

**Table-1 Annual Average and Range values of Four Criteria Parameters (January-October, 2013)**

**(A) Mahanadi River System**

Sl. No	Location	No. of Obs.	Annual average values (Range of values) Parameters				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)	BOD	TC				
<b>Ib river</b>												
1.	Sundargarh	10	8.0 (7.7 – 8.4)	7.5 (6.5 – 8.9)	0.8 (0.3 - 1.5)	2678 (790 – 54000)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities
2.	Jharsuguda	10	8.0 (7.0 – 8.4)	7.6 (6.0 – 9.3)	1.0 (0.3 – 1.6)	1973 (230 – 3300)	0	0	C	C		
3.	Brajarajnaragar U/s	10	8.0 (7.4 – 8.5)	7.5 (6.4 – 9.1)	1.0 (0.4 – 1.6)	2734 (940 – 5400)	0	1 (10)	C	C		
4.	Brajarajnaragar D/s	10	7.7 (6.6 – 8.3)	7.3 (6.0 – 8.8)	1.6 (0.7 – 2.2)	2759 (790 – 3900)	0	0	C	C		
<b>Bheden river</b>												
5.	Jharsuguda	10	7.8 (6.9 – 8.5)	8.0 (6.6 – 10.9)	1.4 (0.4 – 2.2)	2717 (490 – 7900)	0	1 (10)	C	C		
<b>Hirakud reservoir</b>												
6.	Hirakud reservoir	10	7.9 (7.2 – 8.4)	7.2 (5.4 – 8.7)	1.1 (0.4 – 2.2)	2246 (230 – 4900)	0	0	C	C		
<b>Power Channel</b>												
7.	Power Channel U/s	10	7.9 (7.5 – 8.4)	7.1 (5.1 – 8.1)	1.0 (0.4 – 1.8)	592 (78 – 1300)	0	0	C	C		
8.	Power Channel D/s	10	8.0 (7.1 – 8.4)	6.9 (5.5 – 7.9)	1.3 (0.6 – 2.3)	1522 (210 – 3400)	0	0	C	C		
<b>Mahanadi river</b>												
9	Sambalpur U/s	10	8.1 (7.6 – 8.4)	7.5 (5.5 – 8.7)	1.3 (0.3 – 3.6)	7710 (3300 – 17000)	1 (10)	7 (70)	C	Doesn't conform to Class C	BOD, TC	Human activities

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
10	Sambalpur D/s	10	7.9 (7.1 – 8.4)	6.9 (5.6 – 7.6)	3.0 (2.2 – 4.2)	38300 (7000 – 92000)	5 (50)	10 (100)	C	Doesn't conform to Class C	BOD, TC	Waste water of Sambalpur town
11.	Sambalpur FD/s at Shankarmath	10	7.5 (6.9 – 8.0)	6.8 (5.5 – 8.0)	2.4 (1.4 – 3.6)	5260 (1100 – 13000)	2 (20)	3 (30)	C	Doesn't conform to Class C	BOD, TC	Waste water of Sambalpur town
12.	Sambalpur FFD/s at Huma	10	7.9 (6.9 – 8.4)	7.3 (6.1 – 8.2)	1.8 (0.4 – 2.6)	3330 (1300 – 4900)	0	0	C	C		
13.	Sonepur U/s	10	8.0 (7.7 – 8.4)	7.4 (6.4 – 8.6)	1.0 (0.4 – 1.4)	1790 (130 – 4900)	0	0	C	C		
14.	Sonepur D/s	10	7.9 (6.5 – 8.4)	7.6 (6.6 – 8.4)	1.5 (0.7 – 1.8)	2593 (220 – 6300)	0	2 (20)	C	Doesn't conform to Class C	TC	
15.	Tikarapada	10	8.0 (7.5 – 8.4)	7.6 (6.7 – 8.4)	0.8 (0.3 – 1.6)	1880 (490 – 7900)	0	1 (10)	C	C	TC	
16.	Narasinghpur	10	8.0 (7.3 – 8.4)	7.4 (6.4 – 8.9)	1.1 (0.6 – 1.8)	3603 (230 – 9200)	0	3 (30)	C	Doesn't conform to Class C	TC	Human activities
17.	Mundali	10	7.7 (7.1 – 8.2)	7.3 (6.0 – 8.6)	0.9 (0.5 – 2.0)	3783 (330 – 9200)	0	3 (30)	C	Doesn't conform to Class C	TC	Human activities
18.	Cuttack U/s	10	8.1 (7.9 – 8.4)	7.7 (6.2 – 8.6)	1.1 (0.6 – 1.8)	4552 (790 – 16000)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
19.	Cuttack D/s	10	7.9 (7.0 – 8.4)	7.2 (6.0 – 8.2)	2.5 (1.6 – 2.8)	82000 (35000 – 160000)	0	10 (100)	C	Doesn't conform to Class C	TC	Waste water of Cuttack city
20.	Cuttack FD/s	10	8.0 (7.5 – 8.4)	7.6 (6.4 – 8.1)	2.0 (1.4 – 2.4)	35800 (22000 – 54000)	0	10 (100)	C	Doesn't conform to Class C	TC	Waste water of Cuttack city
21.	Paradeep U/s	10	8.0 (7.9 – 8.4)	7.5 (6.3 – 8.6)	1.5 (0.6 – 2.1)	22020 (2200 – 160000)	0	6 (60)	C	Doesn't conform to Class C	TC	Human activities
22.	Paradeep D/s	10	8.1 (7.8 – 8.3)	7.4 (6.5 – 8.6)	1.7 (1.0 – 2.7)	24860 (78 – 160000)	0	5 (50)	C	Doesn't conform to Class C	TC	Human activities
<b>Tel River</b>												
23.	Monmunda	10	7.9 (7.1 – 8.4)	7.7 (6.0 – 10.4)	1.1 (0.7 – 1.8)	3058 (230 – 7900)	0	3 (30)	C	Doesn't conform to Class C	TC	Human activities
<b>Kathajodi river</b>												
24.	Cuttack U/s	10	8.2 (7.9 – 8.3)	7.7 (6.5 – 8.5)	1.2 (0.4 – 1.8)	5140 (1300 – 16000)	0	3 (30)	C	Doesn't conform to Class C	TC	Human activities
25.	Cuttack D/s	10	8.2 (7.6 – 8.6)	7.0 (6.1 – 7.6)	3.8 (2.5 – 4.8)	70600 (11000 – 160000)	9 (90)	10 (100)	C	Doesn't conform to Class C	BOD,TC	Waste water of Cuttack city

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
26.	Mattagajpur (Cuttack FD/s)	10	7.6 (7.0 – 8.4)	3.6 (0.3 – 5.5)	12.4 (5.3 – 27.5)	43700 (7000 – 92000)	10 (100)	10 (100)	C	Doesn't conform to Class C	BOD,TC	Waste water of Cuttack city
<b>Serua River</b>												
27.	Sankhatrasa (Cuttack FD/s)	10	8.1 (7.6 – 8.4)	7.5 (6.9 – 7.9)	2.8 (1.8 – 3.6)	17440 (1400 – 35000)	3 (30)	9 (90)	C	Doesn't conform to Class C	BOD, TC	Waste water of Cuttack city
<b>Kuakhai river</b>												
28	Bhubaneswar FU/s	10	8.0 (7.2 – 8.4)	8.0 (5.5 – 10.7)	1.2 (0.6 – 1.6)	33678 (490 – 160000)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities
29.	Bhubaneswar U/s	10	7.8 (7.2 – 8.4)	7.2 (5.9 – 8.0)	2.0 (1.4 – 3.1)	22460 (1100 – 160000)	1 (10)	6 (60)	C	Doesn't conform to Class C	BOD, TC	Human activities
<b>Daya river</b>												
30.	Bhubaneswar D/s	10	7.8 (7.0 – 8.4)	6.0 (4.3 – 6.8)	4.2 (3.4 – 5.0)	49300 (24000 – 92000)	10 (100)	10 (100)	C	Doesn't conform to Class C	BOD,TC	Waste water of Bhubaneswar city
31.	Bhubaneswar FD/s	10	7.5 (6.7 – 8.1)	6.2 (4.6 – 7.5)	3.3 (2.6 – 4.1)	32200 (16000 – 92000)	6 (60)	10 (100)	C	Doesn't conform to Class C	BOD,TC	Waste water of Bhubaneswar city

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Birupa River</b>												
32.	Choudwar D/s	10	7.8 (7.0 – 8.1)	7.4 (5.9 – 9.0)	1.5 (0.7 – 2.6)	27350 (3500 – 160000)	0	1 (10)	C	Doesn't conform to Class C	TC	Waste water of Choudwar town
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

**(B) Brahmani river system**

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Sankh river</b>												
1.	Sankh U/s	10	7.8 (7.5 – 8.2)	7.6 (6.3 – 10.2)	1.3 (0.3 – 2.8)	7829 (220 – 54000)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities
<b>Koel River</b>												
2.	Koel U/s	10	8.0 (7.5 – 8.4)	7.8 (5.9 – 13.5)	1.4 (0.4 – 3.1)	2759 (490 – 7000)	1 (10)	1 (10)	C	Doesn't conform to Class C	BOD	Human activities
<b>Brahmani river</b>												
3.	Panposh U/s	10	7.9 (7.5 – 8.4)	7.4 (6.3 – 9 .8)	1.2 (0.4 – 2.5)	10280 (1300 – 35000)	0	6 (60)	C	Doesn't conform to Class C	TC	Human activities
4.	Panposh D/s	10	7.5 (6.8 – 8.0)	6.7 (5.1 – 8.8)	4.2 (2.1 – 5.6)	84290 (7900 – 160000)	8 (80)	10 (100)	C	Doesn't conform to Class C	BOD, TC	Waste water of Rourkela town and Steel Plant
5.	Rourkela D/s	10	7.5 (6.4 – 8.5)	7.0 (5.6 – 10.0)	3.3 (0.9 – 4.7)	64840 (2400 – 160000)	6 (60)	9 (90)	C	Doesn't conform to Class C	BOD, TC	-do-

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
6.	Rourkela FD/s (Attaghat)	10	7.7 (7.4 – 8.1)	7.8 (6.2 – 9.8)	2.6 (1.5 – 3.6)	2544 (130 – 13000)	3 (30)	1 (10)	C	Doesn't conform to Class C	BOD	Waste water of Rourkela town and Steel Plant
7.	Rourkela FD/s (Biritola)	10	7.7 (7.0 – 8.2)	8.0 (5.9 – 11.7)	2.6 (1.1 – 3.9)	6258 (330 – 24000)	4 (40)	3 (30)	C	Doesn't conform to Class C	BOD, TC	-do-
8.	Bonaigarh	10	7.9 (7.1 – 8.4)	7.9 (6.2 – 9.8)	1.3 (0.3 – 2.3)	8397 (130 – 54000)	0	4 (40)	C	Doesn't conform to Class C	TC	Human activities
9.	Rengali	10	8.0 (7.4 – 8.3)	8.0 (6.6 – 8.9)	1.0 (0.4 – 2.6)	1260 (78 – 7900)	0	1 (10)	C	C		
10.	Samal	10	7.9 (7.6 – 8.4)	7.9 (5.9 – 9.9)	1.2 (0.5 – 2.0)	3879 (110 – 22000)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities
10.	Talcher FU/s	10	7.9 (7.0 – 8.5)	7.5 (6.5 – 8.6)	1.2 (0.4 – 2.5)	1503 (210 – 4900)	0	0	C	C		
10.	Talcher U/s	10	7.9 (7.4 – 8.5)	7.3 (6.4 – 8.7)	1.4 (0.7 – 2.6)	3400 (1300 – 7900)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities
13.	Talcher D/s	10	7.9 (6.9 – 8.6)	7.6 (6.7 – 8.6)	2.3 (1.4 – 3.0)	9080 (2700 – 24000)	0	5 (50)	C	Doesn't conform to Class C	TC	Waste water of Talcher township
14.	Talcher FD/s	10	7.9 (7.3 – 8.3)	7.3 (6.3 – 8.9)	1.6 (0.8 – 2.8)	4420 (1300 – 7900)	0	3 (30)	C	Doesn't conform to Class C	TC	-do-

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
15.	Dhenkanal U/s	10	8.0 (7.8 - 8.3)	7.8 (6.7 - 8.8)	1.2 (0.6 - 1.7)	12280 (1300 - 54000)	0	4 (40)	C	Doesn't conform to Class C	TC	Human activities
16.	Dhenkanal D/s	10	7.8 (7.3 - 8.4)	7.5 (5.7 - 9.1)	1.9 (0.9 - 2.4)	15949 (790 - 92000)	0	3 (30)	C	Doesn't conform to Class C	TC	Waste water of Dhenkanal township
17.	Bhuban	10	7.9 (7.4 - 8.3)	7.7 (6.3 - 9.3)	1.4 (0.6 - 2.2)	13920 (1300 - 92000)	0	4 (40)	C	Doesn't conform to Class C	TC	Human activities
18.	Kabatabandha	10	7.9 (7.6 - 8.1)	7.6 (6.4 - 8.8)	1.2 (0.7 - 1.6)	14979 (490 - 92000)	0	4 (40)	C	Doesn't conform to Class C	TC	Human activities
19.	Dharmasala	10	8 (7.7 - 8.5)	7.8 (6.4 - 9.9)	1.4 (0.8 - 2.2)	4080 (1700 - 11000)	0	10 (100)	B	Doesn't conform to Class B	TC	Human activities
20.	Pottamundai	10	8.0 (7.4 - 8.4)	7.5 (5.2 - 9.3)	1.3 (0.8 - 1.8)	7199 (790 - 24000)	0	10 (100)	B	Doesn't conform to Class B	TC	Human activities
<b>Nandira river</b>												
21.	Nandira river before confluence with river Brahmani	10	8.1 (7.3 - 8.5)	7.1 (4.2 - 8.9)	3.0 (2.1 - 3.8)	15789 (1700 - 54000)	3 (30)	6 (60)	C	Doesn't conform to Class C	BOD, TC	Human activities



Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class*	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Kisindajhor</b>												
22.	Kisindajhor	10	7.2 (7.6 – 8.5)	7.4 (6.1 – 9.3)	2.1 (1.0 – 4.7)	10349 (490 – 35000)	2 (20)	8 (80)	C	Doesn't conform to Class C	BOD, TC	Human activities
<b>Kharasuan River</b>												
23.	Khanditara	10	8.0 (7.7 – 8.3)	7.4 (6.0 – 10.3)	1.3 (0.4 – 2.0)	4892 (490 – 24000)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities
24.	Binjharpur	10	7.9 (7.3 – 8.4)	7.4 (6.5 – 8.9)	1.1 (0.6 – 1.6)	18179 (790 – 160000)	0	1 (10)	C	Doesn't conform to Class C	TC	Human activities
25.	Aul	10	7.9 (7.2 – 8.3)	6.9 (6.0 – 7.8)	1.4 (0.5 – 2.8)	7910 (1100 – 24000)	0	5 (50)	C	Doesn't conform to Class C	TC	Human activities
<b>Class 'B' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>	<b>500 or less</b>			<b>Outdoor bathing</b>			
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

**(C) Baitarani river system**

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Kusei River</b>												
1.	Deogaon	10	8.0 (7.3 - 8.4)	7.3 (5.8 - 8.9)	1.5 (0.4 - 2.8)	6583 (330 - 24000)	0	4 (40)	C	Doesn't conform to Class C	TC	Human activities
<b>Baitarani River</b>												
2.	Joda	10	7.5 (7.0 - 8.4)	7.5 (6.3 - 8.6)	1.3 (0.2 - 2.4)	4672 (330 - 11000)	0	5 (50)	C	Doesn't conform to Class C	TC	Human activities
3.	Anandpur	10	7.9 (7.3 - 8.3)	7.1 (5.8 - 8.4)	1.6 (0.6 - 2.2)	10923 (230 - 54000)	0	6 (60)	C	Doesn't conform to Class C	TC	Human activities
4.	Jajpur	10	8.0 (7.5 - 8.5)	7.3 (6.4 - 8.8)	1.9 (1.2 - 2.4)	12390 (2400 - 54000)	0	8 (80)	C	Doesn't conform to Class C	TC	Human activities
5.	Chandbali	10	7.8 (7.4 - 8.3)	6.6 (5.5 - 7.8)	1.3 (0.8 - 2.2)	4084 (940 - 9200)	0	3 (30)	C	Doesn't conform to Class C	TC	Human activities
<b>Dhamra River</b>												
6.	Dhamra	10	7.5 (7.0 - 8.1)	6.2 (5.0- 7.6)	1.7 (0.6 - 2.8)	8359 (790 - 24000)	0	5 (50)	C	Doesn't conform to Class C	TC	Human activities
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

**(D) Rushikulya river system**

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Rushikulya river</b>												
1.	Madhopur	10	8.1 (7.6 – 8.4)	7.0 (5.8 - 8.2)	2.0 (1.0 – 3.6)	22523 (790 – 160000)	1 (10)	5 (50)	C	Doesn't conform to Class C	BOD & TC	Human activities
2.	Potagarh	10	8.0 (7.5 – 8.4)	7.0 (5.2 – 8.0)	1.8 (0.9 -2.7)	17269 (130 – 160000)	0	2 (20)	C	Doesn't conform to Class C	TC	Human activities
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

**(E) Nagavali river system**

Sl. No	Location	No. of Obs.*	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Nagavali river</b>												
1.	Penta U/s	11	8.0 (7.4 – 8.4)	7.5 (6.8 – 8.0)	1.4 (0.3 – 2.3)	23191 (1700 – 160000)	0	4 (36)	C	Doesn't conform to Class C	TC	Human activities
2.	J.K. Pur D/S	11	7.9 (7.7 – 8.4)	7.3 (6.8 – 8.0)	2.9 (1.2 – 4.9)	30836 (1700 – 160000)	5 (45)	6 (54)	C	Doesn't conform to Class C	BOD,TC	Human activities
3.	Rayagada D/S	11	7.9 (7.3 – 8.3)	7.6 (6.9 – 8.0)	2.1 (1.3 – 2.9)	31727 (1300 – 160000)	0	7 (63)	C	Doesn't conform to Class C	TC	Human activities
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

\* date for period Jan-Nov, 2013

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(F) Subarnarekha river system

Sl. No	Location	No. of Obs.*	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Subarnarekha river</b>												
1.	Rajghat	11	8.0 (7.5 – 8.5)	7.6 (6.8 – 8.4)	1.2 (0.6 - 1.8)	5917 (790 – 13000)	0	6 (54)	C	Doesn't conform to Class C	TC	Human activities
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

\* date for period Jan-Nov, 2013

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

**(G) Budhabalanga river system**

Sl. No	Location	No. of Obs.*	Annual average values (Range of values) Parameters				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)	BOD	TC				
			<b>Budhabalanga river</b>									
1.	Baripada D/s	11	7.9 (7.0 – 8.4)	7.5 (6.8 – 8.4)	1.5 (0.8 – 2.5)	18118 (2200 – 54000)	0	8 (72)	C	Doesn't conform to Class C	TC	Human activities
2.	Balasure U/s	11	7.8 (7.2 – 8.4)	7.6 (6.4 – 8.0)	1.4 (0.5 – 2.6)	6227 (1100 – 24000)	0	4 (36)	C	Doesn't conform to Class C	TC	Human activities
3.	Balasure D/s	11	7.7 (7.3 – 8.3)	7.6 (6.6 – 8.2)	2.4 (1.5 – 3.6)	32091 (2200 – 92000)	3 (27)	10 (90)	C	Doesn't conform to Class C	BOD,TC	Human activities
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

\* date for period Jan-Nov, 2013

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

(H) Kolab river system

Sl. No	Location	No. of Obs.*	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Kerandi River</b>												
1.	Sunabeda	11	7.5 (7.2 – 7.9)	7.3 (7.1 – 7.8)	1.2 (0.4 – 1.9)	17512 (930 – 160000)	0	2 (18)	C	Doesn't conform to Class C	TC	Human activities
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

(I) Vansadhara river system

Sl. No	Location	No. of Obs.*	Annual average values (Range of values)				Frequency of violation (Percent of violation) from designated criteria value		Designated Class	Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				BOD	TC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)						
<b>Vansadhara River</b>												
1.	Muniguda	11	8.0 (6.9 – 8.4)	7.0 (6.9 – 8.0)	1.0 (0.4 – 2.0)	5153 (790 – 24000)	0	3 (27)	C	Doesn't conform to Class C	TC	Human activities
2.	Gunupur	11	8.0 (7.1 – 8.4)	7.2 (6.9 – 7.8)	1.3 (0.3 – 2.3)	31170 (490 – 160000)	0	3 (27)	C	Doesn't conform to Class C	TC	Human activities
<b>Class 'C' water quality Criteria (IS-2296-1982)</b>			<b>6.5-8.5</b>	<b>4 and above</b>	<b>3 or less</b>	<b>5000 or less</b>			<b>Drinking water source with conventional treatment followed by disinfection</b>			

\* date for period Jan-Nov, 2013

**Note :** The criteria of non-compliance with respect to TC has been calculated on the following basis:

TC values with more than 5% of samples show more than 20,000 MPN/100 ml and more than 20% of the samples show more than 5000 MPN/ 100 ml.

(Ref : IS 2296-1982 foot note)

**Table-2 Water quality with respect to Other Parameters during 2013 (January- October)**

**(A) Mahanadi River System**

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
<b>lb river</b>																
1.	Sundargarh	129 (26-540)	60 (32-80)	8.5 (4.1-19.8)	0.228 (0.112-0.392)	0.012 (0-0.049)	2.48 (1.12-3.40)	991 (230-2300)	156 (80-217)	0.30 (0.08-0.46)	0.071 (0.011-0.185)	89 (48-122)	55 (30-76)	9.5 (2.9-14.8)	5.92 (2.77-10.45)	0.306 (0.210-0.448)
2.	Jharsuguda	67 (12-178)	57 (16-88)	8.4 (6.0-10.6)	0.227 (0.1112-0.495)	0.014 (0-0.033)	2.32 (1.12-4.20)	848 (78-1700)	153 (74.6-214)	0.39 (0.27-0.50)	0.037 (0.003-0.109)	88 (44-128)	50 (24-84)	11.1 (5.8-16.7)	5.71 (1.87-10.07)	0.308 (0.175-0.496)
3.	Brajrajnagar U/s	82 (14-274)	57 (40-72)	9.5 (5.8-16.2)	0.277 (0.112-0.605)	0.014 (0.005-0.022)	2.780 (1.680-4.120)	1089 (330-2400)	153 (97-188)	0.38 (0.21-0.56)	0.066 (0.003-0.139)	90 (58-115)	52 (40-72)	10.7 (5.8-15.7)	5.74 (3.86-7.84)	0.285 (0.209-0.353)
4.	Brajrajnagar D/s	78 (6-270)	64 (36-90)	12.8 (7.0-18.0)	0.300 (0.110-0.605)	0.011 (0-0.027)	2.40 (1.40-3.92)	1383 (130-2700)	165 (101-220)	0.34 (0.13-0.51)	0.024 (0.007-0.068)	95 (60-123)	54 (30-84)	9.3 (4.8-15.7)	7.05 (2.36-15.25)	0.301 (0.210-0.418)
<b>Bheden river</b>																
5.	Jharsuguda	70 (14-138)	71 (40-112)	12.4 (8.4-15.9)	0.339 (0.112-0.660)	0.016 (0-0.049)	2.81 (1.68-3.92)	1365 (230-3300)	261 (110-483)	0.69 (0.21-1.40)	0.027 (0.003-0.041)	157 (68-294)	82 (36-144)	26.2 (6.7-61.9)	22.60 (4.35-51.99)	0.780 (0.215-1.670)
<b>Hirakud Reservoir</b>																
6.	Hirakud reservoir	34 (8-66)	79 (64-88)	10.8 (5.8-16.9)	0.281 (0.112-0.504)	0.017 (0.003-0.063)	3.32 (1.68-6.20)	934 (130-2300)	199 (168-233)	0.32 (0.08-0.53)	0.035 (0.007-0.154)	114 (96-138)	75 (60-88)	10.1 (2.8-16.4)	7.60 (4.35-12.77)	0.318 (0.188-0.442)
<b>Power Channel</b>																
7.	Power Channel U/s	41 (16-76)	79 (64-88)	10.2 (5.8-14.2)	0.272 (0.112-0.550)	0.015 (0.002-0.036)	2.67 (1.68-3.64)	169 (45-490)	204 (165-228)	0.32 (0.21-0.42)	0.058 (0.015-0.215)	115 (96-128)	72 (62-80)	10.2 (7.0-13.7)	7.58- 6.09- 9.70)	0.281 (0.005-0.367)



Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
8.	Power Channel D/s	40 (18-64)	79 (62-92)	12.9 (12.1-14.9)	0.306 (0.112-0.448)	0.019 (0.001-0.035)	2.31 (0.80-3.08)	467 (140-1300)	204 (185-227)	0.36 (0.27-0.47)	0.043 (0.003-0.272)	119 (102-134)	74 (60-86)	11.6 (7.7-16.7)	7.43 (5.60-9.11)	0.304 (0.226-0.359)
<b>Mahanadi river</b>																
9.	Sambalpur U/s	49 (24-116)	78 (62-92)	12.8 (7.0-30.9)	0.223 (0.112-0.450)	0.016 (0.003-0.029)	3.29 (1.12-3.10)	3670 (1100-9400)	204 (144-255)	0.35 (0.23-0.55)	0.098 (0.030-0.268)	118 (88-142)	76 (52-92)	11.5 (6.8-20.6)	8.06 (5.20-11.98)	0.341 (0.157-0.442)
10.	Sambalpur D/s	57 (26-128)	85 (58-104)	24.5 (20.7-28.8)	0.273 (0.055-0.448)	0.016 (0-0.016)	3.57 (2.24-6.20)	23960 (4600-54000)	240 (191-269)	0.51 (0.36-0.70)	0.062 (0.007-0.272)	141 (106-169)	83 (60-100)	17.7 (8.7-30.8)	10.34 (4.85-28.91)	0.369 (0.230-0.572)
11.	Sambalpur FD/s at Shankarmath	35 (16-72)	83 (64-108)	19.5 (14.2-24.1)	0.239 (0.112-0.385)	0.005 (0-0.009)	2.53 (1.68-3.60)	2667 (680-7900)	212 (156-270)	0.35 (0.20-0.51)	0.052 (0.003-0.192)	124 (99-163)	81 (62-104)	12.1 (7.7-16.5)	8.10 (2.73-12.94)	0.371 (0.167-0.515)
12.	Sambalpur FFD/s at Huma	40 (24-80)	79 (60-88)	15.2 (9.0-22.3)	0.296 (0.112-0.504)	0.015 (0-0.035)	2.47 (1.12-5.04)	1772 (330-3300)	201 (158-226)	0.31 (0.19-0.40)	0.030 (0.003-0.079)	117 (90-129)	77 (58-88)	10.6 (6.6-14.8)	7.55 (6.34-10.50)	0.362 (0.240-0.513)
13.	Sonepur U/s	62 (14-174)	78 (58-116)	10.0 (5.9-12.4)	0.277 (0.112-0.550)	0.018 (0.003-0.036)	2.36 (0.84-3.92)	944 (45-3300)	214 (184-237)	0.42 (0.28-0.83)	0.046 (0.003-0.238)	124 (101-151)	78 (58-100)	13.7 (8.5-27.0)	9.23 (5.47-15.05)	0.335 (0.230-0.424)
14.	Sonepur D/s	61 (10-136)	91 (64-120)	14.4 (9.5-19.6)	0.273 (0.112-0.448)	0.019 (0-0.042)	3.01 (1.68-6.72)	1415 (78-4600)	230 (181-286)	0.31 (0.18-0.42)	0.047 (0.003-0.230)	133 (106-162)	89 (64-112)	11.4 (7.5-15.4)	10.18 (2.98-27.52)	0.352 (0.220-0.436)
15.	Tikarapada	73 (14-140)	85 (68-104)	8.3 (5.8-12.1)	0.332 (0.112-0.715)	0.020 (0-0.046)	2.65 (1.12-4.50)	802 (230-2700)	215 (181-250)	0.37 (0.17-0.72)	0.088 (0.003-0.340)	125 (98-152)	78 (64-88)	12.3 (5.6-22.1)	6.50 (2.23-9.07)	0.297 (0.179-0.372)
16.	Narasinghpur	92 (38-290)	80 (56-98)	9.9 (5.6-13.9)	0.299 (0.168-0.448)	0.017 (0-0.031)	2.72 (1.12-4.40)	1623 (78-5400)	223 (166-289)	0.41 (0.22-0.84)	0.044 (0.007-0.151)	126 (90-163)	75 (44-94)	13.2 (6.7-30.5)	8.20 (2.48-15.05)	0.320 (0.246-0.401)

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
17.	Munduli	84 (20-196)	82 (54-96)	9.1 (5.8-13.1)	0.292 (0.112-0.504)	0.009 (0-0.040)	2.45 (1.12-3.64)	890 (130-1300)	206 (144-258)	0.34 (0.21-0.54)	0.028 (0.003-0.064)	119 (88-138)	76 (48-88)	12.4 (7.5-20.2)	6.70 (2.48-12.70)	0.329 (0.246-0.463)
18.	Cuttack U/s	80 (14-316)	76 (56-96)	8.6 (6.8-13.8)	0.188 (0.028-0.280)	0.014 (0.002-0.027)	2.46 (1.12-3.92)	2473 (230-9200)	202 (142-264)	0.36 (0.22-0.45)	0.052 (0.001-0.287)	118 (88-149)	74 (58-96)	11.1 (5.8-16.8)	6.32 (3.35-9.21)	0.355 (0.250-0.483)
19.	Cuttack D/s	81 (14-284)	78 (60-92)	21.7 (12.6-28.9)	0.280 (0.112-0.392)	0.017 (0-0.042)	2.87 (1.40-4.20)	59100 (2400-160000)	206 (169-226)	0.39 (0.30-0.53)	0.073 (0.019-0.151)	118 (90-134)	75 (48-92)	12.9 (7.7-19.3)	7.07 (4.58-11.19)	0.411 (0.248-0.905)
20.	Cuttack FD/s	82 (24-258)	76 (52-92)	17.8 (10.8-25.5)	0.274 (0.112-0.616)	0.018 (0.004-0.049)	2.80 (1.68-4.48)	20580 (7900-35000)	199 (153-219)	0.35 (0.27-0.39)	0.067 (0.007-0.222)	117 (96-134)	76 (56-90)	11.1 (7.7-12.8)	7.31 (4.47-10.40)	0.351 (0.257-0.463)
21.	Paradeep U/s	164 (28-382)	77 (56-88)	15.6 (8.6-37.8)	0.234 (0.112-0.440)	0.013 (0.004-0.035)	2.85 (1.40-5.04)	3067 (1300-4900)	1618 (141-8702)	6.52 (0.18-40.93)	0.147 (0.022-0.382)	1026 (88-5731)	173 (48-420)	479.1 (5.8-3038.0)	68.01 (3.36-210.45)	0.315 (0.201-0.440)
22.	Paradeep D/s	214 (22-460)	85 (60-108)	19.9 (8.7-34.4)	0.318 (0-0.504)	0.021 (0-0.040)	3.18 (2.50-4.20)	4378 (45-24000)	12116 (147-34350)	22.10 (0.28-53.01)	0.641 (0.018-1.745)	9185 (92-26828)	1679 (52-4400)	4749.1 (9.6-14780.0)	675.14 (6.59-2145.47)	0.549 (0.034-1.110)
<b>Tel River</b>																
23.	Monmunda	128 (18-298)	81 (52-112)	10.6 (6.0-21.6)	0.344 (0.112-0.605)	0.018 (0.001-0.035)	2.77 (1.40-4.20)	1652 (78-4900)	187 (132-258)	0.29 (0.16-0.59)	0.046 (0.007-0.268)	108 (78-142)	75 (56-96)	10.2 (5.6-19.6)	5.22 (2.10-12.94)	0.290 (0.178-0.370)
<b>Kathajodi River</b>																
24.	Cuttack U/s	86 (20-260)	73 (56-88)	11.1 (5.4-13.8)	0.498 (0.112-1.400)	0.040 (0.004-0.112)	4.40 (1.68-9.52)	1871 (330-5400)	194 (150-214)	0.36 (0.23-0.52)	0.056 (0.007-0.204)	113 (82-129)	70 (952-82)	11.4 (7.5-17.8)	8.17 (3.23-12.06)	0.324 (0.201-0.452)
25.	Cuttack D/s	87 (28-330)	79 (56-90)	29.6 (19.9-37.1)	0.336 (0.112-0.616)	0.028 (0.005-0.060)	2.85 (1.12-4.48)	40300 (7000-92000)	210 (165-243)	0.34 (0.24-0.45)	0.050 (0.001-0.211)	122 (96-139)	79 (50-98)	11.8 (7.7-16.7)	10.96 (5.35-16.60)	0.322 (0.157-0.452)

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
26.	Mattagajpur (Cuttack FD/s)	98 (32-328)	133 (68-228)	51.6 (21.7-83.6)	0.420 (0.224-0.784)	0.015 (0-0.060)	4.84 (2.52-12.90)	24530 (3300-54000)	470 (183-694)	1.22 (0.29-2.43)	0.088 (0.007-0.253)	269 (100-402)	130 (72-172)	52.3 (10.6-98.3)	28.96 (9.32-60.40)	0.320 (0.165-0.445)
<b>Serua River</b>																
27.	Sankhatrasa (Cuttack FD/s)	83 (28-304)	77 (60-88)	22.7 (14.5-27.3)	0.370 (0.168-0.784)	0.026 (0.004-0.049)	3.27 (1.68-5.04)	9440 (700-24000)	205 (157-226)	0.41 (0.26-0.94)	0.061 (0.007-0.166)	121 (92-134)	77 (62-92)	13.7 (7.5-27.0)	8.79 (3.10-14.60)	0.346 (0.247-0.543)
<b>Kuakhai River</b>																
28.	Bhubaneswar FU/s	51 (18-188)	76 (68-88)	8.4 (5.4-12.8)	0.368 (0.112-0.560)	0.027 (0.002-0.054)	4.67 (1.96-11.20)	32964 (230-160000)	202 (168-223)	0.6 (0.26-0.48)	0.055 (0.019-0.098)	115 (98-126)	71 (56-82)	12.0 (7.7-16.8)	5.99 (1.49-9.90)	0.288 (0.171-0.411)
29.	Bhubaneswar U/s	90 (10-486)	73 (50-88)	16.8 (10.2-25.5)	0.362 (0.168-0.672)	0.015 (0.003-0.033)	6.44 (1.96-14.60)	12391 (1100-160000)	209 (164-233)	0.48 (0.26-0.64)	0.057 (0.003-0.196)	121 (90-140)	73 (48-92)	16.1 (7.5-22.6)	8.18 (1.86-10.82)	0.258 (0.140-0.382)
<b>Daya River</b>																
30.	Bhubaneswar D/s	115 (28-466)	78 (52-104)	31.0 (19.9-37.5)	0.418 (0.224-0.605)	0.016 (0-0.038)	3.51 (1.40-10.80)	26600 (13000-54000)	261 (160-328)	0.74 (0.31-1.17)	0.061 (0.022-0.192)	152 (94-198)	79 (46-100)	25.7 (9.6-46.2)	13.09 (6.34-22.00)	0.280 (0.181-0.398)
31.	Bhubaneswar FD/s	85 (22-298)	78 (60-88)	23.3 (10.9-30.0)	0.401 (0.168-0.728)	0.008 (0-0.018)	4.51 (1.92-11.80)	19200 (7900-54000)	259 (167-306)	0.76 (0.33-1.01)	0.068 (0.003-0.215)	152 (94-180)	77 (46-100)	26.3 (9.6-37.4)	9.81 (2.61-15.72)	0.281 (0.185-0.425)
<b>Birupa River</b>																
32.	Birupa D/s	95 (28-460)	81 (60-144)	14.9 (7.1-22.0)	0.268 (0.112-0.385)	0.009 (0-0.017)	3.42 (1.68-7.30)	23150 (1700-160000)	245 (132-628)	0.44 (0.24-0.89)	0.068 (0.003-0.377)	141 (80-362)	90 (56-184)	16.4 (7.7-53.5)	15.37 (3.37-62.30)	0.346 (0.123-0.787)
<b>* Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>* Class 'E'</b>									2250	26	2.0	2100	-	600	1000	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

**(A) Contd..**

Sl. No.	Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg	Pb
		(mg/l)		(mg/l)								
<b>Ib River</b>												
1.	Sundargarh	1.910 (0.348-4.788)	0.079 (0.003-0.164)	BDL	0.031 (0.005-0.058)	2.635 (0.025-6.201)	0.002	0.006	0.005	<0.001	BDL	0.006
2.	Jharsuguda	1.252 (0.469-2.338)	0.036 (0.003-0.088)	0.002 (0-0.008)	0.033 (0.020-0.053)	2.412 (BDL-8.167)	0.002	0.006	0.006	0.001	BDL	0.006
3.	Brajraj nagar U/s	1.129 (0.071-2.166)	0.060 (0-0.126)	BDL	0.025 (0.005-0.047)	2.190 (0.047-6.369)	0.002	0.005	0.008	0.001	BDL	0.006
4.	Brajraj nagar D/s	1.879 (0.128-6.985)	0.057 (0.003-0.176)	BDL	0.026 (0.010-0.045)	2.402 (0.102-6.524)	0.003	0.005	0.009	0.001	BDL	0.007
<b>Bheden River</b>												
5.	Jharsuguda	2.196 (0.932-3.950)	0.064 (0.002-0.177)	BDL	0.028 (0.010-0.050)	2.184 (BDL-4.818)	0.002	0.006	0.008	0.001	BDL	0.006
<b>Hirakud Reservoir</b>												
6.	Hirakud reservoir	2.091 (0.437-3.215)	0.099 (0.018-0.363)	0.003 (BDL-0.013)	0.048 (0.013-0.075)	0.642 (BDL-4.390)	0.002	0.005	0.006	0.001	BDL	0.008
<b>Power channel</b>												
7.	Power channel U/s	5.807 (0.491-39.481)	0.207 (0.003-1.430)	BDL	0.031 (0.007-0.055)	0.537 (BDL-2.299)	0.002	0.006	0.004	0.001	BDL	0.008
8.	Power Channel D/s	1.765 (0.930-3.388)	0.073 (0.005-0.146)	<0.001 (BDL-0.008)	0.034 (0.010-0.060)	0.375 (BDL-1.650)	0.002	0.008	0.006	0.001	BDL	0.009

Sl. No.	Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg	Pb
		(mg/l)		(mg/l)								
<b>Mahanadi River</b>												
9.	Sambalpur U/s	1.979 (0.784-3.094)	0.065 (0.003-0.146)	BDL	0.022 (0.005-0.038)	1.329 (0.101-3.576)	0.003	0.005	0.006	0.001	BDL	0.009
10.	Sambalpur D/s	4.433 (1.505-24.906)	0.119 (0.005-0.693)	BDL	0.039 (0.003-0.076)	0.691 (0.012-1.341)	0.003	0.004	0.006	0.001	BDL	0.008
11.	Sambalpur FD/s at Shankarmath	2.692 (0.589-6.542)	0.050 (0.003-0.151)	BDL	0.021 (0.001-0.050)	1.368 (0.249-4.640)	0.003	0.003	0.005	0.001	BDL	0.008
12.	Sambalpur FD/s at Huma	1.686 (0.456-2.848)	0.069 (0.005-0.150)	BDL	0.026 (0.005-0.043)	0.442 (0.012-1.060)	0.002	0.007	0.005	0.001	BDL	0.008
13.	Sonepur U/s	2.525 (0.948-4.114)	0.070 (0.003-0.210)	BDL	0.018 (0.005-0.035)	0.400 (0.005-1.076)	0.003	0.004	0.005	<0.001	BDL	0.007
14.	Sonepur D/s	2.502 (1.273-4.101)	0.071 (0.003-0.224)	BDL	0.017 (0.005-0.035)	0.429 (0.086-2.056)	0.004	0.004	0.005	<0.001	BDL	0.007
15.	Tikarapada	1.081 (0.199-3.175)	0.057 (0.010-0.210)	<0.001 (BDL-0.002)	0.031 (0.007-0.047)	2.405 (BDL-5.300)	0.002	0.004	0.004	<0.001	BDL	0.006
16.	Narasinghpur	1.870 (0.642-4.207)	0.075 (0.003-0.270)	0.001 (BDL-0.006)	0.026 (0.010-0.035)	2.675 (0.111-6.474)	0.003	0.004	0.005	<0.001	BDL	0.006
17.	Munduli	1.605 (0.309-3.711)	0.090 (0.010-0.216)	BDL	0.022 (0.005-0.064)	4.454 (0/144-12.980)	0.003	0.002	0.005	<0.001	BDL	0.003
18.	Cuttack U/s	1.441 (0.407-5.128)	0.034 (0.006-0.078)	BDL	0.013 (BDL-0.043)	1.477 (0.013-5.776)	0.003	0.002	0.004	0.001	BDL	0.004

Sl. No.	Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg	Pb
		(mg/l)		(mg/l)								
19.	Cuttack D/s	1.111 (0.335-2.604)	0.021 (0-0.049)	BDL	0.020 (BDL-0.041)	1.575 (0.054-5.438)	0.002	0.002	0.004	0.001	BDL	0.006
20.	Cuttack FD/s	1.798 (0.257-5.568)	0.069 (0.013-0.260)	0.001 (BDL-0.010)	0.019 (0.002-0.037)	2.555 (0.028-6.911)	0.002	0.002	0.005	0.001	BDL	0.006
21.	Paradeep U/s	2.977 (0.912-7.236)	0.078 (0-0.163)	0.001 (BDL-0.008)	0.025 (BDL-0.053)	3.485 (0.211-8.475)	0.002	0.004	0.009	<0.001	BDL	0.006
22.	Paradeep D/s	3.009 (0.709-6.851)	0.243 (0.013-0.500)	BDL (BDL-0.003)	0.024 (0.003-0.060)	4.395 (0.283-10.780)	0.002	0.004	0.010	0.001	BDL	0.006
<b>Tel River</b>												
23.	Monmunda	2.187 (0.120-3.304)	0.060 (0.003-0.130)	BDL	0.0200 (0.005-0.043)	2.753 (0.144-5.947)	0.002	0.004	0.005	<0.001	BDL	0.005
<b>Kathajodi River</b>												
24.	Cuttack U/s	2.914 (0.326-7.307)	0.048 (0.016-0.088)	BDL	0.026 (BDL-0.053)	1.573 (0.061-7.314)	0.002	0.002	0.004	0.001	BDL	0.003
25.	Cuttack D/s	1.640 (0.314-3.375)	0.060 (0.012-0.131)	0.001 (BDL-0.010)	0.023 (0.003-0.043)	2.920 (0.054-9.233)	0.002	0.003	0.008	<0.001	BDL	0.007
26.	Mattagajpur (Cuttack FD/s)	19.447 (2.967-49.398)	1.186 (0.131-3.996)	0.006 (BDL-0.020)	0.031 (0.002-0.067)	2.556 (0.093-6.879)	0.002	0.002	0.010	0.001	BDL	0.009
<b>Serua River</b>												
27.	Sankhatrasa (Cuttack FD/s)	2.132 (0.339-6.483)	0.069 (0.006-0.204)	0.003 (BDL-0.008)	0.024 (0.005-0.052)	2.154 (BDL-9.010)	0.002	0.004	0.005	<0.001	BDL	0.008

Sl. No.	Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg	Pb**
		(mg/l)		(mg/l)								
<b>Kuakhai River</b>												
28.	Bhubaneswar FU/s	1.695 (0.168-6.244)	0.078 (0.004-0.192)	BDL	0.022 (0.005-0.052)	2.109 (0.095-8.844)	0.002	0.002	0.004	0.001	BDL	0.005
29.	Bhubaneswar U/s	3.854 (0.176-9.025)	0.182 (0.008-0.804)	BDL	0.024 (0.002-0.053)	2.355 (0.328-12.752)	0.003	0.002	0.005	0.001	BDL	0.009
<b>Daya River</b>												
30.	Bhubaneswar D/s	8.102 (0.619-31.518)	0.210 (0.013-0.699)	0.001 (BDL-0.005)	0.023 (0.008-0.047)	3.981 (0.460-12.564)	0.004	0.002	0.005	<0.001	BDL	0.004
31.	Bhubaneswar FD/s	10.872 (1.729-21.253)	0.204 (0.008-0.426)	BDL	0.022 (0.005-0.043)	2.932 (0.609-12.121)	0.005	0.002	0.004	<0.001	BDL	0.005
<b>Birupa River</b>												
32.	Choudwar D/s	3.538 (1.219-6.289)	0.131 (0.003-0.426)	BDL	0.021 (0.005-0.043)	4.043 (0.154-12.338)	0.003	0.004	0.006	<0.001	BDL	0.007
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

\*\* Data for the period Feb, 2013

BDL = Below Detection Limit

**(B) Brahmani River System**

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
<b>Sankh river</b>																
1.	Sankha U/s	97 (26-242)	56 (36-98)	11.4 (5.2-20.0)	0.256 (0.112-0.672)	0.010 (0.002-0.025)	2.54 (1.12-4.48)	2676 (78-17000)	151 (108-226)	0.33 (0.25-0.44)	0.051 (0.003-0.102)	87 (60-137)	54 (36-94)	9.9 (6.6-18.7)	7.8 (3.11-17.04)	0.302 (0.140-0.520)
<b>Koel river</b>																
2.	Koel U/s	99 (10-336)	76 (40-112)	12.9 (5.6-28.0)	0.266 (0.112-0.610)	0.014 (ND-0.040)	2.45 (1.12-4.67)	1344 (170-4900)	181 (112-256)	0.31 (0.22-0.46)	0.044 (0.004-0.094)	105 (66-147)	70 (38-100)	10.0 (5.78-14.7)	5.8 (2.86-10.44)	0.259 (0.185-0.343)
<b>Brahmani river</b>																
3.	Panposh U/s	73 (20-166)	66 (36-94)	10 (5.6-16.9)	0.217 (0.112-0.392)	0.010 (0.003-0.028)	2.54 (0.013-6.20)	4969 (490-13000)	168 (112-219)	0.31 (0.12-0.52)	0.032 (0.003-0.090)	96 (64-127)	62 (36-90)	9.5 (3.9-17.7)	5.8 (2.8-10.8)	0.284 (0.173-0.453)
4.	Panposh D/s	113 (22-366)	74 (50-112)	31.1 (15.2-45.5)	0.374 (0.220-0.610)	0.008 (ND-0.025)	2.870 (0.038-6.400)	46370 (2700-92000)	290 (170-429)	0.52 (0.32-0.85)	0.028 (0.003-0.064)	170 (104-225)	96 (60-140)	21.3 (10.1-36.3)	31.5 (5.34-54.5)	1.116 (0.306-1.670)
5.	Rourkela D/s	100 (34-356)	69 (42-96)	26.8 (13.5-40.3)	0.422 (0.22-0.952)	0.014 (ND-0.061)	2.763 (0.048-5.300)	37369 (790-92000)	267 (187-368)	0.50 (0.28-0.91)	0.060 (0.003-0.136)	153 (106-224)	86 (60-114)	19.2 (9.2-34.4)	25.4 (6.71-47.5)	0.655 (0.245-1.540)
6.	Biritola	101 (14-276)	61 (32-90)	21.5 (8.4-37.6)	0.246 (0.110-0.448)	0.007 (ND-0.014)	2.401 (0.030-4.200)	2786 (130-17000)	189 (109-288)	0.38 (0.26-0.51)	0.069 (0.003-0.347)	111 (64-182)	68 (36-116)	12 (5.8-19.2)	16.3 (2.48-32.6)	0.489 (0.166-0.963)
7.	Attaghat	94 (16-274)	64 (36-92)	20.8 (10.3-30.9)	0.267 (0.112-0.784)	0.009 (0.002-0.018)	2.63 (0.05-5.04)	1281 (78-7900)	187 (109-263)	0.37 (0.20-0.53)	0.050 (0.015-0.113)	109 (64-160)	67 (44-106)	12.4 (5.7-22.7)	14.6 (4.6-24.5)	0.497 (0.165-0.980)
8.	Bonaigarh	133 (20-438)	60 (40-80)	10.4 (4.2-16.9)	0.301 (0.112-0.610)	0.012 (0.003-0.021)	2.98 (1.68-6.05)	3729 (45-22000)	186 (107-263)	0.42 (0.27-0.55)	0.088 (0.003-0.264)	109 (62-154)	66 (38-98)	14.0 (6.7-22.6)	13.6 (3.98-24.25)	0.402 (0.093-0.909)



Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
9.	Rengali	75 (18-300)	52 (40-72)	8.9 (5.6-12.7)	0.240 (0.11-0.388)	0.015 (0.003-0.038)	2.731 (1.68-3.92)	286 (45-1100)	146 (107-187)	0.29 (0.21-0.49)	0.060 (0.007-0.238)	85 (62-106)	54 (34-84)	8.7 (5.78-14.8)	6.6 (2.97-14.05)	0.237 (0.18-0.315)
10.	Samal	111 (30-328)	52 (40-96)	10.5 (5.6-16.2)	0.267 (0.112-0.448)	0.012 (0.003-0.028)	2.98 (1.68-4.50)	1525 (45-7900)	148 (106-292)	0.35 (0.21-0.54)	0.070 (0.007-0.328)	87 (60-168)	51 (36-100)	10.5 (5.78-23.14)	7.7 (3.73-17.29)	0.345 (0.179-0.992)
11.	Talcher FU/s	84 (26-256)	52 (40-82)	9.5 (3.52-15.2)	0.311 (0.112-0.721)	0.024 (ND-0.112)	2.56 (1.12-4.80)	764 (170-2300)	155 (121-235)	0.39 (0.23-1.05)	0.053 (0.011-0.124)	89 (72-128)	53 (40-82)	10.1 (6.5-21.2)	9.6 (2.99-23.48)	0.257 (0.153-0.338)
12.	Talcher U/s	81 (20-180)	55 (32-102)	11.1 (5.5-20.1)	0.300 (0.112-0.605)	0.016 (0.003-0.035)	2.73 (1.4-5.04)	1866 (780-4900)	151 (116-222)	0.37 (0.20-0.58)	0.073 (0.011-0.170)	87 (70-129)	55 (38-92)	10.2 (6.5-15.4)	8.4 (4.98-13.93)	0.268 (0.195-0.323)
13.	Talcher D/s	62 (28-160)	58 (34-76)	20.5 (12.8-30.0)	0.372 (0.165-0.499)	0.019 (ND-0.049)	3.32 (1.96-5.60)	4360 (1100-7900)	163 (104-233)	0.35 (0.19-0.53)	0.101 (0.011-0.426)	96 (66-137)	58 (36-78)	9.9 (5.5-18.2)	10.5 (4.48-18.24)	0.344 (0.234-0.867)
14.	Talcher FD/s	105 (18-422)	64 (36-104)	14.0 (9.2-19.7)	0.239 (0.112-0.440)	0.014 (0.002-0.029)	3.01 (0.84-7.30)	2237 (780-4900)	171 (118-267)	0.36 (0.26-0.53)	0.063 (0.003-0.408)	99 (76-145)	63 (40-98)	10.1 (7.7-12.7)	10.3 (6.97-15.42)	0.329 (0.249-0.423)
15.	Dhenkanal U/s	145 (52-584)	54 (40-76)	9.0 (7.0-12.3)	0.245 (0.112-0.448)	0.014 (0.007-0.036)	2.78 (1.40-4.98)	5152 (790-24000)	144 (108-185)	0.32 (0.20-0.44)	0.083 (0.022-0.154)	85 (64-108)	55 (34-80)	9.6 (5.78-13.49)	8.7 (3.23-20.40)	0.319 (0.182-0.751)
16.	Dhenkanal D/s	136 (34-536)	58 (44-76)	15.6 (9.7-20.9)	0.321 (0.112-0.616)	0.015 (0.001-0.049)	2.77 (1.94-3.92)	8632 (220-54000)	168 (127-247)	0.37 (0.23-0.50)	0.098 (0.007-0.336)	100 (75-148)	63 (48-80)	11.3 (7.8-17.36)	8.4 (2.24-20.52)	0.423 (0.189-1.530)
17.	Bhuban	93 (18-248)	52 (38-72)	10.5 (2.9-17.4)	0.296 (0.112-0.728)	0.011 (0.005-0.025)	3.16 (1.4-5.04)	7708 (490-54000)	149 (119-201)	0.33 (0.16-0.54)	0.064 (0.003-0.290)	86 (70-114)	50 (36-66)	9.4 (5.6-14.7)	9.0 (3.85-23.63)	0.253 (0.168-0.332)
18.	Kabatabandha	90 (20-224)	52 (40-68)	9.2 (2.9-15.7)	0.274 (0.112-0.504)	0.011 (0.003-0.018)	2.79 (1.96-4.48)	6222 (330-35000)	143 (114-169)	0.37 (0.23-0.73)	0.049 (0.003-0.215)	84 (64-101)	49 (36-60)	10.7 (6.5-18.7)	7.0 (3.73-11.57)	0.252 (0.165-0.321)

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)								
19.	Dharmasala	216 (4-1244)	61 (42-88)	10.1 (7.8-12.0)	0.273 (0.112-0.444)	0.015 (0.006-0.043)	2.95 (1.96-3.92)	2428 (700-7900)	175 (130-227)	0.41 (0.20-0.66)	0.031 (0.003-0.128)	103 (70-138)	60 (46-84)	12.1 (6.5-18.7)	8.1 (1.5-18.0)	0.349 (0.206-0.736)
20.	Pottamundai	103 (34-454)	72 (54-88)	10.8 (6.9-15.1)	0.229 (0.112-0.504)	0.012 (0.004-0.028)	2.14 (1.12-4.2)	2817 (490-7900)	197 (147-249)	0.44 (0.26-0.55)	0.058 (0.007-0.117)	118 (88-142)	68 (50-82)	13 (9.0-18.7)	10.8 (5.1-25.0)	0.417 (0.180-1.310)
<b>Nandira River</b>																
21.	Nandira river before confluence with river Brahmani	55 (26-98)	136 (116-170)	24.7 (15.3-35.5)	0.426 (0.112-0.825)	0.029 (0.004-0.061)	2.91 (2.47-3.36)	7610 (490-24000)	429 (381-473)	0.57 (0.31-0.87)	0.124 (0.015-0.340)	254 (216-294)	156 (118-176)	27.6 (19.3-35.9)	42.3 (14.3-55.7)	1.577 (0.260-2.670)
<b>Kisinda Jhor</b>																
22.	Kisindajhor	70 (10-174)	114 (56-144)	17.9 (8.81-42.0)	0.339 (0.112-0.499)	0.030 (0.003-0.052)	2.95 (1.96-4.50)	4828 (280-17000)	467 (230-736)	0.82 (0.29-1.50)	0.114 (0.034-0.238)	271 (144-404)	162 (96-246)	41.6 (9.64-73.9)	47.9 (10.3-91.3)	3.249 (0.193-6.52)
<b>Kharasrota River</b>																
23.	Khanditara	142 (16-468)	55 (42-72)	9.3 (7.1-16)	0.295 (0.056-0.560)	0.019 (0.002-0.045)	2.64 (0.84-4.67)	1928 (330-7900)	146 (114-169)	0.33 (0.19-0.54)	0.043 (0.007-0.071)	85 (66-102)	54 (36-76)	9.0 (5.5-14.8)	7.6 (1.4-17.4)	0.266 (0.142-0.353)
24.	Binjharpur	124 (14-458)	54 (40-64)	8.7 (5.6-12.7)	0.396 (0.056-1.460)	0.019 (0.001-0.044)	2.58 (0.82-4.95)	10203 (330-92000)	150 (118-181)	0.38 (0.19-0.59)	0.062 (0.015-0.105)	88 (68-111)	53 (44-68)	10.6 (5.5-16.7)	6.4 (0.5-16.1)	0.237 (0.097-0.317)
25.	Aul	98 (22-256)	51 (40-62)	11.2 (3.5-18.0)	0.245 (0.112-0.448)	0.012 (0.001-0.027)	2.75 (1.1-5.04)	3772 (330-13000)	158 (129-228)	0.48 (0.24-1.32)	0.049 (0.011-0.128)	95 (70-146)	52 (40-60)	13.2 (6.4-39.2)	11.4 (5.7-25.1)	0.287 (0.198-0.381)
<b>*Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>*Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

**(B) Contd..**

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)		(mg/l)								
<b>Sankha River</b>												
1.	Sankha U/s	7.500 (0.927-32.825)	0.081 (0.008-0.179)	BDL	0.025 (0.010-0.038)	2.233 (0.068-9.673)	0.002	0.002	0.005	<0.001	BDL	0.005
<b>Koel River</b>												
2.	Koel U/s	2.292 (0.323-6.018)	0.050 (0.010-0.128)	BDL	0.026 (0.003-0.068)	4.523 (0.100-12.682)	0.002	0.004	0.006	<0.001	BDL	0.005
<b>Brahmani river</b>												
3.	Panposh U/s	2.548 (0.623-7.002)	0.100 (0.036-0.168)	0.012	0.024 (0.005-0.043)	3.210 (0.187-8.607)	0.001	0.002	0.007	<0.001	BDL	0.002
4.	Panposh D/s	12.267 (0.018-37.88)	0.159 (0.040-0.842)	0.007 (0.002-0.013)	0.042 (0.028-0.080)	7.107 (2.24-12.84)	0.002	0.006	0.015	0.001	0.007	0.01
5.	Rourkela D/s	12.292 (2.171-36.619)	0.071 (0.018-0.170)	0.008 (0.003-0.013)	0.033 (0.01-0.052)	4.589 (1.26-8.469)	0.002	0.006	0.009	0.001	0.003	0.008
6.	Biritola	3.847 (0.948-13.255)	0.089 (ND-0.336)	0.007 (0.002-0.010)	0.023 (0.002-0.043)	3.873 (0.25-12.837)	0.001	0.005	0.009	0.001	BDL	0.008
7.	Attaghat	4.482 (0.182-8.999)	0.074 (0.010-0.192)	BDL	0.033 (0.003-0.051)	0.20- 13.149)	0.001	0.005	0.008	0.001	BDL	0.008
8.	Bonaigarh	4.486 (1.382-10.663)	0.058 (0.020-0.099)	0.003 (0.002-0.003)	0.033(0 .010- 0.070)	4.166 (0.115-12.837)	0.001	0.004	0.007	BDL	BDL	0.005
9.	Rengali	2.207 (0.561-6.284)	0.090 (0-0.371)	0.005 (0.003-0.008)	0.027 (0.005-0.054)	1.03 (0.12-2.284)	0.001	0.003	0.008	0.001	0.005	0.004

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3--P</sup>	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)		(mg/l)								
10.	Samal	2.666 (0.186-4.145)	0.062 (0.003-0.160)	0.012 (0.003-0.020)	0.026 (0.005-0.052)	3.949 (0.077-12.646)	0.001	0.002	0.007	<0.001	BDL	0.004
11.	Talcher FU/s	2.601 (0.305-9.566)	0.047 (0.003-0.150)	BDL	0.025 (0.003-0.053)	2.620 (0.336-9.556)	0.001	0.002	0.002	<0.001	BDL	0.008
12.	Talcher U/s	4.242 (0.221-9.991)	0.047 (0.005-0.109)	BDL	0.026 (0.013-0.043)	3.261 (0.180-10.330)	0.002	0.001	0.004	0.001	BDL	0.019
13.	Talcher D/s	2.881 (0.660-2.782)	0.038 (0.003-0.133)	BDL	0.027 (0.015-0.043)	1.974 (0.190-6.355)	0.002	0.004	0.006	0.001	BDL	0.013
14.	Talcher FD/s	2.224 (0.304-7.015)	0.030 (0.001-0.077)	0.004 (0.003-0.005)	0.035 (-0.020-0.052)	3.039 (0.300-9.662)	0.001	0.003	0.005	0.001	BDL	0.012
15.	Dhenkanal U/s	2.258 (0.354-5.855)	0.080 (0.005-0.177)	0.007	0.034 (0.005-0.052)	3.298 (0.210-8.550)	0.003	0.002	0.009	0.001	BDL	0.013
16.	Dhenkanal D/s	1.824 (0.261-6.302)	0.055 (0.010-0.243)	0.006 (0.003-0.012)	0.032 (0.008-0.053)	2.987 (0.180-9.185)	0.003	0.002	0.011	0.001	BDL	0.015
17.	Bhuban	2.514 (0.138-8.822)	0.048 (0.003-0.123)	0.003 (0.002-0.003)	0.032 (0.005-0.060)	3.900 (0.590-11.326)	0.003	0.002	0.008	<0.001	BDL	0.01
18.	Kabatabandha	2.609 (0.076-7.878)	0.051 (0.001-0.123)	0.007	0.024 (0.010-0.041)	5.927 (0.179-12.412)	0.003	0.002	0.009	<0.001	BDL	0.008
19.	Dharmasala	3.220 (0.671-6.071)	0.138 (0.008-0.571)	0.005	0.028 (0.008-0.053)	2.534 (0.270-4.701)	0.003	0.002	0.009	<0.001	BDL	0.006
20.	Pottamundai	3.032 (0.337-11.120)	0.054 (0.012-0.122)	0.003	0.022 (0.055-0.040)	2.319 (0.300-6.170)	0.002	0.002	0.011	0.001	BDL	0.008

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)	(mg/l)									
<b>Nandira River</b>												
21.	Nandira river before confluence with river Brahmani	3.078 (ND-7.396)	0.063 (0.006-0.168)	0.006 (0.003-0.010)	0.037 (0.005-0.070)	1.185 (0.127-2.719)	0.002	0.004	0.008	0.001	BDL	0.009
<b>Kisinda Jhor</b>												
22.	Kisindajhor	5.735 (0.120-22.069)	0.150 (0.012-0.366)	0.006 (0.002-0.008)	0.031 (0.013-0.050)	2.370 (0.810-4.887)	0.004	0.004	0.004	0.001	BDL	0.003
<b>Kharasrota River</b>												
23.	Khanditara	3.225 (0.345-8.363)	0.076 (0.008-0.214)	0.002	0.036 (0.013-0.063)	4.103 (0.095-12.842)	0.003	0.002	0.009	<0.001	BDL	0.005
24.	Binjharpur	2.592 (0.270-6.484)	0.099 (0.002-0.532)	0.005	0.033 (0.005-0.052)	5.006 (0.350-12.577)	0.002	0.003	0.008	<0.001	BDL	0.006
25.	Aul	2.358 (0.080-4.888)	0.073 (0.011-0.126)	0.008	0.024 (0.010-0.038)	3.997 (0.440-10.473)	0.002	0.004	0.008	<0.001	BDL	0.007
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>* Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)    \*\* Data for the period Feb, 2013**

BDL = Below Detection Limit

**(C) Baitarani river system**

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(MPN/100ml)	(µS/cm)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
<b>Kusei river</b>																
1.	Deogan	148 (28-596)	99 (56-124)	10.1 (1.5-26.0)	0.208 (0.056-0.392)	0.011 (0.003-0.018)	2.62 (1.68-5.60)	3042 (130-7900)	242 (152-322)	0.35 (0.23-0.58)	0.040 (0.011-0.068)	139 (90-189)	90 (56-120)	12.7 (7.4-24.6)	6.3 (0.5-20.6)	0.250 (0.147-0.357)
<b>Baitarani river</b>																
2.	Joda	186 (22-1252)	43 (16-68)	11.1 (2.0-18.9)	0.296 (0.112-0.560)	0.006 (0.0-0.017)	2.87 (1.66-5.60)	2125 (130-4900)	125 (88-185)	0.35 (0.22-0.51)	0.138 (0.003-1.004)	74 (48-107)	43 (20-62)	9.6 (5.8-15.7)	5.64 (0.99-10.82)	0.288 (0.101-0.972)
3.	Anandpur	101 (8-424)	56 (28-70)	11.8 (2.2-19.8)	0.295 (0.112-0.721)	0.014 (0.002-0.027)	3.82 (2.24-7.00)	6528 (78-35000)	150 (92-202)	0.36 (0.19-0.63)	0.020 (0.003-0.079)	89 (54-113)	52 (20-72)	10.0 (5.5-19.7)	5.4 (1.4-19.0)	0.182 (0.105-0.263)
4.	Jajpur	134 (28-416)	58 (32-80)	13.3 (2.1-22.0)	0.217 (0.112-0.336)	0.010 (0-0.017)	2.28 (0.82-3.90)	5180 (1300-17000)	163 (105-232)	0.46 (0.22-1.27)	0.049 (0.011-0.091)	96 (64-141)	56 (28-84)	12.7 (4.7-35.6)	6.40 (1.50-17.71)	0.312 (0.110-1.310)
5.	Chandbali	151 (38-364)	64 (26-92)	14.8 (1.6-24.6)	0.335 (0.112-0.616)	0.013 (0-0.038)	3.28 (1.12-6.20)	1492 (400-3500)	3326 (111-9720)	16.66 (0.47-72.12)	0.219 (0.007-0.893)	2216 (72-6318)	295 (40-600)	1540.4 (9.4-6870.0)	163.1 (7.3-957.7)	0.294 (0.137-0.565)
<b>Dhamara river</b>																
6.	Dhamra	276 (56-620)	81 (48-112)	22.5 (1.7-39.8)	0.319 (0.112-0.504)	0.007 (0-0.016)	2.69 (0.56-5.04)	4915 (170-16000)	22227 (380-52170)	42.91 (2.87-90.56)	1.011 (0.120-2.213)	17046 (260-39861)	2671 (68-5800)	9090.6 (94.3-21150.0)	912.2 (24.8-2226.3)	0.509 (0.152-0.813)
<b>*Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>* Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

## (C) Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)		(mg/l)								
<b>Kusei River</b>												
1.	Deogan	3.313 (0.261-11.953)	0.075 (0.003-0.210)	0.009 (0.005-0.013)	0.023 (0.003-0.040)	3.469 (0.340-9.397)	0.002	0-0.002	0.007	<0.001	BDL	0.002
<b>Baitarani river</b>												
2.	Joda	5.655 (1.342-16.917)	0.159 (0.008-0.460)	BDL	0.041 (0.006-0.068)	5.842 (0.514-18.200)	0.002	0.002	0.008	< 0.001	BDL	0.003
3.	Anandpur	4.226 (0.362-14.109)	0.096 (0.020-0.283)	BDL	0.030 (0.010-0.053)	5.057 (0.498-13.160)	0.002	0.002	0.008	<0.001	BDL	0.004
4.	Jajpur	2.253 (0.276-6.235)	0.134 (0.008-0.576)	BDL	0.028 (0.005-0.060)	4.835 (0.402-12.810)	0.002	0.003	0.008	0.001	BDL	0.003
5.	Chandbali	4.145 (2.388-9.397)	0.087 (0.009-0.310)	BDL	0.027 (0.002-0.050)	7.661 (1.970-12.158)	0.003	0.002	0.007	0.001	BDL	0.008
<b>Dhamara river</b>												
6.	Dhamra	4.470 (1.448-13.237)	0.100 (0.037-0.190)	BDL	0.028 (0.007-0.048)	7.123 (BDL-15.996)	0.003	0.002	0.008	0.001	BDL	0.009
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982) \*\* Data for the period Feb, 2013**

BDL = Below Detection Limit

**(D) Rushikulya river system**

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
<b>Rushikulya river</b>																
1.	Madhopur	186 (34-596)	101 (32-128)	19.0 (7.8-34.9)	0.252 (0.112-0.504)	0.019 (0.005-0.038)	3.17 (2.52-4.20)	3398 (490-13000)	3960 (128-19960)	10.12 (0.23-65.45)	0.309 (0.041-1.809)	2718 (76-13874)	375 (32-2000)	1457.3 (7.7-7690.0)	89.6 (1.1-521.6)	0.333 (0.128-0.499)
2.	Potagarh	294 (50-1044)	110 (80-124)	26.7 (14.5-46.1)	0.252 (0.168-0.504)	0.014 (0.004-0.014)	2.78 (1.96-3.40)	9813 (45-92000)	28222 (241-59330)	39.59 (0.87-74.16)	1.880 (0.071-3.513)	21341 (151-44815)	3388 (68-6800)	11550.9 (24.5-23384)	1129.9 (11.8-3016.1)	0.556 (0.172-0.922)
<b>Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients			Heavy metals							
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)			(mg/l)							
<b>Rushikulya river</b>												
1.	Madhopur	4.933 (0.401-13.494)	0.057 (0.005-0.155)	BDL	0.025 (0.005-0.048)	3.394 (0.387-12.625)	0.002	0.004	0.006	0.001	BDL	0.007
2.	Potagarh	6.698 (1.320-17.261)	0.052 (0.016-0.129)	BDL (BDL-0.007)	0.028 (0.005-0.070)	2.337 (0.216-6.339)	0.004	0.004	0.007	0.001	BDL	0.009
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

\*\* Data for the period Feb, 2013

BDL = Below Detection Limit



(E) Nagavali river system

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(MPN/100ml)	(µS/cm)	(µS/cm)	(µS/cm)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
<b>Nagavali river</b>																
1.	Penta	218 (28-1080)	82 (48-108)	11.7 (4.1-20.9)	0.229 (BDL-0.112)	0.012 (0-0.033)	2.48 (1.67-4.43)	11771 (790-92000)	202 (133-292)	0.31 (0.16-0.53)	0.083 (0.011-0.226)	119 (77-173)	78 (52-112)	11.2 (5.5-22.6)	7.37 (2.50-14.40)	0.224 (0.176-0.284)
2.	Jaykaypur D/s	507 (20-2324)	89 (60-125)	22.7 (6.9-36.6)	0.372 (0.224-0.560)	0.016 (0-0.032)	2.81 (1.68-3.92)	9026 (790-35000)	232 (153-338)	0.40 (0.20-0.65)	0.075 (0.007-0.147)	137 (92-175)	87 (56-120)	14.9 (5.8-26.7)	11.71 (2.36-32.98)	0.221 (0.162-0.311)
3.	Rayagada D/s	329 (24-1624)	86 (58-112)	17.1 (9.8-23.8)	0.267 (0.168-0.440)	0.012 (0-0.029)	2.84 (1.40-4.71)	9960 (330-54000)	211 (141-272)	0.36 (0.22-0.56)	0.072 (0.003-0.207)	126 (86-172)	76 (52-94)	11.5 (5.8-21.6)	9.30 (2.26-22.69)	0.221 (0.135-0.285)
<b>Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

(E) Contd..

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)		(mg/l)								
<b>Nagavali river</b>												
1.	Penta	4.288 (1.333-8.083)	0.136 (0.006-0.803)	BDL (BDL-0.002)	0.026 (0.008-0.050)	5.407 (0.800-12.757)	0.001	0.002	0.008	0.001	BDL	0.007
2.	Jaykaypur D/s	4.525 (0.385-15.717)	0.124 (0.005-0.553)	BDL (BDL-0.005)	0.027 (0.007-0.038)	4.360 (0.700-13.149)	0.001	0.003	0.009	0.006	BDL	0.009
3.	Rayagada D/s	4.889 (0.397-10.478)	0.114 (0.003-0.323)	BDL (BDL-0.005)	0.028 (0.010-0.070)	5.805 (0.475-13.646)	0.001	0.003	0.009	0.006	BDL	0.007
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)

\*\* Data for the period Feb, 2013

BDL = Below Detection Limit

**(F) Subarnarekha river system**

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
<b>Subarnarekha river</b>																
1.	Rajghat	111 (8-308)	73 (48-92)	12.5 (7.2-20.9)	0.285 (0.050-0.672)	0.013 (0-0.044)	2.63 (1.68-4.95)	1770 (220-4900)	236 (127-349)	0.56 (0.23-0.92)	0.069 (0.003-0.347)	140 (72-207)	77 (40-106)	20.3 (7.5-37.2)	14 (2.98-26.04)	0.307 (0.186-0.709)
<b>Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients			Heavy metals							
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)			(mg/l)							
<b>Subarnarekha river</b>												
1.	Rajghat	0.644 (0.177-3.328)	0.061 (0.005-0.245)	BDL (BDL-0.002)	0.025 (0.009-0.047)	2.475 (0.212-5.941)	0.003	0.005	0.006	<0.001	BDL	0.005
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

\* Tolerance limit for Inland Surface water bodies (IS-2296-1982) \*\* Data for the period Feb, 2013

BDL = Below Detection Limit

**(G) Budhabalanga river system**

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(MPN/100ml)	(µS/cm)			(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
<b>Budhabalanga river</b>																
1.	Baripada D/s	97 (20-212)	99 (38-156)	11.8 (4.2-19.0)	0.341 (0.112-0.550)	0.016 (0-0.036)	2.79 (1.38-5.04)	7954 (490-24000)	260 (136-420)	0.51 (0.25-0.97)	0.057 (0.003-0.109)	156 (82-247)	91 (48-144)	21.4 (7.7-42.3)	6.59 (2.24-16.92)	0.161 (0.082-0.246)
2.	Balasore U/s	109 (20-276)	78 (40-112)	10.3 (7.0-14.1)	0.250 (0.112-0.560)	0.011 (0.002-0.026)	2.64 (1.68-3.40)	2978 (490-13000)	229 (112-363)	0.53 (0.24-1.03)	0.065 (0.011-0.272)	137 (68-203)	80 (36-124)	19.6 (6.7-37.1)	12.46 (2.49-29.85)	0.195 (0.110-0.361)
3.	Balaosre D/s	95 (8-316)	92 (44-128)	19.0 (8.3-30.8)	0.261 (0.056-0.495)	0.011 (0.001-0.039)	2.69 (1.68-3.92)	19263 (1100-54000)	6198 (142-27880)	14.67 (0.18-56.10)	0.201 (0.018-0.776)	4555 (84-21122)	594 (48-2700)	2333 (7.7-11250.0)	198.54 (3.23-828.60)	0.329 (0.113-0.642)
<b>*Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>*Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)**

**(G) Contd..**

Sl. No.	Sampling Location	Nutrients		Heavy metals								
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)		(mg/l)								
<b>Budhabalanga river</b>												
1.	Baripada D/s	1.743 (0.602-4.065)	0.142 (0.002-0.488)	BDL	0.047 (0.008-0.250)	3.218 (0.132-12.736)	0.002	0.003	0.009	0.001	BDL	0.007
2.	Balasore U/s	1.969 (0.589-9.557)	0.068 (0.006-0.230)	0.002 (BDL-0.013)	0.036 (0.005-0.180)	5.529 (0.240-11.918)	0.003	0.003	0.007	0.001	BDL	0.004
3.	Balaosre D/s	5.974 (0.655-12.110)	0.157 (0.017-0.453)	0.002 (BDL-0.013)	0.015 (0.005-0.033)	7.059 (0.651-12.951)	0.002	0.004	0.009	0.001	BDL	0.009
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

**Class 'C' : Drinking water source with conventional treatment followed by disinfection**

**Class 'E' : Irrigation water quality**

**\* Tolerance limit for Inland Surface water bodies (IS-2296-1982)    \*\* Data for the period Feb, 2013**

BDL = Below Detection Limit

(H) Kolab river system

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
<b>Kerandi river</b>																
1.	Sunabeda	211 (28-1596)	29 (12-104)	13.0 (6.9-26.0)	0.160 (0.056-0.330)	0.003 (0-0.007)	1.68 (1.10-3.10)	1428 (330-4900)	82 (58-103)	0.38 (0.23-0.52)	0.072 (0.003-0.230)	49 (32-63)	32 (16-84)	8.4 (4.6-13.7)	5.86 (1.49-11.81)	0.206 (0.084-0.777)
<b>*Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>*Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients			Heavy metals							
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)			(mg/l)							
<b>Kerandi river</b>												
1.	Sunabeda	2.975 (0.115-9.765)	0.075 (0.006-0.299)	BDL	0.026 (0.002-0.060)	3.752 (0.710-12.921)	0.002	0.003	0.004	0.001	BDL	0.006
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

\* Tolerance limit for Inland Surface water bodies (IS-2296-1982) \*\* Data for the period Feb, 2013

BDL = Below Detection Limit

(I) Vansadhara river system

Sl. No.	Location	Physical parameters		Organic pollution Indicators				Bacteriological parameter	Mineral constituents							
		Annual Average values (Range of values)														
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	FC	EC	SAR	B	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(MPN/100ml)	(µS/cm)	(mg/l)						
<b>Vansadhara river</b>																
1.	Muniguda	120 (24-334)	87 (36-138)	11.5 (7.3-22.0)	0.261 (0.112-0.550)	0.016 (0-0.069)	2.46 (1.68-3.10)	1713 (230-7900)	220 (148-341)	0.40 (0.22-0.63)	0.062 (0.003-0.158)	125 (87-189)	76 (48-124)	12.9 (6.8-27.2)	5.54 (0-21.34)	0.210 (0.142-0.263)
2.	Gunupur	111 (8-368)	81 (44-140)	13.3 (5.5-22.0)	0.317 (0.112-0.666)	0.018 (0-0.053)	2.48 (0.84-3.92)	16931 (170-160000)	202 (127-333)	0.34 (0.22-0.45)	0.070 (0.007-0.366)	118 (72-197)	74 (42-120)	10.9 (5.6-20.7)	6.2 (1.6-21.3)	0.247 (0.137-0.398)
<b>Class 'C'</b>		-	-	-	-	-	-	-	-	-	-	1500	-	600	400	1.5
<b>Class 'E'</b>		-	-	-	-	-	-	-	2250	26	2.0	2100	-	600	1000	-

Sl. No.	Sampling Location	Nutrients				Heavy metals						
		Annual Average values (Range of values)										
		Nitrate as NO <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni**	Cu**	Zn**	Cd**	Hg**	Pb**
		(mg/l)				(mg/l)						
<b>Vansadhara river</b>												
1.	Muniguda	3.154 (0.093-18.348)	0.150 (0.020-0.388)	BDL	0.049 (0.006-0.270)	3.524 (0.288-8.952)	0.002	0.001	0.008	0.001	BDL	0.005
2.	Gunupur	3.348 (0.748-14.610)	0.130 (0.021-0.344)	BDL	0.029 (0.003-0.067)	4.871 (0.460-12.593)	0.002	0.002	0.009	0.001	BDL	0.008
<b>*Class 'C'</b>		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
<b>*Class 'E'</b>		-	-	-	-	-	-	-	-	-	-	-

Class 'C' : Drinking water source with conventional treatment followed by disinfection

Class 'E' : Irrigation water quality

\* Tolerance limit for Inland Surface water bodies (IS-2296-1982) \*\* Data for the period Feb, 2013 BDL = Below Detection Limit