

Table-1 Water Quality of Taladanda Canal with respect to Criteria parameters during 2012

Sl. No	Location	No. of Obs.	Annual average values (Range of values)					Frequency of violation (Percent of violation) from designated criteria value			Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters					BOD	TC	FC			
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)	FC (MPN/100 ml)						
1.	Jobra*	5	7.9 (7.1-8.2)	7.9 (5.5-10.2)	1.8 (1.0-2.7)	48200 (11000-160000)	40160 (4900-160000)	0	5 (100)	5 (100)	Does not conform to Class B,C	BOD, TC,FC	Human activities
2.	Ranihat*	5	8.0 (7.4-8.4)	8.0 (5.1-10.3)	1.9 (1.4-2.3)	109400 (43000-160000)	87400 (28000-160000)	0	5 (100)	5 (100)	Does not conform to Class B & C	BOD, TC,FC	Human activities and waste water of Cuttack town
3.	Chhatrabazar*	5	7.6 (6.9-8.4)	8.7 (5.8-11.8)	2.6 (1.8-3.3)	113800 (35000-160000)	83600 (22000-160000)	2 (40)	5 (100)	5 (100)			
4.	Nuabazar*	5	7.9 (7.4-8.5)	6.4 (5.2-7.9)	2.1 (1.6-2.6)	119200 (92000-160000)	71400 (35000-160000)	0	5 (100)	5 (100)			
5.	Biribati*	5	8.0 (7.7-8.3)	7.8 (6.1-9.2)	1.8 (1.0-2.3)	82800 (16000-160000)	85200 (17000-160000)	0	5 (100)	5 (100)			
6.	Atharabanki**	10	7.8 (6.5-8.4)	7.7 (6.2-16.3)	3.6 (1.1-4.7)	42700 (15000-92000)	19640 (9400-54000)	7 (70)	10 (100)	10 (100)			
Class 'C' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	3 or less	5000 or less					Drinking water source with conventional treatment followed by disinfection		
Class 'B' water quality Criteria (IS-2296-1982)			6.5-8.5	5 and above	3 or less	500 or less					Outdoor bathing		
Water quality criteria for bathing water (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000)			6.5-8.5	5 and above	3 or less		500 (Desirable) 2500 (Permissible)				Water use for organised outdoor bathing		

* Data for the period June-November, 2012

** Data for the period March-December, 2012

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)

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Sl. No	Location	No. of Obs.	Annual average value (Range of values)				Frequency of violation (Percent of violation) from designated criteria value			Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				EC	SAR	B			
			pH	EC (microSiemens /cm)	SAR	B						
1.	Jobra*	5	7.9 (7.1-8.2)	173 (148-205)	0.38 (0.22-0.51)	0.037 (0.007-0.072)	0	0	0	Conform to Class E		
2.	Ranihat*	5	8.0 (7.4-8.4)	186 (150-232)	0.41 (0.29-0.75)	0.052 (0.019-0.109)	0	0	0			
3.	Chhatrabazar*	5	7.6 (6.9-8.4)	(187) (160-206)	0.37 (0.28-0.42)	0.058 (0.019-0.140)	0	0	0			
4.	Nuabazar*	5	7.9 (7.4-8.5)	183 (148-219)	0.34 (0.23-0.50)	0.032 (0.015-0.052)	0	0	0			
5.	Biribati*	5	8.0 (7.7-8.3)	183 (149-215)	0.40 (0.34-0.54)	0.099 (0.023-0.174)	0	0	0			
6.	Atharabanki**	10	7.8 (6.5-8.4)	720 (147-2638)	2.74 (0.30-8.08)	0.217 (0.019-0.738)	1 (10)	0	0	Irrigation, Industrial Cooling or controlled waste disposal		
Class 'E water quality Criteria (IS-2296-1982)			6.5-8.5	2250 or less	26 or less	5						

* Data for the period June-November, 2012

** Data for the period March-December, 2012

Table-2 Water Quality of Taladanda Canal with respect to other parameters during 2012

Sl. No.	Sampling Location	Physical parameters (mg/l)		Organic pollution Indicators (mg/l)				Mineral constituents (mg/l)				
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	TDS	TH	Cl	SO ₄	F
1.	Jobra*	168 (28-388)	70 (58-92)	11.4 (7.5-15.7)	0.252 (0.112-0.448)	0.013 (BDL-0.022)	3.36 (1.12-8.40)	106 (89-132)	68 (64-82)	13.1 (7.8-18.7)	7.22 (4.22-11.08)	0.327 (0.216-0.415)
2.	Ranihat*	99 (24-178)	75 (56-96)	16.2 (7.5-25.5)	0.294 (0.168-0.448)	0.016 (0.007-0.027)	4.37 (1.12-7.84)	115 (88-134)	74 (60-88)	15.3 (8.2-24.8)	8.41 (2.67-15.64)	0.341 (0.262-0.391)
3.	Chhatrabazar*	89 (52-140)	76 (64-92)	15.4 (7.5-27.6)	0.295 (0.112-0.392)	0.015 (BDL-0.042)	7.17 (4.48-12.32)	114 (91-131)	78 (66-90)	12.6 (8.4-15.9)	8.70 (4.46-17.32)	0.332 (0.2669-0.411)
4.	Nuabazar*	60 (40-114)	75 (56-94)	14.1 (6.1-23.5)	0.258 (0.112-0.392)	0.010 (BDL-0.035)	5.71 (1.68-15.12)	112 (88-127)	79 (60-92)	12.5 (7.8-16.0)	7.90 (4.26-10.91)	0.329 (0.261-0.399)
5.	Biribati*	96 (42-246)	70 (56-96)	12.2 (7.5-17.6)	0.157 (0.112-0.336)	0.005 (BDL-0.014)	4.14 (2.24-6.72)	110 (95-129)	75 (60-88)	13.1 (11.9-13.8)	9.91 (6.83-15.34)	0.330 (0.259-0.391)
6.	Atharabanki**	63 (23-140)	106 (52-192)	26.9 (5.8-40.7)	0.336 (0.112-0.952)	0.047 (BDL-0.179)	3.75 (1.40-6.16)	491 (95-1775)	167 (72-540)	188.6 (9.6-912.9)	54.10 (9.00-323.7)	0.465 (0.296-0.638)
Class 'C'		-	-	-	-	-	-	-	-	600	400	1.5
Class 'E'								2100	-	600	1000	-

* Data for the period June-November, 2012

** Data for the period March-December, 2012

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

Class 'E' : Irrigation water quality

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Sl. No.	Sampling Location	Nutrients (mg/l)		Heavy metals (mg/l)								
		NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni	Cu	Zn	Cd	Hg	Pb
1.	Jobra*	2.394 (0.745-5.166)	0.086 (0.011-0.252)	BDL	0.028 (0.010-0.052)	4.900 (0.820-12.420)	-	-	-	-	-	-
2.	Ranihat*	2.203 (0.429-5.350)	0.069 (0.009-0.192)	BDL	0.026 (0.012-0.040)	5.176 (0.620-13.090)	-	-	-	-	-	-
3.	Chhatrabazar*	2.018 (0.261-5.493)	0.121 (0.078-0.176)	BDL	0.031 (0.017-0.047)	5.730 (2.430-11.940)	-	-	-	-	-	-
4.	Nuabazar*	3.880 (0.948-12.115)	0.061 (0.015-0.141)	BDL	0.030 (0.020-0.043)	5.694 (1.470-12.370)	-	-	-	-	-	-
5.	Biribati*	2.062 (0.589-3.274)	0.041 (0.016-0.120)	BDL	0.028 (0.013-0.038)	4.880 (1.900-11.380)	-	-	-	-	-	-
6.	Atharabanki**	3.584 (0.325-11.577)	0.111 (0.023-0.315)	BDL	0.032 (0.013-0.050)	1.784 (0.040-6.800)	0.005 (BDL-0.008)	0.005 (0.002-0.008)	0.011 (0.006-0.016)-	0.001 (0.001-0.002)-	-	0.006 (0.005-0.009)-
Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
Class 'E'		-	-	-	-	-	-	-	-	-	-	-

BDL = Below Detection Limit

* Data for the period June-November, 2012

** Data for the period March-December, 2012

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

Class 'E' : Irrigation water quality