

**Table-1 Water Quality of Taladanda Canal with respect to Criteria parameters during 2014 (February-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*	10	7.9 (7.3 – 8.3)	7.3 (6.1 – 8.3)	1.3 (0.8 – 2.4)	40620 (1400 – 160000)	30529 (790 – 1600000)	0	0	9 (90)	10 (100)	Does not conform to Class B,C	TC,FC	Human activities
2.	Ranihat*	10	7.7 (7.3 – 8.3)	4.9 (0.3 – 8.4)	7.5 (0.6 – 23.3)	160000 (160000 – >160000)	146400 (92000 – 160000)	3 (30)	5 (50)	10 (100)	10 (100)	Does not conform to Class B & C	DO, BOD, TC,FC	Human activities and waste water of Cuttack town
3.	Chhatrabazar*	10	7.7 (7.3 – 8.2)	4.9 (0 – 7.7)	7.6 (0.7 – 23.0)	128889 (54000 – >160000)	111667 (24000 – >160000)	5 (50)	5 (50)	10 (100)	10 (100)			
4.	Nuabazar*	10	7.6 (7.0 – 8.1)	5.6 (0.8 – 14.3)	8.7 (0.8 – 30.9)	139600 (92000 – 160000)	118400 (24000 – 160000)	4 (40)	5 (50)	10 (100)	10 (100)			
5.	Biribati*	10	7.7 (7.0 – 8.4)	4.5 (0 – 9.7)	6.3 (0.7 – 19.5)	104756 (7900 – 160000)	80944 (2200 – 160000)	3 (30)	5 (50)	10 (100)	10 (100)			
6.	Atharabanki**	11	7.4 (7.0 – 7.9)	3.8 (0.1 – 6.8)	4.4 (0.7 – 17.6)	107745 (9200 – 160000)	93745 (2200 – 160000)	6 (60)	7 (64)	9 (90)	9 (90)			
<b>***Class 'C'</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>							
<b>***Class 'B'</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>Water quality criteria for bathing water</b>			<b>6.5-8.5</b>	<b>5 and above</b>	<b>3 or less</b>		<b>2500 (Maximum Permissible)</b>	<b>Water use for organised outdoor bathing (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000)</b>						

\* Data for the period February- December, 2014 except June, 2014  
Surface water bodies (IS-2296-1982)

\*\* Data for the period February- December, 2014 \*\*\* Tolerance limit for Inland

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*	10	7.9 (7.3 – 8.3)	202 (145 - 258)	0.38 (0.24 - 0.59)	0.027 (0.003 - 0.057)	0	0	0	Conform to Class E		
2.	Ranihat*	10	7.7 (7.3 – 8.3)	276 (132- 442)	0.63 (0.20 - 1.12)	0.044 (0.003 - 0.086)	0	0	0			
3.	Chhatrabazar*	10	7.7 (7.3 – 8.2)	306 (148 – 570)	0.70 (0.23 -2.12)	0.037 (0.006 - 0.083)	0	0	0			
4.	Nuabazar*	10	7.6 (7.0 – 8.1)	328 (146 – 582)	0.79 (0.18 - 1.59)	0.073 ( 0.012 - 0.247)	0	0	0			
5.	Biribati*	10	7.7 (7.0 – 8.4)	320 (152 – 584)	0.71 (0.22 - 1.60)	0.082 (0.028 - 0.186)	0	0	0			
6.	Atharabanki**	11	7.4 (7.0 – 7.9)	672 (162 – 2142)	2.59 (0.23 - 9.09)	0.134 (0.038 - 0.298)	0	0	0			
<b>*** Class 'E'</b>			<b>6.5-8.5</b>	<b>2250 or less</b>	<b>26 or less</b>	<b>2 or less</b>				<b>Irrigation, Industrial Cooling or controlled waste disposal</b>		

\* Data for the period February- December, 2014 except June, 2014

\*\* Data for the period February- December, 2014

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

**Table-2 Water Quality of Taladanda Canal with respect to other parameters during 2014 (February-December)**

Sl. No.	Sampling Location	Physical parameters		Organic pollution Indicators				Mineral constituents				
		Annual average values (Range of values)										
		TSS	Total alkalinity	COD	NH <sub>4</sub> -N	Free NH <sub>3</sub> -N	TKN	TDS	TH	Cl	SO <sub>4</sub>	F
		(mg/l)		(mg/l)				(mg/l)				
1.	Jobra*	43 (6-256)	76 (44-98)	10.7 (7.2-15.8)	0.179 (0.112-0.392)	0.008 (0.001-0.020)	1.60 (0.84-2.80)	115 (82-150)	75 (44-90)	11.9 (7.8-20.5)	7.9 (2.9-14.8)	0.325 (0.237-0.452)
2.	Ranihat*	50 (12-193)	86 (40-140)	32.7 (7.7-81.4)	3.377 (0.056-11.536)	0.073 (0.001-0.260)	5.94 (0.84-14.00)	155 (78-234)	84 (36-122)	21.8 (6.0-40.1)	11.6 (3.4-21.2)	0.288 (0.215-0.432)
3.	Chhatrabazar*	58 (9-233)	95 (48-160)	34.3 (5.8-99.5)	3.086 (0.112-10.416)	0.056 (0.002-0.130)	7.00 (0.84-17.92)	172 (88-314)	91 (40-132)	25.7 (7.8-86.1)	15.2 (3.7-31.8)	0.317 (0.210-0.472)
4.	Nuabazar*	62 (12-191)	97 (36-172)	34.5 (6.8-98.5)	3.056 (0.056-11.424)	0.071 (0-0.347)	5.96 (0.84-15.96)	181 (86-308)	94 (40-156)	30.5 (5.9-70.7)	15.4 (4.4-30.4)	0.317 (0.208-0.452)
5.	Biribati*	47 (6-205)	99 (44-186)	27.9 (8.8-70.0)	1.165 (0.056-5.040)	0.037 (0-0.280)	3.58 (0.84-8.68)	178 (90-312)	96 (46-178)	26.9 (7.8-66.5)	13.2 (4.9-24.8)	0.323 (0.233-0.459)
6.	Atharabanki**	35 (15-76)	95 (56-136)	29.1 (8.1-75.5)	0.188 (0.112-0.728)	0.003 (0-0.007)	1.32 (0.56-3.08)	430 (97-1552)	141 (60-450)	161.6 (7.8-782.7)	28.0 (5.5-80.8)	0.581 (0.288-1.210)
***Class 'C'		-	-	-	-	-	-	-	-	600	400	1.5
***Class 'E'								2100	-	600	1000	-

\* Data for the period February- December, 2014 except June, 2014

\*\* Data for the period February- December, 2014

\*\*\* 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 <sub>3</sub> <sup>-</sup>	PO <sub>4</sub> <sup>3-</sup> -P	Cr(VI)	T. Cr	Fe	Ni <sup>#</sup>	Cu <sup>#</sup>	Zn <sup>#</sup>	Cd <sup>#</sup>	Hg	Pb <sup>#</sup>
		(mg/l)		(mg/l)								
1.	Jobra*	3.104 (0.390-9.030)	0.069 (0.004-0.225)	0.017 (0.002-0.031)	0.046 (0.011-0.195)	1.270 (0.030-8.899)	0.012 (0.009-0.015)	0.003 (0.003-0.004)	0.003 (0.002-0.005)	0.0008 (0.0007-0.0010)	0.0002 (<0.00006-0.0015)	0.002 (0.001-0.003)
2.	Ranihat*	15.540 (1.391-40.920)	0.504 (0.022-1.492)	0.019 (0.008-0.033)	0.042 (0.017-0.077)	1.660 (0.051-9.435)	0.019 (0.018-0.019)	0.003 (0.001-0.005)	0.007 (0.002-0.012)	0.0012 (0.0012-0.0013)	0.00018 (<0.00006-0.00051)	0.017 (0.014-0.020)
3.	Chhatrabazar*	14.310 (1.634-42.258)	0.460 (0.018-1.432)	0.020 (0.005-0.041)	0.044 (0.006-0.100)	2.533 (0.020-9.588)	0.013 (0.009-0.017)	0.006 (0.005-0.006)	0.017 (0.012-0.022)	0.0011 (0.0009-0.0013)	0.00036 (<0.00006-0.00108)	0.009 (0.009-0.010)
4.	Nuabazar*	12.558 (0.268-43.110)	0.227 (0.016-1.240)	0.017 (<0.002-0.053)	0.035 (0.003-0.060)	2.622 (0.150-9.971)	0.015 (0.011-0.018)	0.005 (0.001-0.008)	0.015 (0.012-0.018)	0.0010 (0.0009-0.0012)	0.00029 (<0.00006-0.00076)	0.018 (0.016-0.021)
5.	Biribati*	15.370 (0.217-43.580)	0.370 (0.037-1.690)	0.014 (<0.002-0.038)	0.048 (0.010-0.200)	3.015 (0.352-9.333)	0.013 (0.012-0.014)	0.005 (0.005-0.005)	0.014 (0.012-0.016)	0.0013 (0.0004-0.0022)	0.00051 (0.00006-0.00120)	0.017 (0.015-0.020)
6.	Atharabanki**	4.867 (1.178-16.937)	0.268 (0.018-1.664)	0.013 (<0.002-0.033)	0.035 (0.003-0.058)	1.495 (0.031-8.746)	0.023 (0.022-0.025)	0.020 (0.018-0.022)	0.020 (0.016-0.024)	0.0024 (0.0006-0.0043)	0.00026 (0.00006-0.00051)	0.014 (0.010-0.018)
***Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10
***Class 'E'		-	-	-	-	-	-	-	-	-	-	-

\* Data for the period February- December, 2014 except June, 2014 \*\* Data for the period February- December, 2014

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

# Data for the period February and March, 2014

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

Class 'E' : Irrigation water quality