

Water Quality of Taladanda Canal with respect to Criteria parameters during 2015 (January-December)

Sl. No	Sampling 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					DO	BOD	TC	FC				
			pH	DO (mg/l)	BOD (mg/l)	TC (MPN/100 ml)	FC (MPN/100 ml)								
1.	Jobra*	6	8.0 (7.7-8.2)	6.9 (6.4-8.2)	1.2 (0.7-1.8)	50817 (7900-92000)	28717 (3300-54000)	0	0	6 (100)	6 (100)	Does not conform to Class B,C	TC,FC	Human activities	
2.	Ranihat*	6	7.9 (7.5-8.3)	6.1 (1.9-8.3)	3.6 (1.1-12.9)	160000 (160000-160000)	148667 (92000-160000)	1 (17)	1 (17)	6 (100)	6 (100)	Does not conform to Class B & C	DO, BOD, TC,FC	Human activities and waste water of Cuttack town	
3.	Chhatrabazar*	6	7.8 (7.3-8.2)	6.3 (2.6-8.3)	7.9 (1.8-34.6)	119667 (54000-160000)	84333 (24000-160000)	1 (17)	2 (34)	6 (100)	6 (100)				
4.	Nuabazar*	6	7.8 (7.3-8.2)	6.4 (4.4-8.2)	3.4 (1.2-11.2)	119667 (54000-160000)	81167 (35000-160000)	0 [§] 1 ^{§§} (17)	1 (17)	6 (100)	6 (100)	Does not conform to Class B & C	BOD, TC,FC		
5.	Biribati**	7	8.0 (7.8-8.3)	7.0 (5.9-8.6)	2.9 (1.1-6.0)	72271 (7900-160000)	52329 (3300-160000)	0	3 (43)	7 (100)	7 (100)				
6.	Atharabanki	12	7.7 (6.8-8.4)	6.6 (2.8-9.3)	2.3 (1.2-3.7)	98250 (11000-160000)	79492 (7900-160000)	1 [§] (8) 3 ^{§§} (25)	2 (17)	12 (100)	12 (100)	Does not conform to Class B & C	DO, BOD, TC,FC	Human activities	
***Class 'C'			6.5-8.5	4 and above	3 or less	5000 or less		Drinking water source with conventional treatment followed by disinfection							
***Class 'B'			6.5-8.5	5 and above	3 or less	500 or less		Outdoor bathing							
Water quality criteria for bathing water			6.5-8.5	5 and above	3 or less		2500 (Maximum Permissible)	Water use for organised outdoor bathing (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000)							

* Data for the period January,2015 and July-November, 2015

** Data for the period January,2015 , March, 2015 and July-November, 2015

*** Tolerance limit for Inland Surface water bodies (IS-2296-1982) § for Class C and §§ for Class B

NB :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	Sampling 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 (micro Siemens /cm)	SAR	B (mg/l)						
1.	Jobra*	6	8.0 (7.7-8.2)	193 (175-219)	0.36 (0.31-0.45)	0.020 (<0.003-0.061)	0	0	0	Conform to Class E		
2.	Ranihat*	6	7.9 (7.5-8.3)	232 (147-409)	0.27 (1.18-0.50)	0.009 (<0.003-0.022)	0	0	0			
3.	Chhatrabazar*	6	7.8 (7.3-8.2)	243 (181-452)	0.52 (0.28-1.37)	0.019 (<0.003-0.071)	0	0	0			
4.	Nuabazar*	6	7.8 (7.3-8.2)	244 (194-432)	0.57 (0.31-1.58)	0.013 (<0.003-0.0365)	0	0	0			
5.	Biribati**	7	8.0 (7.8-8.3)	270 (166-511)	0.81 (0.31-1.92)	0.044 (<0.003-0.144)	0	0	0			
6.	Atharabanki	12	7.7 (6.8-8.4)	3245 (231-32480)	6.93 (0.36-70.32)	0.274 (0.006-1.945)	0	1 (8)	0			
*** Class 'E'			6.5-8.5	2250 or less	26 or less	2 or less				Irrigation, Industrial Cooling or controlled waste disposal		

* Data for the period January,2015 and July-November, 2015

** Data for the period January,2015 , March, 2015 and July-November, 2015

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

Water Quality of Taladanda Canal with respect to other parameters during 2015 (January-December)

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents				
		Annual average values (Range of values)										
		TSS	Total alkalinity	COD	NH ₄ -N	Free NH ₃ -N	TKN	TDS	TH	Cl	SO ₄	F
		(mg/l)		(mg/l)				(mg/l)				
1.	Jobra*	44 (6-127)	75 (66-84)	7.5 (5.1-9.1)	0.075 (0.056-0.112)	0.003 (0-0.004)	1.40 (1.12-1.96)	110 (98-125)	78 (70-84)	10.44 (8.81-13.69)	11.9 (5.6-21.4)	0.415 (0.310-0.680)
2.	Ranihat*	46 (14-116)	82 (56-124)	15.1 (8.6-33.2)	1.185 (0.112-6.440)	0.048 (0.004-0.258)	2.80 (1.40-8.96)	132 (82-225)	90 (80-122)	14.85 (7.82-35.27)	17.2 (9.1-31.3)	0.411 (0.290-0.650)
3.	Chhatrabazar*	46 (10-117)	80 (64-132)	40.0 (11.4-156.6)	1.465 (0.112-7.896)	0.025 (0.002-0.099)	2.89 (1.40-9.24)	138 (105-245)	88 (72-132)	14.35 (7.82-37.18)	19.5 (12.1-29.4)	0.405 (0.302-0.620)
4.	Nuabazar*	43 (8-134)	82 (66-120)	16.6 (8.6-29.5)	1.409 (0.112-7.616)	0.022 (0.003-0.095)	2.75 (1.40-8.96)	136 (108-240)	86 (76-114)	15.98 (8.8-45.01)	14.8 (8.7-22.1)	0.407 (0.269-0.650)
5.	Biribati**	40 (8-118)	97 (64-164)	17.6 (7.6-38.1)	0.848 (0.056-5.264)	0.049 (0.002-0.263)	2.40 (1.12-8.40)	155 (96-305)	89 (64-132)	21.11 (7.82-56.75)	12.4 (7.2-22.9)	0.385 (0.320-0.700)
6.	Atharabanki	21 (5-34)	94 (60-124)	18.9 (9.3-41.4)	0.087 (0.056-0.168)	0.003 (0-0.007)	1.35 (1.12-1.68)	2431 (125-24880)	392 (72-3350)	1276.5 (11.7-13699.0)	133.8 (4.97-1237.5)	0.590 (0.430-0.834)
***Class 'C'		-	-	-	-	-	-	1500	-	600	400	1.5
***Class 'E'								2100	-	600	1000	-

* Data for the period January,2015 and July-November, 2015

** Data for the period January,2015 , March, 2015 and July-November, 2015

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

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		Heavy metals								
		Annual average values (Range of values)										
		NO ₃ ⁻	PO ₄ ³⁻ -P	Cr(VI)	T. Cr	Fe	Ni [#]	Cu [#]	Zn [#]	Cd [#]	Hg	Pb [#]
(mg/l)		(mg/l)										
1.	Jobra*	2.066 (1.488-3.450)	0.065 (0.004-0.215)	0.008 (<0.002-0.023)	0.021 (0.011-0.045)	3.488 (0.080-7.550)	0.017 (0.005-0.027)	0.002 (0.001-0.005)	0.005 (0.002-0.011)	0.0013 (0.0004-0.0023)	0.00011 (<0.00006-0.00025)	0.008 (0.005-0.018)
2.	Ranihat*	7.482 (1.196-15.899)	0.259 (0.032-1.203)	0.011 (0.002-0.035)	0.041 (0.016-0.072)	2.110 (0.160-5.890)	0.025 (0.007-0.038)	0.006 (0.001-0.012)	0.011 (0.001-0.024)	0.0026 (0.0009-0.0048)	0.00037 (0.00013-0.00095)	0.012 (0.007-0.021)
3.	Chhatrabazar*	7.272 (2.498-15.509)	0.116 (0.048-0.303)	0.015 (0.005-0.028)	0.047 (0.022-0.068)	3.603 (0.220-7.420)	0.021 (0.006-0.029)	0.005 (0.002-0.010)	0.006 (0.002-0.011)	0.0020 (0.0011-0.0034)	0.00034 (<0.00006-0.00095)	0.011 (0.003-0.022)
4.	Nuabazar*	5.498 (1.887-12.125)	0.324 (0.061-1.248)	0.014 (<0.002-0.030)	0.040 (0.021-0.068)	3.987 (0.150-7.270)	0.018 (0.007-0.026)	0.005 (0.001-0.015)	0.004 (0.001-0.006)	0.0023 (0.0011-0.0038)	0.00030 (<0.00006-0.00083)	0.010 (0.006-0.017)
5.	Biribati**	2.877 (0.793-7.241)	0.265 (0.013-1.290)	0.012 (<0.002-0.035)	0.035 (0.011-0.077)	3.815 (0.800-6.980)	0.021 (0.005-0.036)	0.003 (0.001-0.009)	0.004 (0.002-0.005)	0.0020 (0.0009-0.0033)	0.00003 (<0.00006-0.00007)	0.009 (0.002-0.019)
6.	Atharabanki	5.339 (1.971-8.901)	0.087 (0.022-0.281)	0.016 (<0.002-0.046)	0.057 (0.011-0.228)	1.052 (0.020-2.660)	0.011 (0.004-0.031)	0.004 (0.001-0.008)	0.010 (0.001-0.024)	0.0021 (0.0003-0.0042)	0.00023 (<0.00006-0.00070)	0.009 (0.002-0.024)
***Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
***Class 'E'		-	-	-	-	-	-	-	-	-	-	-

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

Data for the period July-November, 2015

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

Class 'E' : Irrigation water quality