

Table- 1 Water Quality of Lakes with respect to Criteria parameters during 2012 (January-December)

(a) Chilka Lake

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	FC			
			pH	DO (mg/l)	BOD (mg/l)	Turbidity, NTU	FC (MPN/100 ml)					
1.	Rambha	12	8.1 (7.9-8.9)	7.8 (5.4-10.1)	1.5 (0.7-2.2)	10 (0.3-28)	250 (45-1100)	0	4 (33)	Does not conform to Class-SW-II	FC	Human activities
2.	Satpada	12	8.0 (7.2-8.4)	7.6 (5.4-10.4)	1.6 (0.6-2.8)	54.3 (4.6-148)	842 (78-2400)	0	5 (41)			
Water quality criteria for Class SW-II Waters (MOEF Notification G.S.R. No. 742(E) Dt. 25.09.2000)			6.5-8.5	4.0 or more	3.0 mg/l or less	30 or less	100 or less			For Bathing, Contact Water Sports and Commercial Fishing		

(b) Anshupa Lake

Sl. No	Location	No. of Obs.	Annual average values (Range of values)				Frequency of violation from designated criteria value		Existing Class	Parameters responsible for downgrading the water quality	Possible Reason
			Parameters				Free ammonia	EC			
			pH	DO (mg/l)	Free ammonia (mg/l)	EC (microSiemens /cm)					
1.	Kadlibari	11	8.0 (7.3-8.4)	8.1 (6.4-11.2)	0.014 (0.001-0.066)	162 (107-223)	0	0			
2.	Bishnupur	12	7.9 (7.3-8.4)	8.2 (5.7-14.2)	0.019 (0.001-0.042)	146 (108-198)	0	0			
3.	Subarnapur	12	8.0 (7.4-8.5)	9.8 (7.9-12.8)	0.018 (0.002-0.035)	140 (106-190)	0	0			
4.	Sarandagarh	12	8.0 (7.5-8.5)	8.9 (6.0-13.0)	0.023 (0.002-0.104)	162 (110-246)	0	0			
Class 'D' water quality Criteria (IS-2296-1982)			6.5-8.5	4 and above	1.2 or less	5000 or less			Fish Culture and Wild life propagation		

Table-2 Water Quality of Lakes with respect to other parameters during 2012 (January-December)

(a) Chilka Lake

Sl. No.	Sampling Location	Physical parameters (mg/l)		Organic pollution Indicators (mg/l)				Bacteriologic al Parameter (MPN/ 100 ml)	Mineral constituents (mg/l)							
		TSS	Total alkal -inity	COD	NH ₄ -N	Free NH ₃ -N	TKN	TC	EC (µS/cm)	TDS	B	SAR	TH	Cl	SO ₄	F
1.	Rambha	126 (26-282)	118 (40-168)	25.2 (13.8-38.3)	0.355 (0.112-0.784)	0.041 (0.007-0.235)	3.85 (1.68-9.52)	633 (110-2400)	23083 (8080-34080)	16633 (5630-2367)	1.109 (0.072-1.890)	37.9 (10.7-55.6)	3032 (1800-6000)	8858 (2244-12345)	991 (180-2217)	0.684 (0.260-0.838)
2.	Satapada	172 (42-406)	105 (84-146)	27.8 (11.3-45.6)	0.261 (0.112-0.560)	0.016 (0.003-0.050)	4.34 (1.68-9.52)	1964 (230-9200)	28683 (3279-49470)	21444 (2344-35570)	1.201 (0.230-2.763)	42.5 (7.21-70.4)	4041 (1000-7000)	11689 (1078-20662)	1357 (314-2782)	0.804 (0.405-1.020)
Class 'C'		-	-	-	-	-	-	5000	-	1500	-	-	-	600	400	1.5

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.	Rambha	5.80 (1.66-17.64)	0.038 (0.005-0.112)	BDL	0.043 (0.015-0.125)	0.922 (0.149-4.147)	0.006 (0.004-0.009)	0.006 (0.003-0.007)	0.008 (0.003-0.010)	0.002 (0.001-0.003)	BDL	0.008 (0.007-0.011)
2.	Satapada	5.34 (0.66-16.56)	0.056 (0.009-0.184)	BDL	0.038 (0.018-0.063)	5.426 (0.300-20.350)	0.005 (0.004-0.006)	0.005 (0.001-0.007)	0.008 (0.005-0.012)	0.003 (0.001-0.004)	BDL	0.007 (0.001-0.012)
Class 'C'		50	-	0.05	-	50	-	1.5	15.0	0.01	-	0.10

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

BDL = Below Detection Limit

(b) Anshupa Lake

Sl. No.	Sampling Location	Physical parameters (mg/l)		Organic pollution Indicators (mg/l)				Bacteriological parameters (MPN/ 100 ml)		Mineral constituents (mg/l)						
		TSS	Total alkalinity	BOD	COD	NH ₄ -N	TKN	TC	FC	TDS	B	SAR*	TH	Cl	SO ₄	F
1.	Kadlibari	61 (21-134)	70 (48-92)	1.6 (1.0-2.8)	15.5 (4.9-23.6)	0.204 (0.112-0.672)	2.93 (1.40-6.72)	5433 (390-17000)	2452 (170-7900)	102 (69-139)	0.041 (0.011-0.079)	0.37 (0.16-0.73)	65 (44-92)	11.8 (6.7-19.2)	4.25 (1.26-14.26)	0.369 (0.216-0.580)
2.	Bishnupur	38 (16-108)	62 (50-84)	2.1 (1.2-4.1)	22.6 (8.4-47.3)	0.304 (0.112-0.784)	3.08 (0.40-9.24)	8289 (790-54000)	4334 (260-28000)	89 (70-123)	0.052 (0.019-0.117)	0.43 (0.22-0.75)	57 (40-76)	12.9 (7.5-22.1)	2.96 (0.45-16.62)	0.357 (0.234-0.514)
3.	Subarnapur	58 (32-106)	58 (32-80)	2.0 (1.0-2.8)	20.6 (11.5-36.2)	0.261 (0.056-0.560)	3.19 (1.12-8.96)	12511 (790-54000)	5684 (330-24000)	87 (70-112)	0.045 (0.015-0.076)	0.36 (0.19-0.47)	60 (48-74)	10.7 (6.7-14.4)	3.64 (1.08-18.12)	0.327 (0.205-0.491)
4.	Sarandagarh	53 (14-145)	60 (50-86)	2.0 (1.0-3.0)	23.4 (10.8-56.1)	0.257 (0.112-0.672)	3.72 (1.68-10.08)	8572 (330-35000)	4768 (230-24000)	101 (71-144)	0.036 (0.022-0.083)	0.50 (0.18-1.31)	59 (40-76)	15.7 (7.5-34.6)	3.80 (0.89-19.1)	0.357 (0.188-0.710)
Class 'C'		-	-	-	-	-	-	5000		1500	-	-	-	600	400	1.5

* No unit

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.	Kadlibari	4.57 (0.79-16.27)	0.090 (0.015-0.220)	BDL	0.030 (0.017-0.072)	2.042 (0.365-7.100)	0.006 (0.005-0.007)	0.003 (0.002-0.004)	0.002 (0.001-0.005)	0.002 (0.001-0.003)	BDL	0.007 (0.005-0.010)
2.	Bishnupur	3.86 (0.07-18.72)	0.062 (0.003-0.132)	BDL	0.034 (0.012-0.058)	1.517 (0.422-5.510)	0.006 (0.003-0.008)	0.004 (0.003-0.006)	0.005 (0.003-0.008)	0.002 (0.001-0.003)	BDL	0.006 (0.001-0.008)
3.	Subarnapur	3.83 (0.36-17.19)	0.077 (0.010-0.214)	BDL	0.034 (0.015-0.084)	2.879 (0.552-7.738)	0.004 (0.002-0.005)	0.004 (0.002-0.006)	0.005 (0.002-0.008)	0.002 (0.001-0.003)	BDL	0.006 (0.003-0.008)
4.	Sarandagarh	5.06 (0.50-15.30)	0.064 (0.001-0.185)	BDL	0.033 (0.015-0.067)	1.830 (0.350-3.060)	0.005 (0.003-0.007)	0.004 (0.004-0.005)	0.004 (0.002-0.008)	0.002 (0.001-0.003)	BDL	0.006 (0.004-0.009)
Class 'C'				0.05	-	50	-	1.5	15.0	0.01	-	0.10

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

BDL = Below Detection Limit

** Data for the period Jan-May, 2012