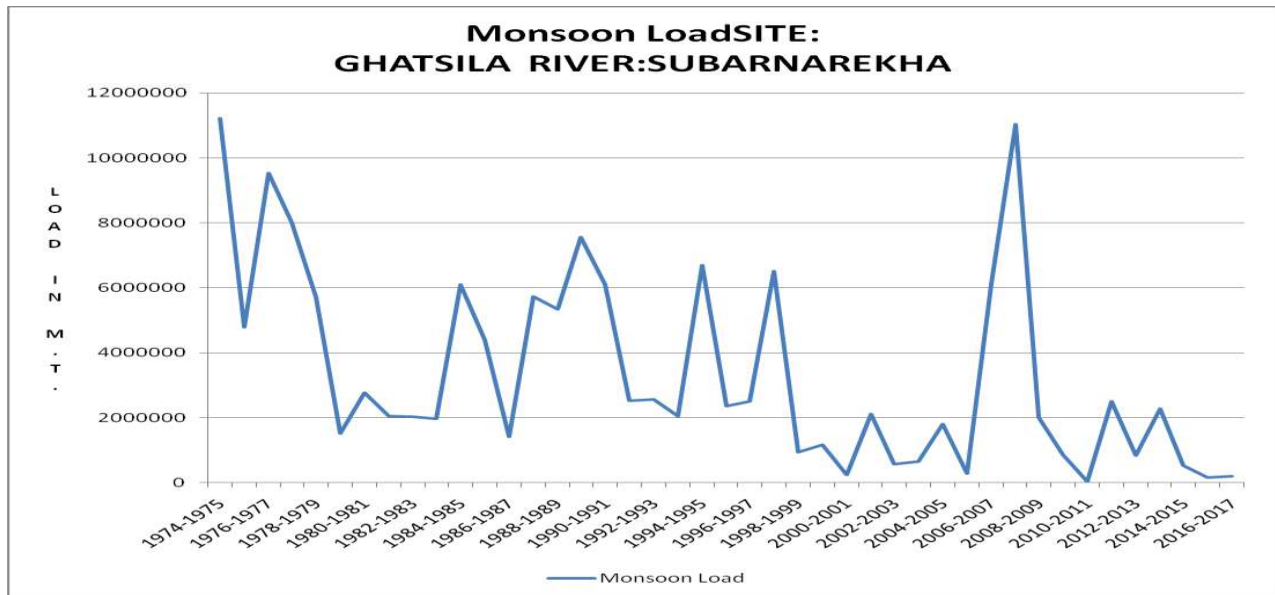
Station Name : GHATSHILA (ES000K7)
Local River : Subarnarekha

Division : E.E., Bhubaneswar
Sub-Division : Balasore

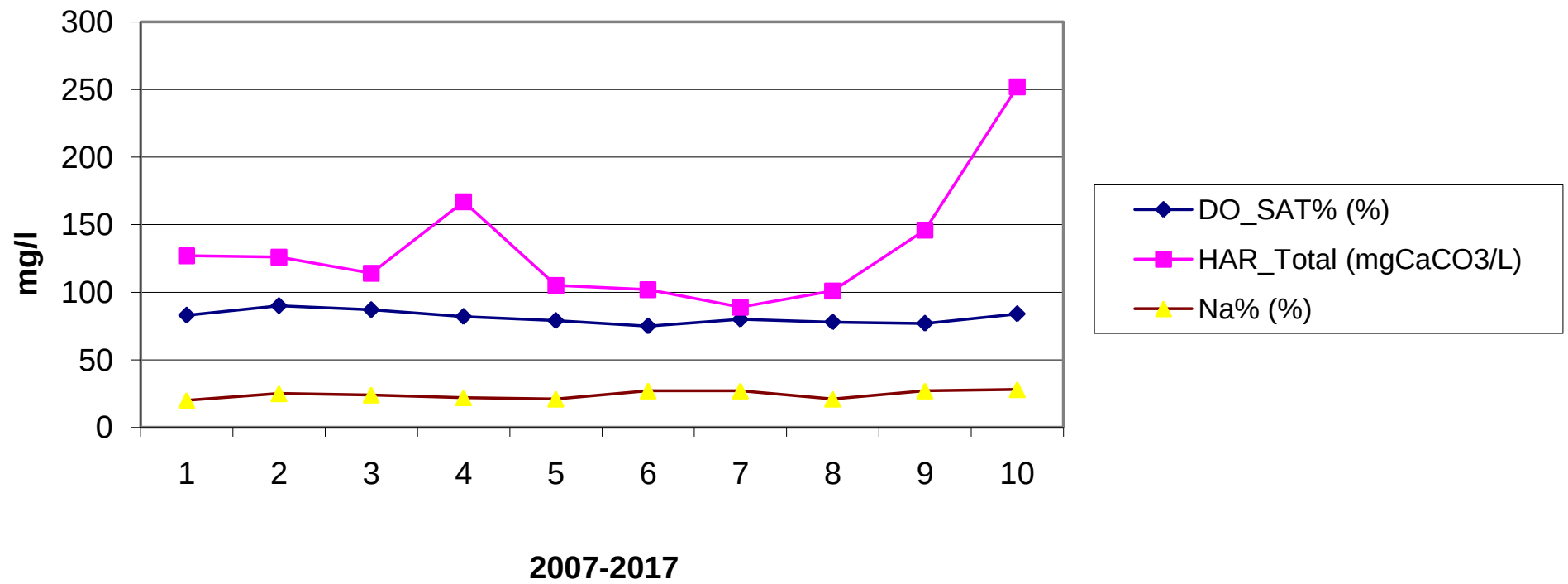
River Water				
S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	556	719	443
3	EC_GEN (µmho/cm)	556	722	447
4	pH_FLD (pH units)	7.6	7.9	7.9
5	pH_GEN (pH units)	7.6	8.1	7.8
6	Temp (deg C)	26.7	26.0	24.7
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)		19.9	0.0
2	ALK-TOT (mgCaCO3/L)		129	80
3	B (mg/L)	0.00	0.01	0.02
4	Ca (mg/L)	31	49	66
5	Cl (mg/L)	22.2	59.1	29.5
6	CO3 (mg/L)	0.0	24.0	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.3	0.5
9	HCO3 (mg/L)	72	109	98
10	K (mg/L)	12.2	10.8	30.4
11	Mg (mg/L)	9.4	19.1	26.6
12	Na (mg/L)	24.1	65.8	45.9
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	0.92	0.95	1.20
15	NO2-N (mgN/L)	0.00	0.00	0.03
16	NO3-N (mgN/L)	0.92	0.95	1.18
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.010	0.010
19	SiO2 (mg/L)	5.0	5.3	7.8
20	SO4 (mg/L)	21.6	27.2	31.1
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	1.1	0.9	1.1
2	DO (mg/L)	5.6	5.2	6.1
3	DO_SAT% (%)	70	64	73
4	FCol-MPN (MPN/100mL)			90
5	Tcol-MPN (MPN/100mL)			183
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	78	123	164
2	HAR_Total (mgCaCO3/L)	117	203	275
3	Na% (%)	26	38	24
4	RSC (-)	0.0	0.1	0.0
5	SAR (-)	1.0	2.2	1.2
	PESTICIDES			



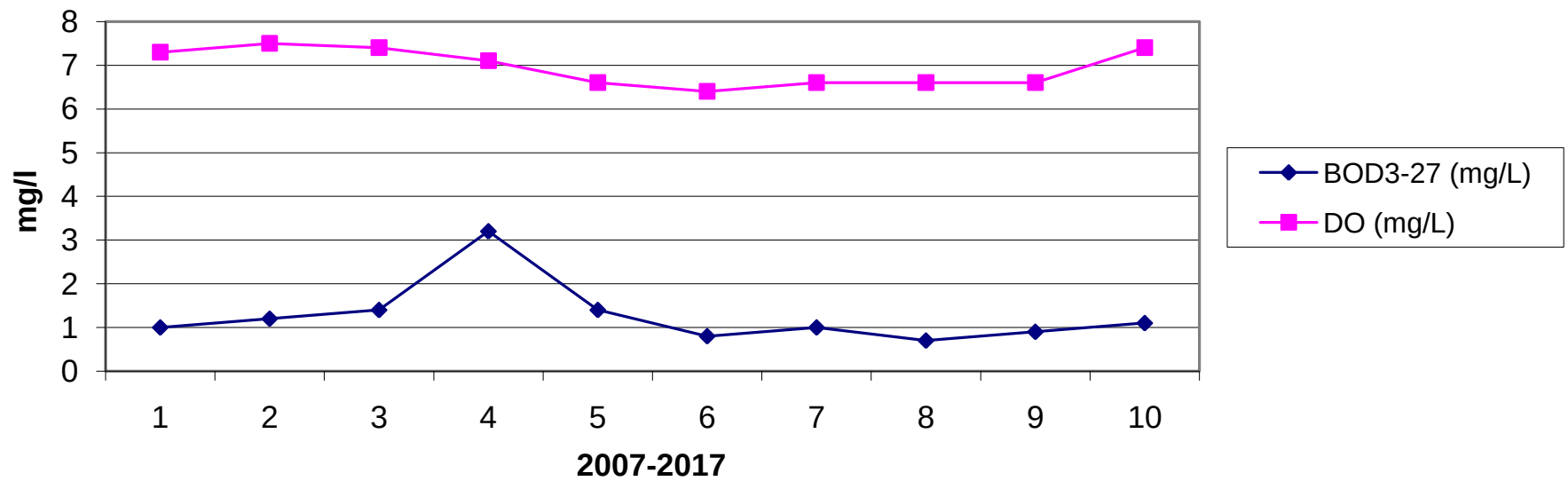




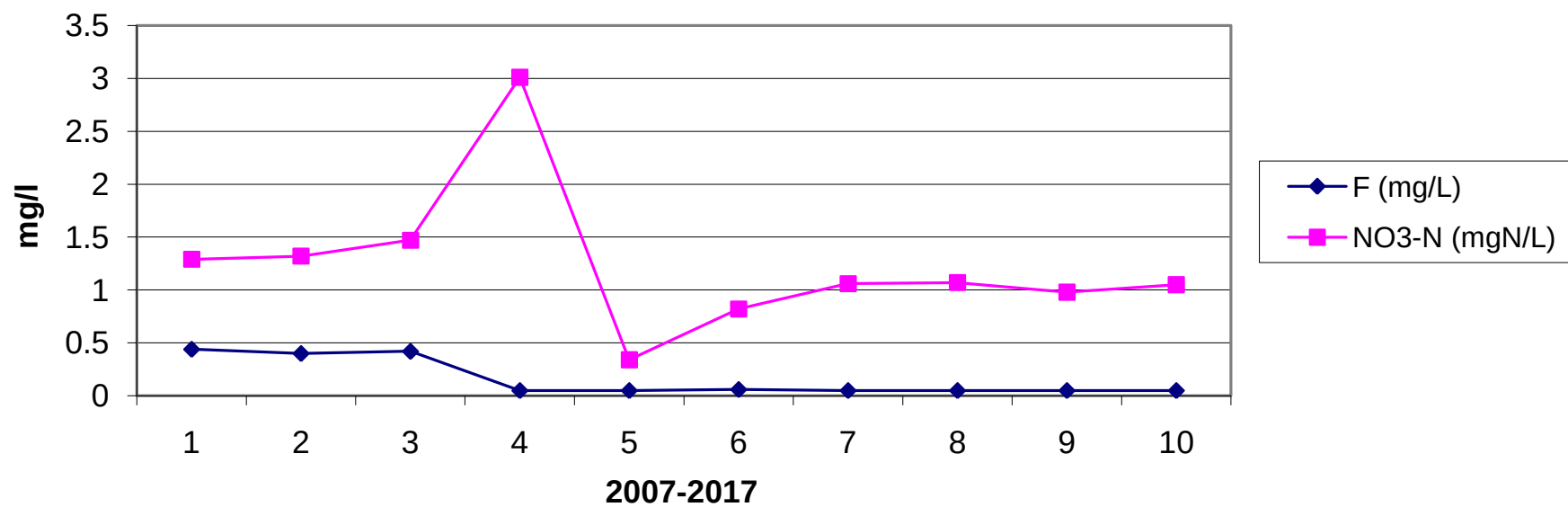
Year Wise Trend For Ghatshila



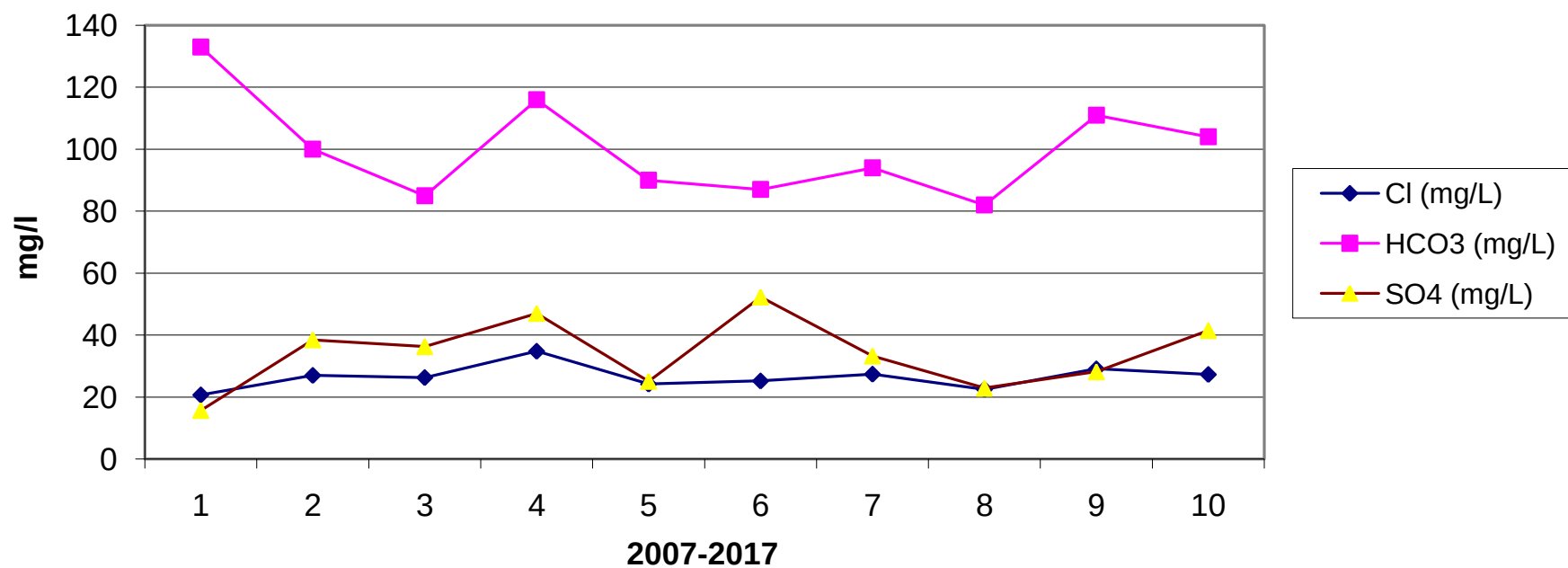
Year Wise Trend For Ghatshila



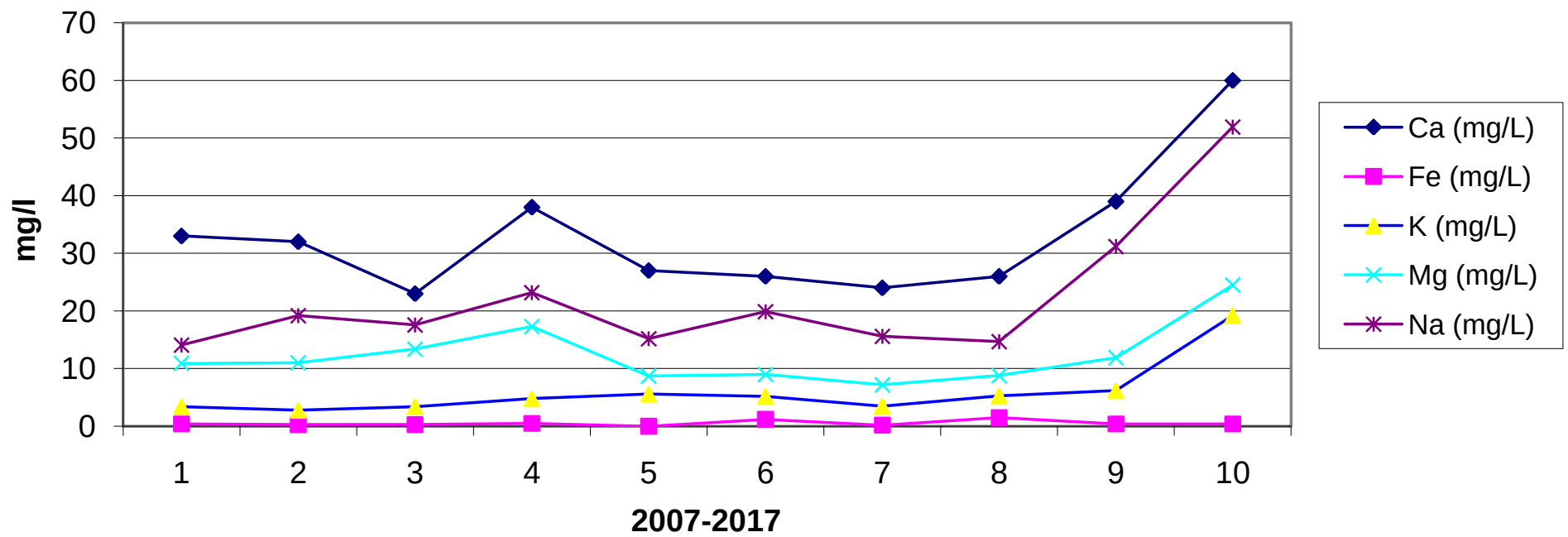
Year Wise Trend For Ghatshila



Year Wise Trend For Ghatshila



Year WiseTrend For Ghatshila



HISTORY SHEET

Water Year : 2016-2017

Site : JAMSHOLAGHAT

Code : JAMSHOLAGHAT

State : Orissa

District : Mayurbhanj

Basin : Subarnarekha

Independent River : Subarnarekha

Tributary : -

Sub Tributary :

Sub-Sub Tributary :

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Drainage Area : 16000 Sq. Km.

Bank : Left

Latitude : 22°13'08"

Longitude : 86°43'00"

Zero of Gauge (m) : 42.32 (m.s.l)
42 (m.s.l)
42 (m.s.l)

21.06.1973 - 30.11.2004
01.12.2004 - 31.01.2020
21.06.2005 - 21.06.2013

Opening Date

Closing Date

Gauge : 01.06.1976

01.06.2026

Discharge : 16.06.2004

30.10.2015

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2011-2012	3750	51.720	24.09.2011	0.000	43.680	13.06.2011
2012-2013	2557	48.230	16.08.2012	61.03	43.900	27.07.2012
2013-2014	2267	47.880	24.08.2013	27.35	43.800	13.07.2013

Water Quality Datasheet for the period : 2016-2017

Station Name : JAMSHOLAGHAT (JAMSHOLAGHAT)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

River Water Analysis

S.No	Parameters	01.06.2016	02.07.2016	01.08.2016	01.09.2016	01.10.2016	01.11.2016	01.12.2016	02.01.2017	01.02.2017	01.03.2017	01.04.2017	01.05.2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	443	450	210	200	186	719	801	361	390	420	398	460
4	EC_GEN (µmho/cm)	448	455	213	203	190	720	806	365	393	410	402	445
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	8.3	8.1	7.5	8.0	7.7	8.2	8.5	8.5	8.6	8.1	8.3	8.3
7	pH_GEN (pH units)	8.3	8.2	7.6	8.1	7.8	8.3	8.6	8.5	8.7	8.0	8.4	8.1
8	Temp (deg C)	30.0	31.5	31.0	29.0	27.5	26.0	21.5	28.0	19.5	23.0	29.0	29.5
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	83	88	79	83	79	83	83	88	60	88	92	83
3	B (mg/L)	0.01	0.02	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.02	0.02	0.01
4	Ca (mg/L)	51	53	53	55	46	48	45	46	46	48	48	43
5	Cl (mg/L)	45.1	20.8	54.7	54.7	9.4	11.3	11.3	13.2	11.3	35.8	9.4	9.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.7	0.2	0.3	0.2	0.5	0.1	0.7	0.6	0.4	0.3	0.4
9	HCO3 (mg/L)	101	107	96	101	96	101	101	107	73	107	113	101
10	K (mg/L)	5.9	18.6	5.4	5.9	4.4	6.7	9.0	17.1	23.3	24.0	24.1	23.5
11	Mg (mg/L)	21.4	23.3	22.4	19.4	18.5	18.5	18.5	19.4	19.4	20.4	20.4	14.6
12	Na (mg/L)	40.0	74.1	13.7	13.9	25.7	41.3	49.1	51.1	40.0	70.0	48.8	49.3
13	NO2+NO3 (mg N/L)	1.29	0.90	0.85	1.18	0.85	1.13	1.01	1.37	1.22	1.23	1.13	1.11
14	NO2-N (mgN/L)	0.00	0.00	0.07	0.00	0.07	0.00	0.03	0.03	0.01	0.01	0.03	0.04
15	NO3-N (mgN/L)	1.29	0.90	0.78	1.18	0.78	1.13	0.98	1.35	1.21	1.22	1.11	1.06
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	7.0	6.0	6.0	6.0	7.0	6.0	6.0	8.0	7.5	8.5	8.0
18	SO4 (mg/L)	48.3	52.2	52.8	51.5	7.8	28.2	28.4	29.2	29.7	38.0	18.4	31.1
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.8	1.2	1.4	0.2	0.2	1.0	0.8	0.6	0.6	1.2	1.0	1.0
2	DO (mg/L)	8.3	7.9	5.4	6.8	9.0	7.0	8.5	10.7	9.9	6.2	6.4	6.8
3	DO_SAT% (%)	110	107	72	88	112	86	96	137	107	72	83	88
4	FCol-MPN (MPN/100mL)						90	170	110	120	60	90	170
5	Tcol-MPN (MPN/100mL)						140	330	170	260	90	140	330
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	128	132	132	136	116	120	112	116	116	120	120	108
2	HAR_Total (mgCaCO3/L)	217	229	225	217	193	197	189	197	197	205	205	169
3	Na% (%)	28	39	11	12	22	31	35	34	28	39	31	35
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.2	2.1	0.4	0.4	0.8	1.3	1.6	1.6	1.2	2.1	1.5	1.7
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : JAMSHOLAGHAT (JAMSHOLAGHAT)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	801	186	420
3	EC_GEN (µmho/cm)	12	806	190	421
4	pH_FLD (pH units)	12	8.6	7.5	8.2
5	pH_GEN (pH units)	12	8.7	7.6	8.2
6	Temp (deg C)	12	31.5	19.5	27.1
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	92	60	82
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	55	43	49
5	Cl (mg/L)	12	54.7	9.4	23.9
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.7	0.1	0.4
9	HCO3 (mg/L)	12	113	73	101
10	K (mg/L)	12	24.1	4.4	14
11	Mg (mg/L)	12	23.3	14.6	19.7
12	Na (mg/L)	12	74.1	13.7	43.1
13	NO2+NO3 (mg N/L)	12	1.37	0.85	1.11
14	NO2-N (mgN/L)	12	0.07	0.00	0.02
15	NO3-N (mgN/L)	12	1.35	0.78	1.08
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	8.5	6.0	6.8
18	SO4 (mg/L)	12	52.8	7.8	34.6
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	1.4	0.2	0.8
2	DO (mg/L)	12	10.7	5.4	7.7
3	DO_SAT% (%)	12	137	72	96
4	FCol-MPN (MPN/100mL)	7	170	60	116
5	Tcol-MPN (MPN/100mL)	7	330	90	209
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	136	108	122
2	HAR_Total (mgCaCO3/L)	12	229	169	204
3	Na% (%)	12	39	11	29
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	2.1	0.4	1.3
	PESTICIDES				

Water Quality Seasonal Average for the period: 2015-2017

Station Name : JAMSHOLAGHAT (JAMSHOLAGHAT)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

River Water

Sub-Division : Balasore

S.No	Parameters	Flood Jun - Oct		Winter Nov - Feb		Summer Mar - May	
		2015	2016	2015-2016	2016-2017	2016	2017
	PHYSICAL						
1	Q (cumec)						
2	EC_FLD (µmho/cm)	293	298	702	568	711	426
3	EC_GEN (µmho/cm)	287	302	702	571	714	419
4	pH_FLD (pH units)	7.7	7.9	7.9	8.5	7.9	8.2
5	pH_GEN (pH units)	7.7	8.0	8.0	8.5	8.1	8.1
6	Temp (deg C)	28.3	29.8	22.8	23.8	29.3	27.2
	CHEMICAL						
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	8.1	0.0	18.4	0.0
2	ALK-TOT (mgCaCO3/L)	67	82	85	79	120	88
3	B (mg/L)	0.01	0.01	0.01	0.01	0.01	0.02
4	Ca (mg/L)	28	52	31	46	47	46
5	Cl (mg/L)	18.1	36.9	18.9	11.8	30.2	18.2
6	CO3 (mg/L)	0.0	0.0	9.7	0.0	22.2	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.3	0.4	0.5	0.5	0.4
9	HCO3 (mg/L)	82	100	85	96	101	107
10	K (mg/L)	1.6	8.0	1.3	14.0	5.3	23.9
11	Mg (mg/L)	10.3	21.0	11.9	19.0	18.8	18.5
12	Na (mg/L)	3.8	33.5	6.1	45.4	42.2	56.0
13	NO2+NO3 (mg N/L)	1.02	1.01	1.09	1.18	1.23	1.16
14	NO2-N (mgN/L)	0.01	0.03	0.00	0.02	0.00	0.03
15	NO3-N (mgN/L)	1.01	0.99	1.09	1.17	1.23	1.13
16	P-Tot (mgP/L)	0.001	0.010	0.001	0.010	0.001	0.010
17	SiO2 (mg/L)	5.6	6.2	5.3	6.8	5.7	8.0
18	SO4 (mg/L)	21.6	42.5	6.5	28.9	33.1	29.2
	BIOLOGICAL/BACTERIOLOGICAL						
1	BOD3-27 (mg/L)	0.8	0.8	1.1	0.7	0.8	1.1
2	DO (mg/L)	6.8	7.5	8.2	9.0	6.6	6.4
3	DO_SAT% (%)	87	98	95	106	85	81
4	FCol-MPN (MPN/100mL)				123		107
5	Tcol-MPN (MPN/100mL)				225		187
	TRACE & TOXIC						
	CHEMICAL INDICES						
1	HAR_Ca (mgCaCO3/L)	70	129	78	116	118	116
2	HAR_Total (mgCaCO3/L)	113	217	128	195	196	193
3	Na% (%)	7	22	9	32	30	35
4	SAR (-)	0.2	1.0	0.2	1.4	1.4	1.8
	PESTICIDES						

HISTORY SHEET

Water Year : 2016-2017

Site : FEKOGHAT

Code : ESA00F3

State : West Bengal

District : Mednipur

Basin : Subarnarekha

Independent River : Subarnarekha

Tributary : Dulang

Sub Tributary :

Sub-Sub Tributary :

Local River : Dulang

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Drainage Area : 700 Sq. Km.

Bank : Left

Latitude : 22°18'28"

Longitude : 86°55'11"

Zero of Gauge (m) : 41.48 (m.s.l)
40 (m.s.l)
40 (m.s.l)

01.07.1987 - 30.11.2004
01.12.2004 - 31.01.2020
01.07.2005 - 01.07.2017

Opening Date

Closing Date

Gauge : 01.07.1987

Discharge : 18.06.1988

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1990-1991	331.7	44.920	04.09.1990	2.104	41.900	29.06.1990
1991-1992	255.8	44.540	22.07.1991	1.240	41.840	14.07.1991
1992-1993	129.5	43.920	08.08.1992	3.070	41.840	09.07.1992
1993-1994	176.0	43.880	14.09.1993	5.559	42.000	22.07.1993
1994-1995	275.3	44.820	20.07.1994	6.026	42.150	30.09.1994
1995-1996	280.1	44.720	27.09.1995	1.887	41.640	01.07.1995
1996-1997	219.0	44.300	26.07.1996	0.420	41.500	20.06.1996
1997-1998	1488	47.660	28.06.1997	3.775	41.700	24.06.1997
1998-1999	532.0	44.840	10.09.1998	1.127	41.460	19.06.1998
1999-2000	685.0	45.320	07.08.1999	3.310	41.840	03.08.1999
2000-2001	153.0	43.260	20.09.2000	1.330	41.560	06.07.2000
2001-2002	597.5	45.200	31.08.2001	6.454	41.640	28.09.2001
2002-2003	392.2	44.140	11.09.2002	2.198	41.380	16.07.2002
2003-2004	509.3	44.830	08.10.2003	2.571	41.580	18.06.2003
2004-2005	420.1	44.280	08.08.2004	2.861	41.540	01.07.2004
2005-2006	375.0	43.960	14.09.2005	0.610	41.320	23.06.2005
2006-2007	410.0	45.890	21.09.2006	3.095	41.480	17.06.2006
2007-2008	650.4	50.000	06.07.2007	3.985	41.560	03.07.2007
2008-2009	480.2	47.060	18.06.2008	21.45	41.780	06.10.2008
2009-2010	195.0	44.420	07.09.2009	0.897	41.260	26.06.2009
2010-2011	40.00	42.180	19.09.2010	1.010	41.260	24.06.2010
2011-2012	200.0	45.100	19.06.2011	10.50	41.460	31.07.2011
2012-2013	179.6	43.770	07.09.2012	0.960	41.220	20.06.2012
2013-2014	569.5	46.160	21.08.2013	9.600	41.540	21.07.2013
2014-2015	60.51	42.360	02.09.2014	1.268	41.100	19.06.2014
2015-2016	78.30	43.260	28.07.2015	0.965	41.000	10.06.2015
2016-2017	246.6	44.360	06.09.2016	0.000	42.080	02.08.2016

Stage-Discharge Data for the period 2016 - 2017

Station Name : FEKOGHAT (ESA00F3)

Division : E.E., Bhubaneswar

Local River : Dulang

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	41.100		41.340	17.88	42.160	28.41	41.380	18.80	41.660	30.24	41.200	
2	41.340		41.320	16.55	42.080	0.000	41.380	16.37	41.720	32.00 *	41.200	
3	41.240		41.420	16.00 *	42.200	45.76	41.440	22.93	41.680	30.51	41.200	
4	41.140		41.620	34.20	42.500	54.87	42.500	60.00 *	41.640	29.97	41.200	
5	41.100		41.620	31.18	42.500	59.73	42.640	49.08	41.500	25.56	41.200	
6	41.060		41.520	28.43	42.800	59.98	44.360	246.6	41.500	26.11	41.240	
7	41.120		41.520	28.40 *	42.520	60.00 *	42.880	55.45	41.540	27.46	41.220	
8	41.080	2.996	41.640	36.27	42.140	45.42	42.680	52.16	41.700	33.53	41.220	
9	41.040	2.480	41.540	29.73	42.020	37.96	42.460	45.70	41.680	32.00 *	41.220	
10	41.040	2.310	41.440	23.00 *	42.400	56.06	42.120	36.61	41.580	30.00 *	41.200	
11	41.060	2.988	41.440	23.09	43.200	98.43	41.960	36.00 *	41.560	28.00 *	41.200	
12	41.060	2.990 *	41.380	19.22	43.120	70.00	41.800	34.34	41.500	26.00 *	41.200	
13	41.040	2.884	41.360	18.44	42.480	58.00	42.040	34.00 *	41.440	21.09	41.200	
14	41.040	2.851	41.380	19.24	42.080	54.00 *	42.180	42.40	41.400	18.94	41.180	
15	41.080	2.904	41.380	18.83	42.060	52.00 *	42.300	49.40	41.380	17.93	41.180	
16	41.600	29.68	41.530	29.72	42.140	45.35	42.160	42.16	41.360	16.00 *	41.180	
17	41.630	31.68	41.680	34.00 *	42.100	26.21	42.000	38.91	41.340	16.80	41.180	
18	41.800	34.20	41.680	34.05	42.240	46.51	41.820	34.00 *	41.320	14.40	41.180	
19	41.640	32.00 *	41.770	35.44	42.480	59.50	41.640	28.84	41.320	13.29	41.160	
20	41.440	24.43	41.620	27.32	42.220	45.32	41.500	24.31	41.300	3.571	41.160	
21	41.360	17.50	41.500	25.16	42.040	42.00 *	41.500	19.98	41.280	3.012	41.160	
22	41.360	19.15	42.140	45.34	42.240	52.17	41.440	25.95	41.280	3.147	41.160	
23	41.280	14.60	42.120	41.38	43.020	89.50	41.620	30.89	41.260	3.040 *	41.160	
24	41.420	21.29	41.800	30.00 *	42.680	51.52	41.820	37.49	41.260	3.040	41.160	
25	41.380	20.34	41.700	35.71	42.240	45.10	41.800	36.00 *	41.240	2.941	41.160	
26	41.300	18.00 *	42.540	55.52	41.940	33.81	41.740	35.48	41.240	2.926	41.140	
27	41.260	13.72	43.440	109.2	41.800	34.99	41.620	29.11	41.240	2.866	41.140	
28	41.240	13.19	42.600	57.82	41.740	34.00 *	41.740	34.89	41.220	2.958	41.140	
29	41.340	17.75	42.120	28.34	41.600	28.91	41.800	35.14	41.240	2.747	41.140	
30	41.360	18.51	41.860	20.78	41.500	32.95	41.720	27.93	41.220	2.750 *	41.140	
31			41.820	22.00 *	41.420	26.04			41.220	2.474		
Ten-Daily Mean												
I Ten-Daily	41.126	2.596	41.498	26.16	42.332	44.82	42.384	60.37	41.620	29.74	41.210	
II Ten-Daily	41.339	16.66	41.522	25.94	42.412	55.53	41.940	36.44	41.392	17.60	41.182	
III Ten-Daily	41.330	17.40	42.149	42.84	42.020	42.82	41.680	31.29	41.245	2.900	41.150	
Monthly												
Min.	41.040	2.310	41.320	16.00	41.420	0.000	41.380	16.37	41.220	2.474	41.140	
Max.	41.800	34.20	43.440	109.2	43.200	98.43	44.360	246.6	41.720	33.53	41.240	
Mean	41.265	15.15	41.737	32.01	42.247	47.56	42.001	42.7	41.414	16.3	41.181	

Annual Runoff in MCM = 398 Annual Runoff in mm = 568

Peak Observed Discharge = 246.6 cumecs on 06/09/2016 Corres. Water Level :44.36 m

Lowest Observed Discharge = 0.000 cumecs on 02/08/2016 Corres. Water Level :42.08 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2016 - 2017

Station Name : FEKOGHAT (ESA00F3)

Local River : Dulang

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
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15												
16												
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18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
<u>Ten-Daily Mean</u>												
I Ten-Daily												
II Ten-Daily												
III Ten-Daily												
<u>Monthly</u>												
Min.												
Max.												
Mean												

Peak Computed Discharge = 60.00 cumecs on 07/08/2016

Corres. Water Level :42.52 m

Lowest Computed Discharge = 2.750 cumecs on 30/10/2016

Corres. Water Level :41.22 m

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

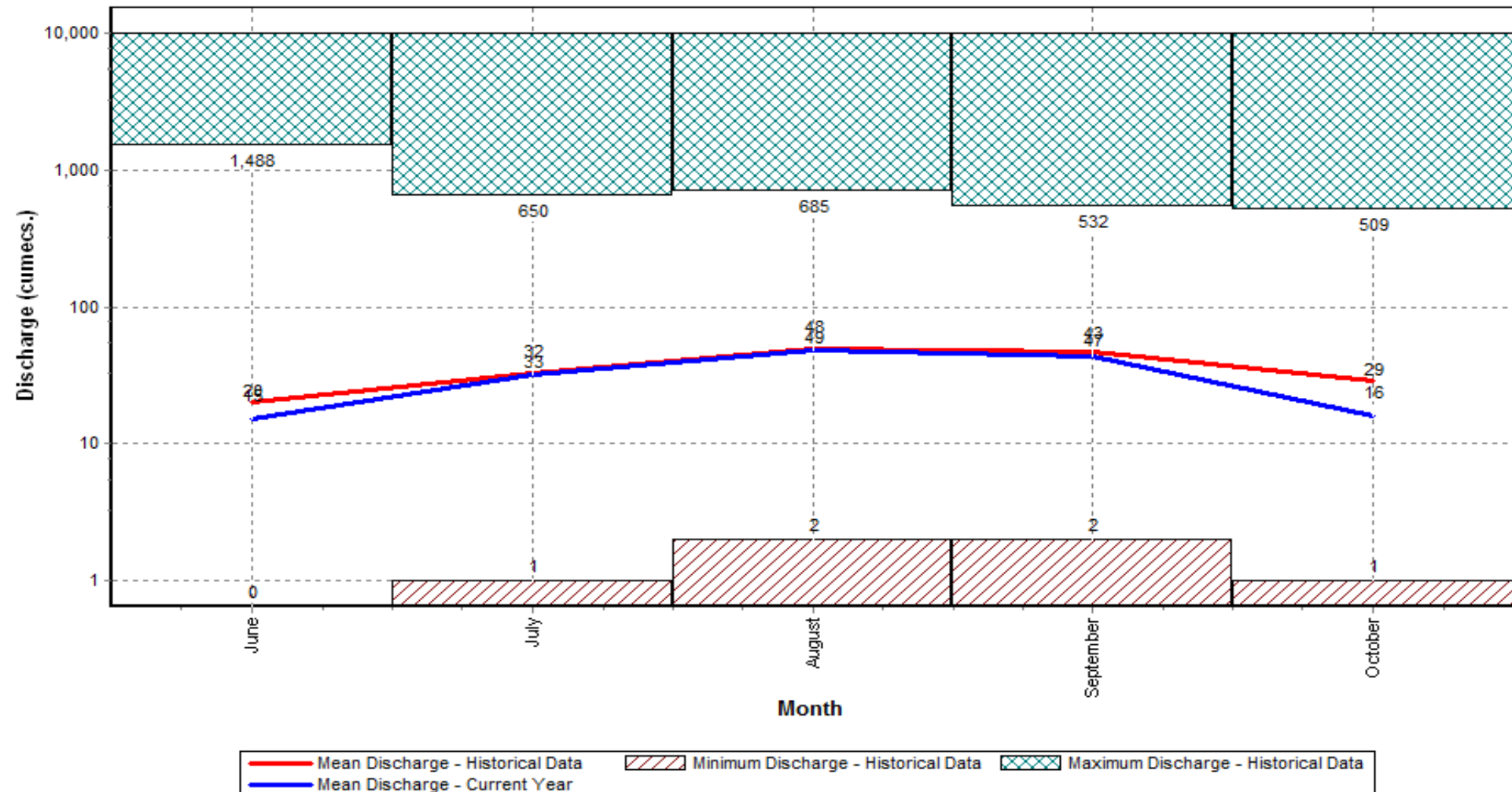
Station Name : FEKOGHAT (ESA00F3)

Data considered : 1990-2017

Division : E.E., Bhubaneswar

Local River : Dulang

Sub-Division : Balasore



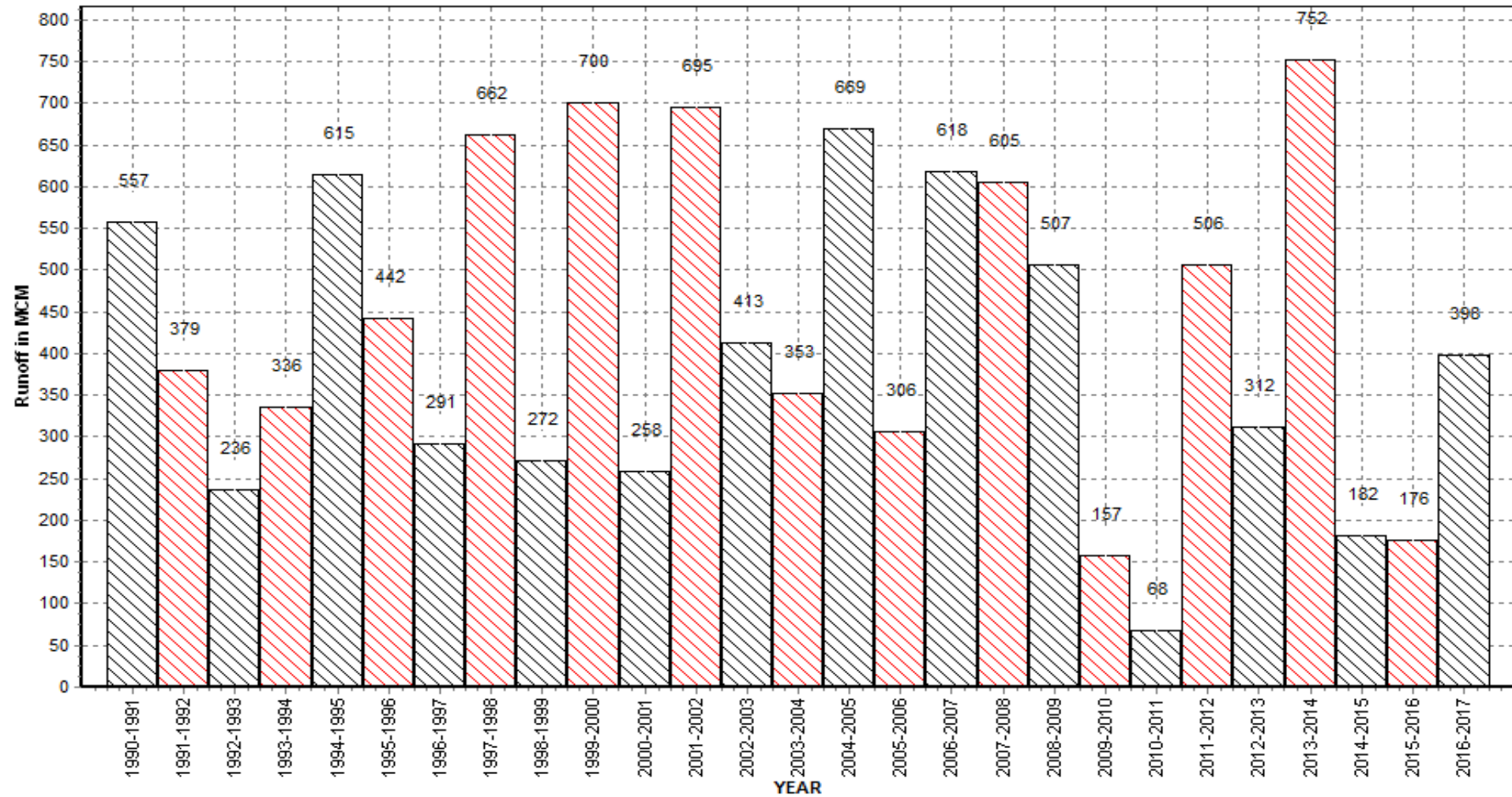
Annual Runoff Values for the period: 1990 - 2017

Station Name : FEKOGHAT (ESA00F3)

Local River : Dulang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Note: Missing values have not been considered while arriving at Annual Runoff

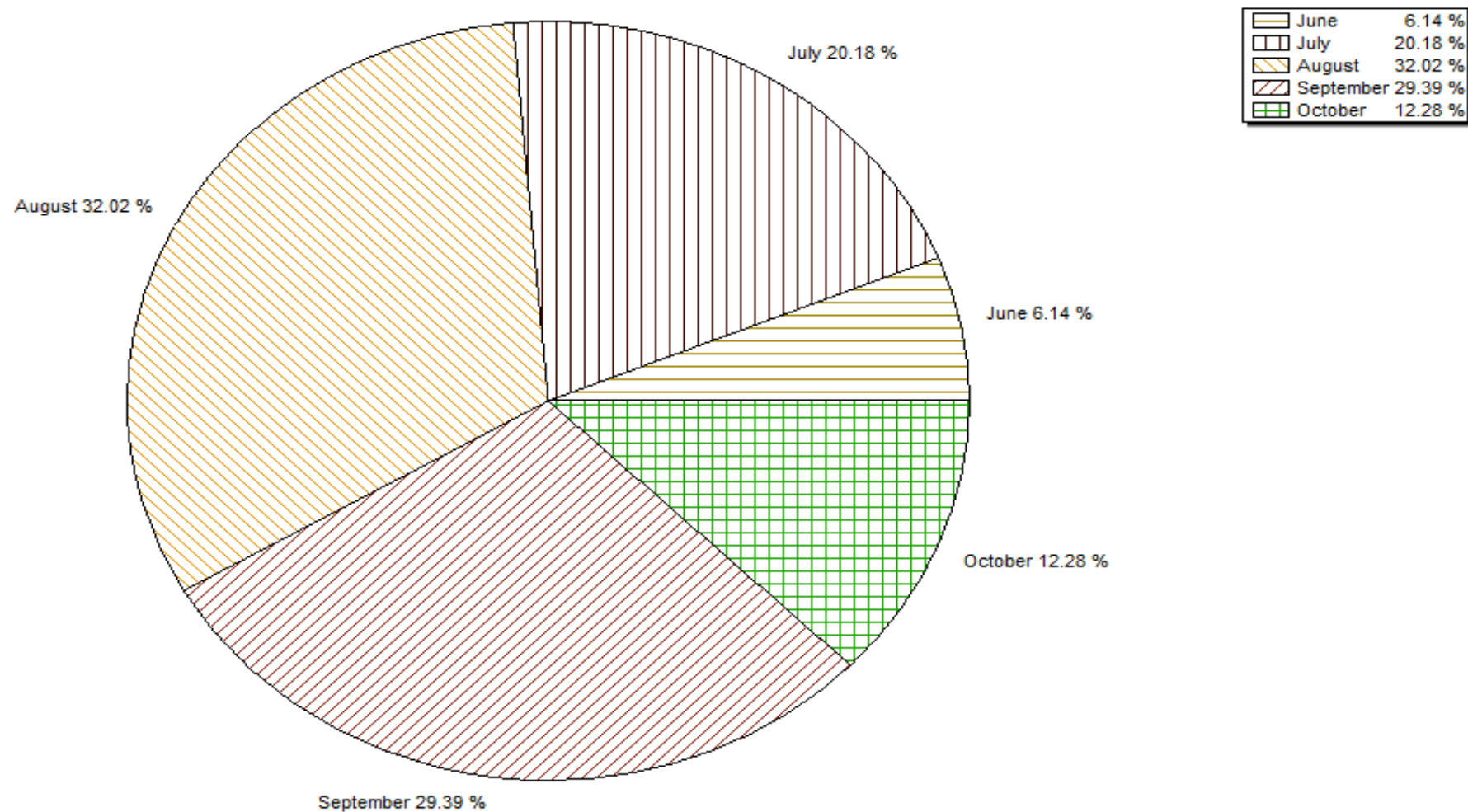
Monthly Average Runoff based on period : 1990-2016

Station Name : FEKOGHAT (ESA00F3)

Local River : Dulang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



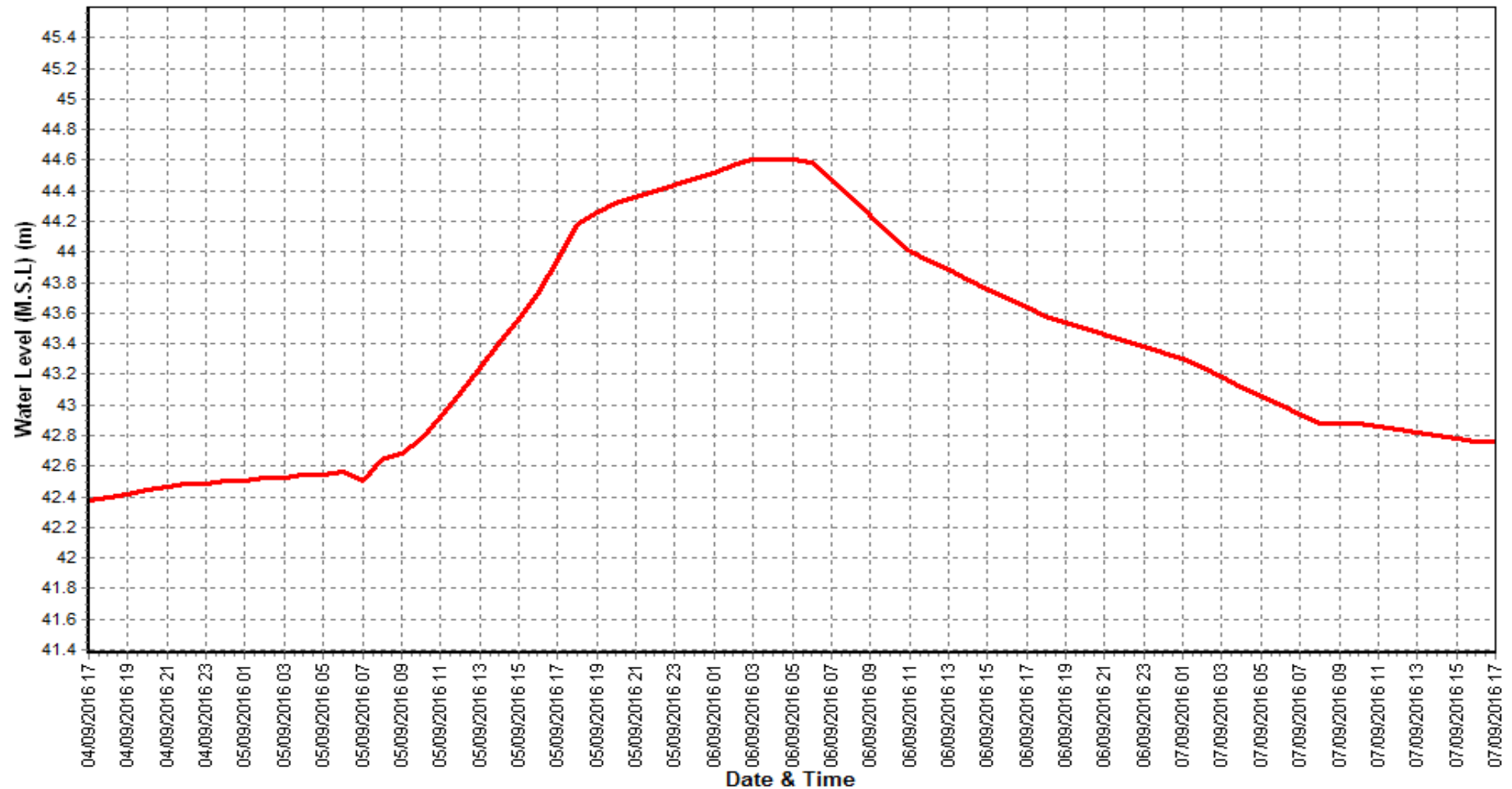
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : FEKOGHAT (ESA00F3)

Local River : Dulang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



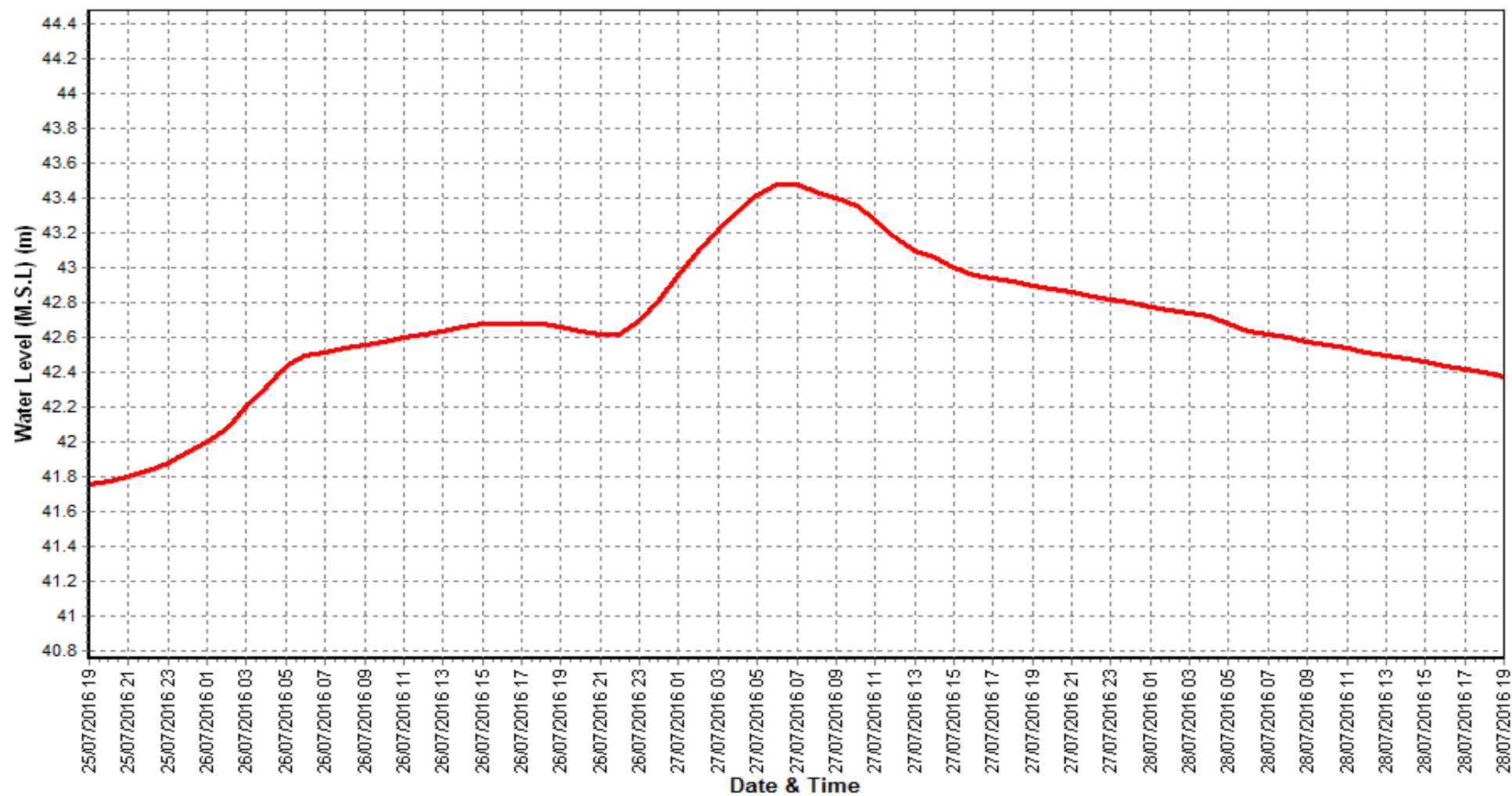
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : FEKOGHAT (ESA00F3)

Local River : Dulang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



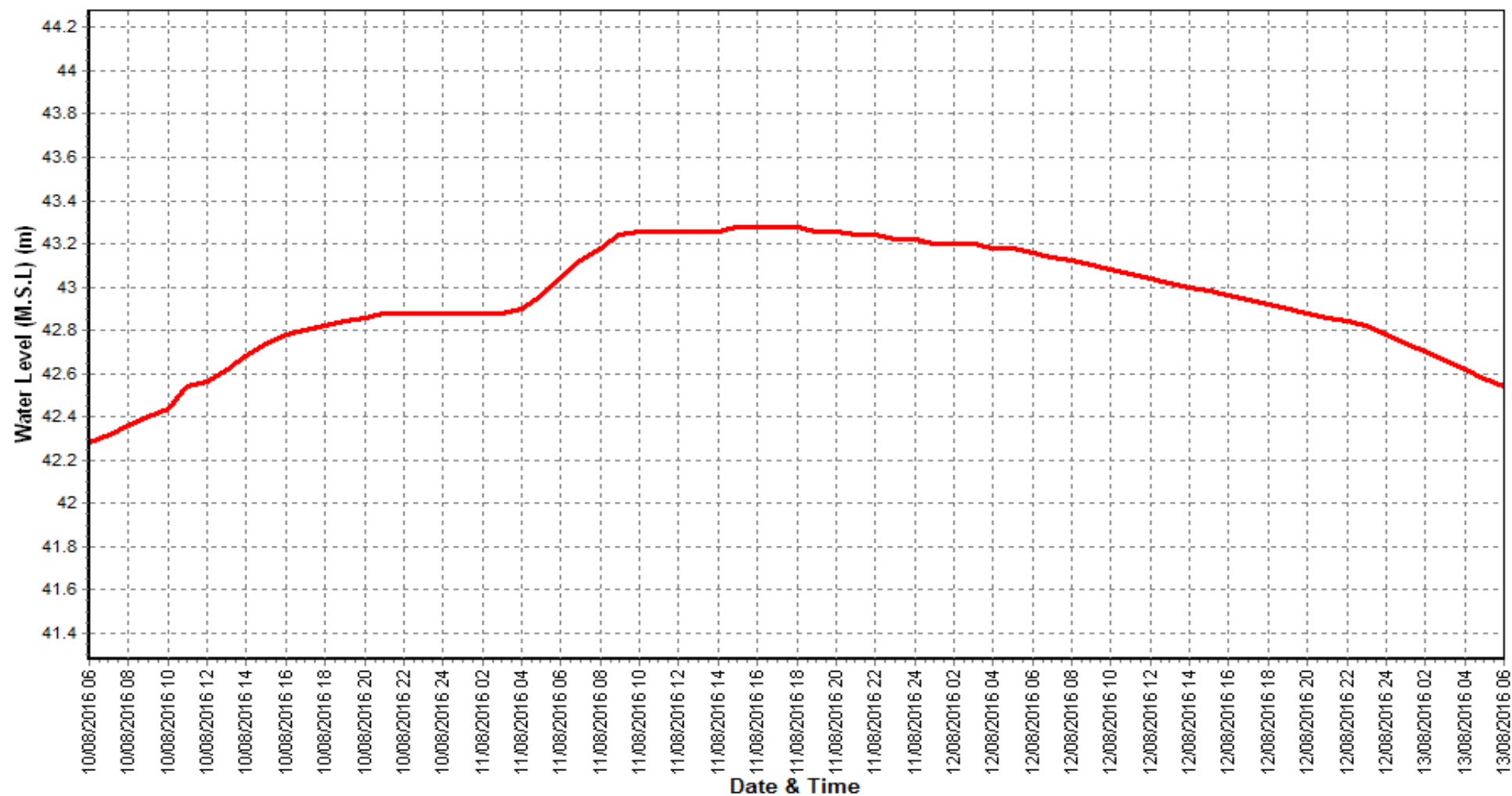
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : FEKOGHAT (ESA00F3)

Local River : Dulang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



HISTORY SHEET

Water Year : 2016-2017

Site : RAJGHAT

Code : RAJGHAT

State : Orissa

District : Balasore

Basin : Subarnarekha

Independent River : Subarnarekha

Tributary : -

Sub Tributary :

Sub-Sub Tributary :

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Drainage Area : 18260 Sq. Km.

Bank :

Latitude : 21°46'04"

Longitude : 87°09'51"

Zero of Gauge (m) : 3 (m.s.l)
5.79 (m.s.l)

01.01.2013
01.06.1972 - 01.06.2012

Opening Date

Closing Date

Gauge : 01.06.1972

Discharge : 01.03.2013

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2015-2016	4144	11.920	29.07.2015	7.984	7.460	03.05.2016
2016-2017	3432	14.420	07.09.2016	11.00	7.700	12.06.2016

Stage-Discharge Data for the period 2016 - 2017

Station Name : RAJGHAT (RAJGHAT)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov		
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	
1	7.690	13.90	7.690	11.91	8.740	217.2	8.710	203.1	9.180	232.2	8.110	125.4	
2	7.690	13.15	7.720	12.94	8.730	214.9	8.650	197.6	9.190	230.0 *	7.940	118.1	
3	7.680	12.92	7.910	19.00 *	8.800	223.2	8.760	206.9	9.080	228.1	7.880	114.1	
4	7.680	12.85	7.950	19.71	8.780	220.0	8.800	220.0 *	9.080	228.6	7.810	110.7	
5	7.710	11.90 *	7.930	18.90	9.820	401.6	9.400	332.1	8.850	208.9	7.780	68.56	
6	7.730	12.98	7.930	18.77	9.560	373.2	12.400	2559	8.780	202.8	7.940	80.20 *	
7	7.740	13.03	7.930	18.00 *	9.650	380.0 *	14.420	3432	8.480	181.2	7.880	80.44	
8	7.760	13.55	8.120	25.40	9.690	394.5	13.260	3096	8.420	174.6	7.850	76.69	
9	7.760	13.41	8.220	28.72	9.320	360.0	11.500	1306	8.450	180.0 *	7.830	73.49	
10	7.740	12.79	8.150	26.00 *	9.710	398.7	12.260	2573	8.480	188.0 *	7.870	79.88	
11	7.710	11.99	8.040	22.21	9.730	400.7	11.020	1120 *	8.000	170.0 *	7.850	77.20	
12	7.700	11.00 *	8.020	21.23	11.420	1267	11.050	1166	8.640	180.0 *	7.830	75.69	
13	7.680	11.78	7.940	18.96	11.460	1316	10.280	1080 *	8.600	182.0	7.830	80.00 *	
14	7.670	11.57	7.910	17.91	11.720	1300 *	10.620	1050	8.560	179.9	7.830	80.00 *	
15	7.650	11.46	7.900	17.69	11.290	1240 *	10.480	1024	8.480	173.2	7.850	77.78	
16	7.650	11.50	7.890	17.32	9.810	396.9	10.000	974.9	8.280	150.0 *	7.800	71.19	
17	7.650	11.24	8.000	22.00 *	9.570	373.3	10.040	1564	8.180	155.3	7.770	69.28	
18	7.670	11.95	8.040	22.01	9.430	358.5	10.800	1080 *	8.070	146.6	7.730	64.66	
19	7.770	14.00 *	9.130	127.5	13.600	2984	9.020	224.3	8.000	144.3	7.700	61.70	
20	7.950	20.37	8.740	124.4	14.260	3085	8.820	208.6	7.970	141.0	7.700	60.00 *	
21	7.960	19.75	8.560	117.3	14.870	3050 *	8.770	207.8	7.970	139.7	7.690	61.64	
22	7.930	19.48	8.380	111.2	10.750	1082	8.800	204.0	7.900	135.9	7.710	65.41	
23	7.820	15.96	8.300	109.1	10.020	962.4	9.420	333.5	7.860	126.0 *	7.700	61.98	
24	7.750	13.46	8.400	100.0 *	11.980	2264	9.180	233.2	7.820	131.5	7.690	60.81	
25	7.720	12.58	8.580	119.7	12.200	2263	9.390	260.0 *	7.940	137.3	7.690	61.66	
26	7.710	12.00 *	8.670	122.2	10.630	1047	9.340	241.7	7.810	125.8	7.670	59.38	
27	7.720	12.52	8.800	128.4	10.380	980.2	9.260	235.4	7.970	131.1	7.660	58.00 *	
28	7.720	12.79	9.160	143.2	10.390	960.0 *	10.280	1010	7.890	125.7	7.650	57.47	
29	7.700	12.14	8.900	131.9	9.690	373.3	10.380	1006	7.870	123.4	7.650	57.45	
30	7.690	11.91	8.760	125.7	9.310	328.8	9.810	871.4	7.900	123.0 *	7.640	56.18	
31			8.880	126.0 *	8.900	214.9			8.260	135.1			
Ten-Daily Mean													
I Ten-Daily	7.718	13.05	7.955	19.94	9.280	318.3	10.816	1413	8.799	205.4	7.889	92.75	
II Ten-Daily	7.710	12.69	8.161	41.12	11.229	1272	10.213	949.2	8.278	162.2	7.789	71.75	
2016-2017		3432	#	#####	11.00	7.700	#####	9.463	460.3	7.926	130.4	7.675	60.00
Monthly													
Min.	7.650	11.00	7.690	11.91	8.730	214.9	8.650	197.6	7.810	123.0	7.640	56.18	
Max.	7.960	20.37	9.160	143.2	14.870	3085	14.420	3432	9.190	232.2	8.110	125.4	
Mean	7.733	13.33	8.276	62.75	10.458	949.4	10.164	940.7	8.321	164.9	7.784	74.83	

Annual Runoff in MCM = 6292 Annual Runoff in mm = 345

Peak Observed Discharge = 3432 cumecs on 07/09/2016 Corres. Water Level :14.42 m

Lowest Observed Discharge = 11.24 cumecs on 17/06/2016 Corres. Water Level :7.65 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

Stage-Discharge Data for the period 2016 - 2017

Station Name : RAJGHAT (RAJGHAT)

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	7.640	71.99	7.520	50.60 *	7.410	22.95	7.330	18.27	7.260	29.07	7.250	27.08
2	7.640	56.00	7.520	50.69	7.410	23.05	7.330	18.35	7.260	29.00 *	7.260	27.36
3	7.630	55.23	7.510	45.27	7.400	22.33	7.320	17.89	7.260	29.00	7.260	27.42
4	7.630	55.20 *	7.500	44.49	7.400	22.34	7.320	17.84	7.260	29.43	7.270	28.21
5	7.620	54.30	7.500	44.59	7.400	22.30 *	7.320	17.80 *	7.260	29.07	7.270	28.15
6	7.610	53.22	7.480	43.76	7.400	22.37	7.320	17.61	7.250	28.21	7.280	28.89
7	7.610	53.31	7.480	43.53	7.390	21.55	7.320	17.41	7.250	28.06	7.280	28.89 *
8	7.600	52.48	7.480	43.40 *	7.390	21.12	7.320	16.56	7.250	27.99	7.280	28.83
9	7.590	52.00	7.470	43.12	7.390	21.71	7.310	16.96	7.250	27.90 *	7.270	28.27
10	7.590	52.02	7.460	42.19	7.380	21.33	7.310	16.99	7.250	27.85	7.270	28.27 *
11	7.590	52.00 *	7.460	42.85	7.380	21.47	7.310	17.00	7.270	29.49	7.270	28.21
12	7.590	52.00 *	7.460	42.83	7.380	21.40 *	7.310	17.00 *	7.270	29.55	7.270	28.13
13	7.590	51.56	7.460	42.56	7.390	21.69	7.310	17.00 *	7.270	29.43	7.280	29.01
14	7.580	50.67	7.460	42.65	7.380	21.59	7.310	16.90	7.270	29.30 *	7.280	29.01 *
15	7.580	50.67	7.430	36.00 *	7.380	21.42	7.310	16.90	7.270	29.37	7.280	28.95
16	7.570	50.00	7.400	23.43	7.380	22.22	7.310	16.74	7.270	29.30 *	7.280	28.83
17	7.570	50.04	7.400	23.22	7.380	21.23	7.300	16.07	7.260	28.57	7.290	29.40
18	7.570	50.00 *	7.400	23.31	7.380	21.26	7.290	15.68	7.260	28.68	7.290	29.35
19	7.560	49.23	7.400	23.38	7.370	20.90 *	7.290	15.50 *	7.260	28.57	7.290	29.06
20	7.550	48.10	7.400	23.38	7.390	20.57	7.290	15.56	7.260	28.57	7.300	29.86
21	7.540	46.71	7.410	23.70	7.370	20.95	7.290	15.49	7.250	27.70	7.300	29.86 *
22	7.550	45.58	7.410	23.70 *	7.370	20.50	7.280	15.03	7.250	27.59	7.300	29.80
23	7.550	48.05	7.420	23.76	7.360	20.49	7.280	14.91	7.250	27.60 *	7.300	29.80
24	7.550	48.19	7.420	23.99	7.360	20.40 *	7.280	14.98	7.250	27.59	7.310	30.60
25	7.540	46.00 *	7.420	23.96	7.360	20.43	7.280	14.06	7.240	26.78	7.310	30.65
26	7.530	47.15	7.420	23.90 *	7.360	20.40 *	7.280	14.06 *	7.240	26.72	7.310	30.60
27	7.520	46.26	7.420	24.29	7.360	20.49	7.280	13.73	7.240	26.78	7.320	31.51
28	7.530	46.64	7.410	22.86	7.360	20.13	7.270	13.57	7.240	26.78	7.320	31.51 *
29	7.530	46.29	7.410	22.80 *			7.270	13.58	7.250	27.64	7.320	31.68
30	7.520	46.04	7.410	23.14			7.270	13.59	7.250	27.60 *	7.350	34.23
31	7.520	45.85	7.410	22.98			7.270	13.57			7.360	35.08
Ten-Daily Mean												
I Ten-Daily	7.616	55.58	7.492	45.17	7.397	22.11	7.320	17.57	7.255	28.56	7.269	28.14
II Ten-Daily	7.575	50.43	7.427	32.36	7.381	21.38	7.303	16.44	7.266	29.08	7.283	28.98
2016-2017	7.535	46.62	7.415	23.55	7.363	20.47	7.277	14.23	7.246	27.28	7.318	31.39
Monthly												
Min.	7.520	45.58	7.400	22.80	7.360	20.13	7.270	13.57	7.240	26.72	7.250	27.08
Max.	7.640	71.99	7.520	50.69	7.410	23.05	7.330	18.35	7.270	29.55	7.360	35.08
Mean	7.574	50.74	7.444	33.37	7.381	21.38	7.299	16.02	7.256	28.31	7.291	29.56

Peak Computed Discharge = 3050 cumecs on 21/08/2016

Corres. Water Level :14.87 m

Lowest Computed Discharge = 11.00 cumecs on 12/06/2016

Corres. Water Level :7.7 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

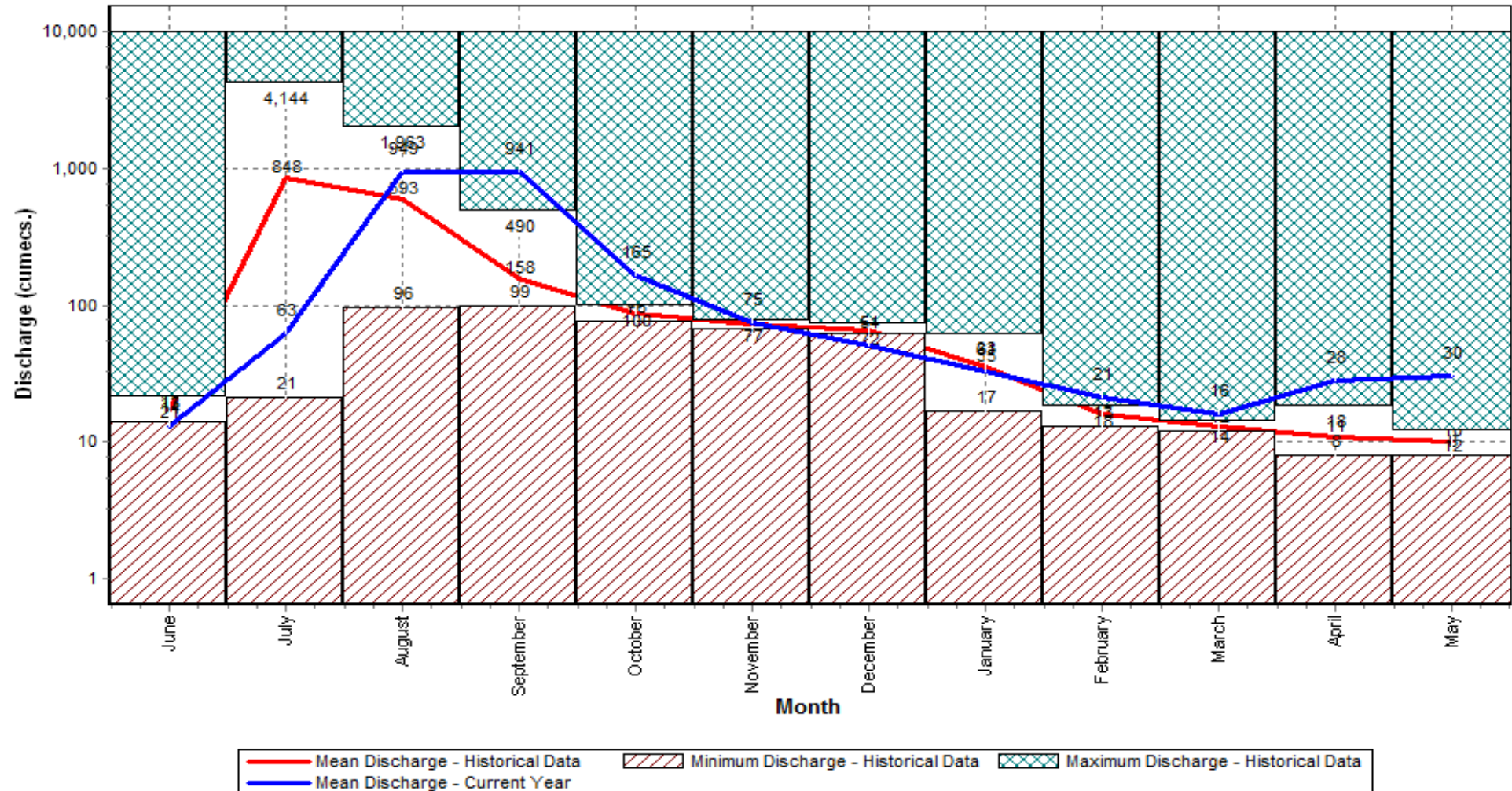
Station Name : RAJGHAT (RAJGHAT)

Data considered : 2015-2017

Division : E.E., Bhubaneswar

Local River : Subarnarekha

Sub-Division : Balasore



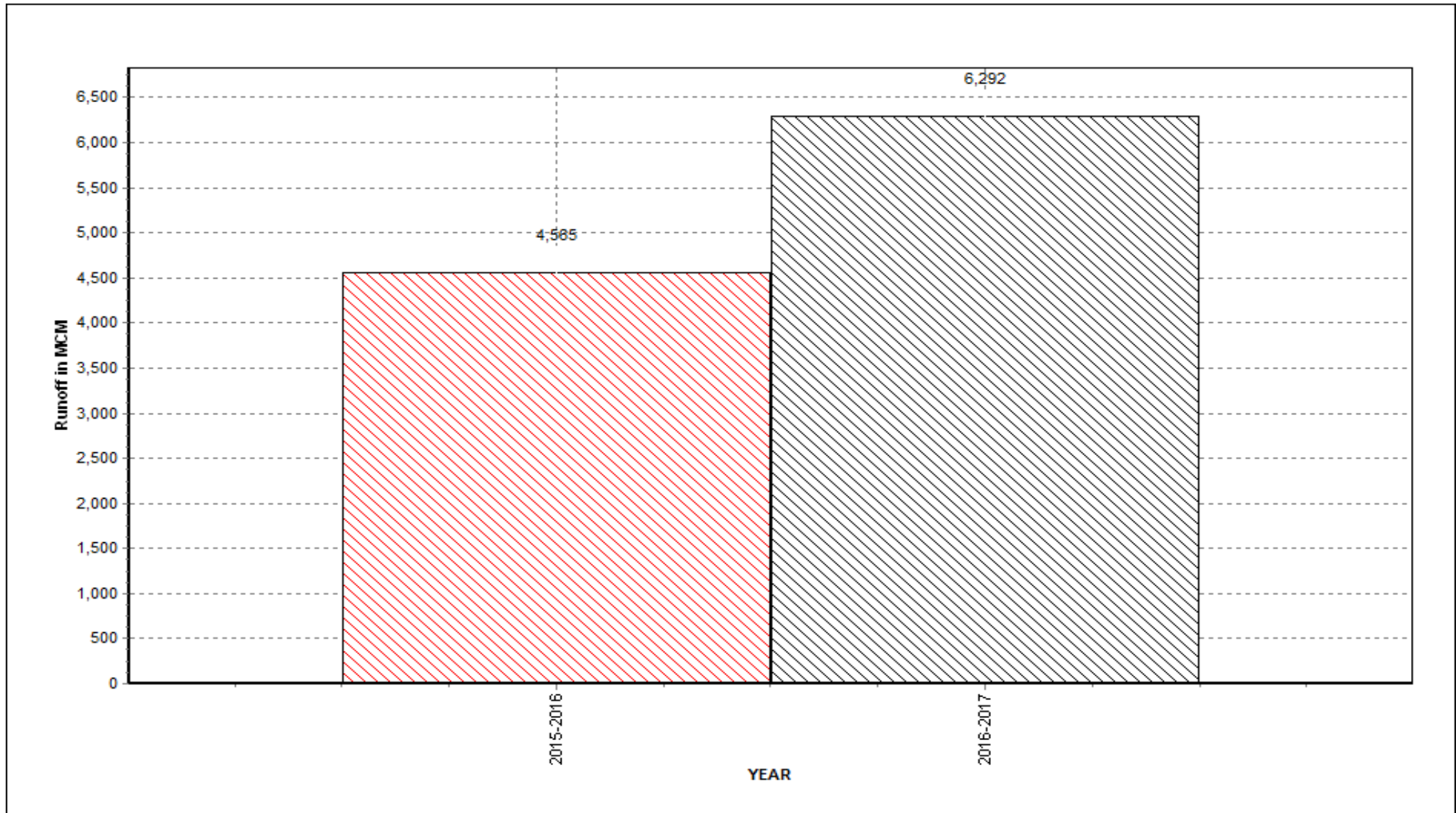
Annual Runoff Values for the period: 2015 - 2017

Station Name : RAJGHAT (RAJGHAT)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Note: Missing values have not been considered while arriving at Annual Runoff

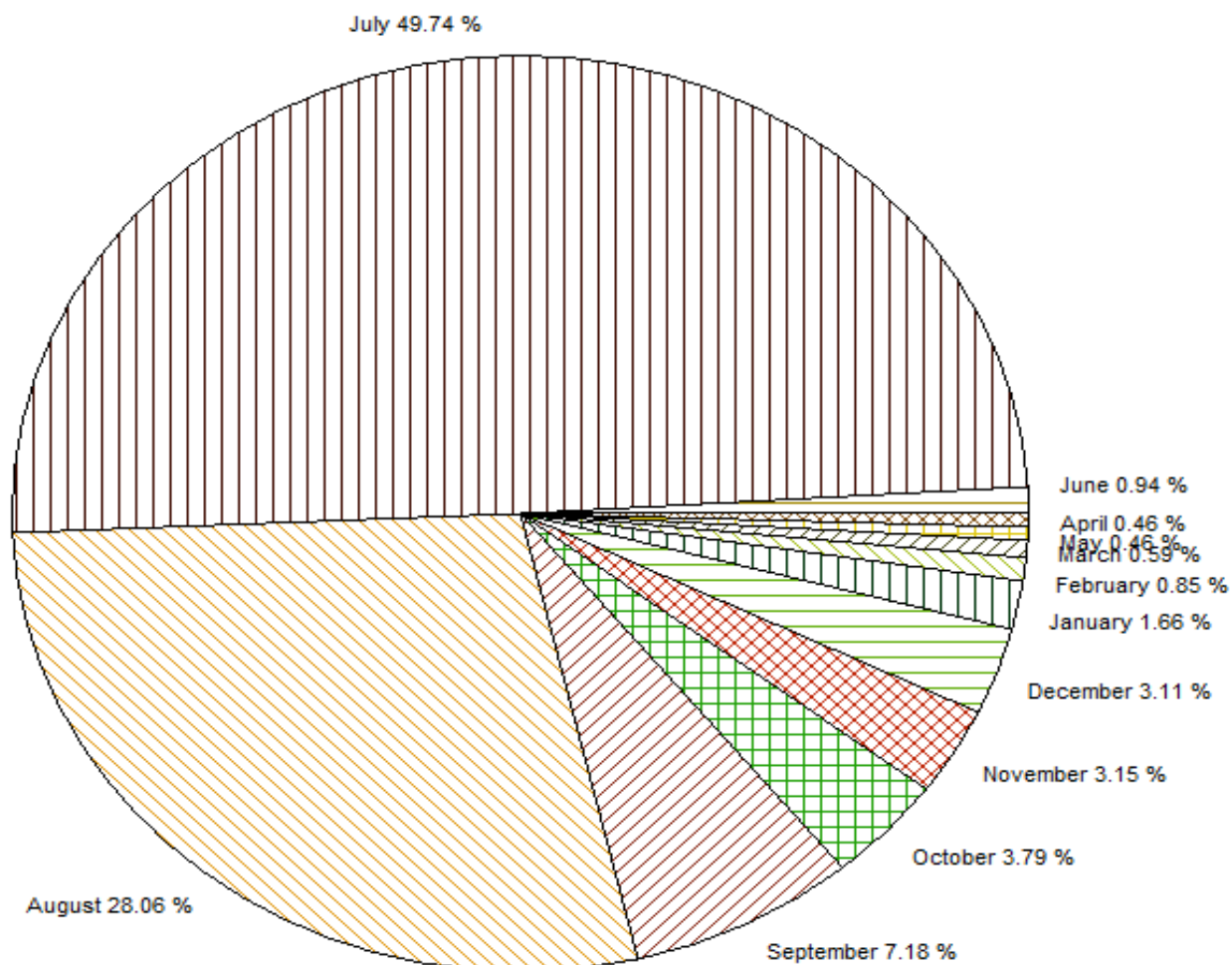
Monthly Average Runoff based on period : 2015-2016

Station Name : RAJGHAT (RAJGHAT)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore

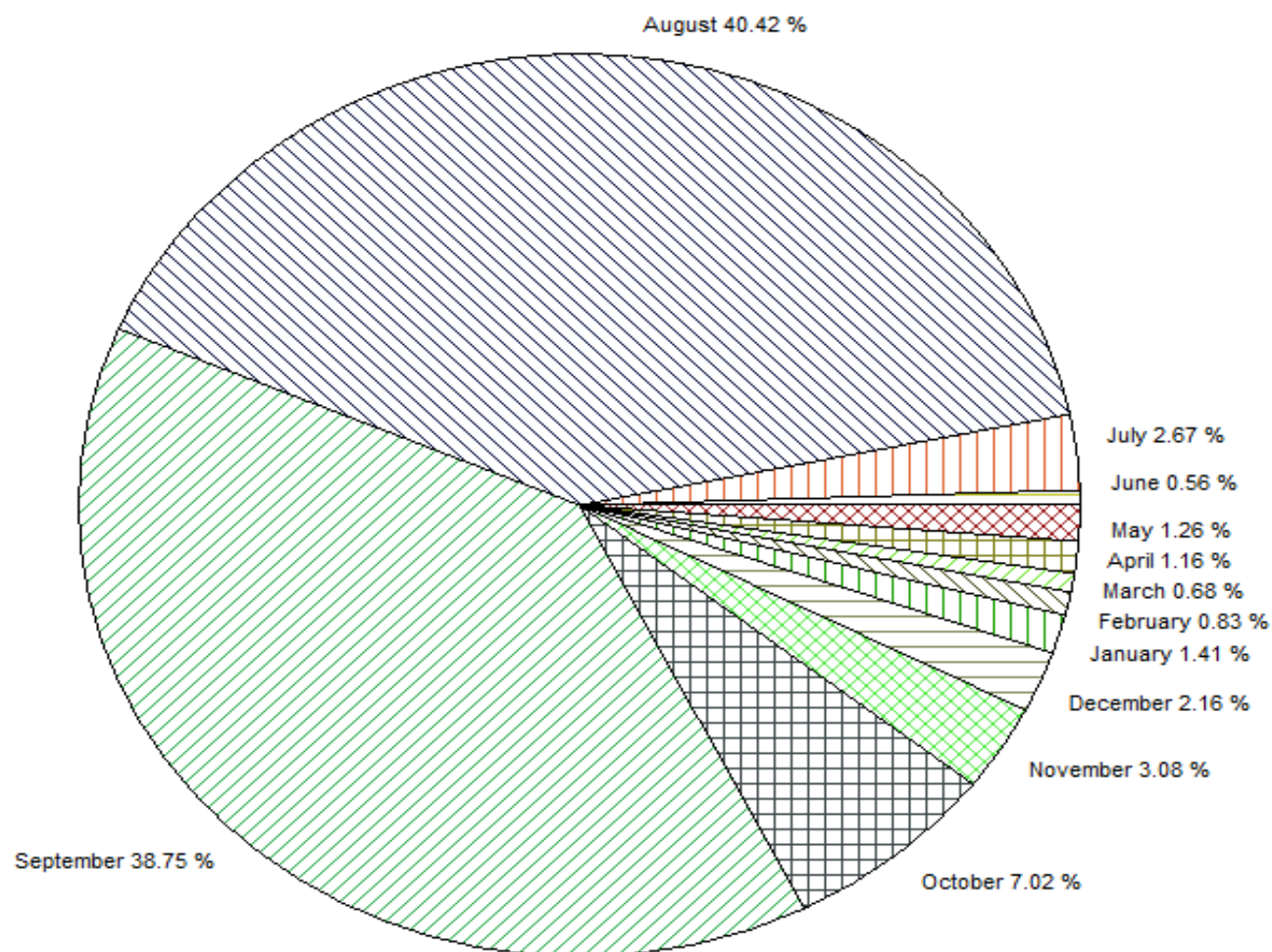


June	0.94 %
July	49.74 %
August	28.06 %
September	7.18 %
October	3.79 %
November	3.15 %
December	3.11 %
January	1.66 %
February	0.85 %
March	0.59 %
April	0.46 %
May	0.46 %

Station Name : RAJGHAT (RAJGHAT)
Local River : Subarnarekha

Monthly Runoff for the Year : 2016-2017

Division : E.E., Bhubaneswar
Sub-Division : Balasore



June	0.56 %
July	2.67 %
August	40.42 %
September	38.75 %
October	7.02 %
November	3.08 %
December	2.16 %
January	1.41 %
February	0.83 %
March	0.68 %
April	1.16 %
May	1.26 %

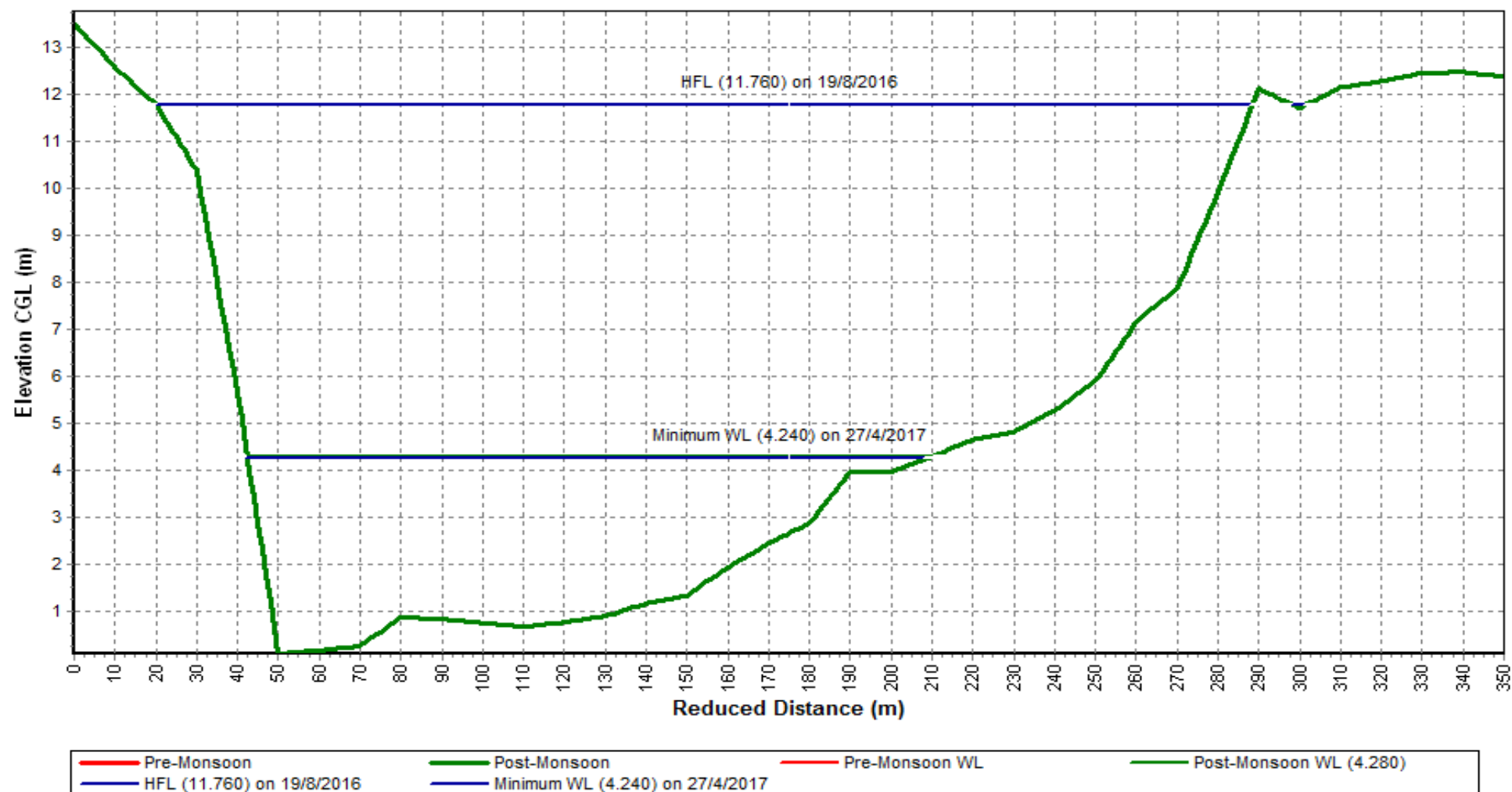
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : RAJGHAT (RAJGHAT)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



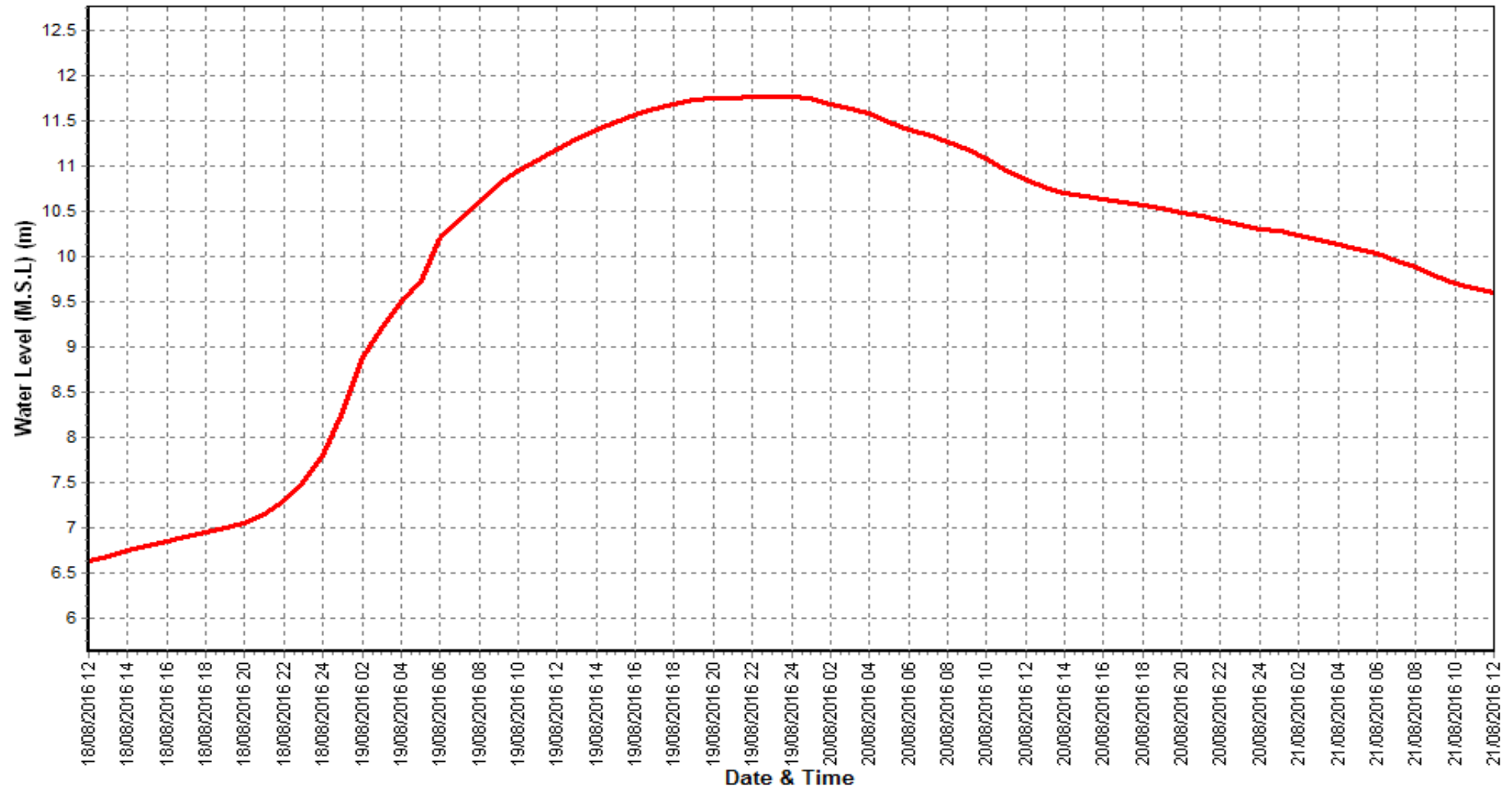
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : RAJGHAT (RAJGHAT)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

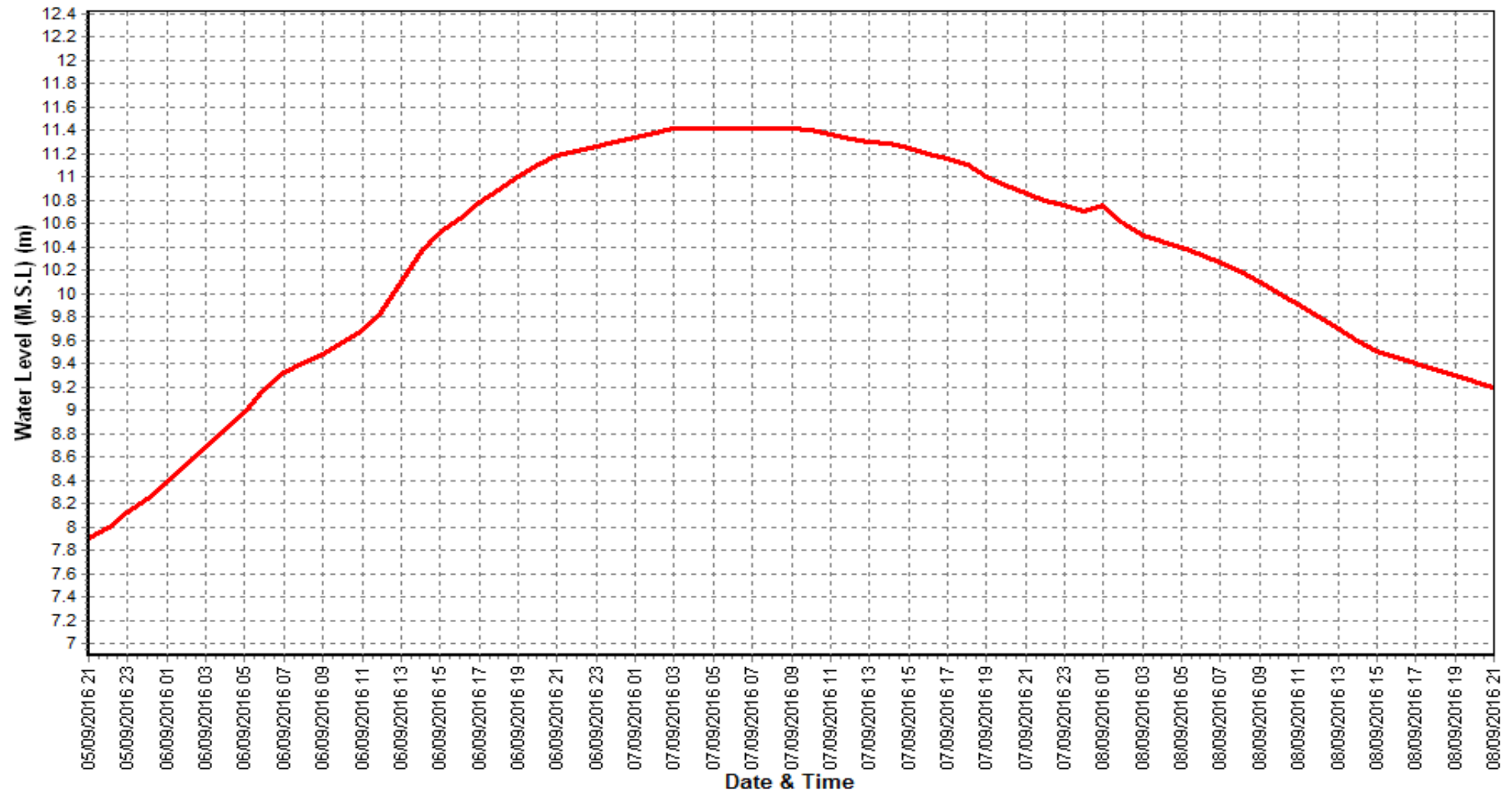
Sub-Division : Balasore



Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : RAJGHAT (RAJGHAT)
Local River : Subarnarekha

Division : E.E., Bhubaneswar
Sub-Division : Balasore



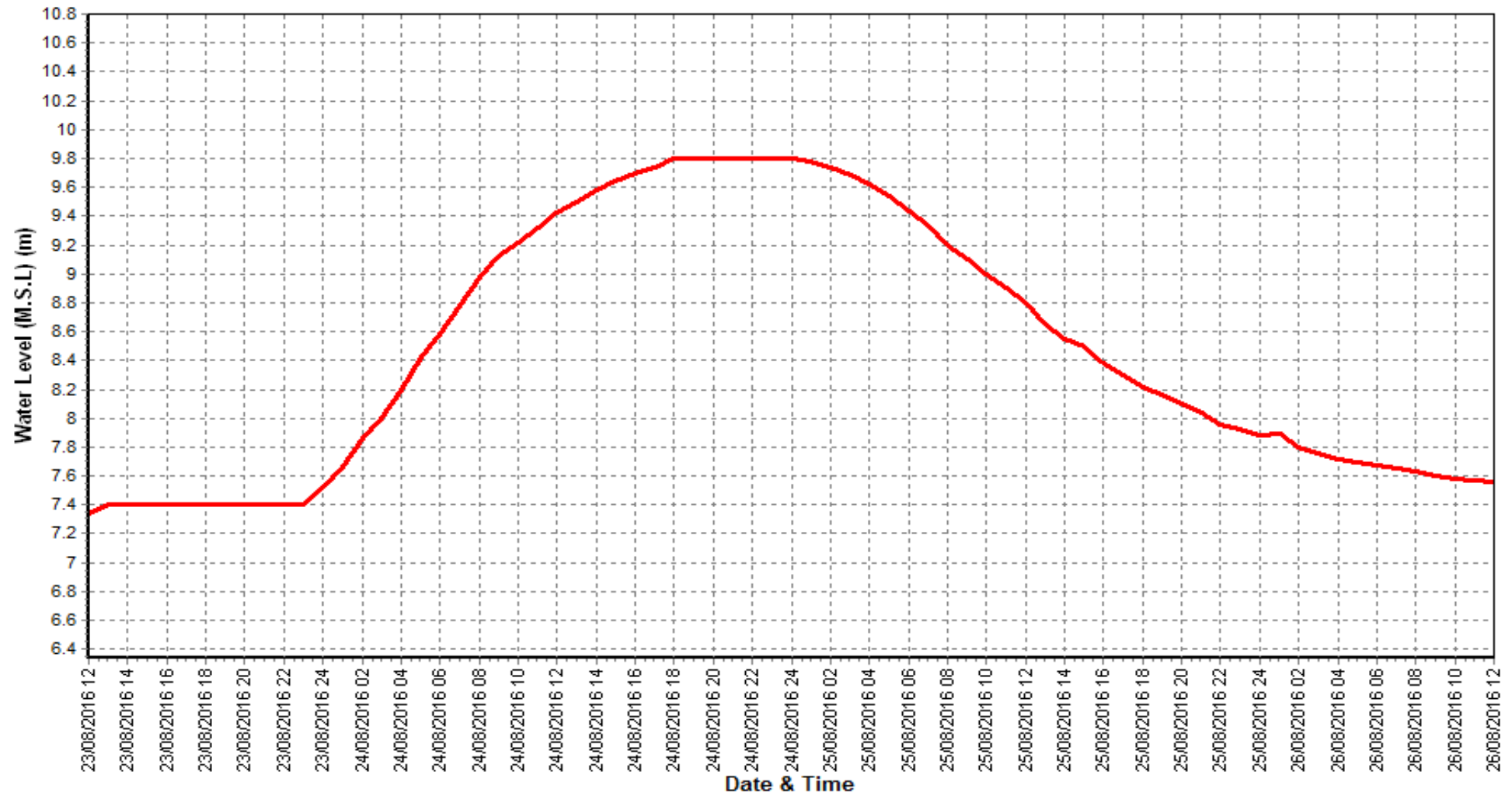
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : RAJGHAT (RAJGHAT)

Local River : Subarnarekha

Division : E.E., Bhubaneswar

Sub-Division : Balasore



HISTORY SHEET

Water Year : 2016-2017

Site : GOPIBALLAVPUR

Code : GOPIBALAVPUR

State : West Bengal

District Mednipur

Basin : Subarnarekha

Independent River : Subarnarekha

Tributary :

Sub Tributary :

Sub-Sub Tributary :

Local River :

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Drainage Area : Sq. Km.

Bank :

Latitude : °'''

Longitude : °'''

Zero of Gauge (m) : 30.5 (m.s.l)

01.03.2014

Opening Date

Closing Date

Gauge : 07.08.2014

Discharge : 15.09.2014

Sediment :

Water Quality :

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
2014-2015	1377.000	36.280	23.09.2014	10.100	32.560	24.03.2015
2015-2016	1164.707	38.500	29.07.2015	4.268	32.320	06.05.2015
2016-2017	1052.000	36.410	11.09.2016	1.855	63.240	03.12.2016

Stage-Discharge Data for the period 2016 - 2017

Station Name : GOPIBALLAVPUR (GOPIBALAVPUR)

Division : E.E., Bhubaneswar

Local River :

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	32.480	10.87	32.780	28.19	33.420	127.6	33.330	131.1	33.930	193.0	32.800	15.83
2	32.480	10.95	32.760	24.04	33.470	134.8	33.480	145.5	33.900	190.0 *	32.800	15.35
3	32.500	11.43	32.700	24.02 *	33.420	130.0	33.360	138.0	33.880	188.7	32.800	15.40
4	32.520	11.22	32.660	15.18	34.540	450.0	33.690	140.0 *	33.730	169.5	32.840	16.72
5	32.540	11.00 *	32.660	15.18	34.170	380.2	35.400	674.9	33.650	167.8	32.800	15.41
6	32.570	15.56	32.980	20.00 *	34.250	394.6	37.470	980.0 *	33.450	151.2	32.780	14.00 *
7	32.590	16.21	33.060	22.00 *	34.210	380.0 *	37.280	640.0 *	33.350	142.9	32.930	22.39
8	32.530	11.62	33.000	29.69	34.160	372.9	36.260	620.0	33.300	133.2	32.880	20.41
9	32.540	11.98	32.840	24.24	34.220	385.9	36.080	978.2	33.270	130.0 *	32.870	20.12
10	32.510	11.46	32.780	18.00 *	34.100	368.6	36.420	1051	33.760	180.0 *	32.840	19.28
11	32.480	10.75	32.700	15.75	35.620	687.9	36.410	1052 *	33.420	160.0 *	32.830	17.70
12	32.470	10.00 *	32.780	17.95	35.620	688.9	35.730	696.1	33.480	168.0 *	32.820	17.36
13	32.460	10.56	32.730	16.22	35.220	601.6	35.050	720.0 *	33.450	152.6	32.820	17.00 *
14	32.460	10.35	32.680	15.50	34.810	500.0 *	34.920	537.4	33.430	150.8	32.810	17.00 *
15	32.470	10.50	32.620	14.37	34.340	480.0 *	34.580	471.7	33.400	98.27	32.810	17.13
16	32.480	10.73	32.860	24.61	34.070	363.0	34.620	476.6	33.360	96.00 *	32.800	17.16
17	32.500	11.04	33.480	50.00 *	34.120	373.6	34.540	460.0	33.320	20.05	32.790	17.15
18	32.600	15.49	33.890	313.0	34.710	539.9	33.860	400.0 *	33.280	19.88	32.790	17.76
19	32.630	16.00 *	33.410	257.0	37.900	720.0 *	33.500	134.9	33.250	19.64	32.780	17.47
20	32.610	15.73	33.220	163.5	37.120	680.0 *	33.480	130.7	33.220	17.39	32.780	17.00 *
21	32.550	13.84	33.170	98.18	36.250	520.0 *	33.540	135.7	33.190	18.05	32.780	17.68
22	32.480	10.73	33.150	93.88	34.260	389.6	33.850	189.6	33.160	17.64	32.760	17.39
23	32.450	9.697	33.300	111.0	34.880	547.3	33.980	195.9	33.130	17.00 *	32.760	17.25
24	32.440	9.601	33.230	110.0 *	36.820	540.0 *	33.980	205.9	33.110	17.46	32.760	17.43
25	32.410	8.992	33.590	147.0	35.380	654.6	33.970	205.0 *	33.080	16.83	32.740	17.09
26	32.380	8.200 *	33.590	147.2	34.960	580.9	33.980	206.3	33.030	16.91	32.740	17.75 *
27	32.420	9.279	33.620	146.4	35.080	573.1	34.920	547.5	32.980	16.44	32.740	18.00 *
28	32.510	11.61	33.440	126.3	34.490	560.0 *	35.100	573.5	32.940	16.65	32.740	18.81
29	32.520	11.91	33.530	139.1	34.070	355.2	34.520	465.7	32.900	16.29	32.740	18.91
30	32.600	16.34	33.560	142.5	33.540	157.8	33.960	203.6	32.860	16.00 *	32.740	19.12
31			33.490	140.0 *	33.300	125.1			32.820	16.13		
Ten-Daily Mean												
I Ten-Daily	32.526	12.23	32.822	22.05	33.996	312.5	35.277	549.9	33.622	164.6	32.834	17.49
II Ten-Daily	32.516	12.11	33.037	88.79	35.353	563.5	34.669	507.9	33.361	90.26	32.803	17.27
III Ten-Daily	32.476	11.02	33.425	127.4	34.821	454.9	34.180	292.9	33.018	16.85	32.750	17.94
Monthly												
Min.	32.380	8.200	32.620	14.37	33.300	125.1	33.330	130.7	32.820	16.00	32.740	14.00
Max.	32.630	16.34	33.890	313.0	37.900	720.0	37.470	1052	33.930	193.0	32.930	22.39
Mean	32.506	11.79	33.105	80.97	34.726	444	34.709	450.2	33.324	88.2	32.796	17.57

Annual Runoff in MCM = 3110 Annual Runoff in mm =

Peak Observed Discharge = 1051 cumecs on 10/09/2016 Corres. Water Level :36.42 m

Lowest Observed Discharge = 1.855 cumecs on 03/12/2016 Corres. Water Level :63.24 m

Stage-Discharge Data for the period 2016 - 2017

Station Name : GOPIBALLAVPUR (GOPIBALAVPUR)

Division : E.E., Bhubaneswar

Local River :

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	63.250	33.26	32.620		63.270	16.16	63.250	13.89	63.270	11.07	63.320	12.10
2	63.250	1.996	63.110	20.36	63.260	16.26	63.250	13.50	32.770		63.320	11.54
3	63.240	1.855	63.140	21.20	63.260	16.21	63.250	13.04	63.270	10.96	63.320	11.30
4	32.740		63.120	20.77	63.260	15.94	63.250	12.55	63.270	10.84	63.330	12.41
5	63.230	2.096	63.120	20.70	32.760		32.750		63.270	10.91	63.330	12.74
6	63.230	2.111	63.150	22.20	63.260	15.58	63.250	12.25	63.260	11.04	63.330	12.90
7	63.240	32.43	63.210	29.61	63.260	15.27	63.250	11.99	63.260	10.93	63.330	12.90 *
8	63.230	31.50	32.740		63.260	15.07	63.250	11.11	63.260	10.94	63.330	12.92
9	63.230	31.26	63.270	32.85	63.260	14.91	63.250	10.52	32.760		63.330	13.24
10	63.220	30.68	63.300	35.01	63.260	15.45	63.250	9.923	63.260	10.94	63.330	13.24 *
11	32.720		63.300	18.04	63.260	15.53	63.250	10.11	63.260	11.40	63.330	13.03
12	32.710		63.300	18.64	32.760		32.760		63.260	10.81	63.320	11.93
13	63.210	30.05	63.290	18.61	63.260	15.48	32.780		63.260	10.57	63.320	13.13
14	63.200	29.50	63.290	18.40	63.260	15.86	63.280	11.61	32.760		63.330	13.03 *
15	63.200	29.45	32.790		63.260	15.41	63.280	11.53	63.260	10.38	63.320	12.70
16	63.180	28.31	63.290	17.83	63.260	15.29	63.280	11.55	32.760		63.320	12.62
17	63.180	27.84	63.280	17.17	63.260	15.33	63.280	11.37	63.260	10.40	63.320	12.31
18	32.680		63.280	16.59	63.260	15.30	63.270	11.16	63.320	13.79	63.330	21.95
19	63.190	28.16	63.280	16.07	32.760		32.770		63.320	13.49	63.370	24.72
20	63.180	27.35	63.280	16.09	63.260	15.56	63.270	11.03	63.330	14.42	63.350	23.85
21	63.170	26.52	63.280	16.05	63.250	15.13	63.270	11.24	63.330	14.25	63.350	23.85 *
22	63.170	25.98	32.780		63.250	15.14	63.270	11.19	63.330	14.00	63.330	23.27
23	63.160	22.38	63.280	16.20	63.250	15.22	63.270	11.15	32.830		63.330	23.00
24	63.160	22.91	63.270	16.48	32.750		63.270	11.17	63.330	13.74	63.350	25.22
25	32.660		63.270	16.51	63.250	14.80	63.270	11.11	63.330	14.30	63.340	24.90
26	63.150	21.88	32.770		32.750		32.770		63.330	13.45	63.350	25.48
27	63.140	21.75	63.270	16.05	63.250	14.41	63.270	10.94	63.330	13.37	63.380	27.18
28	63.130	21.29	63.270	16.76	63.250	13.75	63.270	10.90	63.320	13.02	63.390	27.30 *
29	63.130	21.39	32.770				63.270	10.80	63.320	12.37	63.420	28.32
30	63.120	20.84	63.270	16.69			63.270	10.80	32.820		63.420	28.38
31	63.120	21.12	63.270	16.55			63.270	10.92			63.420	28.54
Ten-Daily Mean												
I Ten-Daily	60.186	18.58	57.078	25.34	60.211	15.65	60.200	12.09	57.165	10.95	63.327	12.53
II Ten-Daily	54.045	28.67	60.238	17.49	57.160	15.47	54.122	11.19	57.179	11.91	63.331	15.93
III Ten-Daily	60.374	22.61	54.955	16.41	55.625	14.74	60.497	11.02	57.227	13.56	63.371	25.95
Monthly												
Min.	32.660	1.855	32.620	16.05	32.750	13.75	32.750	9.923	32.760	10.38	63.320	11.30
Max.	63.250	33.26	63.300	35.01	63.270	16.26	63.280	13.89	63.330	14.42	63.420	28.54
Mean	58.272	22.84	57.344	19.66	57.811	15.35	58.345	11.44	57.190	12.14	63.344	18.39

Peak Computed Discharge = 1052 cumecs on 11/09/2016

Corres. Water Level :36.41 m

Lowest Computed Discharge = 8.200 cumecs on 26/06/2016

Corres. Water Level :32.38 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

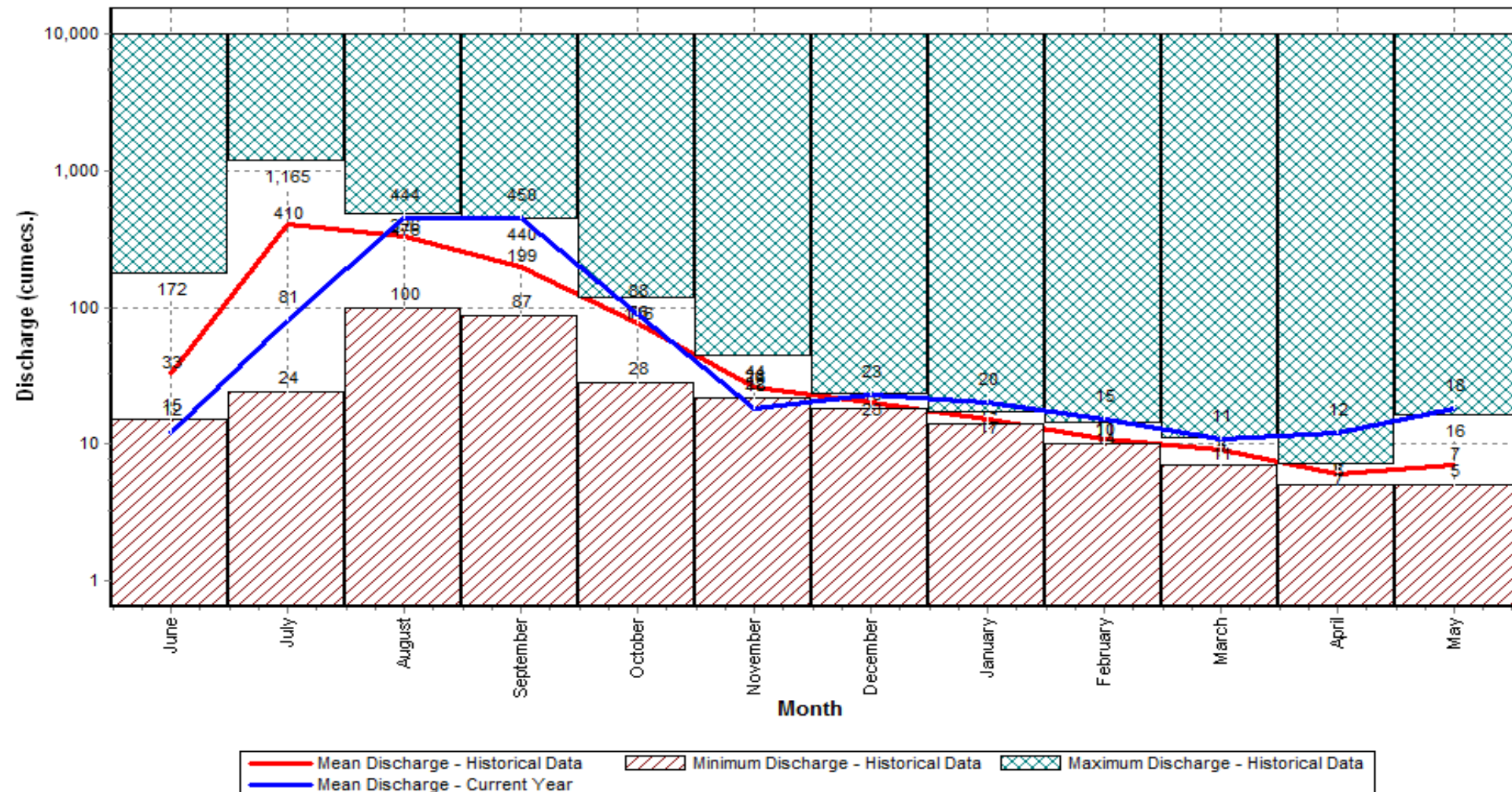
Station Name : GOPIBALLAVPUR (GOPIBALAVPUR)

Data considered : 2016-2017

Division : E.E., Bhubaneswar

Local River :

Sub-Division : Balasore



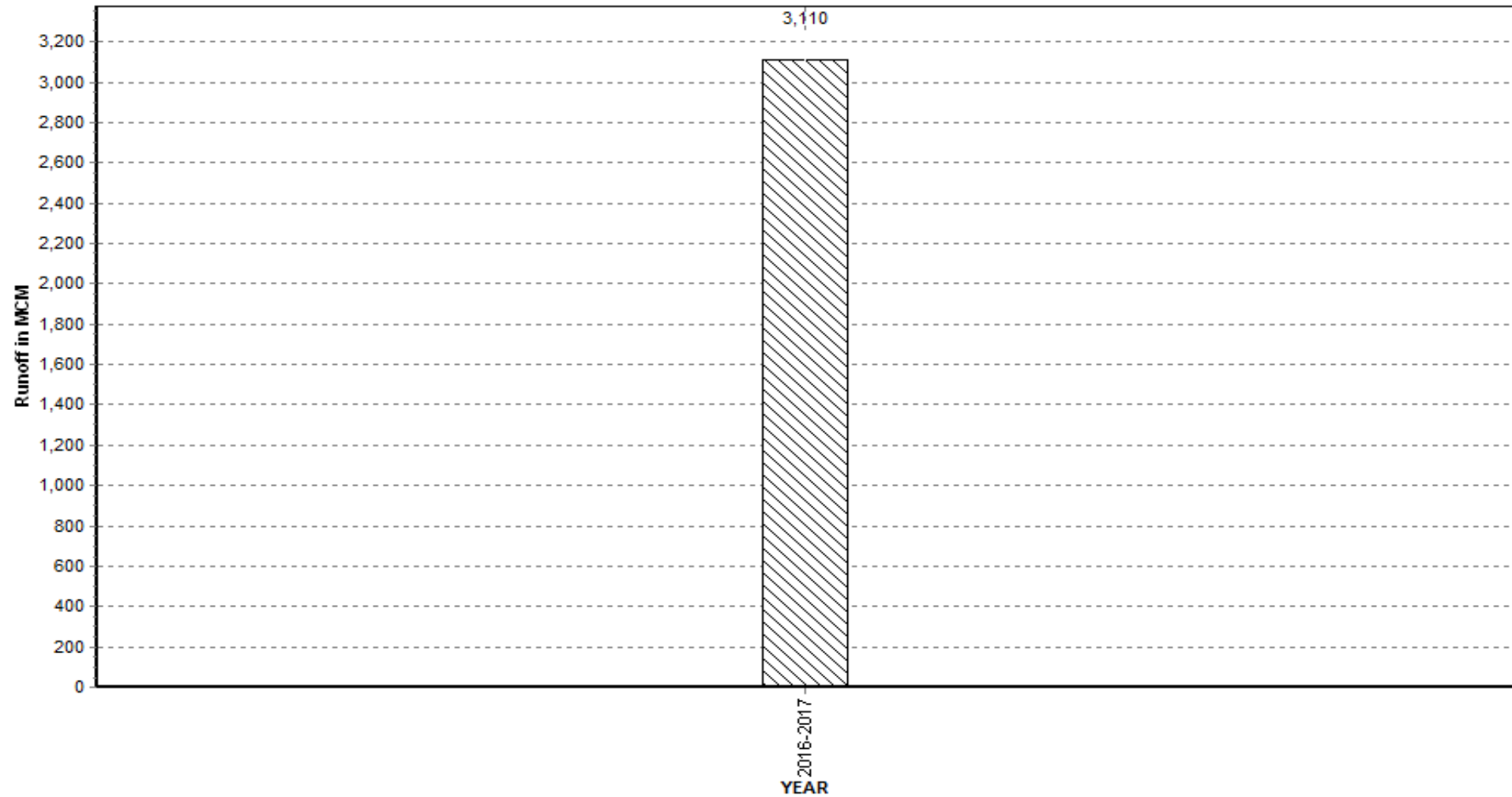
Annual Runoff Values for the period: 2016 - 2017

Station Name : GOPIBALLAVPUR (GOIBALAVPUR)

Local River :

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Annual Runoff Values for the period: 2016 - 2017

Station Name : GOPIBALLAVPUR (GOIBALAVPUR)

Division : E.E., Bhubaneswar

Local River :

Sub-Division : Balasore

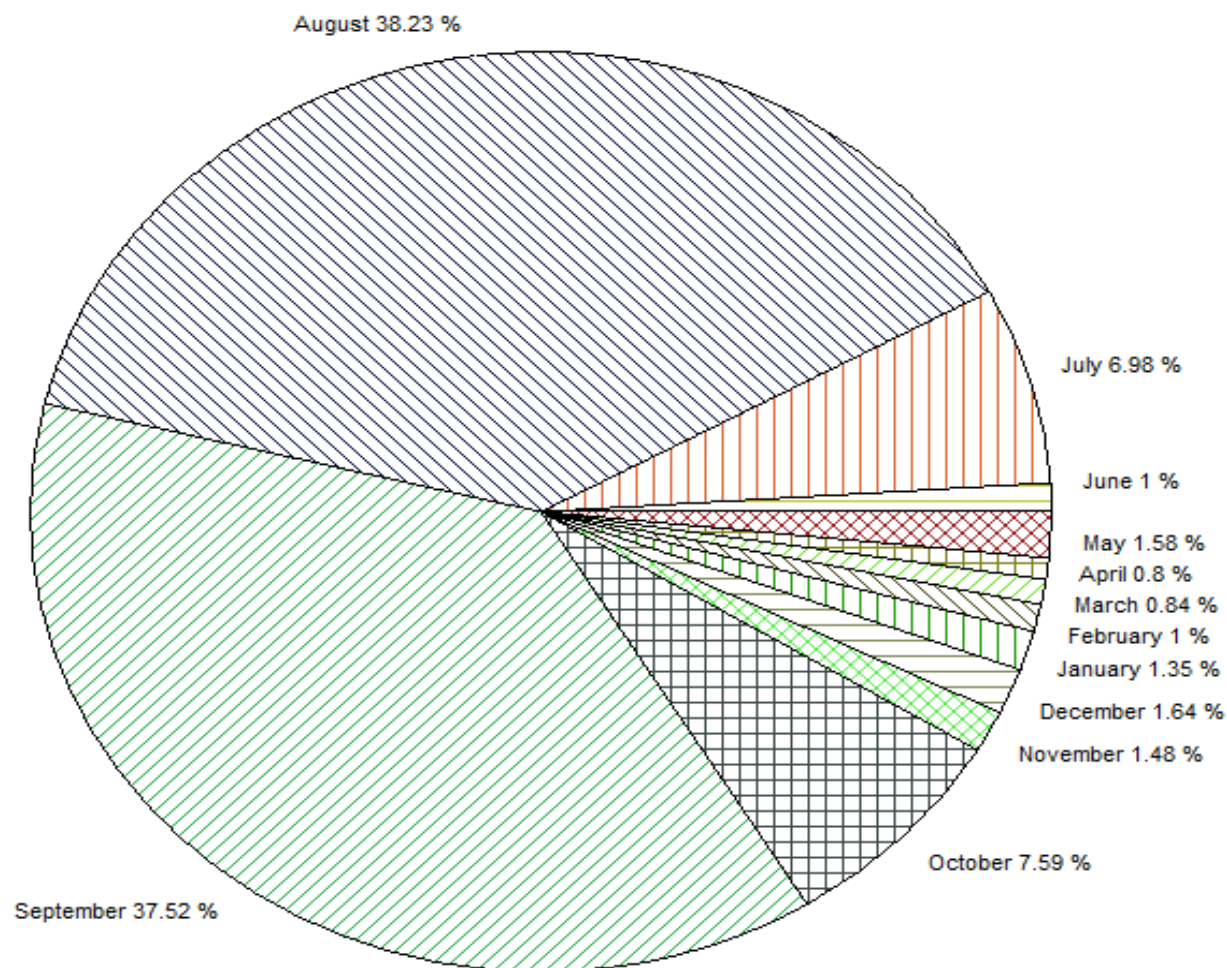
Monthly Runoff for the Year : 2016-2017

Station Name : GOPIBALLAVPUR (GOIBALAVPUR)

Local River :

Division : E.E., Bhubaneswar

Sub-Division : Balasore



June	1 %
July	6.98 %
August	38.23 %
September	37.52 %
October	7.59 %
November	1.48 %
December	1.64 %
January	1.35 %
February	1 %
March	0.84 %
April	0.8 %
May	1.58 %

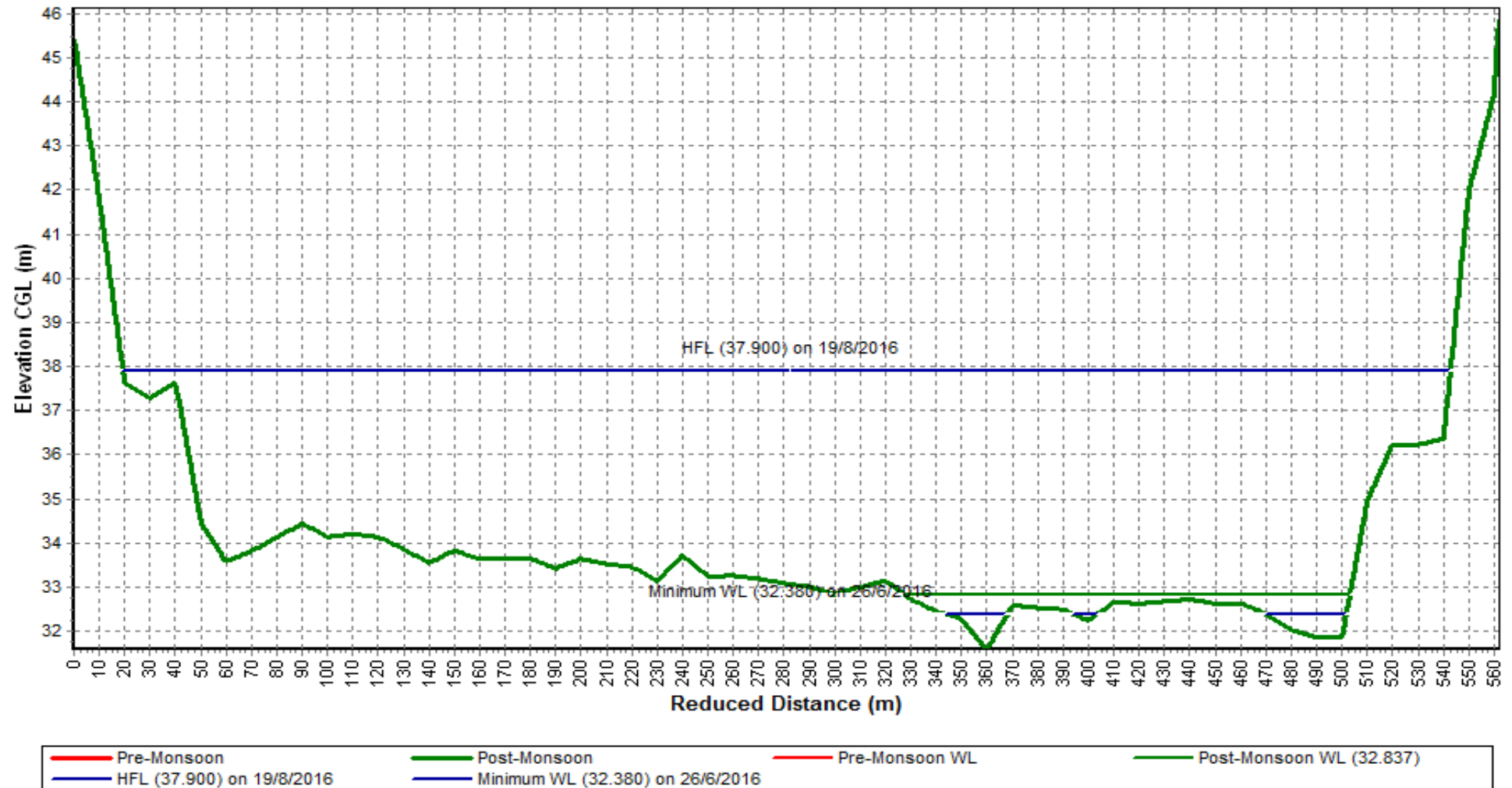
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : GOPIBALLAVPUR (GOPIBALAVPUR)

Local River :

Division : E.E., Bhubaneswar

Sub-Division : Balasore



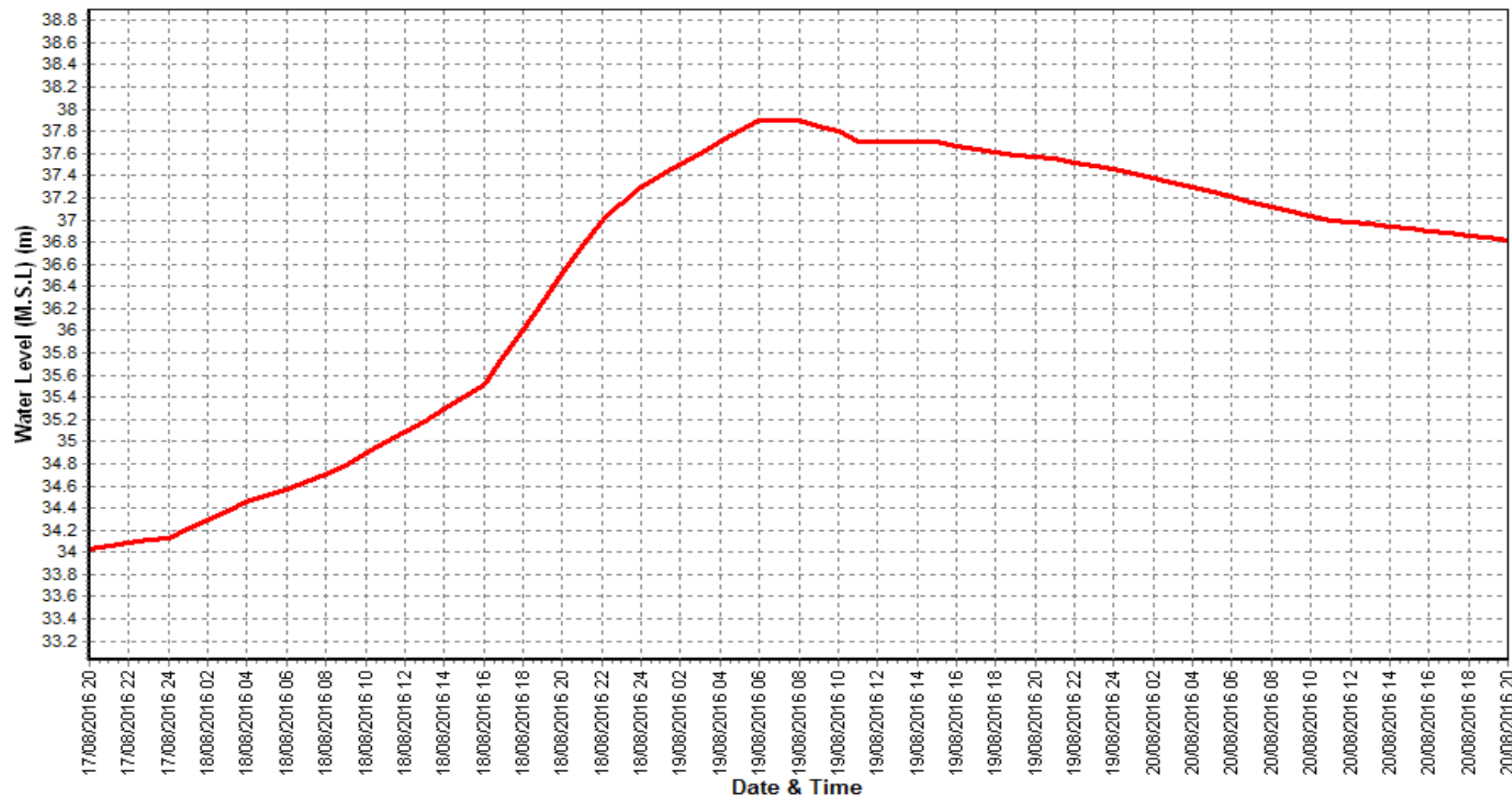
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : GOPIBALLAVPUR (GOPIBALAVPUR)

Division : E.E., Bhubaneswar

Local River :

Sub-Division : Balasore



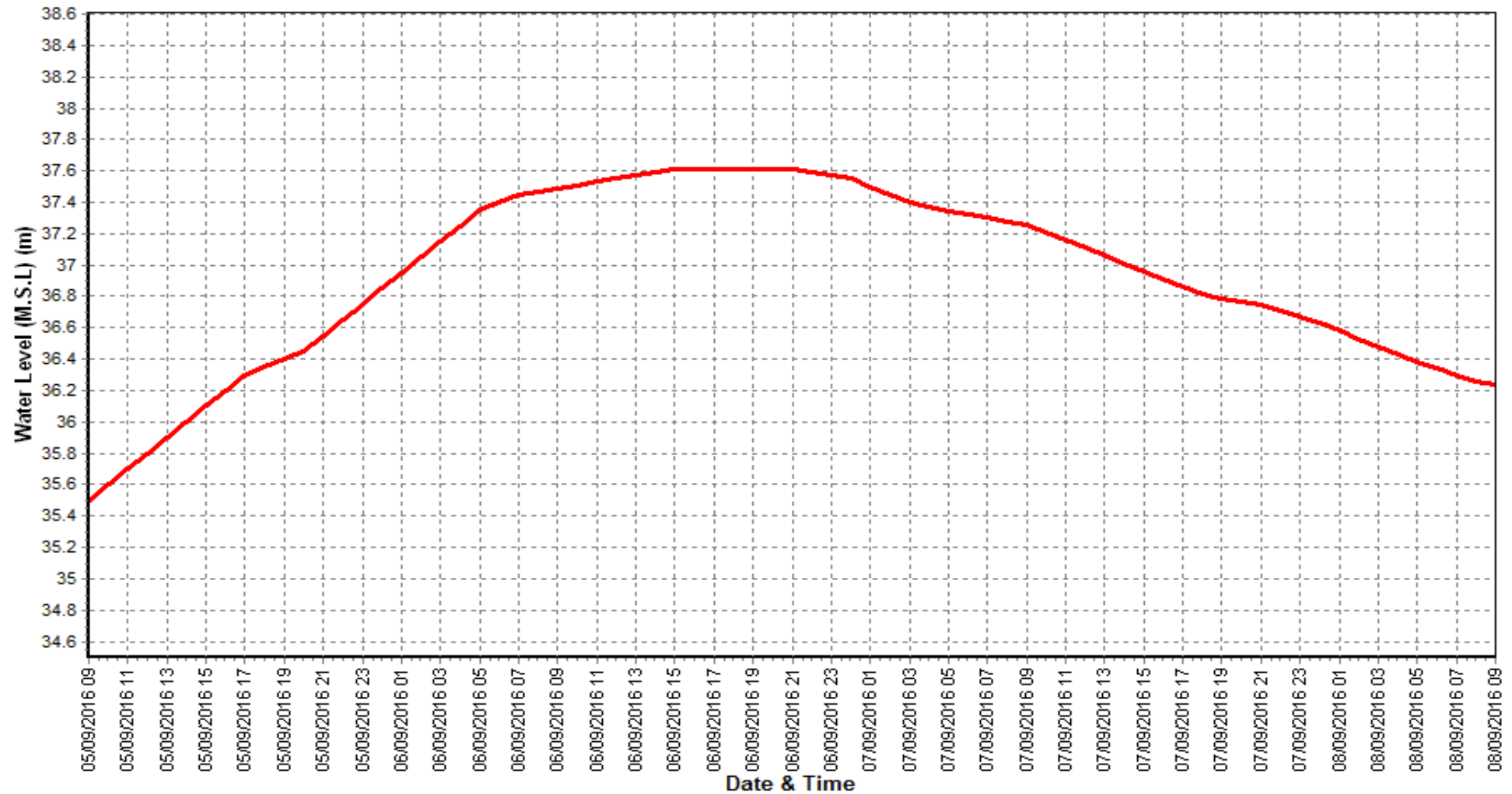
Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : GOPIBALLAVPUR (GOPIBALAVPUR)

Local River :

Division : E.E., Bhubaneswar

Sub-Division : Balasore



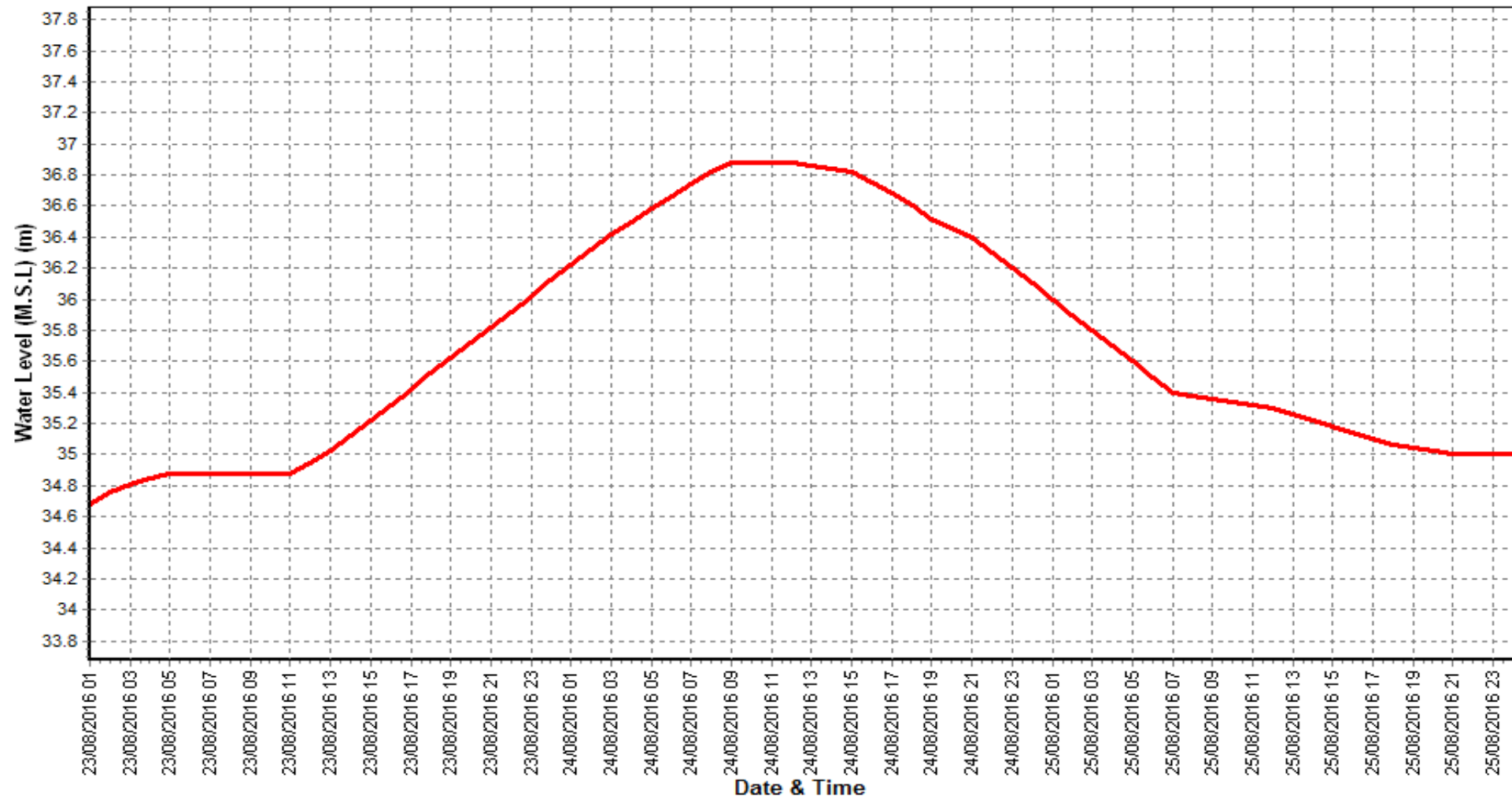
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : GOPIBALLAVPUR (GOPIBALAVPUR)

Local River :

Division : E.E., Bhubaneswar

Sub-Division : Balasore



HISTORY SHEET

		Water Year	: 2016-2017
Site	: GHATSILA ROAD BRIDGE	Code	: GHAT RB
State	: Orissa	District	Angul
Basin	: Subarnarekha	Independent River	: Subarnarekha
Tributary	:	Sub Tributary	:
Sub-Sub Tributary	:	Local River	:
Division	: E.E., Bhubaneswar	Sub-Division	: Balasore
Drainage Area	: Sq. Km.	Bank	:
Latitude	: °'''	Longitude	: °'''
	Opening Date	Closing Date	
Gauge	:		
Discharge	:		
Sediment	:		
Water Quality	: 01.06.1990		

Water Quality Datasheet for the period : 2016-2017

Station Name : GHATSILA ROAD BRIDGE (GHAT RB)

Local River :

Division : E.E., Bhubaneswar

Sub-Division : Balasore

River Water Analysis

S.No	Parameters	01.06.2016	02.07.2016	01.08.2016	01.09.2016	01.10.2016	01.11.2016	01.12.2016	02.01.2017	01.02.2017	01.03.2017	01.04.2017	01.05.2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	957	466	243	229	220	626	790	408	456	470	461	435
4	EC_GEN (µmho/cm)	960	469	244	233	222	630	793	412	458	471	464	441
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	9.8	7.4	7.2	7.9	7.8	8.1	8.4	8.1	7.7	7.7	8.0	8.4
7	pH_GEN (pH units)	9.8	7.5	7.3	7.9	7.9	8.2	8.5	8.2	7.8	7.8	8.0	8.5
8	Temp (deg C)	27.5	26.0	22.0	24.0	23.0	22.0	18.5	16.5	16.5	21.0	23.5	29.5
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	102	97	102	102	69	83	74	79	65	83	88	92
3	B (mg/L)	0.01	0.01	0.01	0.02	0.02	0.01	0.01	0.01	0.02	0.01	0.02	0.01
4	Ca (mg/L)	56	58	59	61	63	58	64	63	66	67	64	48
5	Cl (mg/L)	41.5	41.5	43.4	45.3	7.5	11.3	11.3	33.8	13.2	39.6	35.8	30.2
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.5	0.5	0.5	0.2	0.6	0.5	0.6	0.5	0.6	0.5	0.7	0.7
9	HCO3 (mg/L)	124	118	124	124	85	101	90	96	79	101	107	113
10	K (mg/L)	5.2	18.8	9.0	1.2	7.1	10.7	11.5	24.6	28.4	29.0	29.0	30.0
11	Mg (mg/L)	20.4	22.4	23.3	24.3	27.2	24.3	26.2	28.2	26.2	27.2	26.3	24.3
12	Na (mg/L)	33.2	70.8	38.9	39.0	33.5	42.0	48.2	30.3	43.5	43.8	59.8	39.9
13	NO2+NO3 (mg N/L)	0.88	0.87	1.25	1.09	1.23	1.12	1.26	1.22	0.98	1.33	1.27	1.22
14	NO2-N (mgN/L)	0.07	0.00	0.00	0.03	0.00	0.00	0.03	0.03	0.03	0.00	0.03	0.03
15	NO3-N (mgN/L)	0.81	0.87	1.25	1.06	1.23	1.12	1.23	1.19	0.95	1.33	1.25	1.19
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	7.0	6.0	7.0	6.0	6.0	6.0	6.0	6.0	8.0	8.0	8.5	9.8
18	SO4 (mg/L)	43.6	45.2	45.8	48.1	21.1	28.1	28.1	28.8	28.8	49.9	51.2	36.7
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	1.8	1.6	0.2	0.8	0.4	0.8	1.0	0.4	1.4	0.8	1.8	1.2
2	DO (mg/L)	7.7	5.8	5.4	7.2	7.9	6.6	9.3	9.5	9.3	6.0	7.2	3.8
3	DO_SAT% (%)	97	71	61	85	93	75	99	97	95	67	83	49
4	FCol-MPN (MPN/100mL)						60	90	270	90	20	90	90
5	Tcol-MPN (MPN/100mL)						140	170	330	170	40	170	210
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	140	144	148	152	156	144	160	156	164	168	160	120
2	HAR_Total (mgCaCO3/L)	225	237	246	254	270	246	270	274	274	282	270	222
3	Na% (%)	24	37	25	25	21	26	27	18	23	23	30	25
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	1.0	2.0	1.1	1.1	0.9	1.2	1.3	0.8	1.1	1.1	1.6	1.2
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : GHATSILA ROAD BRIDGE (GHAT RB)

Division : E.E., Bhubaneswar

Local River :

Sub-Division : Balasore

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	12	957	220	480
3	EC_GEN (μmho/cm)	12	960	222	483
4	pH_FLD (pH units)	12	9.8	7.2	8
5	pH_GEN (pH units)	12	9.8	7.3	8.1
6	Temp (deg C)	12	29.5	16.5	22.5
	CHEMICAL				
1	Alk-Phen (mgCaCO ₃ /L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO ₃ /L)	12	102	65	86
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	67	48	61
5	Cl (mg/L)	12	45.3	7.5	29.5
6	CO ₃ (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.7	0.2	0.5
9	HCO ₃ (mg/L)	12	124	79	105
10	K (mg/L)	12	30.0	1.2	17
11	Mg (mg/L)	12	28.2	20.4	25
12	Na (mg/L)	12	70.8	30.3	43.6
13	NO ₂ +NO ₃ (mg N/L)	12	1.33	0.87	1.14
14	NO ₂ -N (mgN/L)	12	0.07	0.00	0.02
15	NO ₃ -N (mgN/L)	12	1.33	0.81	1.12
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO ₂ (mg/L)	12	9.8	6.0	7
18	SO ₄ (mg/L)	12	51.2	21.1	37.9
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD ₃₋₂₇ (mg/L)	12	1.8	0.2	1
2	DO (mg/L)	12	9.5	3.8	7.1
3	DO_SAT% (%)	12	99	49	81
4	FCol-MPN (MPN/100mL)	7	270	20	101
5	Tcol-MPN (MPN/100mL)	7	330	40	176
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO ₃ /L)	12	168	120	151
2	HAR_Total (mgCaCO ₃ /L)	12	282	222	256
3	Na% (%)	12	37	18	25
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	2.0	0.8	1.2
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : GHATSILA ROAD BRIDGE (GHAT RB)

Division : E.E., Bhubaneswar

Local River :

River Water

Sub-Division : Balasore

S.No	Parameters	Flood																				
		Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	246	237	304	274	236	273		256	384	261	276	264	318	560	423	260	258	273	385	327	303
3	EC_GEN (µmho/cm)	252	239	304	269	233	267		256	384	261	276	264	318	564	426	284	250	273	381	325	299
4	pH_FLD (pH units)	7.8	7.7	7.8	7.6	7.8	7.9		7.8	8.1	8.2	7.5	7.3	7.6	7.4	8.0	7.9	7.9	7.8	7.8	7.9	8.2
5	pH_GEN (pH units)	7.6	7.6	7.6	7.7	7.8	7.9		7.8	8.1	8.2	7.5	7.3	7.6	7.3	8.1	7.6	7.8	7.8	7.8	7.9	8.2
6	Temp (deg C)	29.9	31.5	29.1	29.4	28.5	27.0		27.9	27.1	28.0	29.2	27.8	28.8	27.9	24.5	22.0	20.0	22.7	18.3	18.2	16.9
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0		0.0	13.9	6.4			0.0	0.0	0.0						0.2
2	ALK-TOT (mgCaCO3/L)						82		64	110	79			66	87	94						93
3	B (mg/L)	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00
4	Ca (mg/L)	27	26	29	29	25	28		23	30	20	24	20	22	37	59	28	28	27	37	34	31
5	Cl (mg/L)	15.6	15.9	21.6	17.5	21.6	18.1		18.3	26.8	22.3	20.7	22.3	24.3	18.1	35.8	10.2	15.5	26.5	28.6	20.5	22.9
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	7.7	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.3
7	F (mg/L)	0.00	0.05	0.31	0.09	0.14	0.06		0.12	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.00	0.08	0.40	0.37	0.06	0.12
8	Fe (mg/L)	0.3	0.3	0.3	0.2	0.3	0.4		0.3	0.3	0.0	1.3	0.1	1.0	0.3	0.5	0.2	0.3	0.2	0.3	0.3	0.3
9	HCO3 (mg/L)	97	87	101	106	87	100		67	100	81	80	88	81	106	115	121	110	67	119	139	111
10	K (mg/L)	3.5	1.9	3.3	2.5	3.4	3.0		2.0	5.5	3.0	3.0	2.4	3.0	3.7	8.3	5.9	3.0	5.1	3.6	3.6	3.4
11	Mg (mg/L)	7.0	5.9	9.4	8.4	6.2	8.3		9.3	14.4	7.6	7.8	5.0	7.6	11.3	23.5	10.0	6.8	5.8	13.5	10.9	8.6
12	Na (mg/L)	10.5	10.9	14.0	11.7	14.4	12.4		12.5	17.8	10.5	10.7	13.1	10.5	13.9	43.1	6.2	10.3	17.8	19.4	14.0	15.4
13	NO2+NO3 (mg N/L)	2.49	2.74	1.96	2.26	2.26	2.04		1.98	1.74	0.42	0.80	0.92	1.26	0.95	1.06	2.05	1.80	6.07	7.89	2.36	2.18
14	NO2-N (mgN/L)	0.00	0.01	0.06	0.01	0.00	0.00		0.05	0.01	0.07	0.00	0.03	0.02	0.02	0.02	0.00	0.01	0.13	0.39	0.00	0.01
15	NO3-N (mgN/L)	2.49	2.73	1.89	2.26	2.26	2.04		1.93	1.73	0.36	0.80	0.89	1.23	0.92	1.05	2.05	1.79	5.93	7.50	2.36	2.17
16	o-PO4-P (mg P/L)			0.052	0.050	0.009	0.000		0.048											0.023	0.025	0.008
17	P-Tot (mgP/L)	0.001	0.047	0.001	0.050	0.010	0.001		0.002	0.001	0.010	0.001	0.004	0.001	0.001	0.010	0.001	0.034	0.001	0.009	0.025	0.021
18	SiO2 (mg/L)	10.2	13.1	33.4	26.2	15.0	10.4		8.8	9.0	10.0	11.4	11.5	6.2	6.4	6.4	8.3	15.4	33.0	24.2	15.0	9.3
19	SO4 (mg/L)	12.1	8.0	25.2	13.4	14.1	15.7		30.1	35.9	21.7	33.2	29.1	15.5	25.0	40.8	7.8	6.9	30.9	26.9	14.2	15.1
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.1	0.9	1.4	1.4	1.4	1.3		1.6	5.7	1.7	0.8	0.7	0.7	0.8	1.0	1.2	1.8	1.3	1.3	1.4	1.4
2	DO (mg/L)	6.9	6.2	6.7	6.0	6.7	7.0		6.4	5.3	6.3	5.8	5.2	6.0	5.0	6.8	7.7	7.7	8.0	8.4	7.8	8.4
3	DO_SAT% (%)	91	84	86	79	86	87		81	67	80	75	66	77	64	81	87	84	92	88	82	85
4	FCol-MPN (MPN/100mL)																					
5	Tcol-MPN (MPN/100mL)																					
	TRACE & TOXIC																					
1	Al (mg/L)					6.66																
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	67	65	72	74	62	70		57	76	50	59	49	56	91	148	71	70	69	92	84	77
2	HAR_Total (mgCaCO3/L)	96	90	117	109	88	104		96	136	81	92	70	88	138	246	112	98	79	148	129	112
3	Na% (%)	18	21	22	20	25	23		22	22	20	19	28	18	17	26	10	19	29	22	19	22
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0
5	SAR (-)	0.4	0.5	0.6	0.5	0.7	0.6		0.6	0.7	0.5	0.5	0.7	0.5	0.5	1.2	0.3	0.5	0.8	0.7	0.5	0.6
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : GHATSILA ROAD BRIDGE (GHAT RB)

Division : E.E., Bhubaneswar

Local River :

River Water

Sub-Division : Balasore

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		343	495	283	370	249	470	915	570	330	630	368	490	456	480		407	557	303	360	413
3	EC_GEN (µmho/cm)		343	495	283	370	249	470	918	573	328	633	367	488	454	472		407	557	303	360	413
4	pH_FLD (pH units)		7.8	7.5	7.6	7.8	7.7	7.6	7.7	8.1	8.0	8.0	7.6	7.4	7.9	7.9		8.1	8.0	7.8	7.9	7.4
5	pH_GEN (pH units)		7.8	7.5	7.6	7.8	7.7	7.6	7.6	8.1	8.1	7.8	7.6	7.5	7.9	7.9		8.1	8.0	7.8	7.9	7.4
6	Temp (deg C)		16.5	18.0	18.5	17.0	21.4	20.0	19.9	18.4	22.7	28.5	25.8	25.8	25.4	25.5		26.0	23.0	25.2	27.7	27.0
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	0.0			0.0	5.8	0.0					0.0			4.0	15.6	1.5		
2	ALK-TOT (mgCaCO3/L)		63	107	76			77	88	75					256			84	131	89		
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00
4	Ca (mg/L)		29	37	26	32	24	26	68	63	38	59	38	46	51	50		26	44	25	29	27
5	Cl (mg/L)		29.6	41.5	20.3	31.6	28.4	21.6	16.0	17.4	14.8	33.1	37.1	40.5	23.3	31.5		42.1	52.8	27.7	30.2	32.9
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0		3.2	18.8	1.8	0.0	4.2
7	F (mg/L)		0.25	0.05	0.05	0.06	0.05	0.05	0.05	0.05	0.00	0.23	0.46	0.25	0.24	0.05		0.29	0.05	0.05	0.06	0.05
8	Fe (mg/L)		0.3	0.1	0.0	1.2	0.1	0.3	0.4	0.5	0.4	0.2	0.4	0.2	0.3	0.3		0.2	0.2	0.0	1.3	0.1
9	HCO3 (mg/L)		76	131	93	123	90	89	93	92	146	236	94	173	172	184		105	122	105	97	104
10	K (mg/L)		3.3	4.9	2.7	5.4	2.8	2.6	6.1	18.8	7.6	5.9	3.6	5.7	4.4	3.8		5.6	5.3	3.4	5.2	4.9
11	Mg (mg/L)		12.1	20.2	12.3	10.0	6.0	10.6	9.0	26.2	10.4	23.3	8.3	15.1	15.4	12.8		14.9	20.7	5.5	6.9	9.7
12	Na (mg/L)		19.0	29.1	11.6	21.4	15.7	11.8	26.3	41.0	10.6	26.0	23.5	26.8	16.1	22.6		30.9	32.2	15.1	20.9	18.8
13	NO2+NO3 (mg N/L)		3.02	1.95	0.40	0.86	0.90	0.87	1.07	1.15	2.28	3.99	10.43	2.79	8.92	2.58		1.79	1.42	0.41	0.84	0.80
14	NO2-N (mgN/L)		0.09	0.11	0.07	0.00	0.03	0.02	0.01	0.02	0.00	0.00	0.06	0.00	0.00	0.00		0.08	0.00	0.07	0.00	0.03
15	NO3-N (mgN/L)		2.93	1.85	0.33	0.86	0.88	0.85	1.06	1.12	2.28	3.99	10.36	2.79	8.92	2.58		1.71	1.42	0.34	0.84	0.78
16	o-PO4-P (mg P/L)		0.083										0.026	0.048	0.019			0.037				
17	P-Tot (mgP/L)		0.001	0.001	0.010	0.001	0.005	0.001	0.010	0.010	0.001	0.001	0.001	0.050	0.019	0.050		0.004	0.001	0.010	0.001	0.005
18	SiO2 (mg/L)		8.1	5.9	12.0	11.8	10.9	5.8	5.8	6.5	10.5	15.2	31.6	18.2	20.3	9.7		7.3	7.9	9.7	12.7	11.8
19	SO4 (mg/L)		44.2	62.5	30.8	46.1	32.2	26.1	38.0	28.5	15.5	58.2	19.9	36.4	22.1	23.4		43.8	60.1	19.6	42.7	38.4
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		2.6	1.8	2.7	0.9	1.1	1.0	1.0	0.9	1.5	1.4	1.3	1.2	1.4	1.4		1.6	2.2	2.0	1.3	2.0
2	DO (mg/L)		9.1	8.2	7.7	8.7	7.3	9.0	7.8	8.7	6.8	6.8	5.9	7.7	6.4	5.8		7.2	5.8	7.2	6.6	6.2
3	DO_SAT% (%)		92	86	82	90	82	98	85	91	79	88	73	94	77	71		89	67	87	82	77
4	FCol-MPN (MPN/100mL)									128												
5	Tcol-MPN (MPN/100mL)									203												
	TRACE & TOXIC																					
1	Al (mg/L)												0.02									
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		72	93	66	80	60	64	170	156	94	148	94	114	127	126		65	110	61	73	67
2	HAR_Total (mgCaCO3/L)		123	177	117	122	84	108	207	266	138	245	132	177	191	179		128	196	84	101	107
3	Na% (%)		24	26	17	27	28	19	23	24	13	18	26	25	16	22		34	26	27	30	27
4	RSC (-)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.2	0.0	0.0
5	SAR (-)		0.8	1.0	0.5	0.9	0.7	0.5	0.8	1.1	0.4	0.7	0.9	0.9	0.5	0.7		1.2	1.0	0.7	0.9	0.8
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

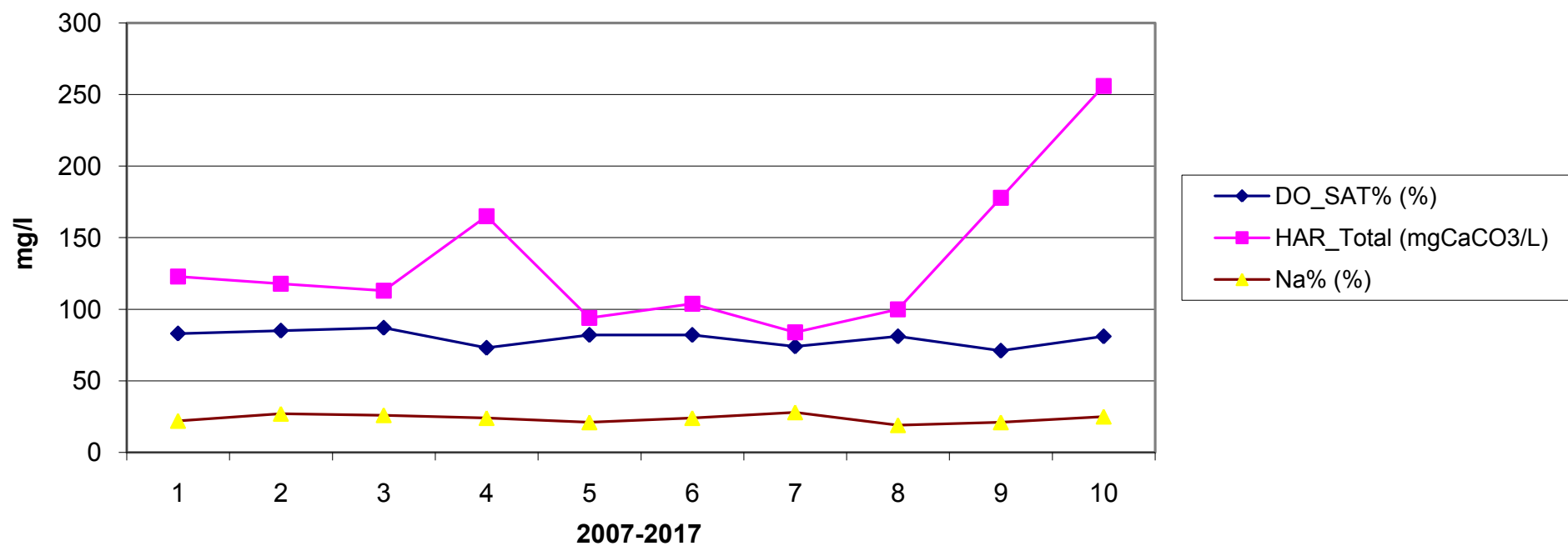
Station Name : GHATSILA ROAD BRIDGE (GHAT RB)
Local River :

Division : E.E., Bhubaneswar
Sub-Division : Balasore

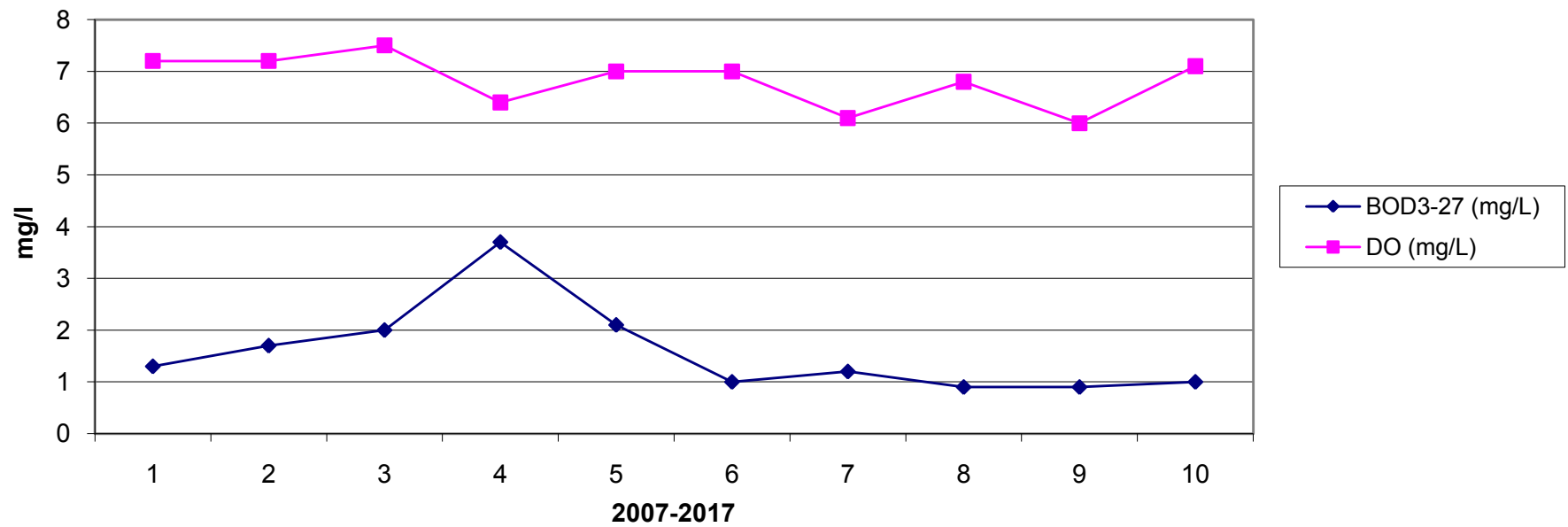
River Water

S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	560	731	455
3	EC_GEN (µmho/cm)	560	729	459
4	pH_FLD (pH units)	7.5	7.9	8.0
5	pH_GEN (pH units)	7.5	7.9	8.1
6	Temp (deg C)	26.7	26.0	24.7
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	9.2	0.0
2	ALK-TOT (mgCaCO3/L)	77	112	88
3	B (mg/L)	0.00	0.01	0.01
4	Ca (mg/L)	28	55	60
5	Cl (mg/L)	33.5	48.4	35.2
6	CO3 (mg/L)	0.0	11.1	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.3	0.4	0.6
9	HCO3 (mg/L)	101	115	107
10	K (mg/L)	2.4	5.4	29.3
11	Mg (mg/L)	9.4	16.5	25.9
12	Na (mg/L)	13.1	33.0	47.8
13	NO2+NO3 (mg N/L)	0.91	0.93	1.27
14	NO2-N (mgN/L)	0.00	0.01	0.02
15	NO3-N (mgN/L)	0.91	0.92	1.26
16	o-PO4-P (mg P/L)			
17	P-Tot (mgP/L)	0.001	0.010	0.010
18	SiO2 (mg/L)	4.5	5.3	8.8
19	SO4 (mg/L)	19.2	37.4	45.9
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	1.1	0.8	1.3
2	DO (mg/L)	5.3	5.1	5.6
3	DO_SAT% (%)	66	63	66
4	FCol-MPN (MPN/100mL)			67
5	Tcol-MPN (MPN/100mL)			140
	TRACE & TOXIC			
1	Al (mg/L)			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	70	138	150
2	HAR_Total (mgCaCO3/L)	109	206	258
3	Na% (%)	21	26	26
4	RSC (-)	0.0	0.0	0.0
5	SAR (-)	0.6	1.0	1.3
	PESTICIDES			

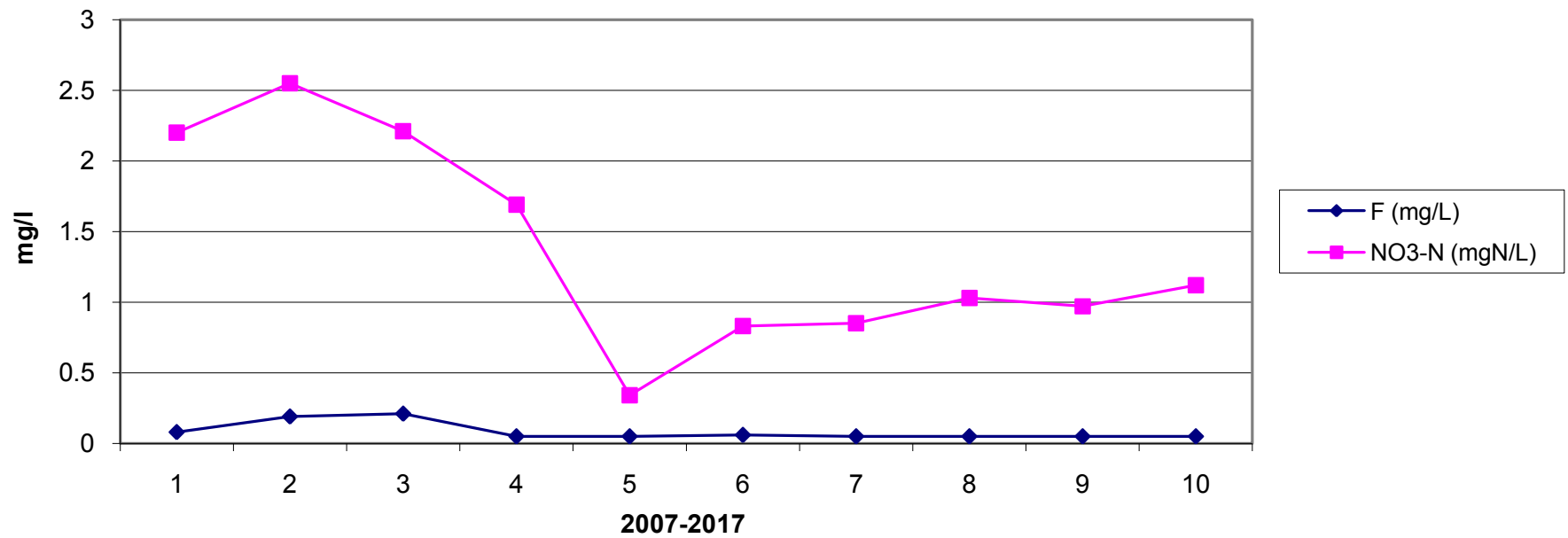
Year Wise Trend For Ghatsila Road Bridge



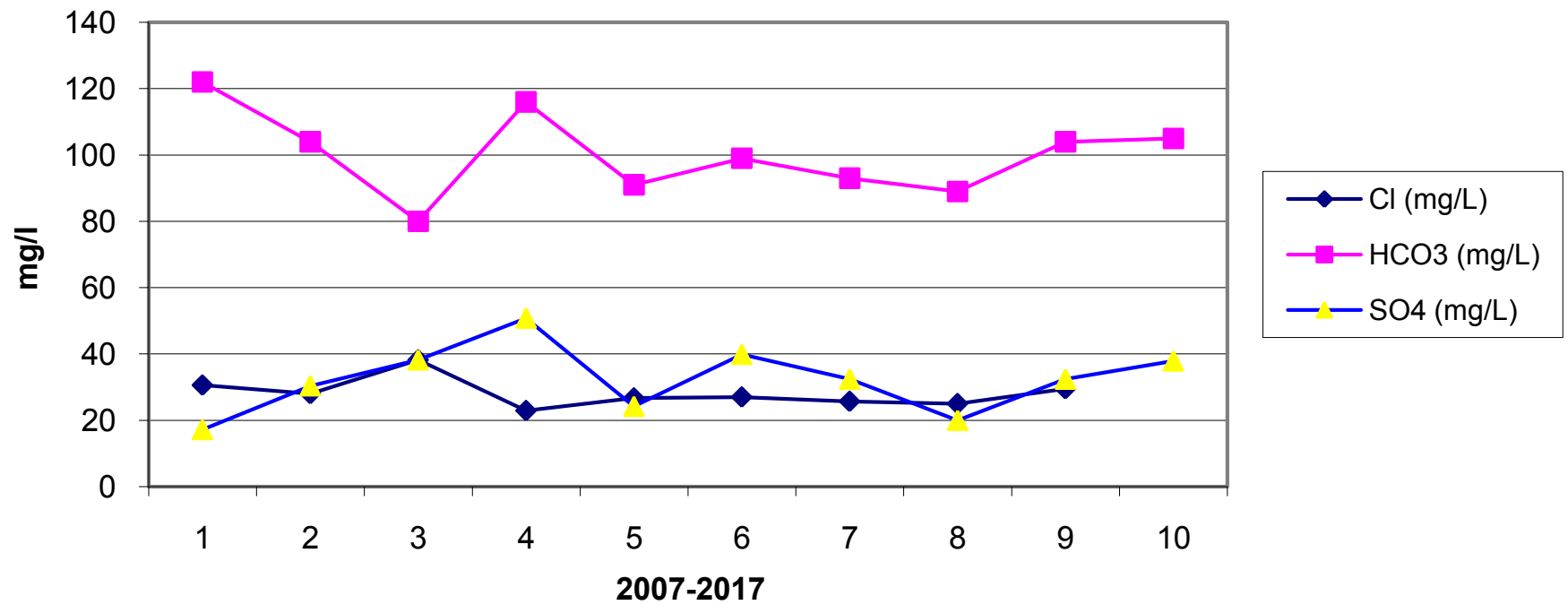
Year Wise Trend For Ghatsila road Bridge



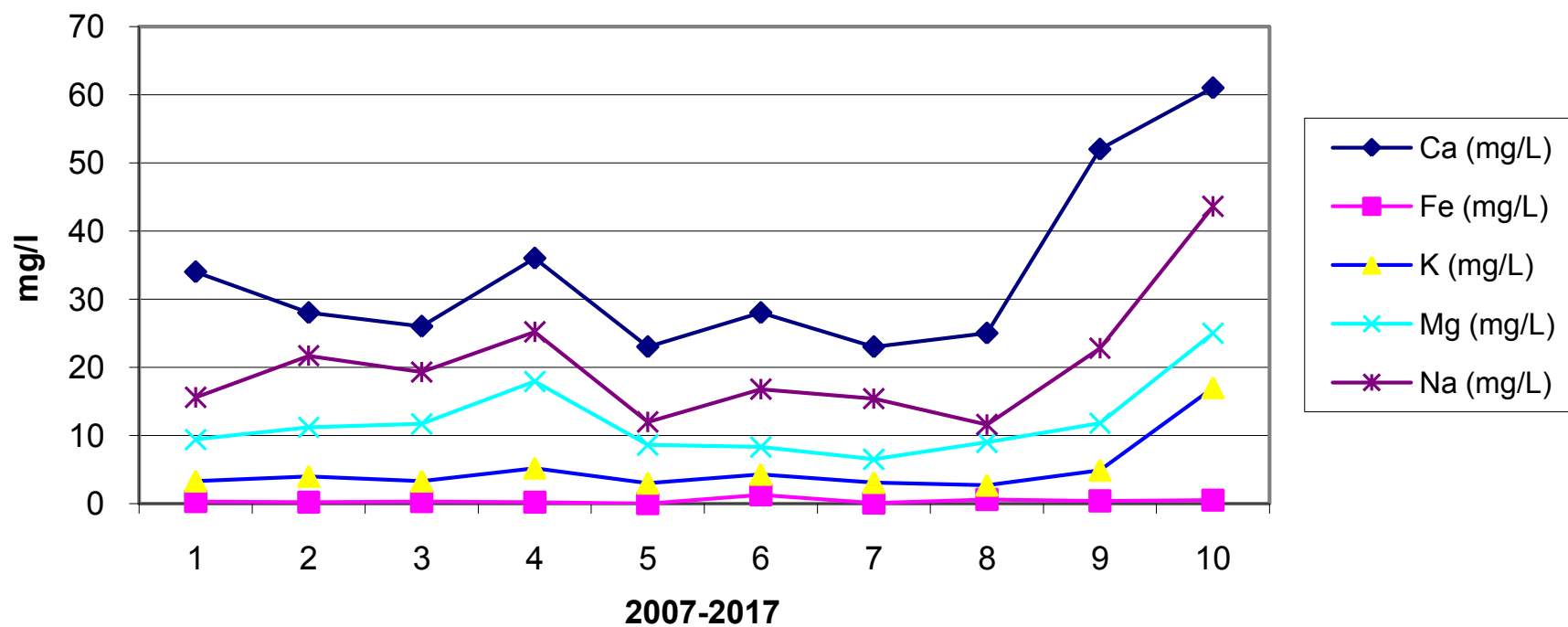
Year Wise Trend For Ghatsila Road Bridge



YEAR WISE TREND FOR GHATSHILA ROAD BRIDGE



Year wise trend for Ghatshila Road bridge



HISTORY SHEET

		Water Year	: 2016-2017
Site	: BARIDHI NALA	Code	: BARIDHI
State	: Jharkhand	District	Paschim Singbhum
Basin	: Subarnarekha	Independent River	: Subarnarekha
Tributary	: Baridhinala	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Baridhinala
Division	: E.E., Bhubaneswar	Sub-Division	: Balasore
Drainage Area	: Sq. Km.	Bank	: Left
Latitude	: °'''	Longitude	: °'''
	Opening Date	Closing Date	
Gauge	:		
Discharge	:		
Sediment	:		
Water Quality	: 01.04.1991		

Water Quality Datasheet for the period : 2016-2017

Station Name : BARIDHI NALA (BARIDHI)

Local River : Baridhinala

Division : E.E., Bhubaneswar

Sub-Division : Balasore

River Water Analysis

S.No	Parameters	01.06.2016	02.07.2016	01.08.2016	01.09.2016	01.10.2016	01.11.2016	01.12.2016	02.01.2017	01.02.2017	01.03.2017	01.04.2017	01.05.2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	136	420	230	197	230	590	636	322	295	328	478	385
4	EC_GEN (µmho/cm)	137	422	234	201	234	595	640	326	297	330	480	390
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.8	7.3	7.1	7.9	7.4	7.8	7.6	7.8	7.4	7.6	7.5	7.6
7	pH_GEN (pH units)	7.8	7.4	7.2	8.0	7.5	7.9	7.7	7.9	7.5	7.7	7.6	7.8
8	Temp (deg C)	26.5	25.0	30.2	28.0	28.0	21.0	17.5	19.5	21.0	20.0	29.0	29.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	203	79	83	83	88	83	92	79	65	79	83	111
3	B (mg/L)	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
4	Ca (mg/L)	59	61	63	61	63	61	64	63	29	67	63	53
5	Cl (mg/L)	71.7	34.0	73.6	69.8	15.1	17.0	18.9	13.2	11.3	20.8	101.5	26.4
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.3	0.5	0.6	0.4	0.1	0.4	0.5	0.4	0.6	0.6	0.5
9	HCO3 (mg/L)	248	96	101	101	107	101	113	96	79	96	101	135
10	K (mg/L)	8.3	17.8	7.9	7.8	5.9	9.4	8.2	25.1	20.2	21.1	21.1	22.0
11	Mg (mg/L)	21.4	23.3	24.3	25.3	27.2	27.2	26.2	27.2	11.7	27.2	23.3	22.4
12	Na (mg/L)	22.8	57.5	37.1	37.1	29.3	41.4	49.1	71.1	39.9	48.0	52.1	53.4
13	NO2+NO3 (mg N/L)	1.15	0.78	1.29	1.42	0.84	0.76	1.09	1.25	0.80	1.30	1.12	1.09
14	NO2-N (mgN/L)	0.03	0.01	0.00	0.00	0.03	0.07	0.00	0.00	0.01	0.03	0.03	0.04
15	NO3-N (mgN/L)	1.12	0.77	1.29	1.42	0.81	0.69	1.09	1.25	0.78	1.28	1.09	1.05
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	8.0	6.0	7.0	6.0	7.0	7.0	7.0	7.0	8.0	8.0	7.0	9.4
18	SO4 (mg/L)	73.5	113.6	120.0	113.9	16.4	18.6	18.6	18.9	19.2	21.9	22.1	28.5
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	0.6	1.4	0.2	1.6	0.4	0.8	5.6	2.2	59.0	0.8	20.0	1.2
2	DO (mg/L)	7.6	7.7	5.6	6.8	7.6	6.4	6.8	7.0	5.8	2.4	0.8	1.4
3	DO_SAT% (%)	93	94	74	86	96	71	70	75	65	26	10	18
4	FCol-MPN (MPN/100mL)								330	5	60	90	80
5	Tcol-MPN (MPN/100mL)								340	12	120	120	130
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	148	152	156	152	156	152	160	156	72	168	156	132
2	HAR_Total (mgCaCO3/L)	237	250	258	258	270	266	270	270	121	282	254	225
3	Na% (%)	17	32	23	23	19	25	28	34	37	25	29	32
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.6	1.6	1.0	1.0	0.8	1.1	1.3	1.9	1.6	1.2	1.4	1.6
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : BARIDHI NALA (BARIDHI)

Division : E.E., Bhubaneswar

Local River : Baridhinala

Sub-Division : Balasore

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	12	636	136	354
3	EC_GEN (μmho/cm)	12	640	137	357
4	pH_FLD (pH units)	12	7.9	7.1	7.6
5	pH_GEN (pH units)	12	8.0	7.2	7.7
6	Temp (deg C)	12	30.2	17.5	24.6
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	203	65	94
3	B (mg/L)	12	0.02	0.01	0.01
4	Ca (mg/L)	12	67	29	59
5	Cl (mg/L)	12	101.5	11.3	39.4
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.6	0.1	0.4
9	HCO3 (mg/L)	12	248	79	115
10	K (mg/L)	12	25.1	5.9	14.6
11	Mg (mg/L)	12	27.2	11.7	23.9
12	Na (mg/L)	12	71.1	22.8	44.9
13	NO2+NO3 (mg N/L)	12	1.42	0.76	1.07
14	NO2-N (mgN/L)	12	0.07	0.00	0.02
15	NO3-N (mgN/L)	12	1.42	0.69	1.05
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	9.4	6.0	7.3
18	SO4 (mg/L)	12	120.0	16.4	48.8
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	59.0	0.2	7.8
2	DO (mg/L)	12	7.7	0.8	5.5
3	DO_SAT% (%)	12	96	10	65
4	FCol-MPN (MPN/100mL)	5	330	5	113
5	Tcol-MPN (MPN/100mL)	5	340	12	144
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	168	72	147
2	HAR_Total (mgCaCO3/L)	12	282	121	247
3	Na% (%)	12	37	17	27
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	1.9	0.6	1.3
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : BARIDHI NALA (BARIDHI)
Local River : Baridhinala

Division : E.E., Bhubaneswar
Sub-Division : Balasore

River Water

S.No	Parameters	Flood																				
		Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	761	656	910	847	910	872		988	1070	1008	656	470	580	717	243	675	777	584	1673	738	730
3	EC_GEN (µmho/cm)	786	662	908	845	906	862		988	1066	1008	656	470	580	720	246	688	783	583	669	736	725
4	pH_FLD (pH units)	8.0	7.8	7.7	7.3	7.6	7.6		7.9	7.8	8.3	7.4	7.7	7.7	7.3	7.5	7.5	7.8	7.6	7.5	7.7	7.6
5	pH_GEN (pH units)	7.8	7.7	7.8	7.4	7.6	7.7		8.0	7.9	8.3	7.4	7.7	7.7	7.3	7.6	7.4	7.6	7.7	7.5	7.7	7.7
6	Temp (deg C)	32.3	31.3	31.3	29.7	29.7	30.1		30.5	30.1	31.3	32.4	28.8	29.5	28.5	27.5	24.1	24.9	24.0	20.4	20.2	21.4
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0		2.0	2.0	16.6			0.0	0.0	0.0						0.0
2	ALK-TOT (mgCaCO3/L)						250		160	214	176			164	112	107						170
3	B (mg/L)	0.00	0.48	0.02	0.52	0.00	0.49		0.14	0.23	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.43	0.18	0.49	0.00	0.24
4	Ca (mg/L)	77	68	86	73	94	73		88	94	57	45	33	58	40	61	70	74	57	74	76	75
5	Cl (mg/L)	36.6	50.9	63.0	61.5	53.6	67.2		77.7	83.6	64.5	50.1	42.2	64.3	35.8	52.8	45.9	56.6	49.2	49.7	46.0	53.7
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		1.9	9.6	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	2.03	1.42	1.62	3.30	4.38	1.82		1.67	2.31	0.05	0.05	0.05	0.05	0.05	0.05	0.67	0.94	1.80	2.02	1.21	2.47
8	Fe (mg/L)	0.1	0.2	0.3	0.6	0.2	0.8		0.3	0.2	0.0	1.9	0.1	0.2	0.4	0.4	0.2	0.2	0.2	0.3	0.3	0.2
9	HCO3 (mg/L)	301	175	240	259	336	317		162	276	175	134	164	169	136	131	295	253	107	139	272	208
10	K (mg/L)	8.5	7.5	6.8	17.7	11.8	15.2		21.6	28.4	25.5	21.9	9.0	25.5	21.5	9.5	8.4	16.3	11.3	7.3	10.0	17.2
11	Mg (mg/L)	25.1	16.8	21.6	26.8	29.2	30.5		20.2	26.4	14.6	11.2	10.9	14.6	8.4	24.3	19.9	21.1	13.5	21.4	22.5	18.8
12	Na (mg/L)	27.3	34.8	42.5	40.3	36.8	46.6		51.0	55.1	45.5	34.3	26.2	45.5	35.7	36.8	32.8	41.6	34.4	35.1	30.0	37.5
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	8.87	13.13	12.53	10.68	12.11	8.44		13.86	12.32	0.39	0.81	1.26	1.95	1.00	1.10	4.91	14.86	13.38	14.63	9.86	13.70
15	NO2-N (mgN/L)	0.00	0.08	0.05	0.00	0.00	0.00		0.27	0.00	0.07	0.00	0.04	0.05	0.01	0.01	0.00	0.00	0.04	0.42	0.02	0.03
16	NO3-N (mgN/L)	8.87	13.05	12.48	10.68	12.11	8.44		13.59	12.32	0.33	0.81	1.22	1.90	0.99	1.08	4.91	14.86	13.34	14.21	9.83	13.68
17	o-PO4-P (mg P/L)			0.305	0.507	0.238	0.122		0.330										0.214	0.110	0.083	0.443
18	P-Tot (mgP/L)	0.084	0.157	0.001	0.034	0.236	0.975		0.002	0.284	0.010	0.001	0.007	0.001	0.001	0.010	0.072	0.277	0.001	0.062	0.084	0.196
19	SiO2 (mg/L)	19.2	15.6	24.6	26.9	19.8	8.4		10.0	8.3	11.6	15.1	12.4	5.6	5.8	6.8	18.8	18.7	24.7	25.2	20.0	8.2
20	SO4 (mg/L)	40.7	56.2	59.2	70.7	51.1	48.0		146.8	107.6	122.1	56.7	61.4	121.9	39.0	87.5	17.6	58.6	65.3	110.4	38.3	69.5
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	151.6	39.0	73.0	55.1	68.8	49.5		33.0	68.2	39.2	36.1	0.8	32.1	13.4	0.8	34.5	74.3	67.3	53.3	51.5	47.8
2	DO (mg/L)	1.0	1.0	0.5	0.3	1.0	1.0		0.6	1.4	0.9	2.5	4.1	1.8	2.7	7.0	1.2	2.1	1.2	1.6	1.9	0.0
3	DO_SAT% (%)	14	14	6	4	13	13		8	19	12	34	53	24	34	89	13	26	15	17	21	0
4	FCol-MPN (MPN/100mL)																					
5	Tcol-MPN (MPN/100mL)																					
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	194	170	214	181	236	184		220	235	143	113	82	146	100	153	174	185	143	185	190	188
2	HAR_Total (mgCaCO3/L)	298	240	304	301	357	311		305	345	204	160	127	207	135	254	257	273	220	274	284	266
3	Na% (%)	16	24	23	22	18	24		26	25	30	28	29	29	31	23	22	23	27	21	18	22
4	RSC (-)	0.0	0.0	0.0	0.1	0.1	0.1		0.0	0.0	0.7	0.0	0.3	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.0	0.0
5	SAR (-)	0.7	1.0	1.1	1.0	0.9	1.1		1.3	1.4	1.4	1.2	1.0	1.4	1.3	1.0	0.9	1.1	1.1	0.9	0.8	1.0
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : BARIDHI NALA (BARIDHI)
Local River : Baridhinala

Division : E.E., Bhubaneswar
Sub-Division : Balasore

River Water

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		763	830	663	420	508	665	744	461	557	617	738	870	887	965		817	1090	607	743	687
3	EC_GEN (µmho/cm)		763	830	663	420	508	665	749	465	618	622	730	865	888	962		817	1090	607	743	687
4	pH_FLD (pH units)		7.5	7.2	7.6	7.1	7.7	7.5	7.5	7.7	7.7	7.8	7.8	7.3	7.7	7.7		7.4	8.1	7.3	7.4	7.3
5	pH_GEN (pH units)		7.5	7.2	7.6	7.1	7.7	7.5	7.4	7.7	7.6	7.6	7.8	7.3	7.7	7.7		7.4	8.1	7.3	7.4	7.3
6	Temp (deg C)		21.5	22.1	22.9	21.1	19.6	21.5	22.0	19.8	28.0	28.7	26.5	29.6	28.2	28.6		27.9	25.9	26.0	26.2	26.7
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	0.0				0.0	0.0					0.0	0.0		0.0	15.6	0.0		
2	ALK-TOT (mgCaCO3/L)		92	210	85				98	80					563	248		169	241	102		
3	B (mg/L)		0.11	0.17	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.60	0.00	0.34	0.00	0.07		0.17	0.27	0.01	0.00	0.00
4	Ca (mg/L)		62	79	47	41	41	60	38	54	54	76	75	76	93	96		49	97	17	45	45
5	Cl (mg/L)		69.0	66.0	37.2	27.7	49.7	50.0	17.9	15.1	45.8	56.4	47.4	66.3	57.7	62.7		87.0	75.4	39.6	14.8	56.8
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	18.8	0.0	0.0	0.0
7	F (mg/L)		0.87	0.72	0.05	0.05	0.05	0.05	0.05	0.05	0.00	3.35	2.21	0.98	1.03	1.18		3.16	0.64	0.05	0.05	0.05
8	Fe (mg/L)		0.2	0.1	0.0	1.9	0.1	0.2	0.3	0.3	0.4	0.2	0.2	0.6	0.3	0.3		0.2	0.7	0.0	1.9	0.2
9	HCO3 (mg/L)		113	256	104	136	139	155	120	97	238	166	205	296	302	303		207	256	124	114	153
10	K (mg/L)		17.1	17.9	21.2	16.3	7.5	25.8	4.1	15.7	6.0	14.0	11.0	15.2	11.9	14.4		26.5	25.4	11.0	24.0	5.5
11	Mg (mg/L)		18.5	20.4	6.1	11.4	13.3	9.0	7.8	23.1	15.9	18.1	22.8	28.2	20.9	27.6		24.6	32.4	5.0	10.3	11.2
12	Na (mg/L)		49.8	46.2	30.6	31.3	26.1	38.6	20.3	50.4	30.5	36.0	29.7	42.9	38.3	42.4		63.7	50.3	26.7	43.5	21.3
13	NH3-N (mg N/L)															0.05						
14	NO2+NO3 (mg N/L)		10.74	7.72	0.41	0.72	1.37	1.10	1.03	0.97	1.84	7.12	13.44	9.35	9.41	8.83		7.37	12.43	0.40	0.73	1.27
15	NO2-N (mgN/L)		0.26	0.00	0.07	0.00	0.06	0.01	0.01	0.02	0.00	0.02	0.06	0.00	0.00	0.11		0.12	0.00	0.07	0.00	0.00
16	NO3-N (mgN/L)		10.48	7.72	0.34	0.72	1.32	1.09	1.02	0.95	1.84	7.10	13.38	9.35	9.41	8.72		7.24	12.43	0.33	0.73	1.26
17	o-PO4-P (mg P/L)		0.275										0.346	0.140	0.186	0.111		0.180				
18	P-Tot (mgP/L)		0.002	0.305	0.010	0.001	0.005	0.001	0.010	0.010	0.039	0.107	0.001	0.104	0.198	0.141		0.001	0.293	0.010	0.001	0.007
19	SiO2 (mg/L)		8.9	5.4	11.5	23.3	14.1	7.0	5.5	7.3	16.2	21.3	22.5	25.1	25.2	8.8		7.8	7.2	10.7	24.7	13.7
20	SO4 (mg/L)		117.0	58.8	62.2	68.6	81.6	77.9	24.0	18.8	10.5	109.7	65.9	49.8	46.5	73.7		64.0	137.4	25.7	57.4	67.4
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		60.0	11.6	68.5	1.7	15.4	11.4	1.1	16.9	91.3	90.3	124.5	60.2	133.0	53.7		47.3	38.3	16.7	6.9	40.1
2	DO (mg/L)		0.8	3.7	0.0	6.3	3.9	3.8	4.8	6.5	1.1	0.0	0.0	1.3	0.0	0.0		0.0	1.6	0.0	0.4	1.7
3	DO_SAT% (%)		10	43	0	70	42	42	53	70	14	0	0	18	0	0		0	19	0	5	20
4	FCol-MPN (MPN/100mL)									168												
5	Tcol-MPN (MPN/100mL)									176												
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		155	197	117	103	102	149	95	135	135	189	189	189	232	240		123	243	43	113	113
2	HAR_Total (mgCaCO3/L)		232	282	143	150	157	187	128	231	201	265	273	307	319	355		226	378	64	156	160
3	Na% (%)		31	24	27	27	25	28	24	31	24	22	20	23	20	20		35	22	46	29	22
4	RSC (-)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0		0.0	0.0	0.8	0.0	0.0
5	SAR (-)		1.5	1.2	1.1	1.1	0.9	1.2	0.8	1.5	0.9	1.0	0.8	1.1	0.9	1.0		1.9	1.2	1.8	1.5	0.7
	PESTICIDES																					

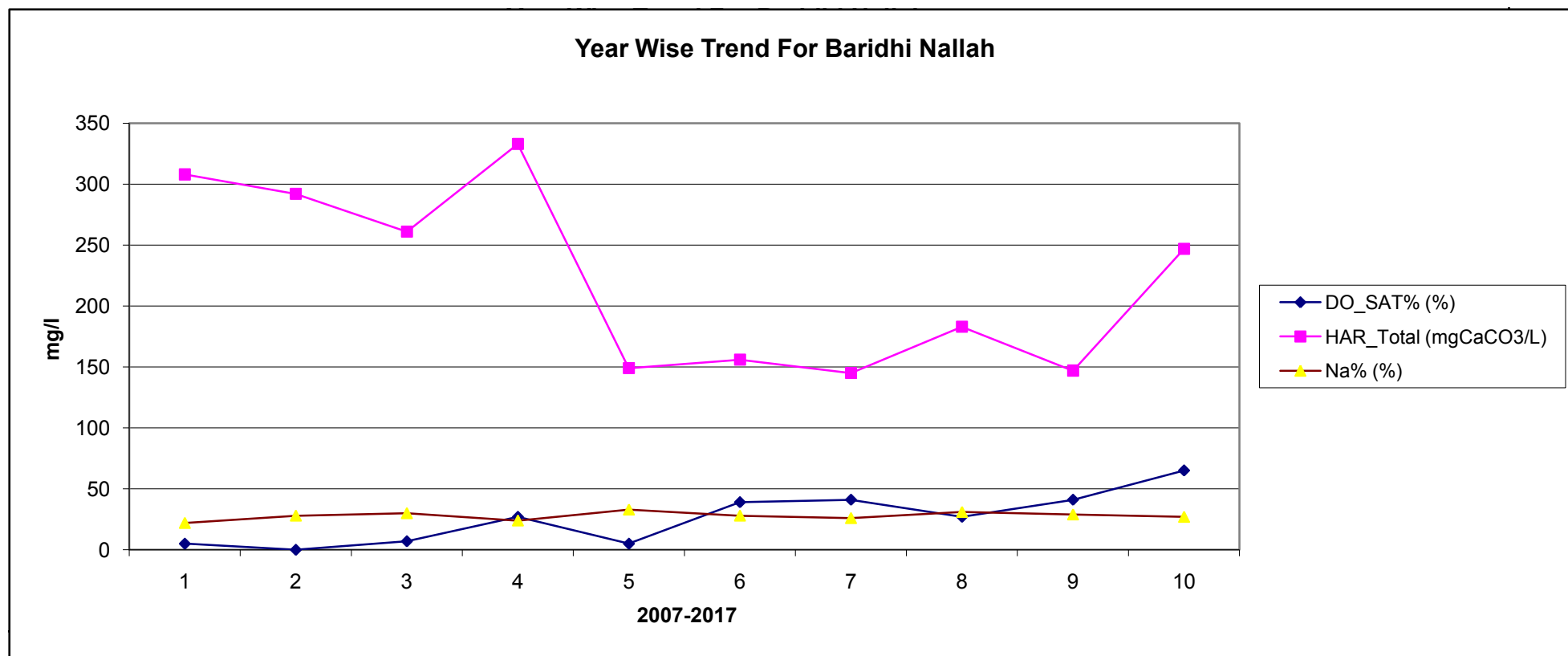
Water Quality Seasonal Average for the period: 2002-2017

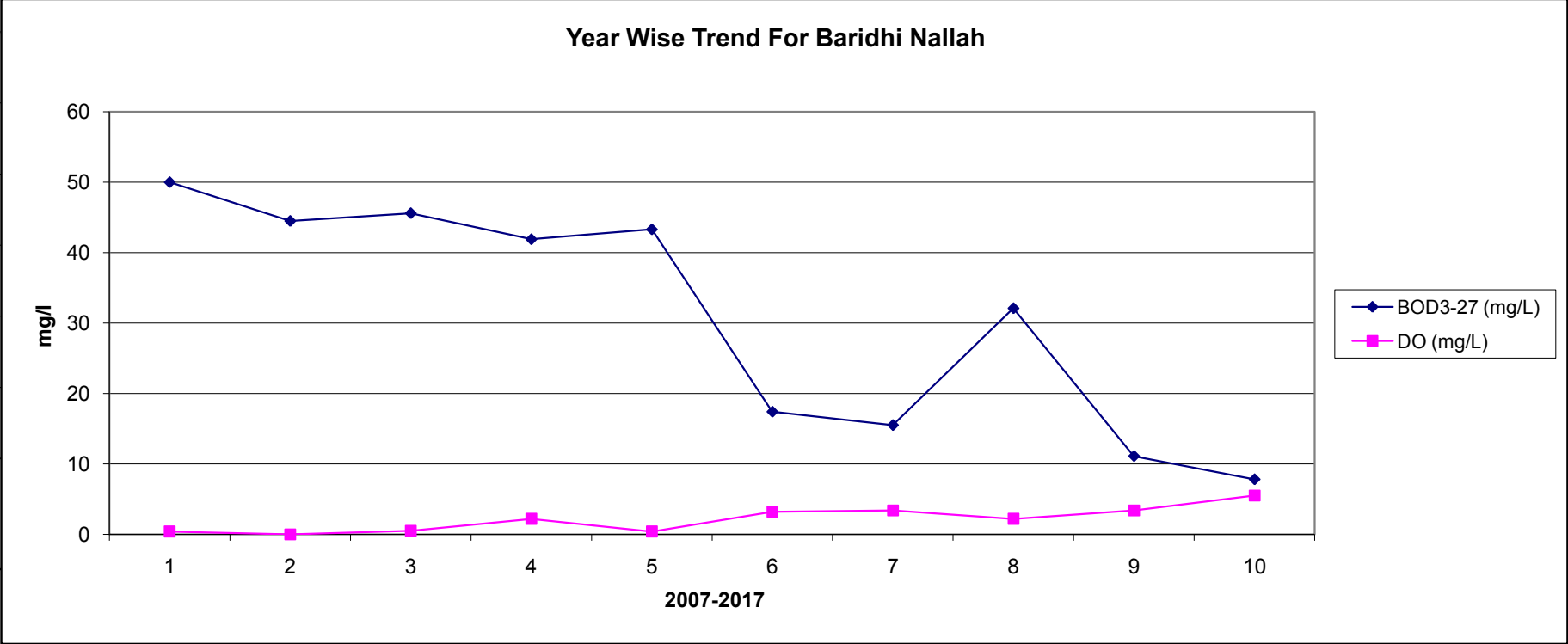
Station Name : BARIDHI NALA (BARIDHI)
Local River : Baridhinala

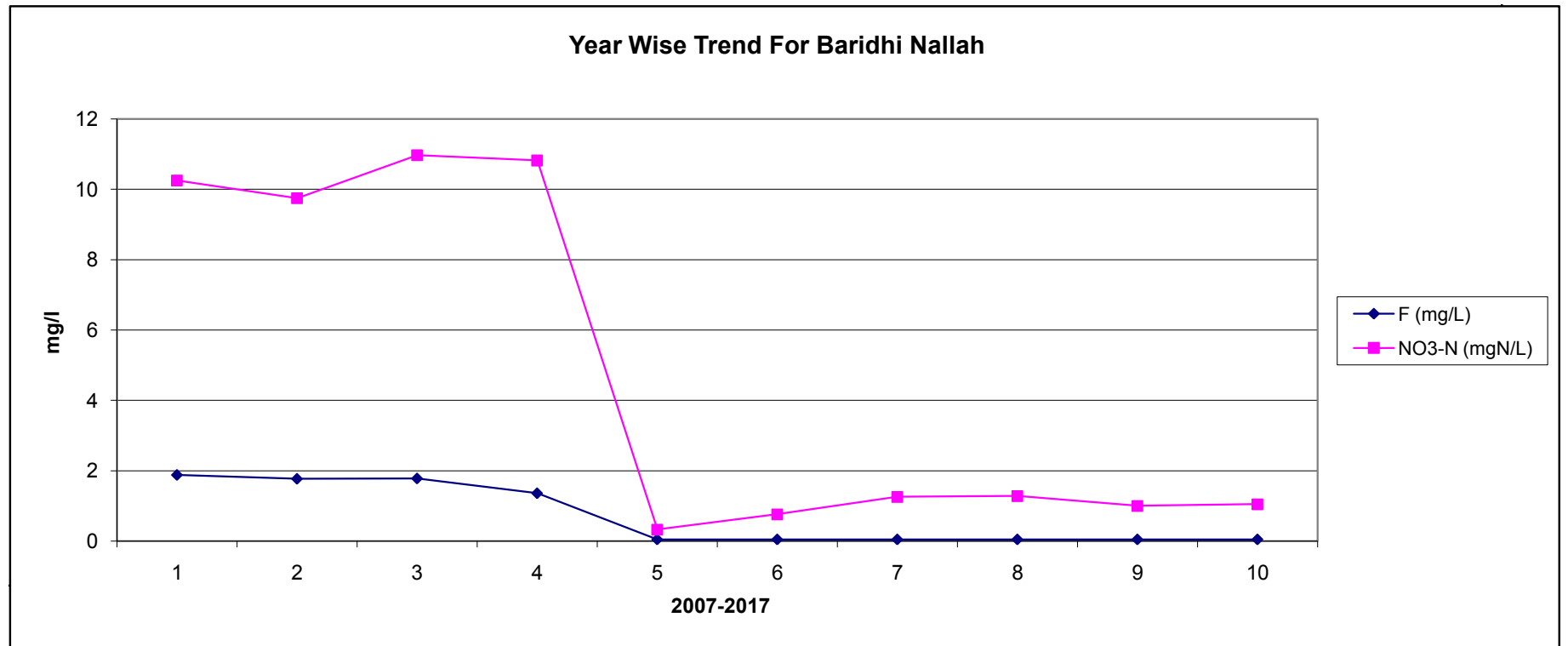
Division : E.E., Bhubaneswar
Sub-Division : Balasore

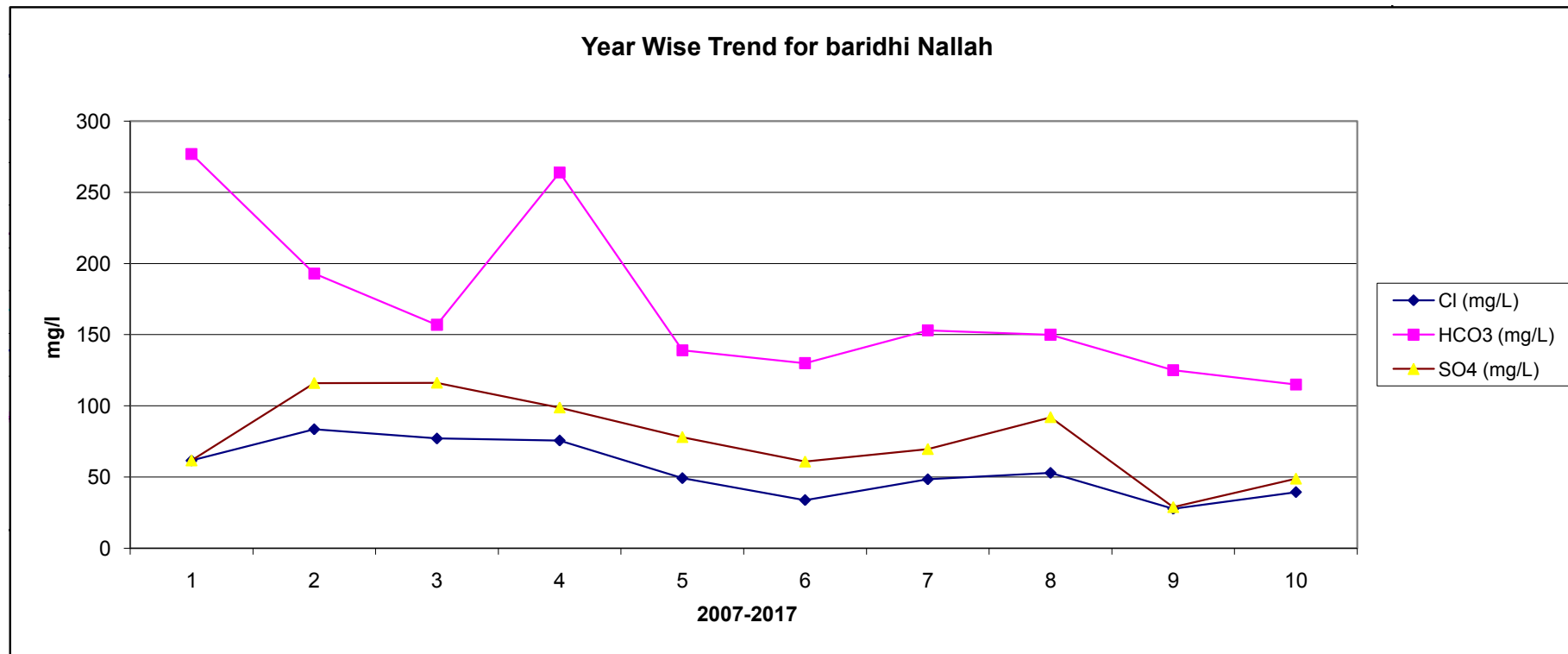
River Water

S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	952	577	397
3	EC_GEN (µmho/cm)	952	579	400
4	pH_FLD (pH units)	7.3	7.3	7.6
5	pH_GEN (pH units)	7.3	7.3	7.7
6	Temp (deg C)	27.5	29.8	26.0
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	137	92	91
3	B (mg/L)	0.00	0.01	0.01
4	Ca (mg/L)	41	50	61
5	Cl (mg/L)	37.8	27.0	49.5
6	CO3 (mg/L)	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.6	0.4	0.6
9	HCO3 (mg/L)	109	113	111
10	K (mg/L)	17.9	5.3	21.4
11	Mg (mg/L)	16.5	15.9	24.3
12	Na (mg/L)	37.6	40.0	51.2
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	0.50	0.99	1.17
15	NO2-N (mgN/L)	0.02	0.00	0.03
16	NO3-N (mgN/L)	0.48	0.98	1.14
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.010	0.010
19	SiO2 (mg/L)	4.8	5.7	8.1
20	SO4 (mg/L)	61.1	18.2	24.2
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	59.7	20.5	7.3
2	DO (mg/L)	0.8	2.8	1.5
3	DO_SAT% (%)	10	37	18
4	FCoI-MPN (MPN/100mL)			77
5	TcoI-MPN (MPN/100mL)			123
	TRACE & TOXIC			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	102	126	152
2	HAR_Total (mgCaCO3/L)	171	192	254
3	Na% (%)	34	31	29
4	RSC (-)	0.0	0.0	0.0
5	SAR (-)	1.5	1.3	1.4
	PESTICIDES			

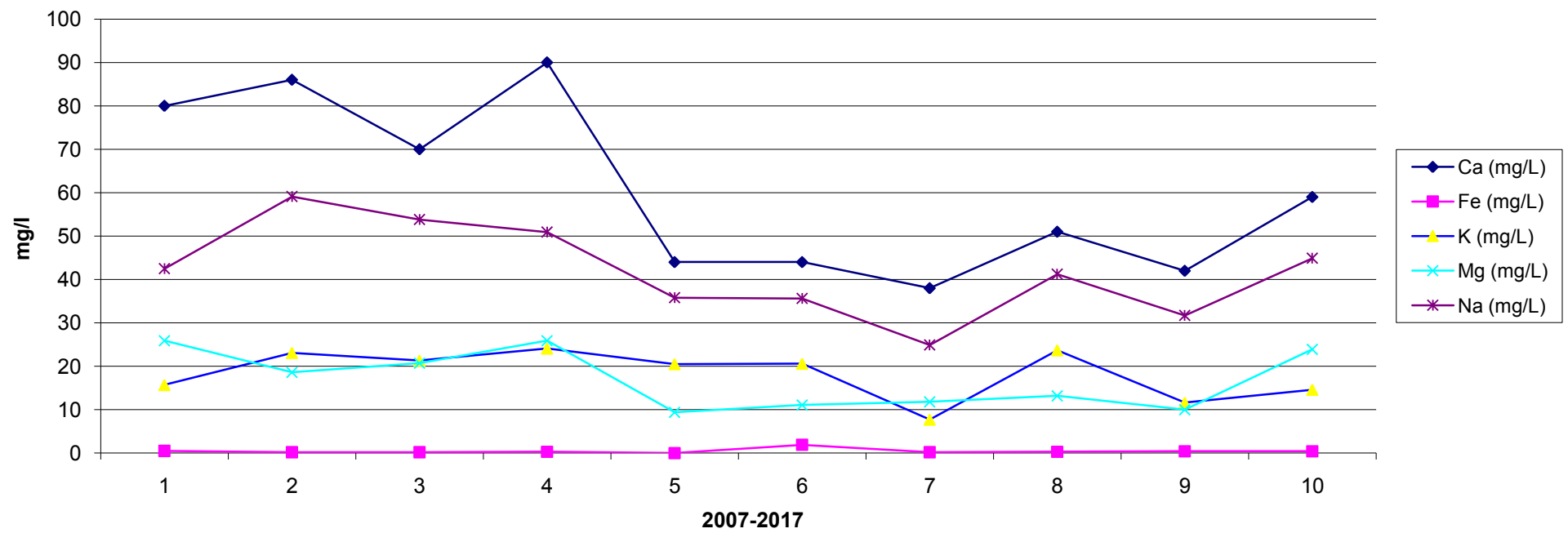








Year wise trend for Baridhi Nallah



HISTORY SHEET

		Water Year	: 2016-2017
Site	: KULPATANGA	Code	: KULPATANGA
State	: Jharkhand	District	Dumka
Basin	: Subarnarekha	Independent River	: Subarnarekha
Tributary	: Kharkhai	Sub Tributary	:
Sub-Sub Tributary	:	Local River	: Kharkhai
Division	: E.E., Bhubaneswar	Sub-Division	: Balasore
Drainage Area	: Sq. Km.	Bank	: Left
Latitude	: °'''	Longitude	: °'''
	Opening Date	Closing Date	
Gauge	:		
Discharge	:		
Sediment	:		
Water Quality	: 01.04.1991		

Water Quality Datasheet for the period : 2016-2017

Station Name : KULPATANGA (KULPATANGA)

Local River : Kharkhai

Division : E.E., Bhubaneswar

Sub-Division : Balasore

River Water Analysis

S.No	Parameters	01.06.2016	02.07.2016	01.08.2016	01.09.2016	01.10.2016	01.11.2016	01.12.2016	02.01.2017	01.02.2017	01.03.2017	01.04.2017	01.05.2017
		A	A	A	A	A	A	A	A	A	A	A	A
	PHYSICAL												
1	Q (cumec)												
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Light Brown	Light Brown	Clear	Clear	Clear	Clear	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	340	253	198	228	221	678	681	527	366	345	467	571
4	EC_GEN (µmho/cm)	341	257	201	231	226	680	685	529	368	347	470	555
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	8.3	8.1	7.8	8.1	7.9	8.0	8.3	7.7	8.1	8.2	8.0	8.2
7	pH_GEN (pH units)	8.4	8.2	7.9	8.1	7.9	8.2	8.4	7.7	8.1	8.3	8.0	8.2
8	Temp (deg C)	31.3	31.5	30.5	31.5	30.5	26.5	22.0	19.0	20.5	25.0	30.5	30.0
	CHEMICAL												
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	106	97	92	102	88	88	83	92	88	125	28	106
3	B (mg/L)	0.01	0.02	0.01	0.02	0.01	0.02	0.01	0.01	0.02	0.01	0.03	0.03
4	Ca (mg/L)	40	61	58	56	51	53	53	51	51	53	50	40
5	Cl (mg/L)	28.3	13.2	30.2	32.1	11.3	13.2	11.3	15.1	15.1	22.6	34.0	41.5
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.2	0.1	0.5	0.6	0.6	0.3	0.4	0.3	0.5	0.4	0.4
9	HCO3 (mg/L)	130	118	113	124	107	107	101	113	107	152	34	130
10	K (mg/L)	2.2	6.7	5.9	6.0	4.2	3.1	4.1	23.0	43.0	33.4	34.0	26.1
11	Mg (mg/L)	10.7	24.3	23.3	22.4	20.4	21.4	21.4	22.4	22.4	23.3	20.4	15.6
12	Na (mg/L)	26.0	33.2	30.6	30.8	29.4	38.7	39.8	71.1	67.6	62.5	69.4	69.9
13	NO2+NO3 (mg N/L)	0.95	0.88	1.11	1.15	1.25	0.94	1.33	1.15	0.85	1.18	1.11	1.12
14	NO2-N (mgN/L)	0.00	0.00	0.00	0.03	0.00	0.03	0.01	0.00	0.03	0.00	0.03	0.01
15	NO3-N (mgN/L)	0.95	0.88	1.11	1.12	1.25	0.91	1.32	1.15	0.83	1.18	1.08	1.11
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	6.0	6.0	6.0	7.0	6.0	6.0	6.0	8.0	7.0	8.5	9.6
18	SO4 (mg/L)	16.1	16.6	17.2	18.4	5.7	6.5	6.6	6.9	7.2	13.0	12.8	42.6
	BIOLOGICAL/BACTERIOLOGICAL												
1	BOD3-27 (mg/L)	1.4	2.4	0.2	0.4	0.4	1.0	1.0	1.2	0.8	1.0	1.2	0.8
2	DO (mg/L)	7.9	12.5	5.4	6.4	8.3	6.2	7.9	8.5	10.1	6.6	4.6	6.8
3	DO_SAT% (%)	107	169	71	86	110	76	91	92	112	79	61	89
4	FCol-MPN (MPN/100mL)						70	70	70	60	170	20	40
5	Tcol-MPN (MPN/100mL)						330	90	120	170	270	80	90
	TRACE & TOXIC												
	CHEMICAL INDICES												
1	HAR_Ca (mgCaCO3/L)	100	152	144	140	128	132	132	128	128	132	124	100
2	HAR_Total (mgCaCO3/L)	145	254	242	233	213	221	221	221	221	229	209	165
3	Na% (%)	28	22	21	22	23	27	28	38	35	33	38	44
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.9	0.9	0.9	0.9	0.9	1.1	1.2	2.1	2.0	1.8	2.1	2.4
	PESTICIDES												

Water Quality Summary for the period : 2016-2017

Station Name : KULPATANGA (KULPATANGA)

Division : E.E., Bhubaneswar

Local River : Kharkhai

Sub-Division : Balasore

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (µmho/cm)	12	681	198	406
3	EC_GEN (µmho/cm)	12	685	201	408
4	pH_FLD (pH units)	12	8.3	7.7	8
5	pH_GEN (pH units)	12	8.4	7.7	8.1
6	Temp (deg C)	12	31.5	19.0	27.4
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	12	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	12	125	28	91
3	B (mg/L)	12	0.03	0.01	0.02
4	Ca (mg/L)	12	61	40	51
5	Cl (mg/L)	12	41.5	11.3	22.3
6	CO3 (mg/L)	12	0.0	0.0	0
7	F (mg/L)	12	0.05	0.05	0.05
8	Fe (mg/L)	12	0.6	0.1	0.4
9	HCO3 (mg/L)	12	152	34	111
10	K (mg/L)	12	43.0	2.2	16
11	Mg (mg/L)	12	24.3	10.7	20.7
12	Na (mg/L)	12	71.1	26.0	47.4
13	NO2+NO3 (mg N/L)	12	1.33	0.85	1.08
14	NO2-N (mgN/L)	12	0.03	0.00	0.01
15	NO3-N (mgN/L)	12	1.32	0.83	1.07
16	P-Tot (mgP/L)	12	0.010	0.010	0.01
17	SiO2 (mg/L)	12	9.6	6.0	6.8
18	SO4 (mg/L)	12	42.6	5.7	14.1
	BIOLOGICAL/BACTERIOLOGICAL				
1	BOD3-27 (mg/L)	12	2.4	0.2	1
2	DO (mg/L)	12	12.5	4.6	7.6
3	DO_SAT% (%)	12	169	61	95
4	FCol-MPN (MPN/100mL)	7	170	20	71
5	Tcol-MPN (MPN/100mL)	7	330	80	164
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	12	152	100	129
2	HAR_Total (mgCaCO3/L)	12	254	145	215
3	Na% (%)	12	44	21	30
4	RSC (-)	12	0.0	0.0	0
5	SAR (-)	12	2.4	0.9	1.4
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : KULPATANGA (KULPATANGA)

Division : E.E., Bhubaneswar

Local River : Kharkhai

River Water

Sub-Division : Balasore

S.No	Parameters	Flood Jun - Oct																				
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)	299	270	267	240	217	222		242	466	266	235	150	248	375	248	248	247	253	285	298	277
3	EC_GEN (µmho/cm)	301	272	267	238	213	219		242	466	266	235	150	248	378	251	259	237	253	280	296	275
4	pH_FLD (pH units)	7.9	7.8	7.9	7.8	8.0	7.9		7.9	7.8	8.3	7.9	7.6	8.1	7.6	8.0	7.8	7.6	8.2	8.1	8.2	8.1
5	pH_GEN (pH units)	7.9	7.7	7.9	7.9	8.0	8.0		7.9	7.8	8.3	7.9	7.6	8.1	7.6	8.1	7.8	7.4	8.2	8.2	8.1	8.2
6	Temp (deg C)	30.8	30.3	30.7	28.9	29.0	28.6		28.2	29.9	28.6	31.0	28.2	30.5	30.4	31.1	23.5	21.3	18.9	19.0	18.8	16.3
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)						0.0		3.2	0.8	10.1		3.4	0.0	0.0	0.0						
2	ALK-TOT (mgCaCO3/L)						54		58	90	90		75	113	83	97						
3	B (mg/L)	0.00	0.00	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00
4	Ca (mg/L)	30	27	18	25	22	22		20	43	20	24	23	22	28	53	24	26	20	28	33	30
5	Cl (mg/L)	21.8	15.7	21.5	20.7	18.0	18.2		17.5	33.5	24.5	15.1	21.5	24.5	14.3	23.0	14.4	19.4	26.2	25.6	23.1	22.1
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0		3.8	1.0	12.2	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
7	F (mg/L)	0.27	0.33	0.75	0.24	0.32	0.23		0.57	0.21	0.05	0.06	0.05	0.05	0.05	0.05	0.16	0.13	0.73	0.29	0.33	0.25
8	Fe (mg/L)	0.3	0.3	0.2	0.3	0.4	0.2		0.4	0.1	0.0	3.7	0.2	0.3	0.5	0.4	0.2	0.2	0.2	0.2	0.2	0.2
9	HCO3 (mg/L)	112	84	60	86	86	80		63	108	85	97	81	137	101	118	103	100	68	101	108	103
10	K (mg/L)	5.2	2.0	3.3	3.1	3.0	2.5		1.6	3.8	1.6	1.4	2.4	1.5	1.7	5.0	2.9	2.5	4.1	2.9	2.6	2.8
11	Mg (mg/L)	8.0	7.3	4.0	5.2	5.7	6.2		9.7	13.4	8.6	5.2	6.9	8.6	12.1	20.2	8.7	5.2	5.0	7.9	8.7	7.4
12	Na (mg/L)	14.8	10.9	14.6	13.9	11.7	12.2		12.3	21.4	12.2	8.3	13.5	6.3	11.3	30.0	10.5	14.2	17.7	17.0	14.9	15.4
13	NH3-N (mg N/L)																					
14	NO2+NO3 (mg N/L)	2.96	3.92		1.58	1.76	1.74		3.78	1.82	0.41	0.80	0.73	1.04	0.97	1.07	2.17	1.16		2.49	3.97	2.45
15	NO2-N (mgN/L)	0.01	0.03		0.01	0.01	0.02		0.03	0.00	0.07	0.00	0.02	0.06	0.03	0.01	0.00	0.03		0.00	0.02	0.00
16	NO3-N (mgN/L)	2.95	3.90		1.58	1.74	1.72		3.75	1.82	0.34	0.80	0.70	0.98	0.94	1.06	2.17	1.13		2.48	3.94	2.45
17	o-PO4-P (mg P/L)				0.073	0.116	0.116		0.078	0.124										0.070	0.056	0.169
18	P-Tot (mgP/L)	0.116	0.083	0.001	0.064	0.116	0.346		0.002	0.168	0.010	0.001	0.002	0.001	0.001	0.010	0.074	0.074	0.001	0.070	0.056	0.001
19	SiO2 (mg/L)	12.0	12.5	32.3	26.8	11.4	9.7		7.8	8.5	10.8	11.4	10.0	8.4	5.8	6.2	11.1	17.4	33.0	20.6	17.9	9.3
20	SO4 (mg/L)	13.4	14.1	20.6	10.5	8.1	9.0		17.2	59.3	10.7	48.9	28.7	32.4	6.0	14.8	9.3	5.6	22.6	12.5	12.8	9.5
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)	1.7	1.0	47.7	1.1	1.5	1.3		2.0	10.0	5.8	1.0	0.7	0.3	0.7	1.0	1.4	0.8	1.5	1.5	1.3	2.3
2	DO (mg/L)	6.2	5.5	5.3	6.4	6.8	6.5		6.1	5.2	5.9	6.2	6.9	6.3	6.7	8.1	6.9	7.6	8.4	7.9	8.2	8.1
3	DO_SAT% (%)	83	73	72	83	88	84		78	69	75	83	88	83	89	108	81	86	90	84	87	81
4	FCol-MPN (MPN/100mL)																					
5	Tcol-MPN (MPN/100mL)																					
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)	76	68	46	61	56	56		49	108	50	61	57	56	71	133	59	65	50	71	82	75
2	HAR_Total (mgCaCO3/L)	109	98	68	83	80	82		89	164	85	83	86	92	121	217	95	87	71	104	118	105
3	Na% (%)	22	22	32	26	25	26		24	22	21	17	25	13	16	23	19	25	34	25	22	24
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.6	0.5	0.8	0.7	0.6	0.6		0.6	0.7	0.6	0.4	0.6	0.3	0.5	0.9	0.5	0.7	0.9	0.7	0.6	0.7
	PESTICIDES																					

Water Quality Seasonal Average for the period: 2002-2017

Station Name : KULPATANGA (KULPATANGA)

Division : E.E., Bhubaneswar

Local River : Kharkhai

River Water

Sub-Division : Balasore

S.No	Parameters	Winter									Summer											
		Nov - Feb									Mar - May											
		2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
	PHYSICAL																					
1	Q (cumec)																					
2	EC_FLD (µmho/cm)		348	630	335	265	234	333	651	563	470	360	413	408	348	359		943	1717	617	340	270
3	EC_GEN (µmho/cm)		348	630	335	265	234	333	650	566	577	368	413	403	344	368		943	1717	617	340	270
4	pH_FLD (pH units)		7.9	7.6	7.9	7.6	8.2	8.1	7.9	8.0	7.8	7.8	7.8	7.5	8.1	8.2		7.7	8.4	7.5	7.9	8.0
5	pH_GEN (pH units)		7.9	7.6	7.9	7.6	8.2	8.1	8.0	8.1	7.7	7.6	7.8	7.5	8.1	8.2		7.7	8.4	7.5	7.9	8.0
6	Temp (deg C)		19.9	20.8	19.8	19.4	21.9	20.5	22.1	22.0	27.0	26.0	28.3	27.1	26.2	27.0		29.2	25.3	27.5	28.2	27.2
	CHEMICAL																					
1	Alk-Phen (mgCaCO3/L)		0.0	0.0	0.0		9.3	0.0	5.8	0.0					0.0			2.7	37.1	0.0		0.0
2	ALK-TOT (mgCaCO3/L)		95	119	94		138	108	94	88					223			185	341	172		133
3	B (mg/L)		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.01	0.00	0.00	0.00		0.00	0.00	0.01	0.00	0.00
4	Ca (mg/L)		36	48	36	27	24	32	27	52	52	34	39	38	34	41		71	120	49	26	29
5	Cl (mg/L)		24.3	54.2	21.7	17.9	25.7	18.9	17.4	13.7	22.7	29.9	24.6	42.3	20.7	27.5		90.4	164.1	44.6	21.9	33.3
6	CO3 (mg/L)		0.0	0.0	0.0	0.0	8.4	0.0	6.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5		3.2	44.7	0.0	0.0	0.0
7	F (mg/L)		0.33	0.24	0.05	0.06	0.05	0.05	0.05	0.05	0.54	0.29	0.64	0.24	0.25	0.43		0.59	1.15	0.05	0.06	0.05
8	Fe (mg/L)		0.3	0.1	0.0	1.2	0.1	0.2	0.3	0.4	0.4	0.1	0.2	0.2	0.3	0.2		0.3	0.2	0.0	1.1	0.1
9	HCO3 (mg/L)		107	145	115	131	127	135	100	107	200	115	173	123	146	152		219	325	210	132	133
10	K (mg/L)		1.6	3.8	2.0	1.3	2.9	1.7	3.2	18.3	4.2	4.2	8.5	6.3	4.0	3.7		15.4	22.7	6.4	1.7	3.1
11	Mg (mg/L)		11.4	22.1	8.0	11.2	5.7	11.7	8.5	21.9	14.3	9.4	11.3	11.2	12.6	7.5		30.8	50.5	8.1	12.8	6.8
12	Na (mg/L)		15.3	39.6	16.0	14.4	16.5	13.8	23.9	54.3	17.4	20.4	15.3	28.3	13.5	19.7		67.4	110.8	30.2	17.4	18.5
13	NH3-N (mg N/L)															0.05						
14	NO2+NO3 (mg N/L)		1.89	3.23	0.43	0.80	0.82	1.15	0.99	1.07	2.98	6.75		4.52	3.35	2.46		12.11	16.22	0.41	0.81	0.71
15	NO2-N (mgN/L)		0.06	0.00	0.07	0.00	0.03	0.01	0.01	0.02	0.00	0.00		0.00	0.00	0.00		0.08	0.22	0.07	0.00	0.00
16	NO3-N (mgN/L)		1.83	3.23	0.36	0.80	0.79	1.14	0.98	1.05	2.98	6.75		4.52	3.35	2.46		12.03	16.00	0.34	0.81	0.71
17	o-PO4-P (mg P/L)		0.088											0.088	0.031	0.098		0.247				
18	P-Tot (mgP/L)		0.001	0.046	0.010	0.001	0.001	0.001	0.010	0.010	0.066	0.114	0.001	0.081	0.032	0.050		0.001	0.074	0.010	0.001	0.004
19	SiO2 (mg/L)		8.3	5.6	12.5	12.0	11.9	7.9	5.5	6.5	14.4	11.2	32.6	17.4	18.5	11.0		9.8	9.0	10.3	11.3	12.3
20	SO4 (mg/L)		35.0	84.3	15.9	5.5	32.2	35.9	5.7	6.8	22.1	15.8	20.9	33.2	6.9	14.0		103.2	169.9	48.5	7.8	41.4
	BIOLOGICAL/BACTERIOLOGICAL																					
1	BOD3-27 (mg/L)		2.2	2.5	2.5	0.8	0.5	1.0	1.0	1.0	19.1	1.8	1.4	5.3	17.3	1.8		20.0	14.7	10.8	1.1	0.5
2	DO (mg/L)		7.1	7.2	6.0	7.6	8.0	9.1	8.1	8.2	3.0	6.8	5.7	4.0	5.9	6.1		0.0	2.6	1.1	6.4	6.8
3	DO_SAT% (%)		78	79	65	82	91	99	93	93	37	84	73	51	72	77		0	30	12	80	85
4	FCol-MPN (MPN/100mL)									68												
5	Tcol-MPN (MPN/100mL)									178												
	TRACE & TOXIC																					
	CHEMICAL INDICES																					
1	HAR_Ca (mgCaCO3/L)		89	120	90	67	60	80	67	130	129	86	97	94	84	102		177	299	123	65	72
2	HAR_Total (mgCaCO3/L)		137	212	124	113	84	128	103	221	189	125	145	141	137	133		305	510	157	118	100
3	Na% (%)		19	27	22	22	29	18	30	32	17	24	18	29	17	25		31	31	24	24	28
4	RSC (-)		0.0	0.0	0.0	0.0	0.8	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.7	0.1	0.4
5	SAR (-)		0.6	1.1	0.6	0.6	0.8	0.5	1.0	1.6	0.5	0.8	0.6	1.1	0.5	0.8		1.7	2.2	1.0	0.7	0.8
	PESTICIDES																					

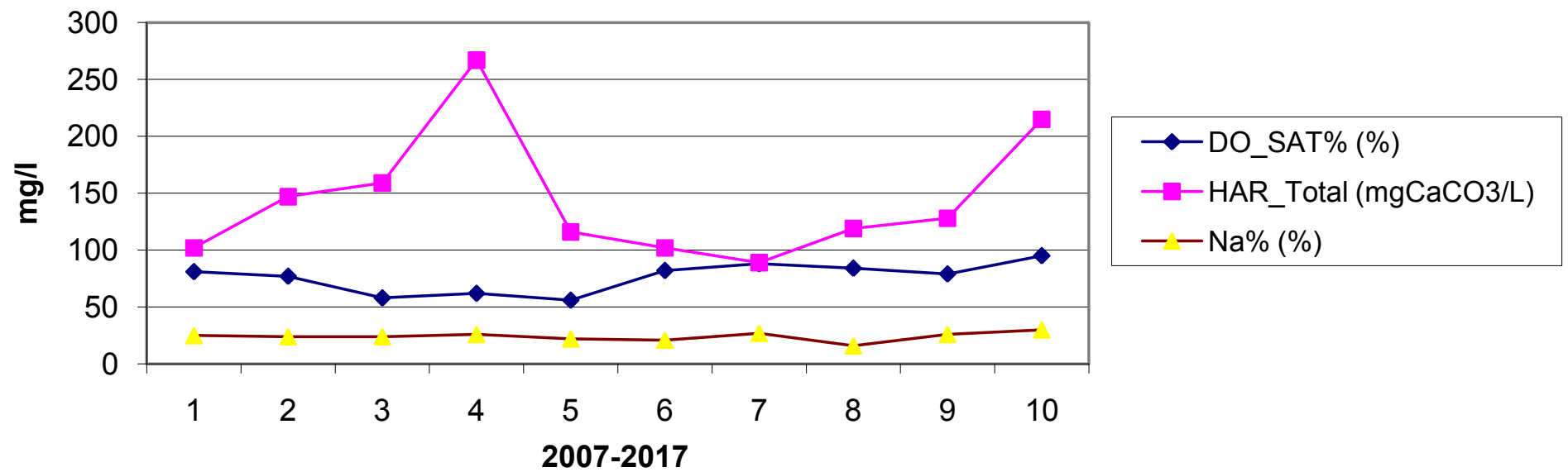
Water Quality Seasonal Average for the period: 2002-2017

Station Name : KULPATANGA (KULPATANGA)
Local River : Kharkhai

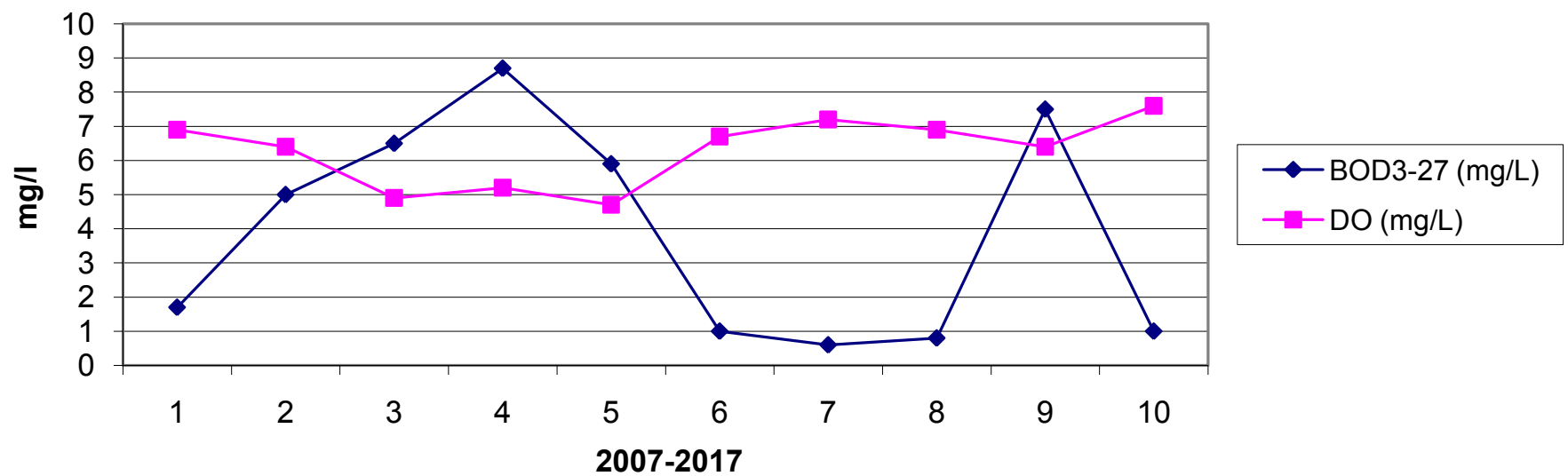
Division : E.E., Bhubaneswar
Sub-Division : Balasore

River Water				
S.No	Parameters			
		2015	2016	2017
	PHYSICAL			
1	Q (cumec)			
2	EC_FLD (µmho/cm)	499	1224	461
3	EC_GEN (µmho/cm)	499	1221	457
4	pH_FLD (pH units)	7.9	8.0	8.1
5	pH_GEN (pH units)	7.9	8.0	8.1
6	Temp (deg C)	26.7	28.3	28.5
	CHEMICAL			
1	Alk-Phen (mgCaCO3/L)	0.0	6.1	0.0
2	ALK-TOT (mgCaCO3/L)	119	122	86
3	B (mg/L)	0.00	0.01	0.02
4	Ca (mg/L)	35	45	48
5	Cl (mg/L)	27.9	35.8	32.7
6	CO3 (mg/L)	0.0	7.4	0.0
7	F (mg/L)	0.05	0.05	0.05
8	Fe (mg/L)	0.1	0.3	0.4
9	HCO3 (mg/L)	119	133	105
10	K (mg/L)	2.6	2.4	31.2
11	Mg (mg/L)	15.1	14.6	19.8
12	Na (mg/L)	15.5	45.7	67.3
13	NH3-N (mg N/L)			
14	NO2+NO3 (mg N/L)	1.09	1.13	1.13
15	NO2-N (mgN/L)	0.00	0.00	0.01
16	NO3-N (mgN/L)	1.09	1.13	1.12
17	o-PO4-P (mg P/L)			
18	P-Tot (mgP/L)	0.001	0.010	0.010
19	SiO2 (mg/L)	7.2	5.3	8.4
20	SO4 (mg/L)	33.9	16.7	22.8
	BIOLOGICAL/BACTERIOLOGICAL			
1	BOD3-27 (mg/L)	1.3	27.3	1.0
2	DO (mg/L)	5.2	3.6	6.0
3	DO_SAT% (%)	64	46	76
4	FCoI-MPN (MPN/100mL)			77
5	TcoI-MPN (MPN/100mL)			147
	TRACE & TOXIC			
	CHEMICAL INDICES			
1	HAR_Ca (mgCaCO3/L)	88	112	119
2	HAR_Total (mgCaCO3/L)	150	173	201
3	Na% (%)	18	36	38
4	RSC (-)	0.5	0.0	0.0
5	SAR (-)	0.6	1.5	2.1
	PESTICIDES			

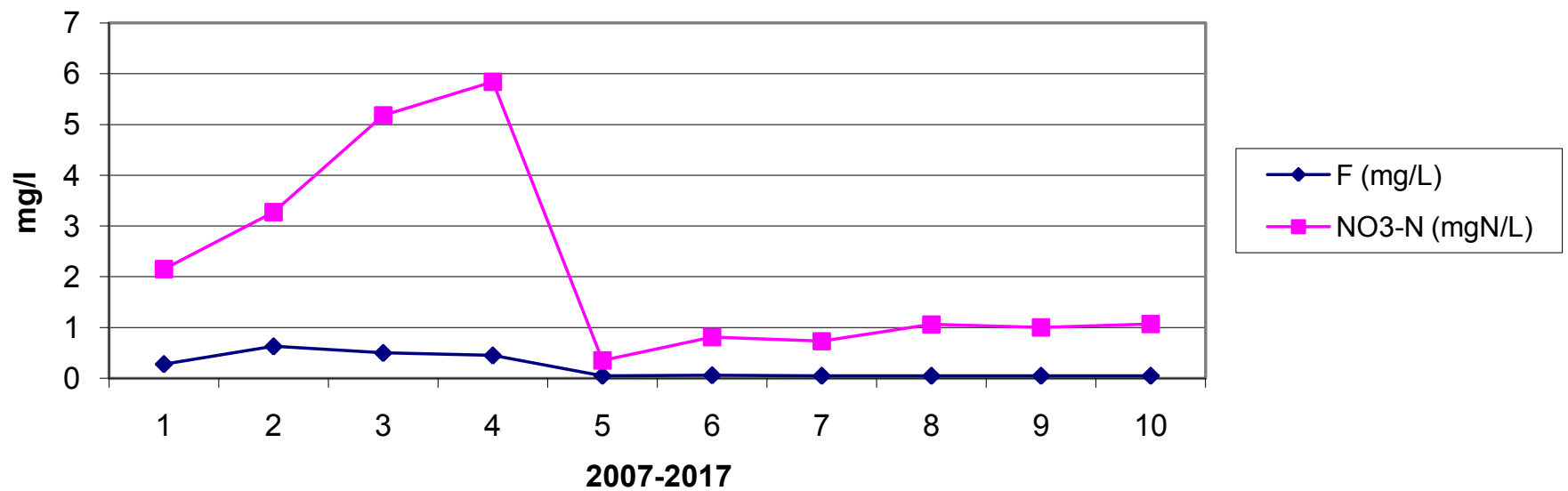
Year Wise Trend For Kulpatanga



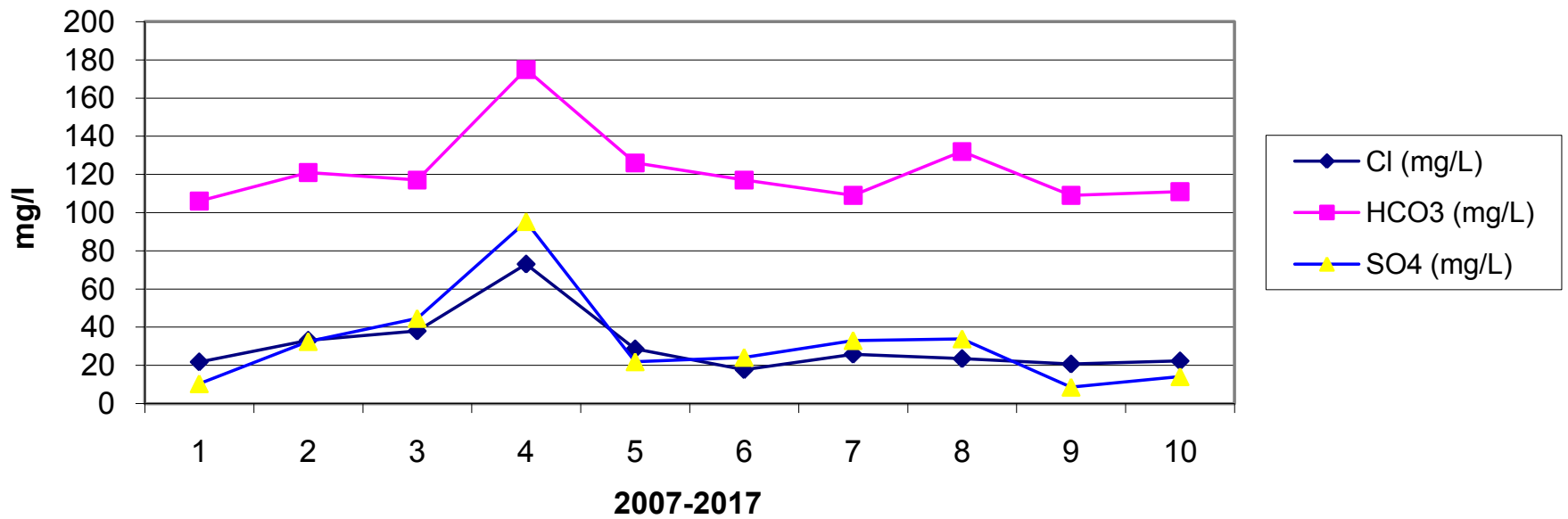
Year Wise Trend For Kulpatanga



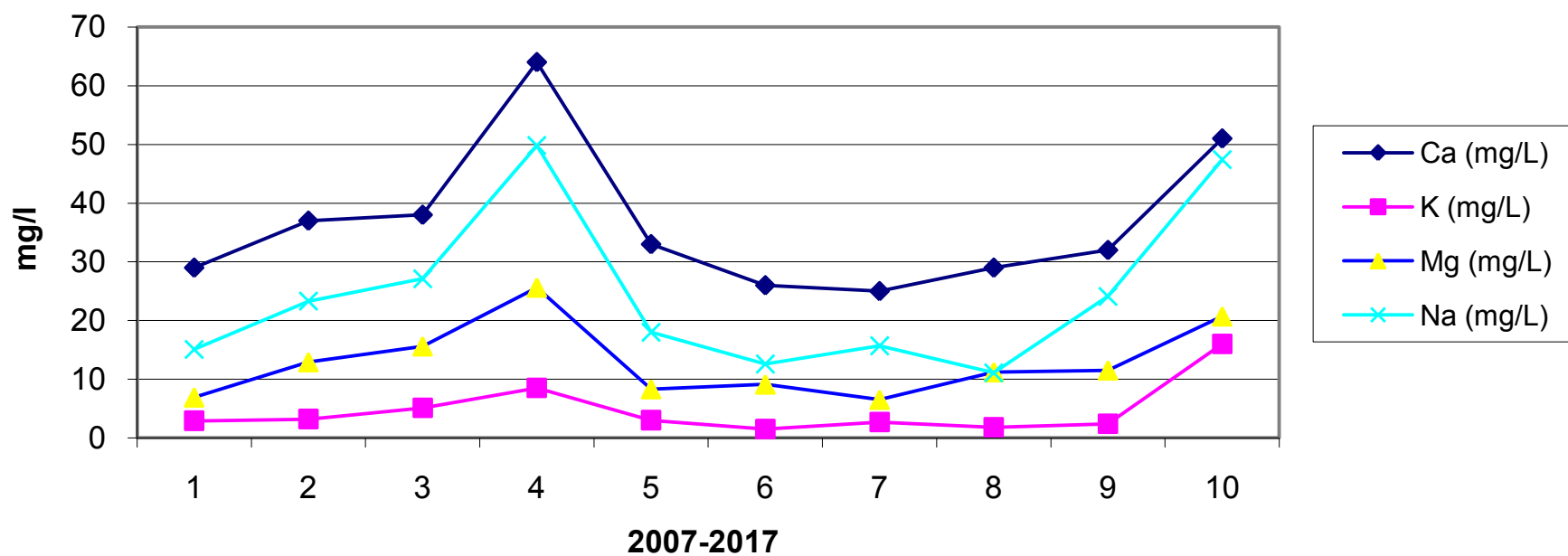
Year Wise Trend For Kulpatanga



Year Wise Trend For Kulpatanga



Year Wise Trend For Kulpatanga



BURHABALANGA BASIN

BURHABALANG BASIN

1 GENERAL

1.1 Introduction

Burhabalang is one of the east flowing rivers situated in the northern part of Orissa State. It is bounded by the geographical co-ordinates of north latitudes between 21°22' to 22°20' and east longitudes 86°20' to 87°05'. It drains parts of the areas in Mayurbhanj and Balasore districts of Orissa with a total catchment area of 4800 sq.km. This is a flashy river originating near Bishaldanga in Mayurbhanj District of Orissa State at an elevation of 800 m, and out-falls into Bay of Bengal after traversing a total distance of 125 km.

Basin Map of Burhabalang river system showing the various hydrological and hydro meteorological observation stations maintained by CWC, State Government and India Meteorological Department are given at Page No. 184 herewith.

1.2 River System

Burhabalang river during its traverse receives contribution from various tributaries on both the banks. The principal tributaries of this river are: Katranala, Gangahar and Sone.

The catchment area details are furnished below:

Name of River	River/Tributary	Length (km)	Catchment area (sq.km)	Percentage of total catchment area
Burhabalang	Main stream	125	2,363	49.3
Katranala	Left Tributary		325	6.7
Gangahar	Right Tributary		656	13.7
Sone	Right Tributary		1,456	30.3
		Total	4,800	100.0

1.3 Climatic Characteristics

The basin is greatly influenced by the south-west monsoon, which sets in June and withdraws in middle of October. The average annual rainfall in this basin is about 1800 mm. The maximum temperature in the plains of the basin rises between 42 to 49 °C during May and goes down to 8 to 14 °C during December-January.

1.4 Geology

Geologically, the basin belongs mostly to the Archean terrains. The rocks in the basin include Gneisses, Schist, Quartzite and Amphibolites. Igneous rocks are also seen in the river bed at some places. Iron ore, China clay, Quartz and Soap stone are found in limited areas in the Mayurbhanj portion of the basin. Lime stone is found in the Similipal hill ranges.

1.5 Site Details

Sl. No.	Name of Project	River	Status
1.	Beldiha	Palpada	Existing
2.	Kalo	Kalo	Existing
3.	Sunei Reservoir	Sunei	Existing

2. STREAM FLOW DATA

2.1 Methodology

Area-velocity method is generally adopted for measuring discharge at sites. Cup type current meter is used to measure the velocity of the flow and the depth is measured by using sounding rod for depths upto 3 m and by log line beyond 3 m. Discharge by area velocity method is being observed once in a day starting at 0800 Hrs. at all the sites except on Sundays and holidays. Besides, silt and water quality observation are also being carried out at CWC sites as listed above.

The observed stage and discharge figures for each season (monsoon and non-monsoon) are plotted and a mean Stage V/s. Discharge curve is drawn, giving due attention to the scattered points with reference to area, velocity etc.

The factors responsible for the shifting of the curves are also taken care of by studying the river cross section at regular intervals and with super imposition of previous years' Stage V/s. Discharge curves. Accordingly, the trend of the current curve is finalised. Finally, the discharges of the non observed days are computed from these Stage V/s. Discharge Curves.

2.2 Data Availability

Code No.	Station Name	Type	Data Available	
			From	To
ED000E4	NH-5 Road Bridge Govindpur	GDSQ	G-24.04.91 D-07.03.92 S-21.03.03 Q-01.05.03	Continuing -do- -do- -do-
BALIMUNDULI	Balimunduli	G	G-14.07.87	Continuing
BARIPADA	Baripada	G	G-01.07.72	Continuing
CHANDANPUR	Chandanpur	G	G-01.07.87	Continuing
JAIPUR	Jaipur	G	G-20.06.78	Continuing

2.3 Explanatory Notes on Water Year Book

SWDES (Surface Water Data Entry Software), a custom made software for processing hydrological data, has been used for preparation of this volume. The explanatory notes described below can be used for interpretation of data presented in this volume.

- Water Year ranges from June 1st of one calendar year to May 31st of the next calendar year and covers one complete hydrological cycle.
- Discharge is given in cubic meters per second.
- Discharges are expressed as 0.000 when river bed is dry and 0.000 N.F. when velocity is observed as 'NIL'.
- The zero R.L. of gauge is a datum level fixed for given site, which is kept 1 or 2 m lower than the lowest water level recorded in a perennial stream. In a non-perennial stream, it is kept 1 or 2 m lower than the lowest bed level of the stream.
- Discharges are rounded off as per standard practice.
- Runoff in mm is the notional depth of water in millimeters over the catchment, equivalent to annual runoff volume calculated at the discharge measurement station. It is computed using the relation:

$$\text{Runoff (mm)} = \frac{\text{Annual runoff (Mm}^3\text{)} \times 1000}{\text{Catchment area (km}^2\text{)}}$$

- vii) Peak and lowest flow correspond to the highest and lowest water levels recorded from 'SWDES' entered data.
- viii) Measuring Authority refers to the field division of Central Water Commission (Eastern Rivers Division) responsible for the operation of the gauging station.
- ix) The gauging station code number is a unique seven column alphanumeric reference number which facilitates storage and retrieval of flow data in data base. The first column is identifier of either an integral river basin or, for the sake of convenience, a region having several contiguous river catchments. This is followed by a column which identifies an independent river system which either has one or more outlets to the sea or crosses international border to enter another country. The third, fourth and fifth column spaces denote first, second and third order tributaries, respectively, from the mouth upstream. The sixth and seventh column spaces indicate the location of the gauging station in one of the 225 slots earmarked on the river. The blank column spaces are filled by zero.

1. HYDROLOGICAL DATA

This volume contains the following information for each site stated above:

- i. History Sheet: Site Name, State, District, River Basin, Tributary, Sub-Tributary, Catchment Area, Latitude / Longitude, Opening / Closing date for various types of data.
- ii. Annual maximum/minimum discharge since period of observation.
- iii. Daily Water level and observed/ computed discharge data including 10-daily, monthly and annual totals etc.
- iv. Histogram and Hydrograph showing current year monthly mean discharges, Historical monthly mean discharges, historical monthly minimum and monthly maximum discharges.
- v. Histogram showing Annual Run off volume since beginning of observation.
- vi. Pie-Chart showing monthly mean run off (as percentage of Annual Run off) historical for the current year
- vii. Plot of Pre and Post Monsoon Cross-section of the rivers for current year.
- viii. Water Level hydrograph for 3(three) major flood events of current year.

4. SEDIMENT DATA (In case of Sediment Observation sites)

The frequency of sediment observation is carried out daily during monsoon season and once in a week (on Monday) during the non-monsoon period. Data for non-observed days is estimated/ interpolated from the relationship of discharge v/s. sediment load, prepared on the basis of observed sediment concentration and weighted mean discharge of the same year.

Sediment samples are collected from 0.6 depth, using Punjab type bottle sampler, from all the verticals along the hydrological observation sections where velocity is observed for computation of discharge. The collected samples from all the segments are combined in 3 to 7 groups having compartments or groups of equal or nearly equal discharges for analysis. Quantum of suspended sediment load is estimated in three grades, viz. Coarse, Medium and Fine. Coarse and medium grades are separated by sieving process and the fine grade by filtration of left over samples after sieving through filter paper. Grade wise concentration is derived gravimetrically as per standard procedure. The following parameters are derived and recorded:

- Daily Observed suspended sediment (g/l).
- Corresponding discharge.
- Average sediment load in tonnes/day (10 daily & monthly basis).
- Annual sediment load for the current year.

- Annual & Seasonal sediment load and the corresponding volume of inflow for all the years since inception.
- Grain size distribution of bed load.

3. WATER QUALITY DATA (In case of Water Quality Observation sites)

The water samples are collected at a regular interval of once in a month for trend stations and once in two month for base station (on 1st working day), from the main flowing segment of the stream just below the water surface (20 to 30 cm) on the Station Gauge line where depth of flow and velocity are maximum, preferably in the mid stream. The water samples are collected in the pre-rinsed and cleaned one-litre capacity polythene bottle having double stopper (in side and out side) facility. Sampling bottle is filled to its full capacity without entrapping air bubbles inside.

After sampling, the collected samples are sent to the Water Quality Laboratory (Level-II) based at Bhubaneswar (under the Eastern Rivers Division) and to Raipur laboratory (under Mahanadi Division, Burla), along with in-situ physical characteristics, for analysis. The samples received from the sites are preserved in a refrigerator in the water quality laboratories for analysis.

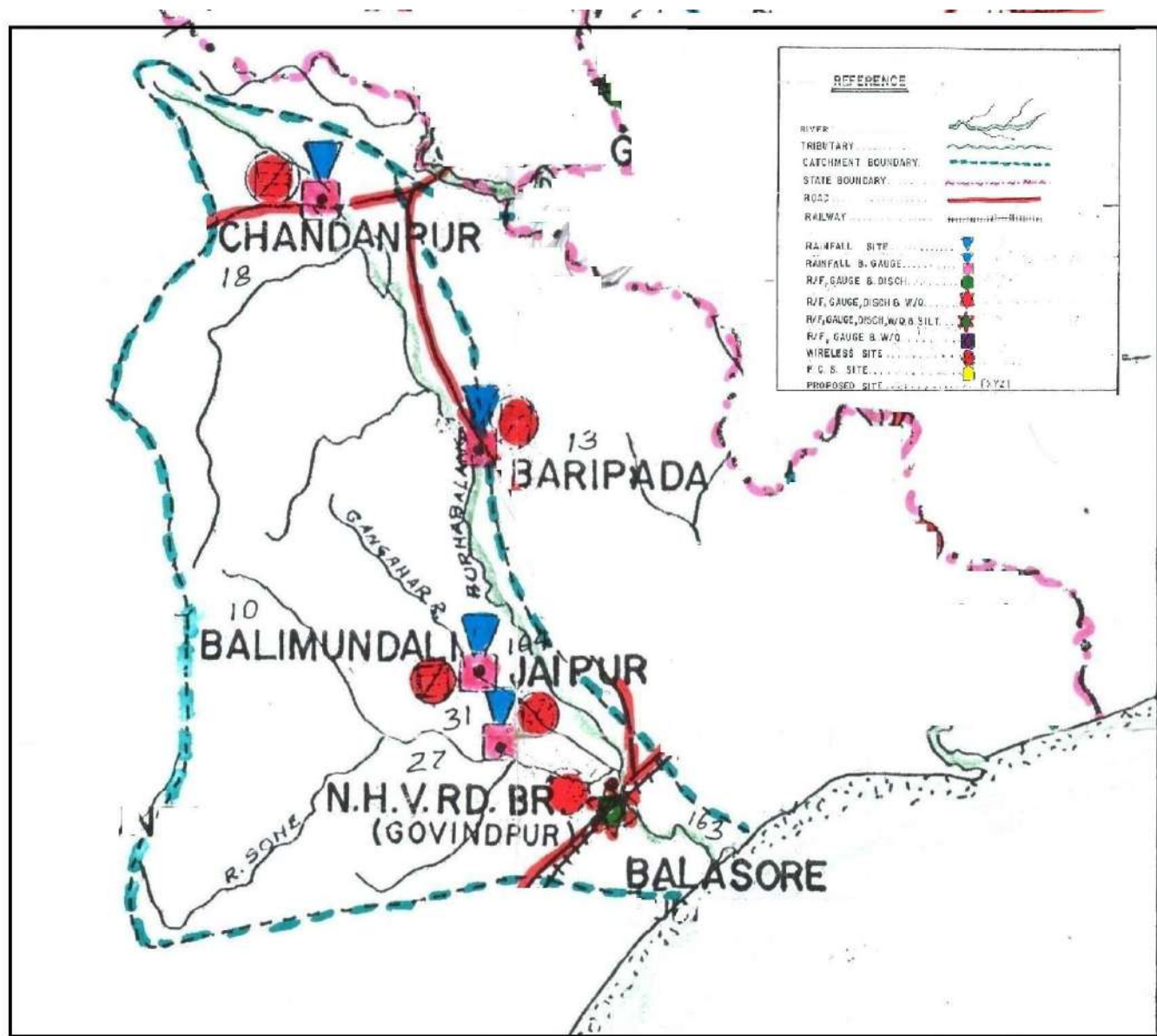
Analysis of parameters, namely pH, Electrical conductivity, Sodium, Potassium, Iron, Aluminum, Ammonia, Fluoride, Nitrate, Nitrite, Phosphate, Silicate, Boron, Sulphate, Calcium, Magnesium, Carbonate, Bi-carbonate, Chloride, Dissolved Oxygen, BOD and COD, are carried out at the Level II laboratory by using standard methodology. Micro biological parameters like total coliform and faecal coliform are also being analyzed. For analysis of trace and toxic elements, samples are sent to Level-II+ laboratory at Hyderabad once in a year, in the month of April.

The following parameters are analyzed and recorded:

- Monthly Values: Physical; Chemical (mg/l); Biological (mg/l); Traces & Toxic (mg/l) and Chemical Indices.
- Average Values for the Year: 10 Years data to be given season wise averages:-
 - Average for Summer (March to June).
 - Average for Floods (July to October).
 - Average for Winter (November to February)

NAME OF THE SITES IN OPERATION UNDER BURHABALANG BASIN

Sl. No.	Station Name	River/ Tributary	Code No.	Type	Latitude	Longitude
1.	Balimunduli	Gangahar		G	21° 43' 58"	86° 38' 08"
2.	Baripada	Burhabalang		G	21° 55' 52"	86° 43' 11"
3.	Chandanpur	Katranalla		G	22° 09' 59"	86° 34' 24"
4.	Govindpur	Burhabalang	ED000E4	GDSQ	21° 32' 52"	86° 55' 14"
5.	Jaipur	Sone		G	21° 37' 08"	86° 10' 41"



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HISTORY SHEET

Water Year : 2016-2017

Site : GOVINDPUR

Code : ED000E4

State : Orissa

District : Balasore

Basin : Subarnarekha

Independent River : Burhabalang

Tributary : -

Sub Tributary :

Sub-Sub Tributary :

Local River : Burhabalang

Division : E.E., Bhubaneswar

Sub-Division : Balasore

Drainage Area : 4495 Sq. Km.

Bank : Left

Latitude : 21°32'52"

Longitude : 86°55'14"

Zero of Gauge (m) : 0 (m.s.l)
0 (m.s.l)

01.03.1990 - 01.02.2090
01.03.1992 - 01.03.2023

Opening Date

Closing Date

Gauge : 22.06.1978

01.01.2100

Discharge : 07.03.1992

01.01.2100

Sediment : 21.03.2003

01.01.2100

Water Quality : 01.05.2003

01.05.2013

Annual Maximum / Minimum discharge with corresponding Water Level (m.s.l)

Year	Maximum			Minimum		
	Q (cumecs)	WL (m)	Date	Q (cumecs)	WL (m)	Date
1992-1993	696.4	6.900	28.07.1992	1.230	2.600	27.03.1993
1993-1994	650.6	6.700	14.09.1993	3.147	2.600	29.03.1994
1994-1995	1263	7.740	19.07.1994	0.700	2.610	01.05.1995
1995-1996	1321	8.110	11.11.1995	2.610	2.420	30.05.1996
1996-1997	1043	7.260	07.08.1996	0.063	2.500	31.01.1997
1997-1998	1451	8.290	22.08.1997	3.632	2.580	17.06.1997
1998-1999	1418	7.860	14.09.1998	0.826	2.070	19.04.1999
1999-2000	1725	8.900	31.10.1999	3.180	2.360	14.04.2000
2000-2001	1649	7.840	15.09.2000	2.920	2.280	21.03.2001
2001-2002	1305	7.700	02.10.2001	4.612	2.280	29.05.2002
2002-2003	1184	7.520	24.09.2002	4.149	1.780	27.03.2003
2003-2004	1511	8.630	08.10.2003	1.755	1.300	09.03.2004
2004-2005	1110	7.610	07.10.2004	0.916	1.700	14.02.2005
2005-2006	1317	7.770	15.09.2005	1.369	1.440	03.06.2005
2006-2007	1422	7.930	23.08.2006	4.060	1.160	08.04.2007
2007-2008	2559	8.840	24.09.2007	3.417	1.320	07.05.2008
2008-2009	2886	7.910	18.06.2008	0.700	0.920	03.05.2009
2009-2010	2625	8.000	03.10.2009	0.540	0.600	29.04.2010
2010-2011	1270	7.080	19.09.2010	2.956	0.680	28.03.2011
2011-2012	2686	8.010	23.09.2011	2.011	0.880	31.03.2012
2012-2013	878.1	5.770	10.09.2012	2.000	0.960	24.03.2013
2013-2014	2200	7.920	27.10.2013	8.160	1.080	09.06.2013
2014-2015	1443	8.360	05.08.2014	58.36	1.020	02.03.2015
2015-2016	1047	7.460	29.07.2015	4.004	0.560	23.05.2016
2016-2017	320.0	2.920	09.10.2016	3.689	0.320	28.03.2017

Stage-Discharge Data for the period 2016 - 2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore

Day	Jun		Jul		Aug		Sep		Oct		Nov	
	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q	W.L	Q
1	0.820	7.078	2.100	49.21	1.860	46.59	1.660	55.95	2.620	217.5	1.200	97.28
2	0.870	7.362	1.440	42.10	2.000	46.88	2.160	66.05	3.500	280.0 *	1.180	95.31
3	0.780	7.519	2.300	60.00 *	2.100	48.29	2.120	58.63	3.340	264.3	1.100	95.99
4	0.800	7.698	2.040	48.37	3.580	218.5	1.840	40.00 *	2.920	243.1	1.140	96.30
5	0.760	7.000 *	1.900	45.78	4.480	237.2	3.120	161.8	2.240	204.7	1.300	106.1
6	0.720	8.097	1.920	47.13	4.240	226.0	4.780	223.6	1.940	195.3	1.360	110.0 *
7	0.810	7.368	1.740	42.00 *	3.220	160.0 *	4.400	201.5	2.220	195.8	1.160	91.75
8	0.920	7.973	1.540	41.94	2.620	87.25	3.200	158.4	2.800	298.3	1.240	104.9
9	0.900	9.152	1.300	40.66	2.560	73.48	2.660	266.0	2.920	320.0 *	1.120	94.14
10	0.720	8.167	1.220	37.00 *	1.900	54.08	2.680	250.1	2.760	290.0 *	1.260	104.3
11	0.740	8.355	1.300	39.27	3.800	205.2	2.680	260.0 *	2.400	260.0 *	1.700	113.2
12	1.060	20.00 *	1.320	39.77	3.480	186.8	2.440	233.7	2.180	250.0 *	1.660	111.9
13	1.000	9.171	0.720	32.85	2.800	81.16	3.580	270.0 *	1.860	233.9	1.600	110.0 *
14	0.920	9.139	1.220	37.31	1.920	50.00 *	3.880	283.9	1.640	219.7	1.640	110.0 *
15	0.900	9.177	1.100	37.48	1.600	48.00 *	3.680	275.1	1.620	198.7	1.620	111.5
16	0.750	8.685	0.940	38.50	1.700	52.49	2.960	264.0	1.700	180.0 *	1.650	119.0
17	0.650	8.153	1.000	37.00 *	2.660	78.80	2.620	230.1	1.600	179.2	1.100	88.30
18	0.750	8.116	1.360	41.49	3.800	203.3	2.260	220.0 *	1.720	182.6	1.000	84.18
19	0.760	8.100 *	1.120	37.76	5.380	210.3	2.140	208.3	1.660	177.0	0.900	82.94
20	0.920	9.568	1.180	36.87	3.360	190.4	2.040	197.4	1.460	174.6	0.960	84.00 *
21	1.540	57.85	1.280	40.40	2.520	86.00 *	1.900	176.8	1.460	171.9	0.900	80.97
22	1.180	37.17	1.100	37.20	2.180	61.20	2.140	207.6	1.320	154.8	0.860	80.86
23	1.040	40.34	1.160	36.62	2.580	67.07	2.980	246.3	1.180	150.0 *	1.000	81.96
24	1.100	40.53	2.100	50.00 *	3.620	187.6	4.160	302.7	1.140	117.5	1.200	83.34
25	1.160	39.51	2.300	55.68	3.300	158.7	3.740	280.0 *	1.260	121.2	1.340	85.01
26	1.150	39.00 *	2.420	76.92	2.820	77.91	3.260	257.7	1.280	107.4	1.300	83.65
27	1.200	40.09	4.780	213.9	2.220	63.84	2.780	241.4	1.380	111.2	1.100	82.00 *
28	1.500	41.09	3.500	178.7	2.120	61.00 *	2.520	235.3	1.940	123.1	0.900	79.15
29	2.000	47.25	2.280	68.40	2.000	62.35	2.400	222.8	1.760	114.6	0.820	76.39
30	1.920	46.12	1.800	47.50	1.800	53.51	2.080	208.4	1.460	80.00 *	0.800	71.52
31			1.560	41.00 *	1.880	56.22			2.080	88.40		
Ten-Daily Mean												
I Ten-Daily	0.810	7.741	1.750	45.42	2.856	119.8	2.862	148.2	2.726	250.9	1.206	99.61
II Ten-Daily	0.845	9.846	1.126	37.83	3.050	130.6	2.828	244.2	1.784	205.6	1.383	101.5
III Ten-Daily	1.379	42.89	2.207	76.94	2.458	85.04	2.796	237.9	1.478	121.8	1.022	80.49
Monthly												
Min.	0.650	7.000	0.720	32.85	1.600	46.59	1.660	40.00	1.140	80.00	0.800	71.52
Max.	2.000	57.85	4.780	213.9	5.380	237.2	4.780	302.7	3.500	320.0	1.700	119.0
Mean	1.011	20.16	1.711	54.15	2.777	111	2.829	210.1	1.979	190.5	1.204	93.87

Annual Runoff in MCM = 2269 Annual Runoff in mm = 505

Peak Observed Discharge = 302.7 cumecs on 24/09/2016 Corres. Water Level :4.16 m

Lowest Observed Discharge = 3.689 cumecs on 28/03/2017 Corres. Water Level :0.32 m

Stage-Discharge Data for the period 2016 - 2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore

Day	Dec		Jan		Feb		Mar		Apr		May	
	W.L	Q	WL	Q	WL	Q	WL	Q	WL	Q	WL	Q
1	0.800	68.13	0.700	61.00 *	0.500	38.06	0.440	18.83	0.500	5.733	0.500	20.21
2	0.820	68.16	0.700	61.08	0.580	38.50	0.360	15.85	0.480	5.600 *	0.640	30.52
3	0.800	67.69	0.800	60.73	0.500	36.50	0.420	5.247	0.480	5.624	0.540	23.86
4	0.880	72.00 *	0.740	60.31	0.500	37.74	0.420	6.811	0.480	5.544	0.480	21.93
5	0.790	67.92	0.780	59.68	0.660	40.00 *	0.440		0.460	5.269	0.440	21.42
6	0.800	71.44	0.700	58.20	0.500	37.94	0.420	5.213	0.600	6.580	0.400	20.99
7	0.840	68.67	0.760	56.11	0.480	36.18	0.480	4.945	0.500	5.167	0.500	20.20 *
8	1.000	69.11	0.820	64.00 *	0.460	34.43	0.440	5.274	0.460	4.898	0.480	22.57
9	0.940	69.95	1.000	63.41	0.460	33.09	0.420	5.088	0.420	4.600 *	0.440	21.93
10	1.160	65.78	0.940	60.03	0.480	34.69	0.400	4.944	0.380	4.864	0.400	20.99 *
11	1.400	76.00 *	0.760	58.93	0.420	32.87	0.500	6.033	0.320	4.184	0.480	21.85
12	1.540	78.00 *	0.750	48.81	0.480	36.00 *	0.460		0.300	3.954	0.500	23.93
13	1.150	69.85	0.700	51.98	0.440	33.99	0.420		0.360	4.398	0.460	19.63
14	1.120	69.16	0.650	51.13	0.440	34.11	0.400	4.601	0.400	4.600 *	0.520	21.50 *
15	0.860	66.47	0.620	50.00 *	0.400	32.24	0.420	4.884	0.400	4.663	0.480	19.99
16	0.740	56.83	0.600	49.51	0.400	31.80	0.460	4.982	0.460	5.200 *	0.440	18.92
17	0.700	63.51	0.580	49.27	0.380	32.11	0.400	4.551	0.380	4.494	0.400	18.27
18	0.720	64.00 *	0.560	53.46	0.380	31.42	0.420	4.553	0.420	4.775	0.520	21.50
19	0.760	60.31	0.540	45.68	0.400	32.00 *	0.400		0.400	5.190	0.500	23.07
20	0.740	61.67	0.600	46.48	0.400	27.15	0.500	5.012	0.500	5.265	0.540	23.50
21	0.700	64.01	0.640	46.71	0.500	27.20	0.400	4.508	0.620	5.542	0.540	23.50 *
22	0.700	62.61	0.620	45.00 *	0.480	24.81	0.420	4.763	0.600	5.412	0.500	22.93
23	0.760	63.74	0.740	47.62	0.440	24.44	0.480	5.165	0.420	4.800 *	0.560	23.86
24	0.800	63.31	0.740	45.18	0.400	22.00 *	0.400	4.200	0.400	4.652	0.620	25.94
25	1.020	60.00 *	0.700	46.67	0.400	22.57	0.380	3.785	0.480	5.049	0.460	22.14
26	0.900	54.94	0.640	44.00 *	0.460	26.00 *	0.420		0.540	6.645	0.400	21.21
27	0.880	66.20	0.740	46.53	0.380	18.73	0.340	3.786	0.460	6.302	0.460	20.06
28	0.800	65.56	0.600	45.13	0.400	18.72	0.320	3.689	0.420	5.870	0.500	23.93 *
29	0.720	62.11	0.560	42.00 *			0.400	4.679	0.400	5.551	0.400	20.42
30	0.740	62.45	0.500	38.45			0.420	4.819	0.440	5.800 *	0.580	25.51
31	0.740	58.50	0.500	38.03			0.480	5.536			0.640	25.65
Ten-Daily Mean												
I Ten-Daily	0.883	68.88	0.794	60.46	0.512	36.71	0.424	8.022	0.476	5.388	0.482	22.46
II Ten-Daily	0.973	66.58	0.636	50.53	0.414	32.37	0.438	4.945	0.394	4.672	0.484	21.22
III Ten-Daily	0.796	62.13	0.635	44.12	0.433	23.06	0.405	4.493	0.478	5.562	0.515	23.20
Monthly												
Min.	0.700	54.94	0.500	38.03	0.380	18.72	0.320	3.689	0.300	3.954	0.400	18.27
Max.	1.540	78.00	1.000	64.00	0.660	40.00	0.500	18.83	0.620	6.645	0.640	30.52
Mean	0.881	65.74	0.686	51.46	0.454	31.26	0.422	5.836	0.449	5.208	0.494	22.32

Peak Computed Discharge = 320.0 cumecs on 09/10/2016

Corres. Water Level :2.92 m

Lowest Computed Discharge = 4.600 cumecs on 09/04/2017

Corres. Water Level :0.42 m

Q: Observed/Computed Discharge in cumecs WL:Corresponding Mean Water Level(m.s.l) in m *:Computed Discharge

Note:Missing values ignored while arriving at Annual Runoff

HISTOGRAM - HYDROGRAPH for Water Year : 2016-2017

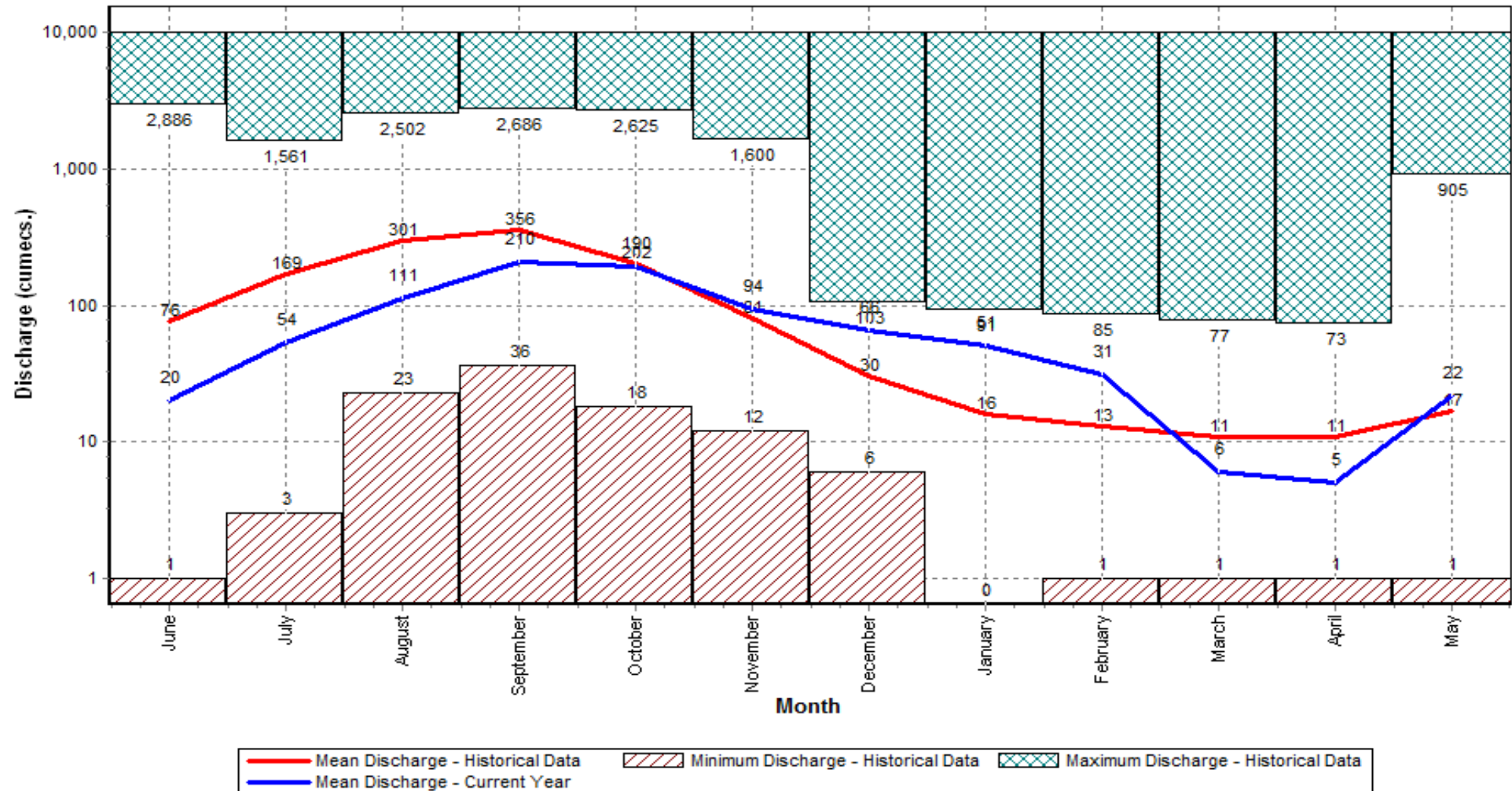
Station Name : GOVINDPUR (ED000E4)

Data considered : 1992-2017

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore



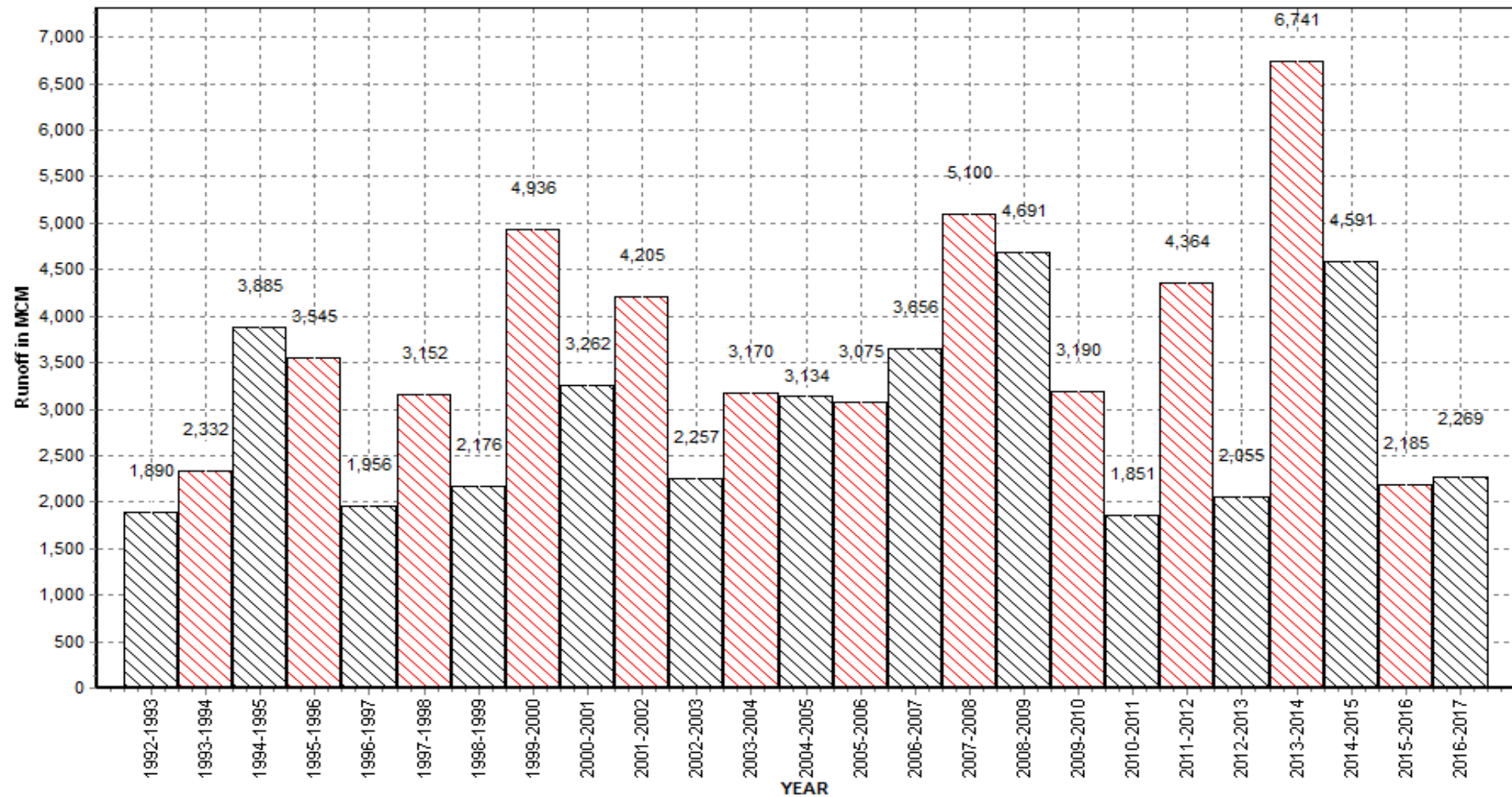
Annual Runoff Values for the period: 1992 - 2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



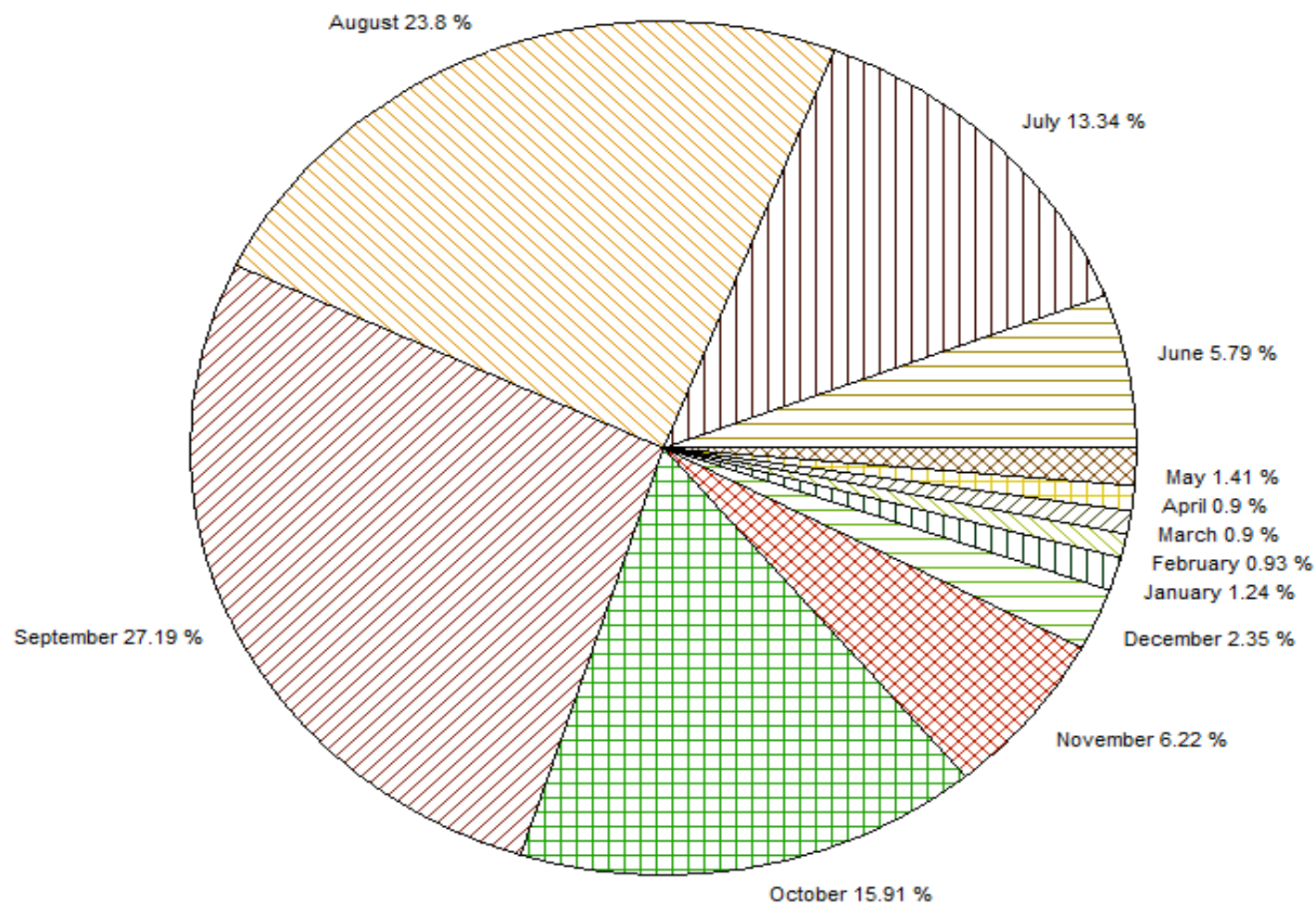
Monthly Average Runoff based on period : 1992-2016

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



June	5.79 %
July	13.34 %
August	23.8 %
September	27.19 %
October	15.91 %
November	6.22 %
December	2.35 %
January	1.24 %
February	0.93 %
March	0.9 %
April	0.9 %
May	1.41 %

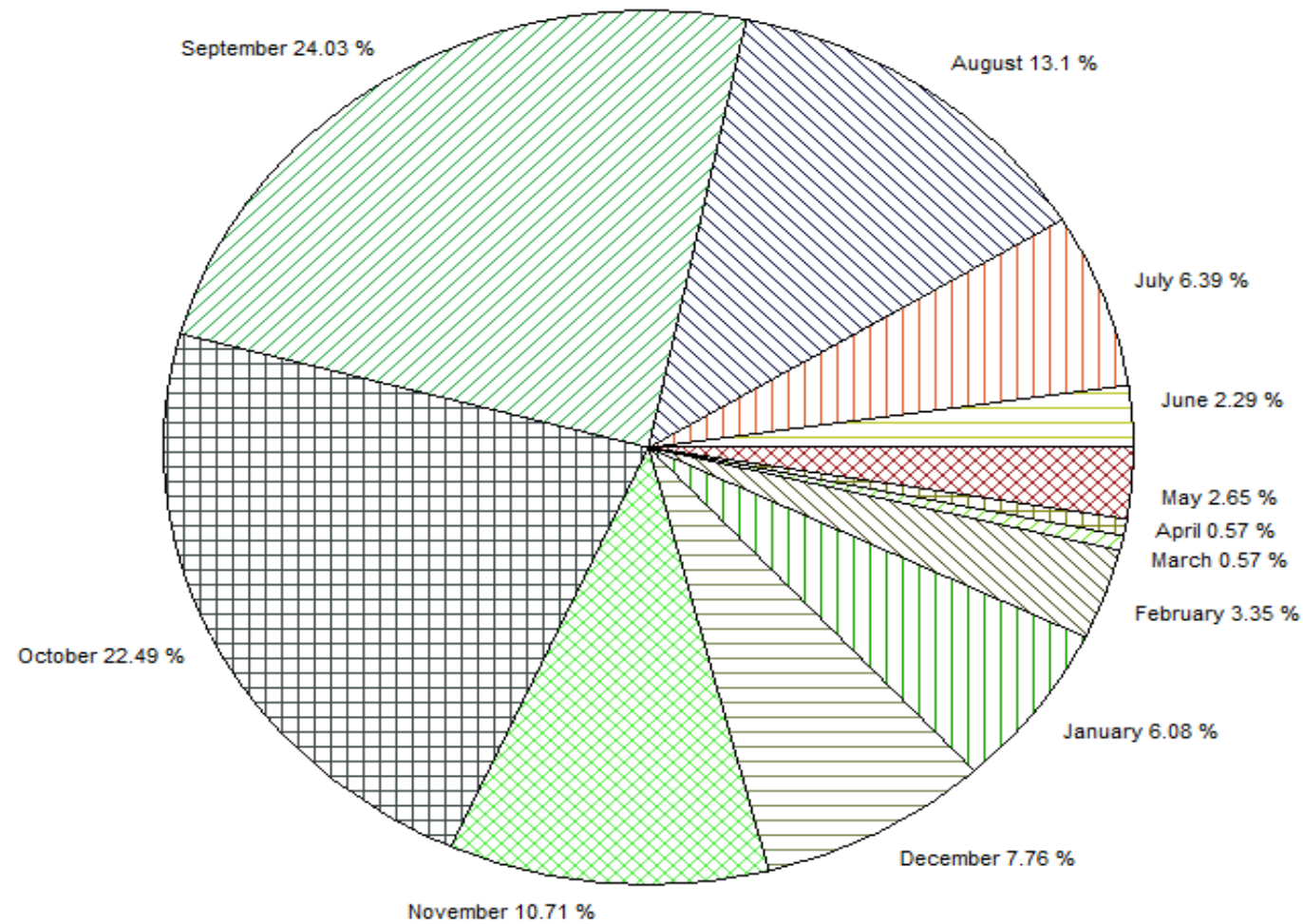
Monthly Runoff for the Year : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



June	2.29 %
July	6.39 %
August	13.1 %
September	24.03 %
October	22.49 %
November	10.71 %
December	7.76 %
January	6.08 %
February	3.35 %
March	0.57 %
April	0.57 %
May	2.65 %

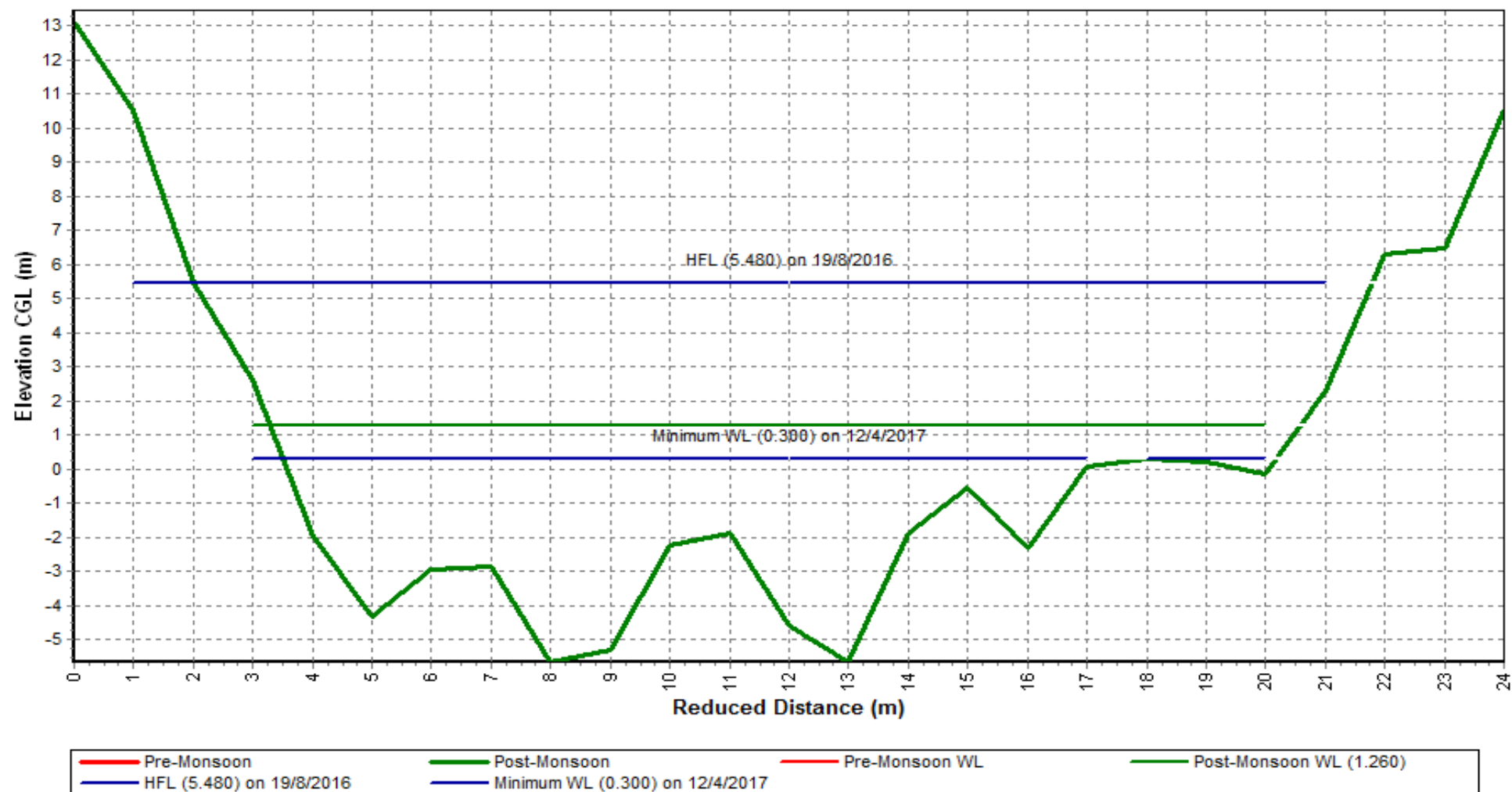
Pre-Monsoon & Post-Monsoon X-Section for Water Year : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



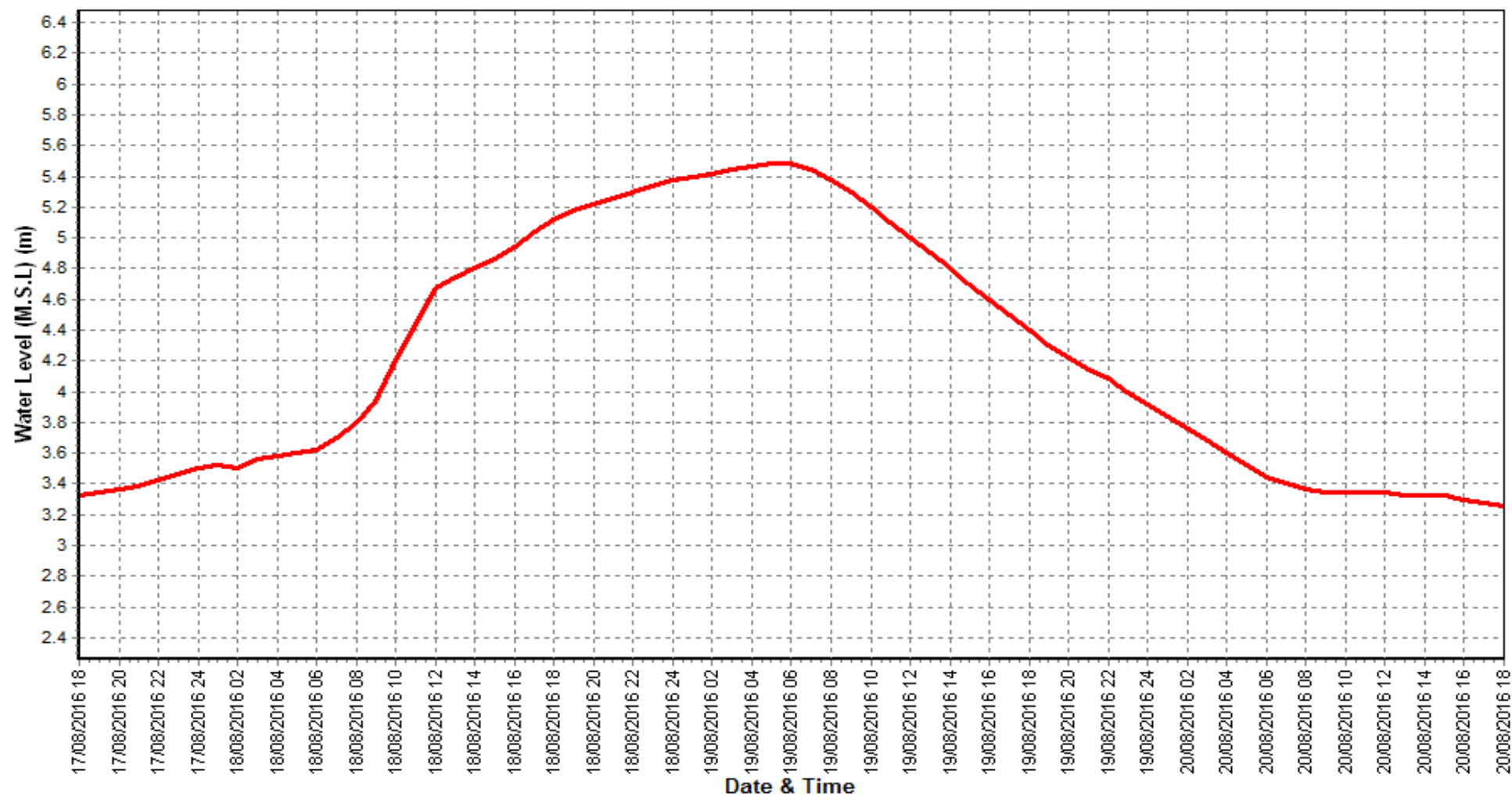
Water Level vs. Time - Graph of Highest Flood Peak during the Year : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

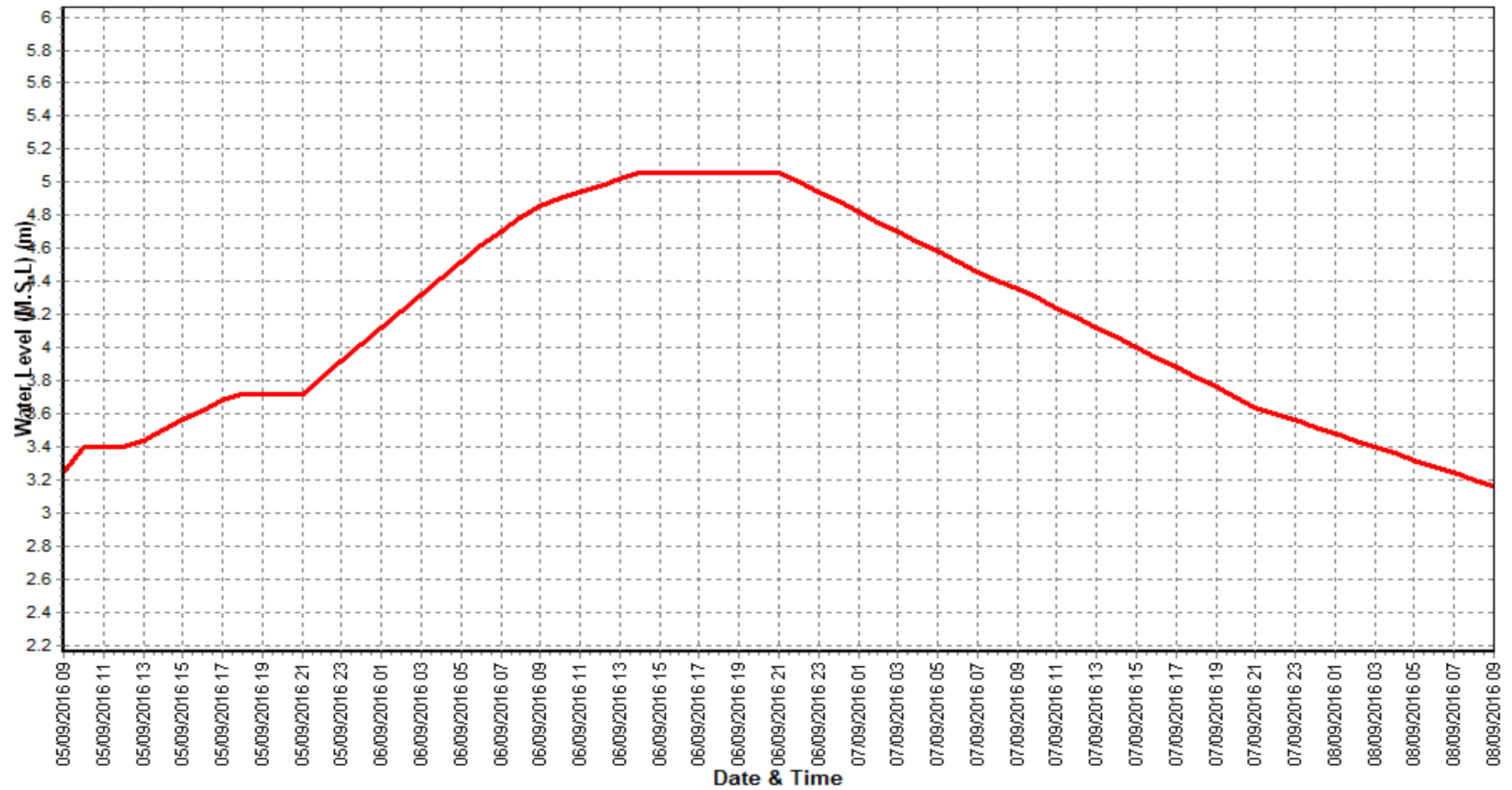
Sub-Division : Balasore



Water Level vs. Time - Graph of 2nd Highest Flood Peak during the Year : 2016-2017

Station Name : GOVINDPUR (ED000E4)
Local River : Burhabalang

Division : E.E., Bhubaneswar
Sub-Division : Balasore



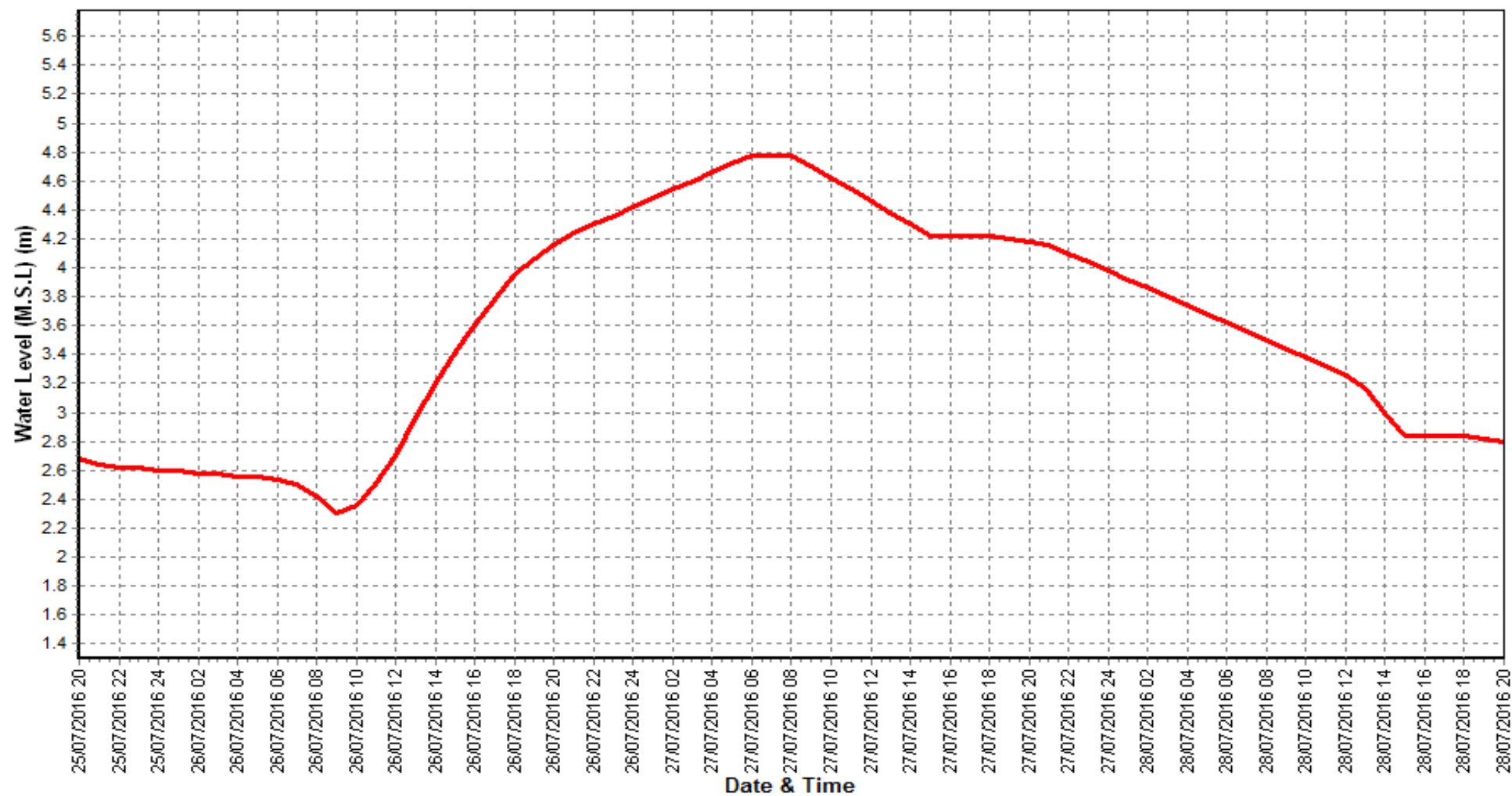
Water Level vs. Time - Graph of 3rd Highest Flood Peak during the Year : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore

Day	Jun						Jul						Aug					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	7.078	0.000	0.000	0.002	0.002	1	49.21	0.000	0.000	0.008	0.008	33	46.59	0.000	0.000	0.003	0.003	14
2	7.362	0.000	0.000	0.002	0.002	1	42.10	0.000	0.000	0.010	0.010	36	46.88	0.000	0.000	0.004	0.004	16
3	7.519	0.000	0.000	0.002	0.002	1	60.00	0.000	0.000	0.010	0.010	51	48.29	0.000	0.000	0.004	0.004	15
4	7.698	0.000	0.000	0.002	0.002	1	48.37	0.000	0.000	0.008	0.008	35	218.5	0.000	0.000	0.003	0.003	64
5	7.000	0.000	0.000	0.002	0.002	1	45.78	0.000	0.000	0.007	0.007	29	237.2	0.000	0.000	0.004	0.004	74
6	8.097	0.000	0.000	0.002	0.002	1	47.13	0.000	0.000	0.010	0.010	40	226.0	0.000	0.000	0.004	0.004	70
7	7.368	0.000	0.000	0.002	0.002	1	42.00	0.000	0.000	0.007	0.007	26	160.0	0.000	0.000	0.004	0.004	48
8	7.973	0.000	0.000	0.002	0.002	1	41.94	0.000	0.000	0.004	0.004	15	87.25	0.000	0.000	0.003	0.003	25
9	9.152	0.000	0.000	0.002	0.002	1	40.66	0.000	0.000	0.005	0.005	19	73.48	0.000	0.000	0.004	0.004	23
10	8.167	0.000	0.000	0.002	0.002	1	37.00	0.000	0.000	0.005	0.005	17	54.08	0.000	0.000	0.004	0.004	17
11	8.355	0.000	0.000	0.002	0.002	1	39.27	0.000	0.000	0.005	0.005	17	205.2	0.000	0.000	0.003	0.003	57
12	20.00	0.000	0.000	0.002	0.002	3	39.77	0.000	0.000	0.004	0.004	12	186.8	0.000	0.000	0.003	0.003	53
13	9.171	0.000	0.000	0.002	0.002	1	32.85	0.000	0.000	0.005	0.005	14	81.16	0.000	0.000	0.004	0.004	25
14	9.139	0.000	0.000	0.002	0.002	1	37.31	0.000	0.000	0.005	0.005	17	50.00	0.000	0.000	0.004	0.004	16
15	9.177	0.000	0.000	0.002	0.002	2	37.48	0.000	0.000	0.005	0.005	17	48.00	0.000	0.000	0.003	0.003	14
16	8.685	0.000	0.000	0.002	0.002	1	38.50	0.000	0.000	0.004	0.004	13	52.49	0.000	0.000	0.004	0.004	17
17	8.153	0.000	0.000	0.002	0.002	1	37.00	0.000	0.000	0.004	0.004	13	78.80	0.000	0.000	0.004	0.004	25
18	8.116	0.000	0.000	0.002	0.002	1	41.49	0.000	0.000	0.004	0.004	13	203.3	0.000	0.000	0.003	0.003	60
19	8.100	0.000	0.000	0.002	0.002	1	37.76	0.000	0.000	0.004	0.004	14	210.3	0.000	0.000	0.003	0.003	58
20	9.568	0.000	0.000	0.002	0.002	1	36.87	0.000	0.000	0.004	0.004	13	190.4	0.000	0.000	0.004	0.004	58
21	57.85	0.000	0.000	0.004	0.004	19	40.40	0.000	0.000	0.004	0.004	14	86.00	0.000	0.000	0.003	0.003	25
22	37.17	0.000	0.000	0.004	0.004	12	37.20	0.000	0.000	0.003	0.003	11	61.20	0.000	0.000	0.004	0.004	19
23	40.34	0.000	0.000	0.003	0.003	10	36.62	0.000	0.000	0.004	0.004	13	67.07	0.000	0.000	0.004	0.004	21
24	40.53	0.000	0.000	0.003	0.003	10	50.00	0.000	0.000	0.004	0.004	17	187.6	0.000	0.000	0.004	0.004	60
25	39.51	0.000	0.000	0.003	0.003	11	55.68	0.000	0.000	0.005	0.005	22	158.7	0.000	0.000	0.004	0.004	51
26	39.00	0.000	0.000	0.002	0.002	8	76.92	0.000	0.000	0.004	0.004	28	77.91	0.000	0.000	0.004	0.004	24
27	40.09	0.000	0.000	0.002	0.002	8	213.9	0.000	0.000	0.004	0.004	74	63.84	0.000	0.000	0.003	0.003	19
28	41.09	0.000	0.000	0.003	0.003	11	178.7	0.000	0.000	0.004	0.004	63	61.00	0.000	0.000	0.003	0.003	17
29	47.25	0.000	0.000	0.003	0.003	14	68.40	0.000	0.000	0.004	0.004	25	62.35	0.000	0.000	0.003	0.003	17
30	46.12	0.000	0.000	0.004	0.004	14	47.50	0.000	0.000	0.004	0.004	17	53.51	0.000	0.000	0.003	0.003	16
31							41.00	0.000	0.000	0.004	0.004	14	56.22	0.000	0.000	0.004	0.004	18
Ten Daily Mean																		
Ten Daily I	7.741	0.000	0.000	0.002	0.002	1	45.42	0.000	0.000	0.007	0.007	30	119.8	0.000	0.000	0.004	0.004	37
Ten Daily II	9.846	0.000	0.000	0.002	0.002	2	37.83	0.000	0.000	0.004	0.004	14	130.6	0.000	0.000	0.003	0.003	38
Ten Daily III	42.89	0.000	0.000	0.003	0.003	12	76.94	0.000	0.000	0.004	0.004	27	85.04	0.000	0.000	0.004	0.004	26
Monthly																		
Total						144						741						1036

Annual Sediment Load (Metric Tonnes) : 44623

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore

Day	Sep						Oct						Nov					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	55.95	0.000	0.000	0.003	0.003	16	217.5	0.000	0.000	0.003	0.003	47	97.28	0.000	0.000	0.024	0.024	202
2	66.05	0.000	0.000	0.003	0.003	19	280.0	0.000	0.000	0.003	0.003	60	95.31	0.000	0.000	0.023	0.023	189
3	58.63	0.000	0.000	0.004	0.004	18	264.3	0.000	0.000	0.003	0.003	57	95.99	0.000	0.000	0.022	0.022	182
4	40.00	0.000	0.000	0.003	0.003	12	243.1	0.000	0.000	0.003	0.003	52	96.30	0.000	0.000	0.022	0.022	183
5	161.8	0.000	0.000	0.004	0.004	50	204.7	0.000	0.000	0.003	0.003	48	106.1	0.000	0.000	0.020	0.020	183
6	223.6	0.000	0.000	0.003	0.003	60	195.3	0.000	0.000	0.003	0.003	44	110.0	0.000	0.000	0.022	0.022	209
7	201.5	0.000	0.000	0.003	0.003	59	195.8	0.000	0.000	0.003	0.003	47	91.75	0.000	0.000	0.022	0.022	174
8	158.4	0.000	0.000	0.004	0.004	48	298.3	0.000	0.000	0.003	0.003	64	104.9	0.000	0.000	0.023	0.023	208
9	266.0	0.000	0.000	0.004	0.004	85	320.0	0.000	0.000	0.003	0.003	69	94.14	0.000	0.000	0.024	0.024	195
10	250.1	0.000	0.000	0.004	0.004	76	290.0	0.000	0.000	0.003	0.003	63	104.3	0.000	0.000	0.023	0.023	207
11	260.0	0.000	0.000	0.003	0.003	76	260.0	0.000	0.000	0.003	0.003	56	113.2	0.000	0.000	0.021	0.021	205
12	233.7	0.000	0.000	0.004	0.004	71	250.0	0.000	0.000	0.003	0.003	54	111.9	0.000	0.000	0.020	0.020	193
13	270.0	0.000	0.000	0.003	0.003	79	233.9	0.000	0.000	0.003	0.003	51	110.0	0.000	0.000	0.020	0.020	190
14	283.9	0.000	0.000	0.004	0.004	93	219.7	0.000	0.000	0.002	0.002	44	110.0	0.000	0.000	0.020	0.020	190
15	275.1	0.000	0.000	0.200	0.200	4748	198.7	0.000	0.000	0.002	0.002	41	111.5	0.000	0.000	0.022	0.022	212
16	264.0	0.000	0.000	0.200	0.200	4566	180.0	0.000	0.000	0.002	0.002	37	119.0	0.000	0.000	0.025	0.025	257
17	230.1	0.000	0.000	0.200	0.200	3981	179.2	0.000	0.000	0.003	0.003	42	88.30	0.000	0.000	0.024	0.024	183
18	220.0	0.000	0.000	0.200	0.200	3804	182.6	0.000	0.000	0.003	0.003	41	84.18	0.000	0.000	0.020	0.020	145
19	208.3	0.000	0.000	0.200	0.200	3601	177.0	0.000	0.000	0.002	0.002	37	82.94	0.000	0.000	0.024	0.024	172
20	197.4	0.000	0.000	0.003	0.003	53	174.6	0.000	0.000	0.003	0.003	42	84.00	0.000	0.000	0.024	0.024	174
21	176.8	0.000	0.000	0.003	0.003	44	171.9	0.000	0.000	0.003	0.003	37	80.97	0.000	0.000	0.023	0.023	161
22	207.6	0.000	0.000	0.003	0.003	50	154.8	0.000	0.000	0.003	0.003	35	80.86	0.000	0.000	0.002	0.002	17
23	246.3	0.000	0.000	0.003	0.003	57	150.0	0.000	0.000	0.003	0.003	32	81.96	0.000	0.000	0.002	0.002	16
24	302.7	0.000	0.000	0.200	0.200	5231	117.5	0.000	0.000	0.002	0.002	24	83.34	0.000	0.000	0.003	0.003	18
25	280.0	0.000	0.000	0.200	0.200	4836	121.2	0.000	0.000	0.003	0.003	28	85.01	0.000	0.000	0.003	0.003	19
26	257.7	0.000	0.000	0.199	0.199	4426	107.4	0.000	0.000	0.003	0.003	26	83.65	0.000	0.000	0.003	0.003	18
27	241.4	0.000	0.000	0.003	0.003	60	111.2	0.000	0.000	0.003	0.003	24	82.00	0.000	0.000	0.002	0.002	17
28	235.3	0.000	0.000	0.003	0.003	57	123.1	0.000	0.000	0.003	0.003	27	79.15	0.000	0.000	0.002	0.002	16
29	222.8	0.000	0.000	0.003	0.003	54	114.6	0.000	0.000	0.002	0.002	24	76.39	0.000	0.000	0.002	0.002	15
30	208.4	0.000	0.000	0.003	0.003	47	80.00	0.000	0.000	0.002	0.002	17	71.52	0.000	0.000	0.002	0.002	12
31							88.40	0.000	0.000	0.002	0.002	18						
Ten Daily Mean																		
Ten Daily I	148.2	0.000	0.000	0.003	0.003	44	250.9	0.000	0.000	0.003	0.003	55	99.61	0.000	0.000	0.023	0.023	193
Ten Daily II	244.2	0.000	0.000	0.102	0.102	2107	205.6	0.000	0.000	0.003	0.003	44	101.5	0.000	0.000	0.022	0.022	192
Ten Daily III	237.9	0.000	0.000	0.062	0.062	1486	121.8	0.000	0.000	0.003	0.003	27	80.49	0.000	0.000	0.004	0.004	31
Monthly																		
Total						36378						1289						4165

Annual Sediment Load (Metric Tonnes) : 44623

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore

Day	Dec						Jan						Feb					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	68.13	0.000	0.000	0.001	0.001	8	61.00	0.000	0.000	0.003	0.003	13	38.06	0.000	0.000	0.003	0.003	9
2	68.16	0.000	0.000	0.001	0.001	8	61.08	0.000	0.000	0.003	0.003	13	38.50	0.000	0.000	0.003	0.003	9
3	67.69	0.000	0.000	0.001	0.001	8	60.73	0.000	0.000	0.003	0.003	13	36.50	0.000	0.000	0.003	0.003	8
4	72.00	0.000	0.000	0.001	0.001	9	60.31	0.000	0.000	0.003	0.003	13	37.74	0.000	0.000	0.003	0.003	8
5	67.92	0.000	0.000	0.001	0.001	8	59.68	0.000	0.000	0.003	0.003	13	40.00	0.000	0.000	0.003	0.003	9
6	71.44	0.000	0.000	0.001	0.001	9	58.20	0.000	0.000	0.002	0.002	12	37.94	0.000	0.000	0.003	0.003	9
7	68.67	0.000	0.000	0.001	0.001	8	56.11	0.000	0.000	0.002	0.002	11	36.18	0.000	0.000	0.003	0.003	8
8	69.11	0.000	0.000	0.001	0.001	8	64.00	0.000	0.000	0.002	0.002	13	34.43	0.000	0.000	0.003	0.003	8
9	69.95	0.000	0.000	0.001	0.001	8	63.41	0.000	0.000	0.002	0.002	13	33.09	0.000	0.000	0.003	0.003	7
10	65.78	0.000	0.000	0.001	0.001	8	60.03	0.000	0.000	0.002	0.002	12	34.69	0.000	0.000	0.003	0.003	8
11	76.00	0.000	0.000	0.001	0.001	9	58.93	0.000	0.000	0.002	0.002	12	32.87	0.000	0.000	0.003	0.003	8
12	78.00	0.000	0.000	0.001	0.001	9	48.81	0.000	0.000	0.002	0.002	10	36.00	0.000	0.000	0.003	0.003	9
13	69.85	0.000	0.000	0.001	0.001	8	51.98	0.000	0.000	0.002	0.002	10	33.99	0.000	0.000	0.003	0.003	8
14	69.16	0.000	0.000	0.001	0.001	7	51.13	0.000	0.000	0.003	0.003	11	34.11	0.000	0.000	0.003	0.003	8
15	66.47	0.000	0.000	0.001	0.001	7	50.00	0.000	0.000	0.003	0.003	11	32.24	0.000	0.000	0.003	0.003	8
16	56.83	0.000	0.000	0.002	0.002	8	49.51	0.000	0.000	0.003	0.003	11	31.80	0.000	0.000	0.003	0.003	8
17	63.51	0.000	0.000	0.002	0.002	9	49.27	0.000	0.000	0.003	0.003	11	32.11	0.000	0.000	0.003	0.003	7
18	64.00	0.000	0.000	0.002	0.002	9	53.46	0.000	0.000	0.003	0.003	12	31.42	0.000	0.000	0.003	0.003	7
19	60.31	0.000	0.000	0.002	0.002	8	45.68	0.000	0.000	0.003	0.003	10	32.00	0.000	0.000	0.003	0.003	7
20	61.67	0.000	0.000	0.002	0.002	9	46.48	0.000	0.000	0.003	0.003	10	27.15	0.000	0.000	0.003	0.003	6
21	64.01	0.000	0.000	0.002	0.002	9	46.71	0.000	0.000	0.003	0.003	10	27.20	0.000	0.000	0.003	0.003	6
22	62.61	0.000	0.000	0.002	0.002	9	45.00	0.000	0.000	0.003	0.003	10	24.81	0.000	0.000	0.003	0.003	5
23	63.74	0.000	0.000	0.002	0.002	8	47.62	0.000	0.000	0.003	0.003	11	24.44	0.000	0.000	0.003	0.003	5
24	63.31	0.000	0.000	0.002	0.002	8	45.18	0.000	0.000	0.003	0.003	10	22.00	0.000	0.000	0.002	0.002	5
25	60.00	0.000	0.000	0.002	0.002	8	46.67	0.000	0.000	0.003	0.003	10	22.57	0.000	0.000	0.002	0.002	5
26	54.94	0.000	0.000	0.002	0.002	7	44.00	0.000	0.000	0.003	0.003	10	26.00	0.000	0.000	0.002	0.002	5
27	66.20	0.000	0.000	0.002	0.002	9	46.53	0.000	0.000	0.003	0.003	11	18.73	0.000	0.000	0.002	0.002	4
28	65.56	0.000	0.000	0.002	0.002	8	45.13	0.000	0.000	0.003	0.003	11	18.72	0.000	0.000	0.002	0.002	4
29	62.11	0.000	0.000	0.002	0.002	8	42.00	0.000	0.000	0.003	0.003	10						
30	62.45	0.000	0.000	0.002	0.002	8	38.45	0.000	0.000	0.003	0.003	9						
31	58.50	0.000	0.000	0.001	0.001	7	38.03	0.000	0.000	0.003	0.003	9						
Ten Daily Mean																		
Ten Daily I	68.88	0.000	0.000	0.001	0.001	8	60.46	0.000	0.000	0.002	0.002	13	36.71	0.000	0.000	0.003	0.003	8
Ten Daily II	66.58	0.000	0.000	0.001	0.001	8	50.53	0.000	0.000	0.002	0.002	11	32.37	0.000	0.000	0.003	0.003	8
Ten Daily III	62.13	0.000	0.000	0.002	0.002	8	44.12	0.000	0.000	0.003	0.003	10	23.06	0.000	0.000	0.002	0.002	5
Monthly																		
Total						256						343						197

Annual Sediment Load (Metric Tonnes) : 44623

Daily Observed Sediment Datasheet for period : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore

Day	Mar						Apr						May					
	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day	Q cumecs.	Coarse g/l	Medium g/l	Fine g/l	Total g/l	Total M.T./day
1	18.83	0.000	0.000	0.003	0.003	4	5.733	0.000	0.000	0.003	0.003	1	20.21					
2	15.85	0.000	0.000	0.003	0.003	4	5.600	0.000	0.000	0.003	0.003	1	30.52					
3	5.247	0.000	0.000	0.003	0.003	1	5.624	0.000	0.000	0.003	0.003	1	23.86					
4	6.811	0.000	0.000	0.003	0.003	2	5.544	0.000	0.000	0.003	0.003	1	21.93					
5		0.000	0.000	0.003	0.003		5.269	0.000	0.000	0.003	0.003	1	21.42					
6	5.213	0.000	0.000	0.003	0.003	1	6.580	0.000	0.000	0.003	0.003	2	20.99					
7	4.945	0.000	0.000	0.003	0.003	1	5.167	0.000	0.000	0.003	0.003	1	20.20					
8	5.274	0.000	0.000	0.003	0.003	1	4.898	0.000	0.000	0.003	0.003	1	22.57					
9	5.088	0.000	0.000	0.003	0.003	1	4.600	0.000	0.000	0.003	0.003	1	21.93					
10	4.944	0.000	0.000	0.003	0.003	1	4.864	0.000	0.000	0.003	0.003	1	20.99					
11	6.033	0.000	0.000	0.003	0.003	1	4.184	0.000	0.000	0.003	0.003	1	21.85					
12		0.000	0.000	0.003	0.003		3.954	0.000	0.000	0.003	0.003	1	23.93					
13		0.000	0.000	0.003	0.003		4.398	0.000	0.000	0.003	0.003	1	19.63					
14	4.601	0.000	0.000	0.003	0.003	1	4.600	0.000	0.000	0.003	0.003	1	21.50					
15	4.884	0.000	0.000	0.003	0.003	1	4.663	0.000	0.000	0.003	0.003	1	19.99					
16	4.982	0.000	0.000	0.003	0.003	1	5.200	0.000	0.000	0.003	0.003	1	18.92					
17	4.551	0.000	0.000	0.003	0.003	1	4.494	0.000	0.000	0.003	0.003	1	18.27					
18	4.553	0.000	0.000	0.003	0.003	1	4.775	0.000	0.000	0.003	0.003	1	21.50					
19		0.000	0.000	0.003	0.003		5.190	0.000	0.000	0.003	0.003	1	23.07					
20	5.012	0.000	0.000	0.003	0.003	1	5.265	0.000	0.000	0.003	0.003	1	23.50					
21	4.508	0.000	0.000	0.003	0.003	1	5.542	0.000	0.000	0.003	0.003	1	23.50					
22	4.763	0.000	0.000	0.003	0.003	1	5.412	0.000	0.000	0.003	0.003	1	22.93					
23	5.165	0.000	0.000	0.003	0.003	1	4.800	0.000	0.000	0.003	0.003	1	23.86					
24	4.200	0.000	0.000	0.003	0.003	1	4.652	0.000	0.000	0.003	0.003	1	25.94					
25	3.785	0.000	0.000	0.003	0.003	1	5.049	0.000	0.000	0.003	0.003	1	22.14					
26		0.000	0.000	0.003	0.003		6.645	0.000	0.000	0.003	0.003	2	21.21					
27	3.786	0.000	0.000	0.003	0.003	1	6.302	0.000	0.000	0.003	0.003	1	20.06					
28	3.689	0.000	0.000	0.003	0.003	1	5.870	0.000	0.000	0.003	0.003	1	23.93					
29	4.679	0.000	0.000	0.003	0.003	1	5.551	0.000	0.000	0.003	0.003	1	20.42					
30	4.819	0.000	0.000	0.003	0.003	1	5.800	0.000	0.000	0.003	0.003	1	25.51					
31	5.536	0.000	0.000	0.003	0.003	1							25.65					
Ten Daily Mean																		
Ten Daily I	8.022	0.000	0.000	0.003	0.003	2	5.388	0.000	0.000	0.003	0.003	1	22.46					
Ten Daily II	4.945	0.000	0.000	0.003	0.003	1	4.672	0.000	0.000	0.003	0.003	1	21.22					
Ten Daily III	4.493	0.000	0.000	0.003	0.003	1	5.562	0.000	0.000	0.003	0.003	1	23.20					
Monthly																		

Total

37

36

Annual Sediment Load for period : 2003-2017**Station Name : GOVINDPUR (ED000E4)****Division : E.E., Bhubaneswar****Local River : Burhabalang****Sub-Division : Balasore**

Year	Monsoon (M.T.)	Non-Monsoon (M.T.)	Annual Load (M.T.)	Annual Run Off (MCM)
2003-2004	911645	24562	936207	3170
2004-2005	1204010	16705	1220715	3134
2005-2006	1373050	15439	1388489	3075
2006-2007	1936696	7309	1944005	3656
2007-2008	2174291	20120	2194411	5100
2008-2009	1710229	4818	1715047	4691
2009-2010	1393627	6328	1399954	3190
2010-2011	425907	205	426112	1851
2011-2012	16087	1702	17789	4364
2012-2013	253388	666	254055	2055
2013-2014	883614	18171	901785	6741
2014-2015	393494	8347	401840	4591
2015-2016	14240	2622	16862	2185
2016-2017	43753	869	44623	2269

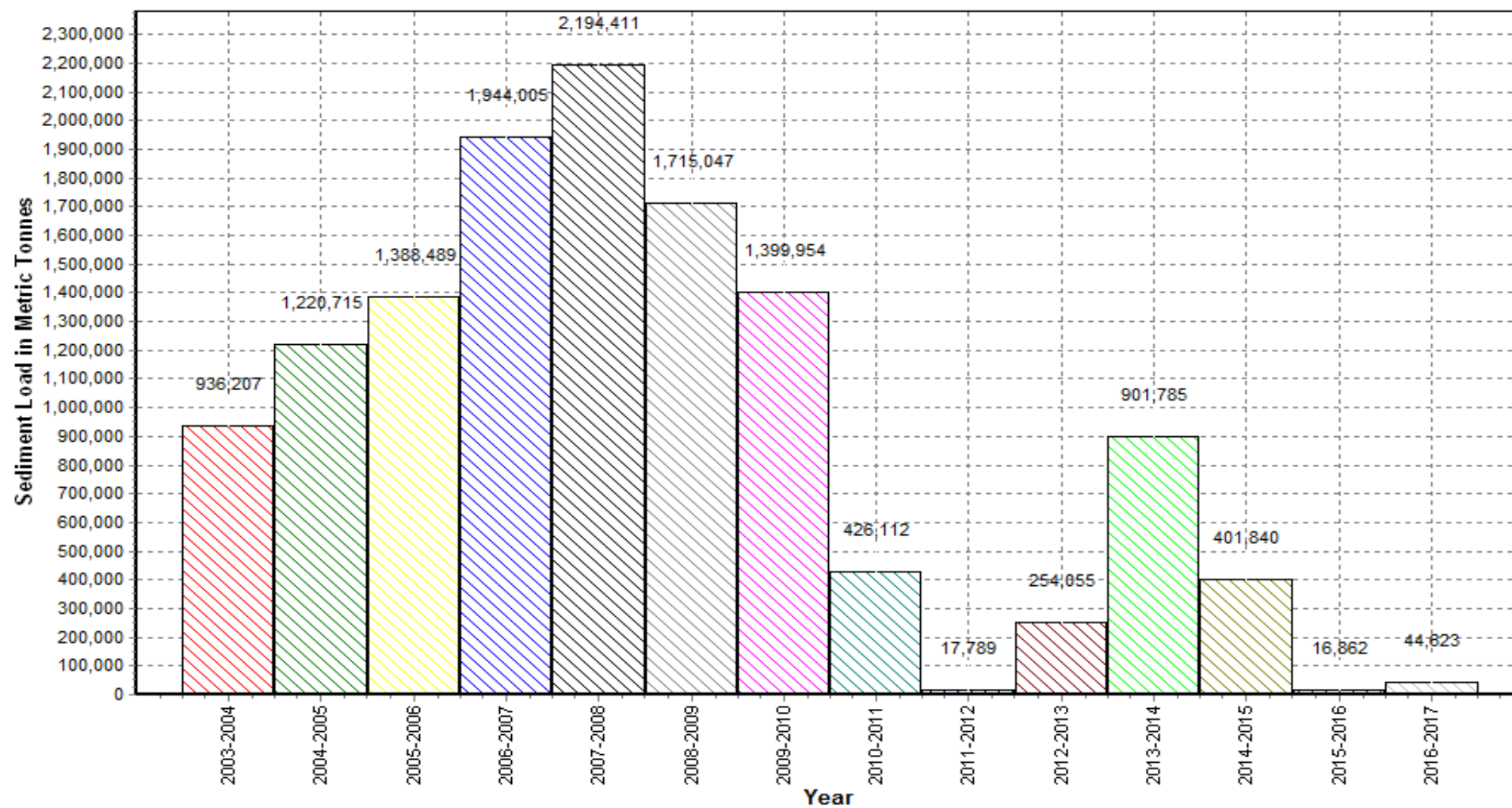
Annual Sediment Load for the period: 2003-2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

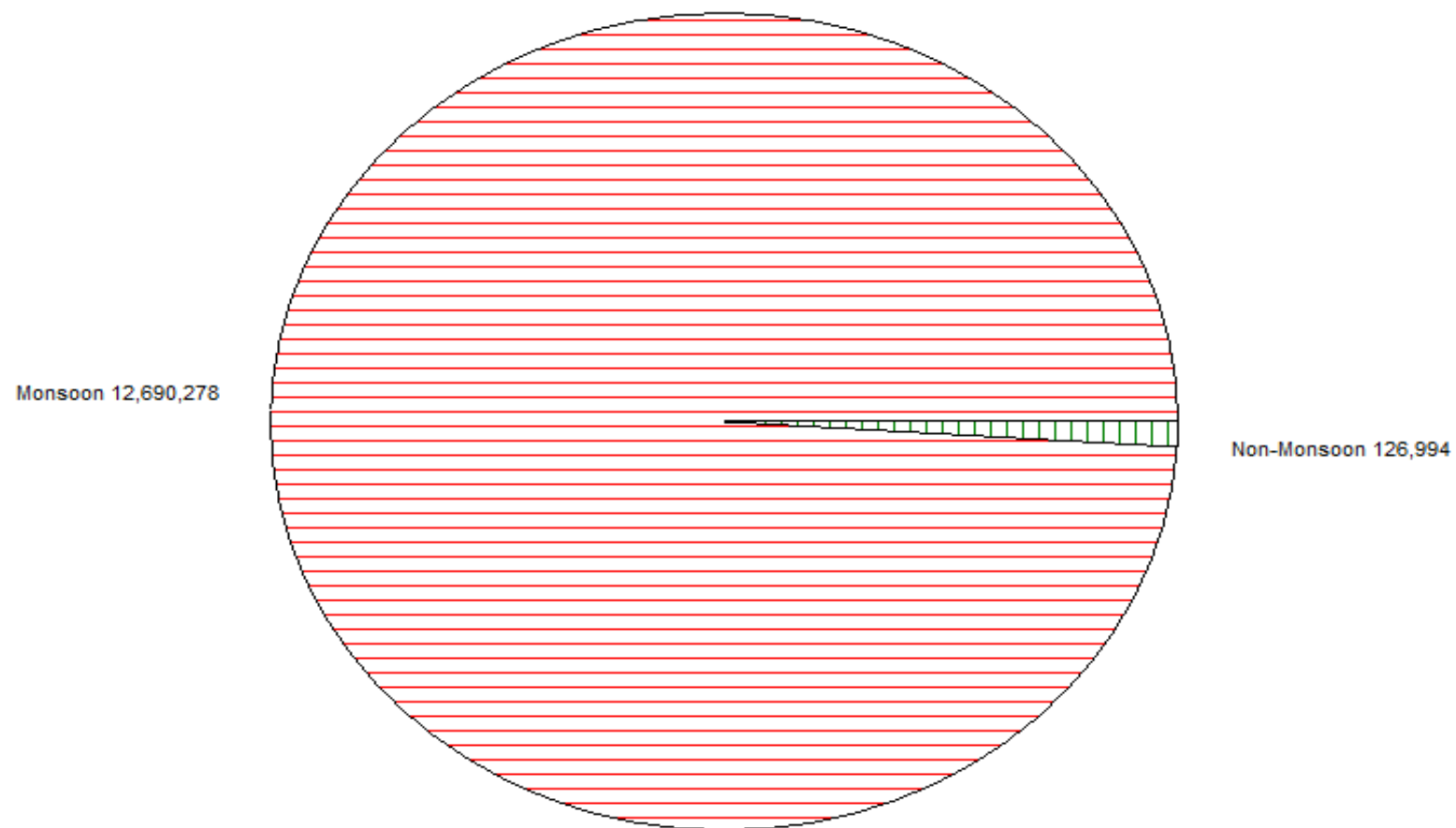
Sub-Division : Balasore



Station Name : GOVINDPUR (ED000E4)
Local River : Burhabalang

Seasonal Sediment Load for the period : 2003-2016

Division : E.E., Bhubaneswar
Sub-Division : Balasore



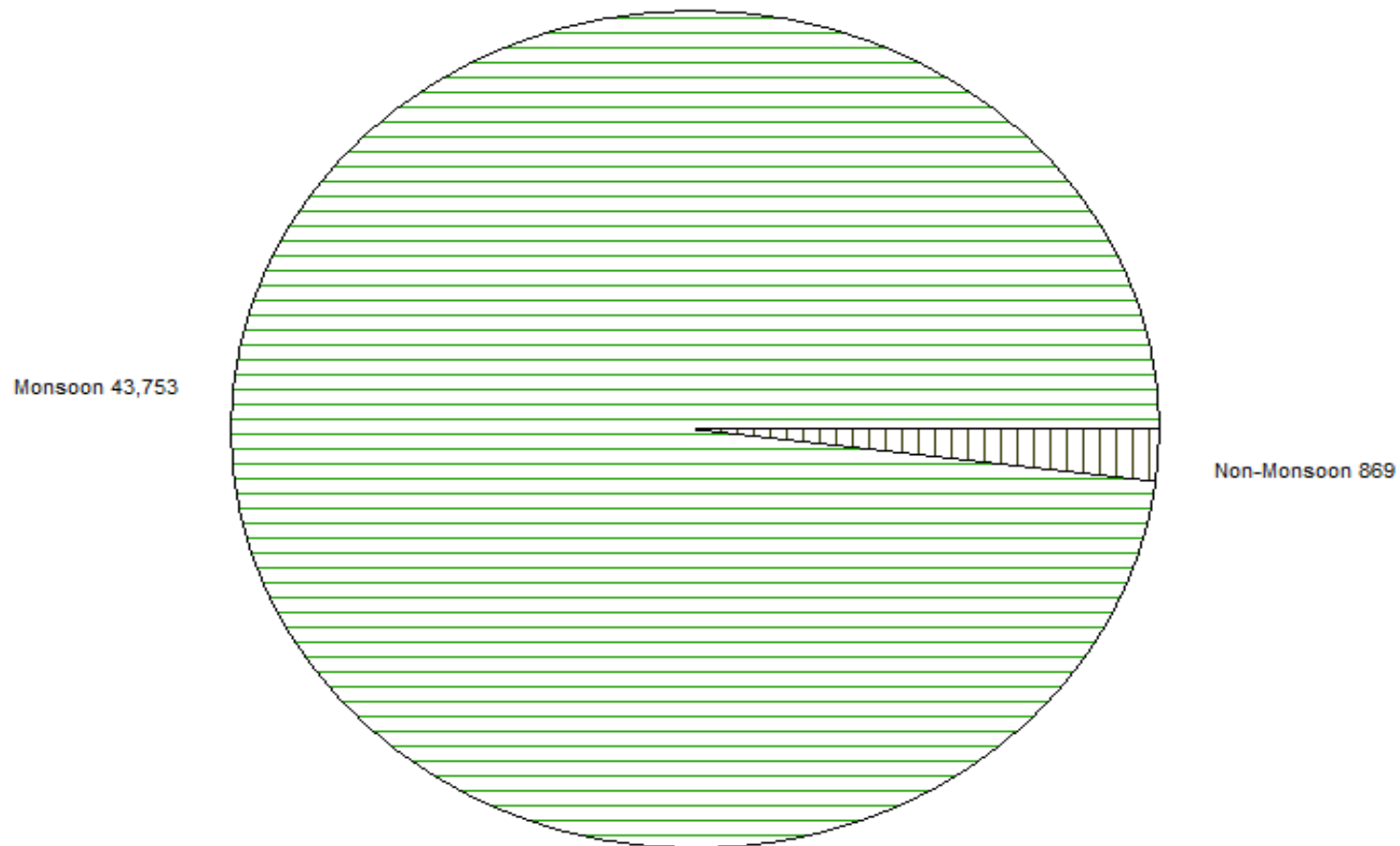
Seasonal Sediment Load for the Year: 2016-2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

Division : E.E., Bhubaneswar

Sub-Division : Balasore



Water Quality Datasheet for the period : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

River Water Analysis

Sub-Division : Balasore

S.No	Parameters	01.06.2016	01.08.2016	01.10.2016	01.12.2016	01.02.2017	01.04.2017
		A	A	A	A	A	A
	PHYSICAL						
1	Q (cumec)						
2	Colour_Cod (-)	Clear	Light Brown	Light Brown	Clear	Clear	Clear
3	EC_FLD (µmho/cm)	312	115	126	205	326	377
4	EC_GEN (µmho/cm)	316	118	130	201	329	380
5	Odour_Code (-)	odour free	odour free	odour free	odour free	odour free	odour free
6	pH_FLD (pH units)	7.5	7.5	7.4	7.5	7.2	7.4
7	pH_GEN (pH units)	7.5	7.6	7.5	7.6	7.3	7.5
8	Temp (deg C)	24.0	30.0	26.0	27.5	21.0	28.0
	CHEMICAL						
1	Alk-Phen (mgCaCO3/L)	0.0	0.0	0.0	0.0	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	92	97	55	60	60	65
3	B (mg/L)	0.01	0.02	0.01	0.01	0.03	0.02
4	Ca (mg/L)	37	34	22	38	37	38
5	Cl (mg/L)	9.4	15.1	13.2	15.1	13.2	24.5
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	0.4	0.2	0.8	0.2	0.6	0.6
9	HCO3 (mg/L)	113	118	68	73	73	79
10	K (mg/L)	1.6	5.1	2.7	3.3	4.7	5.1
11	Mg (mg/L)	14.6	13.6	12.6	13.6	15.6	16.5
12	Na (mg/L)	23.5	20.7	19.3	22.1	28.0	39.9
13	NO2+NO3 (mg N/L)	0.85	1.22	1.11	0.83	1.06	1.22
14	NO2-N (mgN/L)	0.00	0.00	0.01	0.03	0.00	0.00
15	NO3-N (mgN/L)	0.85	1.22	1.09	0.80	1.06	1.22
16	P-Tot (mgP/L)	0.010	0.010	0.010	0.010	0.010	0.010
17	SiO2 (mg/L)	6.0	7.0	6.0	6.0	8.0	8.5
18	SO4 (mg/L)	26.6	26.8	1.0	18.6	1.0	1.5
	BIOLOGICAL/BACTERIOLOGICAL						
	TRACE & TOXIC						
	CHEMICAL INDICES						
1	HAR_Ca (mgCaCO3/L)	92	84	56	96	92	96
2	HAR_Total (mgCaCO3/L)	153	141	109	153	157	165
3	Na% (%)	25	24	27	24	27	34
4	RSC (-)	0.0	0.0	0.0	0.0	0.0	0.0
5	SAR (-)	0.8	0.8	0.8	0.8	1.0	1.4
	PESTICIDES						

Water Quality Summary for the period : 2016-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

Sub-Division : Balasore

River Water Summary

S.No	Parameters	Number of Observations	Maximum	Minimum	Mean
	PHYSICAL				
1	Q (cumec)				
2	EC_FLD (μmho/cm)	6	377	115	244
3	EC_GEN (μmho/cm)	6	380	118	246
4	pH_FLD (pH units)	6	7.5	7.2	7.4
5	pH_GEN (pH units)	6	7.6	7.3	7.5
6	Temp (deg C)	6	30.0	21.0	26.1
	CHEMICAL				
1	Alk-Phen (mgCaCO3/L)	6	0.0	0.0	0
2	ALK-TOT (mgCaCO3/L)	6	97	55	72
3	B (mg/L)	6	0.03	0.01	0.02
4	Ca (mg/L)	6	38	22	34
5	Cl (mg/L)	6	24.5	9.4	15.1
6	CO3 (mg/L)	6	0.0	0.0	0
7	F (mg/L)	6	0.05	0.05	0.05
8	Fe (mg/L)	6	0.8	0.2	0.5
9	HCO3 (mg/L)	6	118	68	87
10	K (mg/L)	6	5.1	1.6	3.7
11	Mg (mg/L)	6	16.5	12.6	14.4
12	Na (mg/L)	6	39.9	19.3	25.6
13	NO2+NO3 (mg N/L)	6	1.22	0.83	1.05
14	NO2-N (mgN/L)	6	0.03	0.00	0.01
15	NO3-N (mgN/L)	6	1.22	0.80	1.04
16	P-Tot (mgP/L)	6	0.010	0.010	0.01
17	SiO2 (mg/L)	6	8.5	6.0	6.9
18	SO4 (mg/L)	6	26.8	1.0	12.6
	BIOLOGICAL/BACTERIOLOGICAL				
	TRACE & TOXIC				
	CHEMICAL INDICES				
1	HAR_Ca (mgCaCO3/L)	6	96	56	86
2	HAR_Total (mgCaCO3/L)	6	165	109	146
3	Na% (%)	6	34	24	27
4	RSC (-)	6	0.0	0.0	0
5	SAR (-)	6	1.4	0.8	0.9
	PESTICIDES				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

River Water

Sub-Division : Balasore

S.No	Parameters	Flood Jun - Oct																			
		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007
	PHYSICAL																				
1	Q (cumec)																				
2	EC_FLD (µmho/cm)		165	131			157		140	187	185	170	181	240	327	184		178	173		
3	EC_GEN (µmho/cm)		165	131			151		140	187	185	170	181	240	332	188		178	173		
4	pH_FLD (pH units)		7.6	7.8			7.6		7.8	7.6	8.0	7.4	7.6	7.8	7.0	7.5		7.5	8.0		
5	pH_GEN (pH units)		7.6	7.8			7.6		7.8	7.6	8.0	7.4	7.6	7.8	7.1	7.5		7.4	7.8		
6	Temp (deg C)		28.5	28.4			22.8		25.7	21.7	29.1	26.5	29.4	27.8	24.7	26.7		20.0	23.5		
	CHEMICAL																				
1	Alk-Phen (mgCaCO3/L)						0.0		0.0	0.0	0.0				0.0	0.0					
2	ALK-TOT (mgCaCO3/L)						45		44	56	82				60	82					
3	B (mg/L)		0.00	0.00			0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.01		0.00	0.00		
4	Ca (mg/L)		15	12			14		11	16	19	18	19	24	26	31		18	15		
5	Cl (mg/L)		14.0	10.1			13.0		9.7	14.9	13.2	18.1	22.5	13.2	14.5	12.6		13.6	11.7		
6	CO3 (mg/L)		0.0	0.0			0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		
7	F (mg/L)		0.05	0.39			0.00		0.07	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.00	0.41		
8	Fe (mg/L)			0.1			0.1		0.1	0.1	0.0	1.3	0.0	0.6	0.4	0.5		0.0	0.0		
9	HCO3 (mg/L)		62	57			55		54	70	100	109	70	81	73	100		77	82		
10	K (mg/L)		2.1	2.4			3.0		1.0	2.4	0.9	3.3	1.4	1.4	2.2	3.1		2.3	1.1		
11	Mg (mg/L)		3.8	3.3			4.8		7.1	7.5	7.1	7.8	4.9	11.0	10.7	13.6		4.3	7.3		
12	Na (mg/L)		10.0	7.6			9.6		5.6	8.6	7.3	9.9	10.9	10.1	9.8	21.2		10.3	7.7		
13	NO2+NO3 (mg N/L)		0.25	0.30			0.54		0.32	0.36	0.38	0.95	0.41	1.03	0.92	1.06		0.35	0.19		
14	NO2-N (mgN/L)		0.00	0.00			0.00		0.00	0.00	0.07	0.00	0.00	0.00	0.00	0.00		0.00	0.00		
15	NO3-N (mgN/L)		0.25	0.30			0.54		0.32	0.36	0.31	0.95	0.41	1.03	0.92	1.06		0.35	0.19		
16	o-PO4-P (mg P/L)						0.000		0.067									0.000			
17	P-Tot (mgP/L)			0.001			0.001		0.010	0.001	0.010	0.004	0.001	0.001	0.004	0.010			0.001		
18	SiO2 (mg/L)		11.6	34.5			8.9		6.3	6.5	11.0	21.8	9.0	7.3	6.3	6.3		22.0	35.2		
19	SO4 (mg/L)		2.0	3.8			13.9		7.6	10.0	9.3	7.5	19.2	13.2	13.2	18.2		1.6	2.7		
	BIOLOGICAL/BACTERIOLOGICAL																				
1	BOD3-27 (mg/L)		1.0	0.7														0.7	0.8		
2	DO (mg/L)		6.1	6.5														8.4	7.6		
3	DO_SAT% (%)		78	84														91	89		
	TRACE & TOXIC																				
	CHEMICAL INDICES																				
1	HAR_Ca (mgCaCO3/L)		38	30			34		28	40	47	45	48	59	64	77		45	38		
2	HAR_Total (mgCaCO3/L)		53	47			54		58	71	76	78	68	105	109	134		62	62		
3	Na% (%)		30	26			27		17	20	17	19	26	15	14	25		27	20		
4	RSC (-)		0.0	0.1			0.0		0.0	0.0	0.1	0.2	0.0	0.0	0.0	0.0		0.0	0.0		
5	SAR (-)		0.6	0.5			0.6		0.3	0.4	0.4	0.5	0.6	0.4	0.4	0.8		0.6	0.4		
	PESTICIDES																				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : GOVINDPUR (ED000E4)

Division : E.E., Bhubaneswar

Local River : Burhabalang

River Water

Sub-Division : Balasore

S.No	Parameters	Winter										Summer									
		Nov - Feb										Mar - May									
		2007-2008	2008-2009	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	2016-2017	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
	PHYSICAL																				
1	Q (cumec)																				
2	EC_FLD (µmho/cm)	185		221	255	215	208	169	345	397	266		240				210		340	370	260
3	EC_GEN (µmho/cm)	176		221	255	215	208	169	345	392	265		240				220		340	370	260
4	pH_FLD (pH units)	8.0		7.7	7.7	7.8	7.3	7.6	7.3	7.5	7.4		7.9				8.2		8.4	8.1	7.6
5	pH_GEN (pH units)	8.1		7.7	7.7	7.8	7.3	7.5	7.3	7.7	7.4		7.9				8.3		8.4	8.1	7.6
6	Temp (deg C)	18.8		18.0	17.5	24.3	20.3	22.9	23.0	28.5	24.3		27.0				23.0		24.0	25.5	
	CHEMICAL																				
1	Alk-Phen (mgCaCO3/L)	0.0		0.0	0.0	0.0				0.0	0.0						0.0		5.8	0.0	0.0
2	ALK-TOT (mgCaCO3/L)	56		56	100	53				67	60						73		99	112	106
3	B (mg/L)	0.00		0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.02		0.00				0.00		0.00	0.00	0.01
4	Ca (mg/L)	17		17	20	20	22	16	23	23	38		24				25		18	27	30
5	Cl (mg/L)	15.1		22.3	17.0	18.9	22.3	19.4	17.0	15.1	14.1		17.3				15.2		31.6	28.3	34.0
6	CO3 (mg/L)	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0				0.0		7.0	0.0	0.0
7	F (mg/L)	0.00		0.00	0.05	0.05	0.05	0.05	0.05	0.05	0.05		0.00				0.05		0.08	0.05	0.05
8	Fe (mg/L)	0.1		0.1	0.1	0.0	3.8	0.1	0.5	0.3	0.4								0.1	0.1	0.0
9	HCO3 (mg/L)	68		68	111	65	151	98	107	82	73		115				89		107	136	130
10	K (mg/L)	2.5		1.1	1.0	0.9	2.6	1.3	1.1	3.1	4.0		2.3				0.8		1.5	1.2	1.1
11	Mg (mg/L)	5.0		9.2	12.2	8.7	8.5	4.5	7.8	8.3	14.6		7.5				5.8		17.5	15.6	5.8
12	Na (mg/L)	10.8		12.6	10.8	9.1	17.2	11.2	10.4	16.5	25.1		11.8				10.3		22.7	22.0	18.2
13	NO2+NO3 (mg N/L)	0.38		0.30	0.39	0.36	1.04	0.90	1.25	0.83	0.95		0.24				0.48		0.57	0.55	0.42
14	NO2-N (mgN/L)	0.00		0.00	0.00	0.07	0.00	0.00	0.00	0.01	0.01		0.00				0.00		0.00	0.00	0.07
15	NO3-N (mgN/L)	0.38		0.30	0.39	0.29	1.04	0.90	1.25	0.81	0.93		0.24				0.48		0.57	0.55	0.35
16	o-PO4-P (mg P/L)	0.000		0.045															0.080		
17	P-Tot (mgP/L)	0.001		0.010	0.001	0.010	0.001	0.001	0.001	0.010	0.010						0.050		0.010	0.001	0.010
18	SiO2 (mg/L)	9.0		7.7	5.8	9.0	20.5	9.5	5.5	5.0	7.0		20.7				9.4		8.1	9.5	9.0
19	SO4 (mg/L)	11.0		10.9	5.2	3.7	13.6	21.6	4.7	55.2	9.8		1.5				10.8		20.1	22.9	21.8
	BIOLOGICAL/BACTERIOLOGICAL																				
1	BOD3-27 (mg/L)												0.9								
2	DO (mg/L)												7.5								
3	DO_SAT% (%)												94								
	TRACE & TOXIC																				
	CHEMICAL INDICES																				
1	HAR_Ca (mgCaCO3/L)	43		42	50	50	55	41	57	58	94		60				63		44	68	76
2	HAR_Total (mgCaCO3/L)	64		81	101	87	91	59	90	93	155		91				87		117	133	100
3	Na% (%)	26		25	19	20	28	29	20	27	25		21				20		30	26	28
4	RSC (-)	0.0		0.0	0.0	0.0	0.7	0.4	0.1	0.0	0.0		0.1				0.0		0.0	0.0	0.1
5	SAR (-)	0.6		0.6	0.5	0.4	0.8	0.6	0.5	0.7	0.9		0.5				0.5		0.9	0.8	0.8
	PESTICIDES																				

Water Quality Seasonal Average for the period: 2002-2017

Station Name : GOVINDPUR (ED000E4)

Local River : Burhabalang

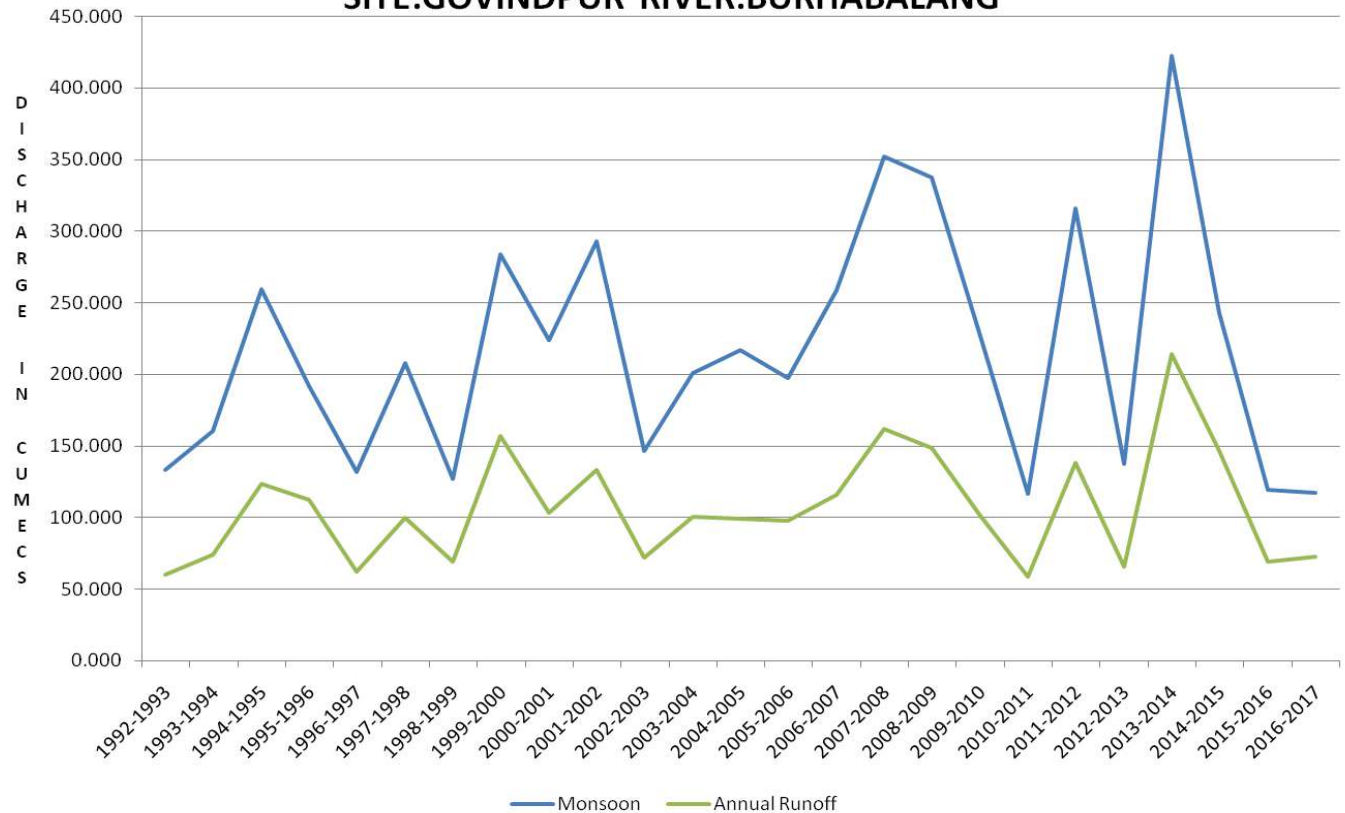
Division : E.E., Bhubaneswar

Sub-Division : Balasore

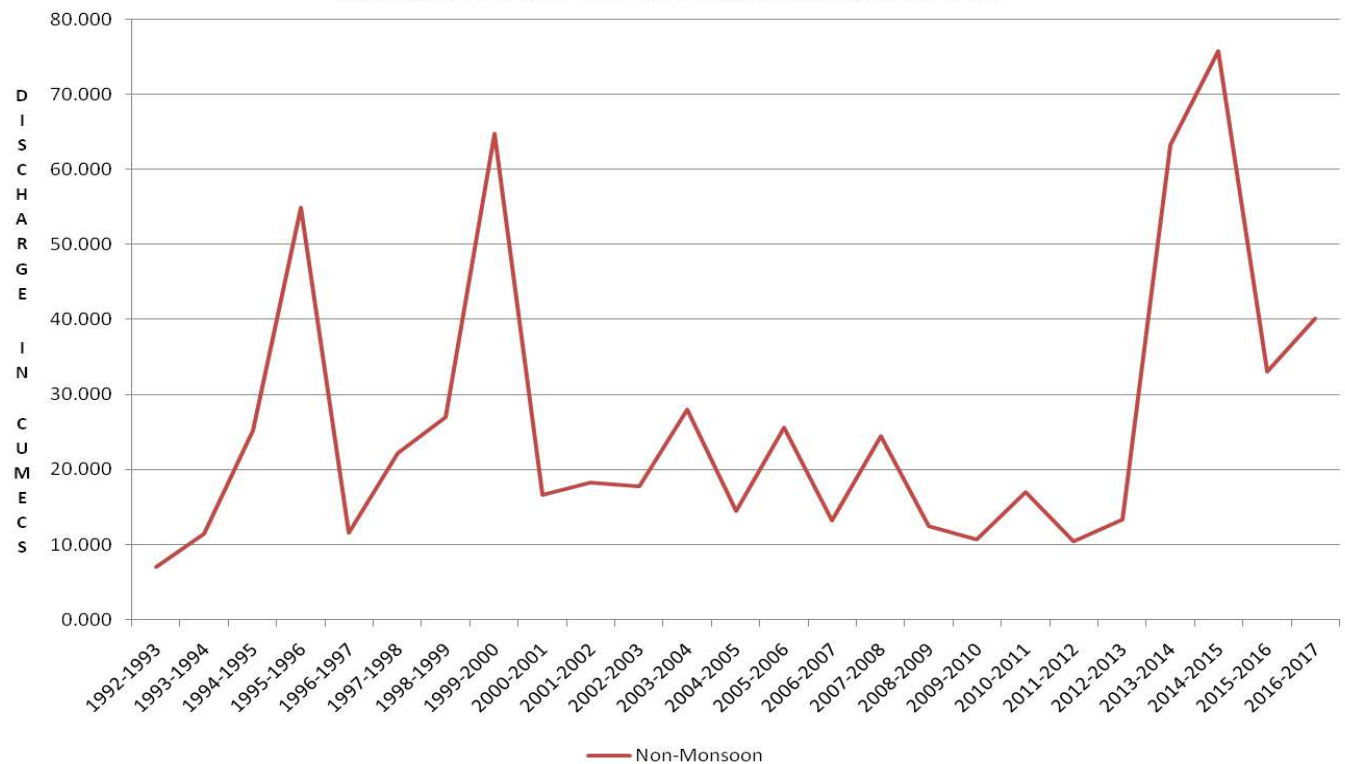
River Water

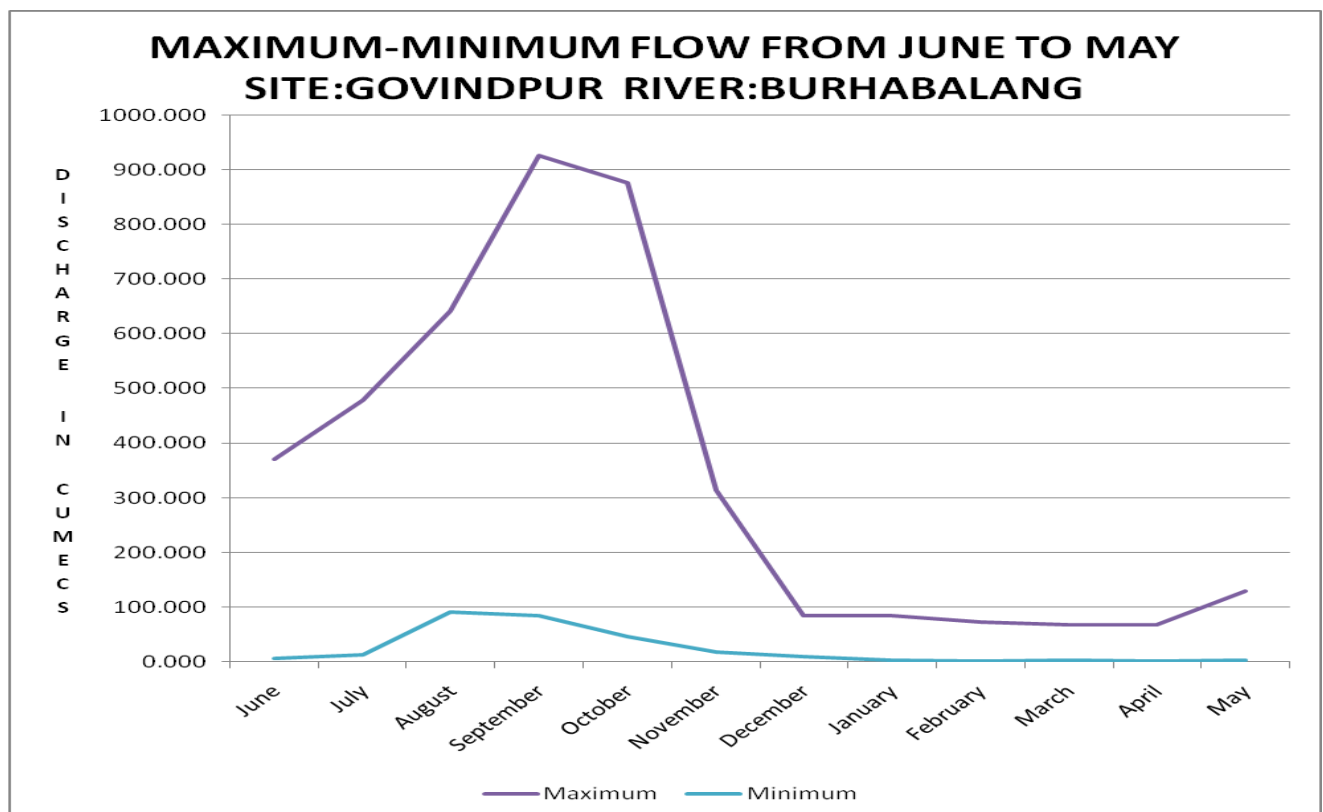
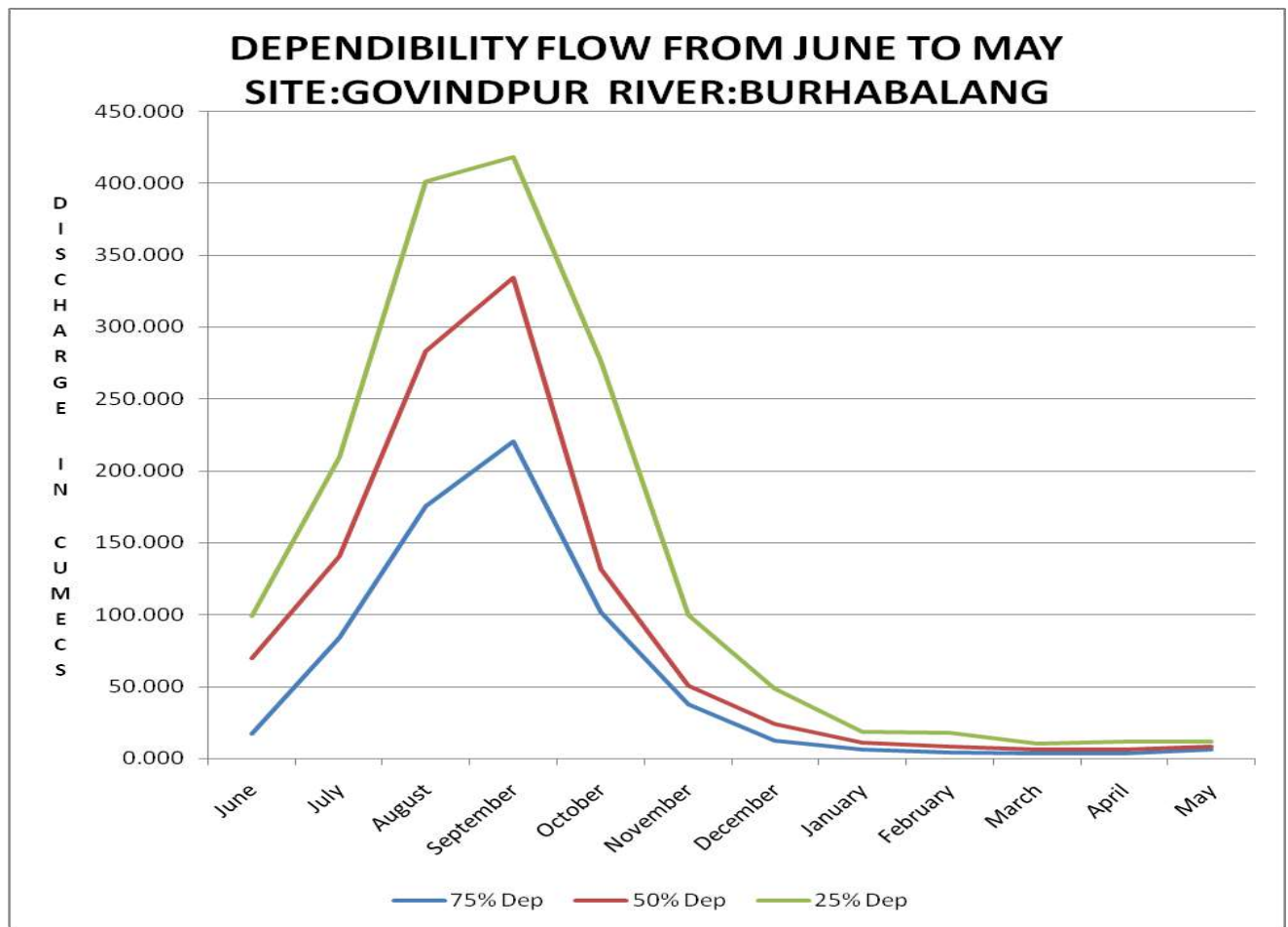
S.No	Parameters					
		2013	2014	2015	2016	2017
	PHYSICAL					
1	Q (cumec)					
2	EC_FLD (µmho/cm)	230	186	530	653	377
3	EC_GEN (µmho/cm)	230	186	530	662	380
4	pH_FLD (pH units)	7.3	8.1	7.1	7.4	7.4
5	pH_GEN (pH units)	7.3	8.1	7.1	7.2	7.5
6	Temp (deg C)	28.0	27.0	32.5	25.0	28.0
	CHEMICAL					
1	Alk-Phen (mgCaCO3/L)				0.0	0.0
2	ALK-TOT (mgCaCO3/L)				69	65
3	B (mg/L)	0.00	0.00	0.00	0.01	0.02
4	Ca (mg/L)	15	15	31	32	38
5	Cl (mg/L)	22.1	25.3	35.0	18.9	24.5
6	CO3 (mg/L)	0.0	0.0	0.0	0.0	0.0
7	F (mg/L)	0.05	0.05	0.05	0.05	0.05
8	Fe (mg/L)	2.6	0.0	0.4	0.2	0.6
9	HCO3 (mg/L)	122	93	131	85	79
10	K (mg/L)	6.3	2.6	1.2	13.0	5.1
11	Mg (mg/L)	6.3	3.1	5.9	12.6	16.5
12	Na (mg/L)	12.4	12.3	18.6	20.9	39.9
13	NO2+NO3 (mg N/L)	1.16	0.73	1.20	0.88	1.22
14	NO2-N (mgN/L)	0.00	0.00	0.01	0.00	0.00
15	NO3-N (mgN/L)	1.16	0.73	1.19	0.88	1.22
16	o-PO4-P (mg P/L)					
17	P-Tot (mgP/L)	0.001	0.001	0.001	0.010	0.010
18	SiO2 (mg/L)	18.6	9.8	8.0	5.0	8.5
19	SO4 (mg/L)	6.2	21.2	21.7	57.8	1.5
	BIOLOGICAL/BACTERIOLOGICAL					
1	BOD3-27 (mg/L)					
2	DO (mg/L)					
3	DO_SAT% (%)					
	TRACE & TOXIC					
	CHEMICAL INDICES					
1	HAR_Ca (mgCaCO3/L)	37	38	79	80	96
2	HAR_Total (mgCaCO3/L)	63	51	103	133	165
3	Na% (%)	28	33	28	23	34
4	RSC (-)	0.8	0.5	0.1	0.0	0.0
5	SAR (-)	0.7	0.8	0.8	0.8	1.4
	PESTICIDES					

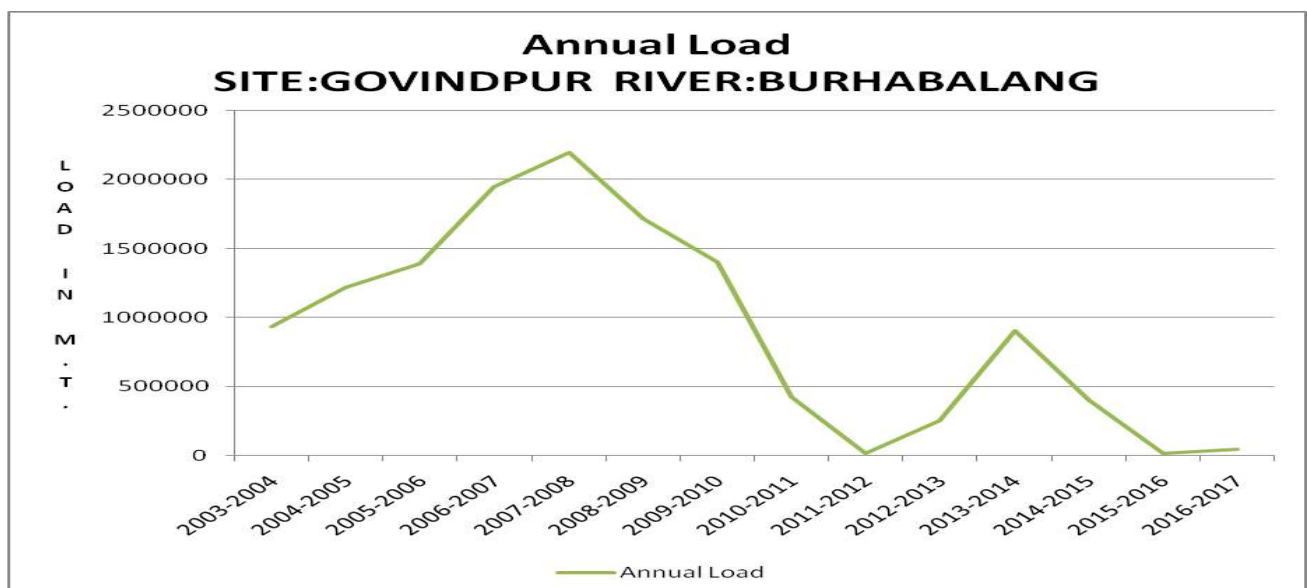
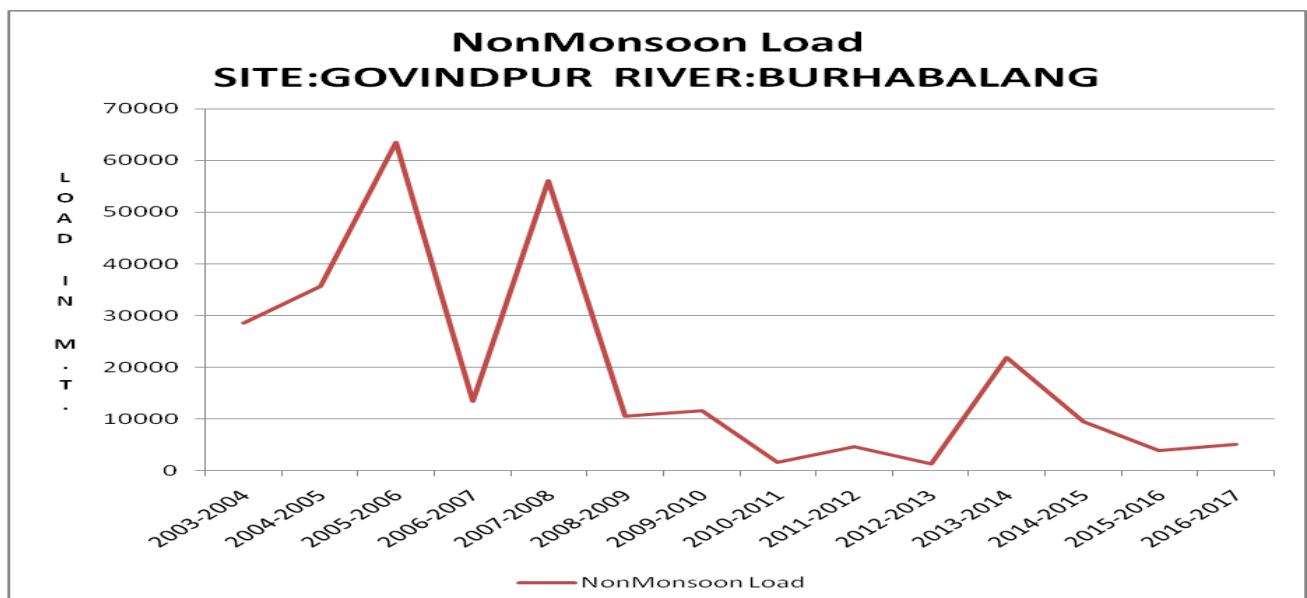
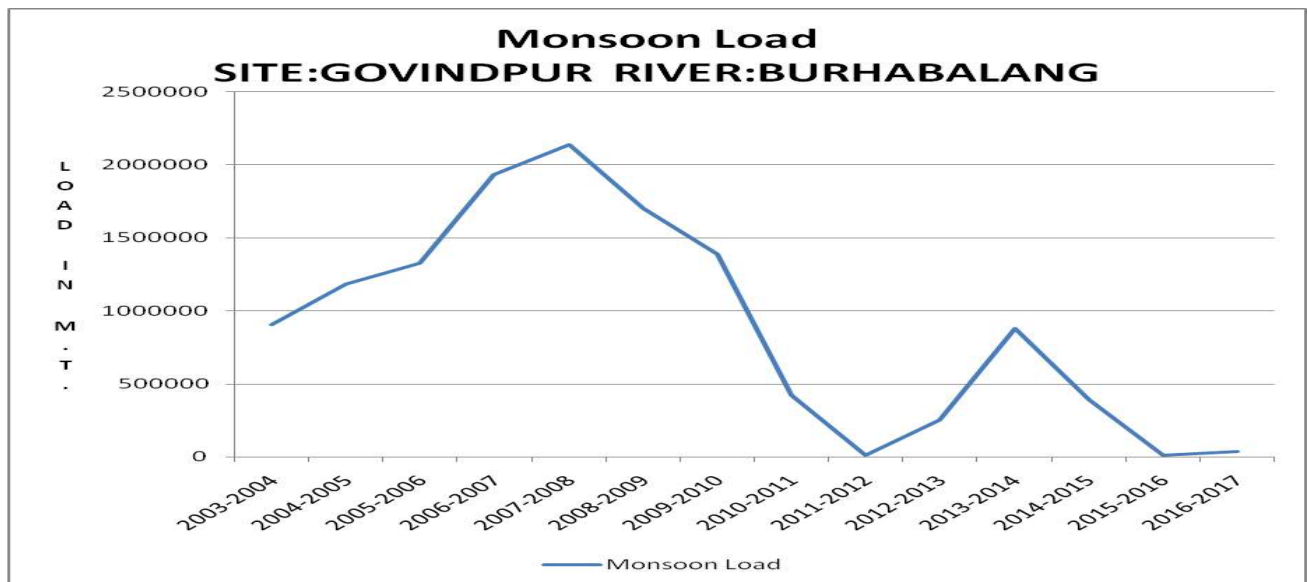
TOTAL ANNUAL DISCHARGE SITE:GOVINDPUR RIVER:BURHABALANG



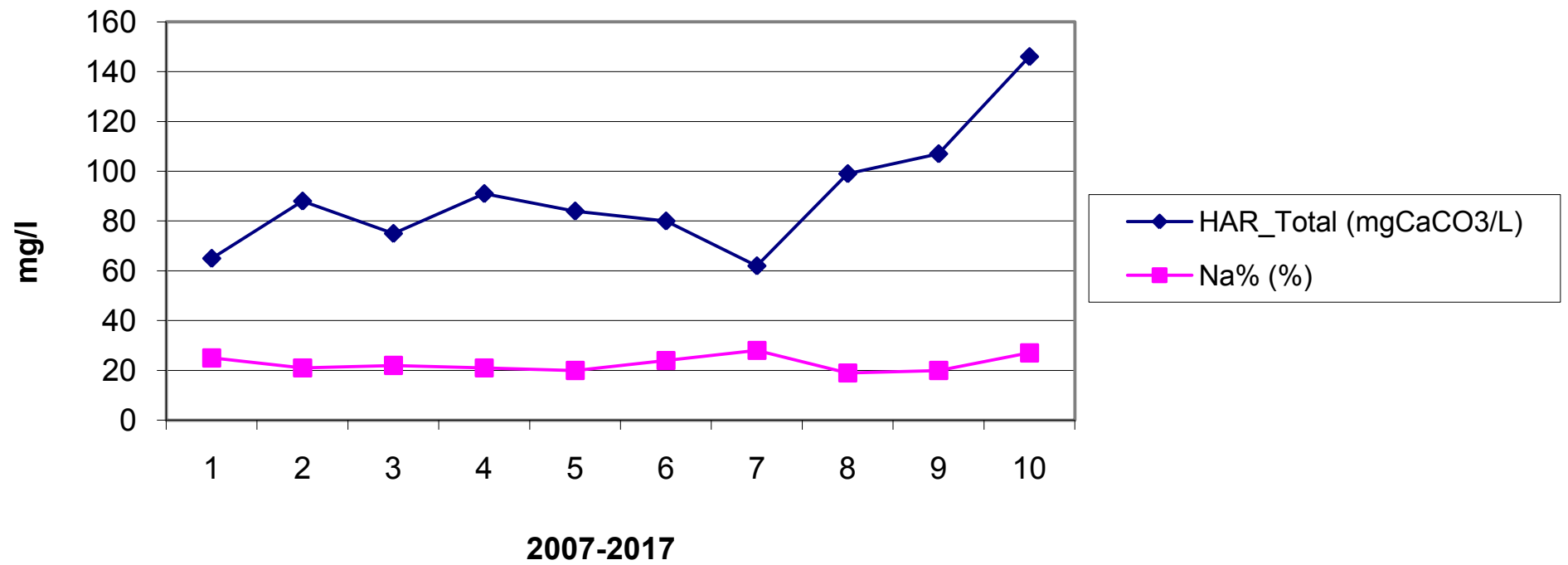
TOTAL ANNUAL DISCHARGE SITE:GOVINDPUR RIVER:BURHABALANG



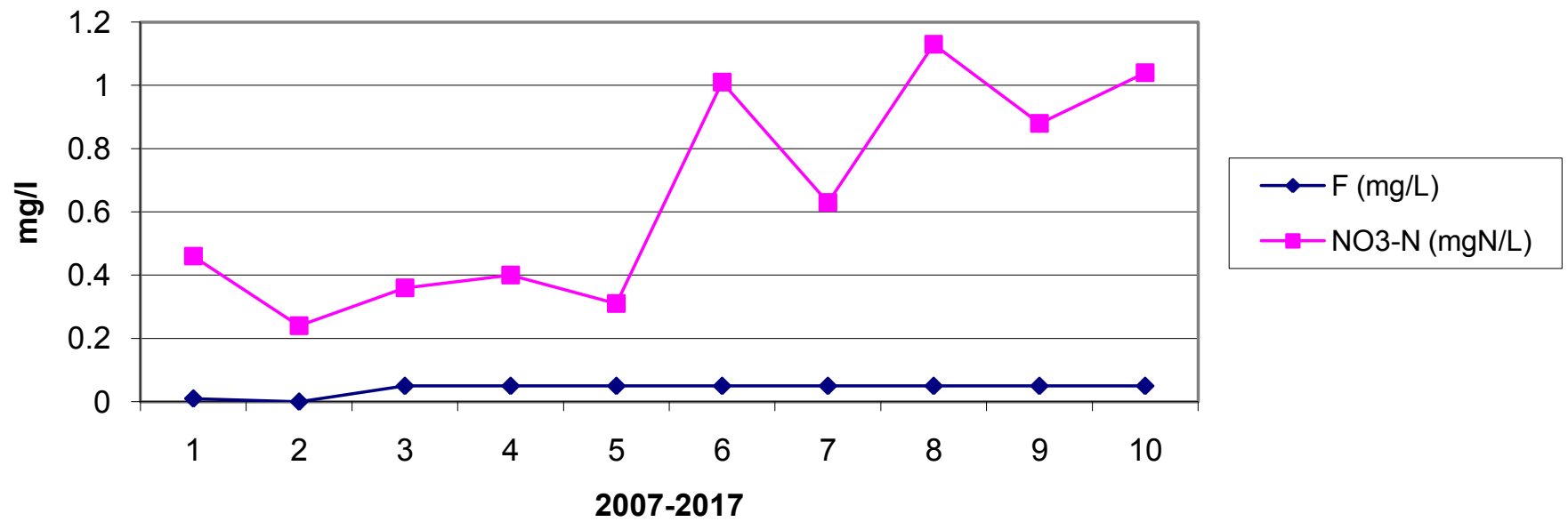




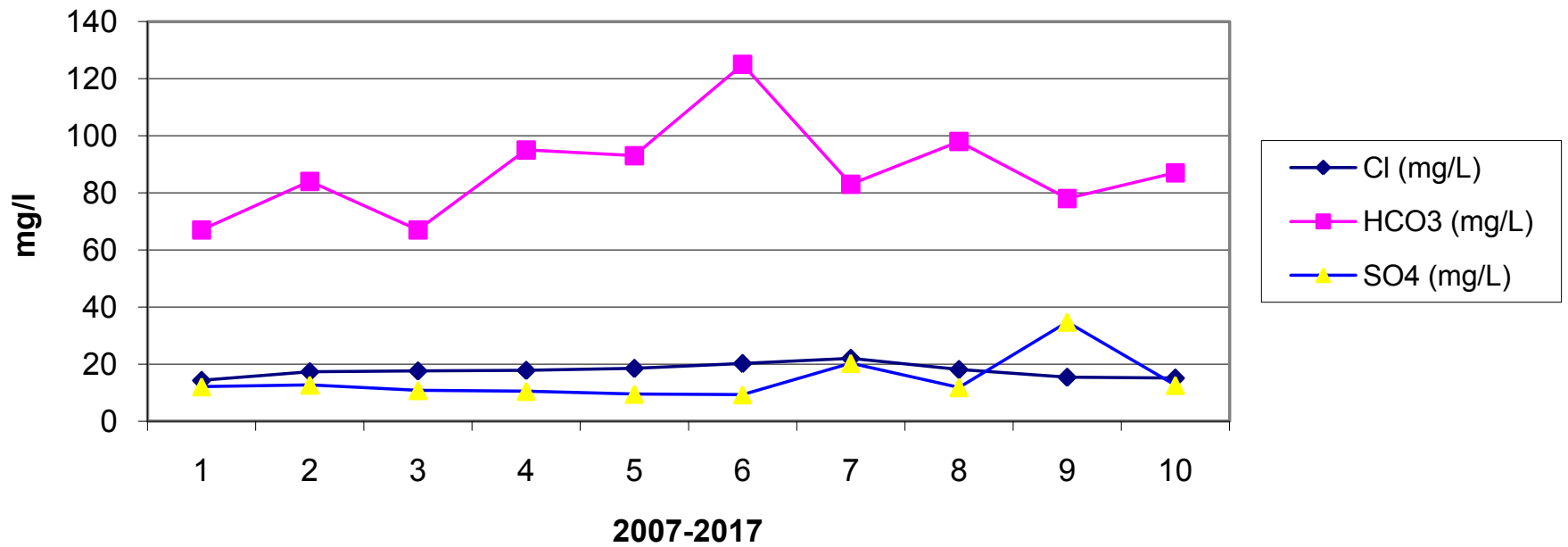
Year Wise Trend For Govindpur



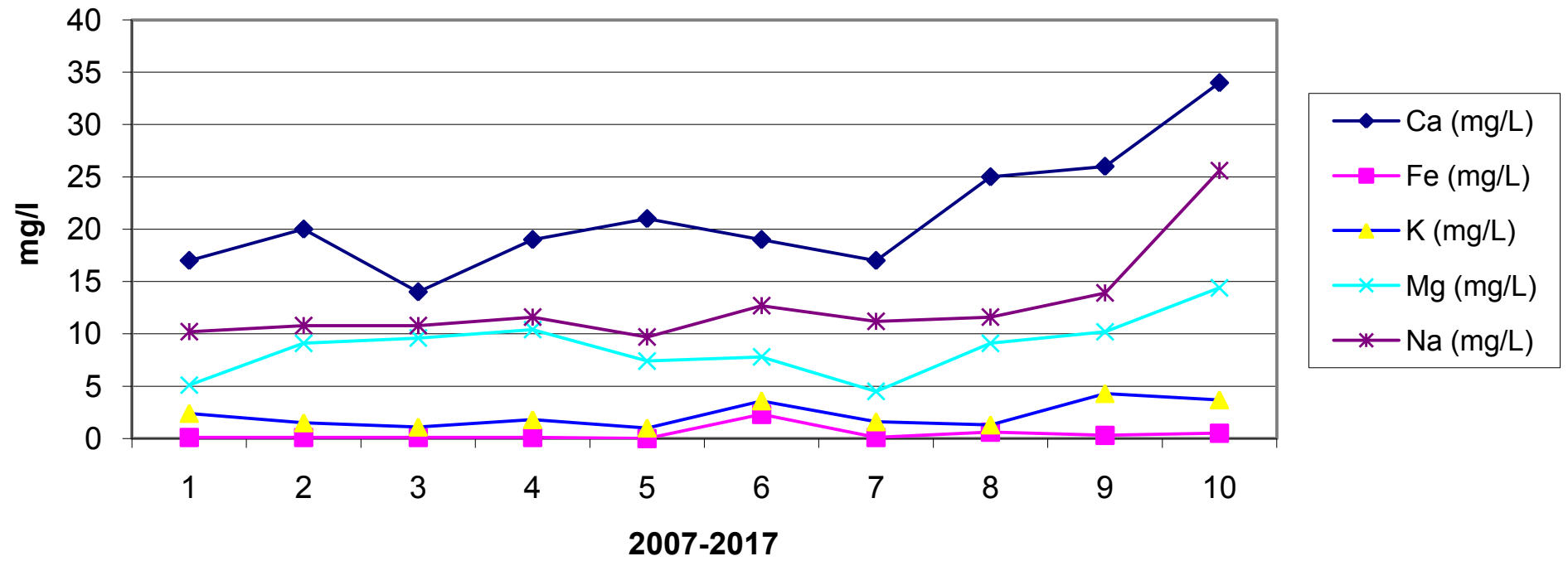
Year Wise Trend For Govinpur



Year Wise Trend For Govinpur



Year Wise Trend For Govindpur



LIST OF PERSONS INVOLVED IN THE PREPARATION OF WATER YEAR BOOK

1. Sri. C. Mohanty, Executive Engineer, ERD, CWC, Bhubaneswar
2. Sri. D.S. Prasad, AEE, H.O. Circle, CWC, Bhubaneswar
3. Sri. G. Satyanarayana, SDE, Baitarani Sub-Division, CWC, Bhubaneswar
4. Sri. P.S. Baral, SDE, Subarnarekha Sub-Division, CWC, Balasore
5. Smt. Dr. B.S. Shanthala Devi, EAD, ERD, CWC, Bhubaneswar
6. Sri. N.K. Bhuyan, ARO, ERD, CWC, Bhubaneswar
7. Sri. B.B. Nayak, JE (HQS), ERD, CWC, Bhubaneswar
8. Sri. S.S. Mohanty, Sr. Computer, ERD, CWC, Bhubaneswar
9. Sri. Ashok Mishra, SWA, ERD, Bhubaneswar

