

Water analysis of various sites of Pong Dam Wetland (21.3.2014 to 23.03 2014)

Table1: Physiochemical parameters of different sites of Pong Dam Reservoir

Site: Sansarpur Terrace (Pong Dam): Dated 21.03.2014

	Site-I	Site II	Site-III	Site-IV	Site-V
Locality	Pong Dam at Swamp Area Terrace	Swamp Area Terrace (Khan Khud)	Saha Nehar Barrage (Sathana Site)	Saha Nehar Gate	Pong Dam Near Water Sport
Altitude (m)	334	341	325	328	411
Latitude	N 31.95154°	N 31.95013	N 31.95864	N 31.95836	N 31.97997
Longitude	E 075.91353	E 075.91901	E 075.89779	E 075.89662	E 075.95099
Physiochemical Parameters					
Air Temp.	29°C	21°C	19°C	29.7	25.8°C
Water Temp.	19.4°C	24.2°C	18°C	21.5	20.5°C
pH	7.5	7.8			
Dissolved Oxygen(mg/l)	4.2	3.5	7.3	6.5	7.2
Alkalinity (mg/l)	89	15.6	96.6	107.5	95.4
Free Co ₂ (mg/l)	3.8	10.5	4.2	5.6	3.5
Chloride (mg/l)	5.6	12.7	5.7	6.9	7.2
TDS	116.6	33.1	136.3	124.7	126.7
Conductivity	191.3	49.40	203.4	186.7	190.2

Site: Dhameta (Pong Dam) Dated 22.03.2014

	Site-I	Site II	Site-III
Locality	Karu Island Near Kutada Village	Karu Island	Pong dam Near Dhameta Village
Altitude (m)	398	415	403
Latitude	N 32.01946	N 32.00961	N 32.03537
Longitude	E 075.97850	E 075.98560	E 075.97737
Air Temp.	25.8	26.7	26.9
Water Temp.	20.5	21.0	21.9
pH	6.96	8.39	6.9
Dissolved Oxygen(mg/l)	4.8	5.9	6.2
Alkalinity (mg/l)	145.6	123.3	102.4
Free CO ₂ (mg/l)	4.5	3.4	4.7
Chloride (mg/l)	8.2	7.8	8.7
TDS	126.3	117.5	124.6
Conductivity	188.50	175.37	185.97

Site: Nagrota Saurian (Pong Dam) Dated: 23.03.2014

	Site-I	Site II	Site-III
Locality	Jagatpur (Nagrota Surian)	Ransar Island near FRH	Centre of Dam while going to Ransar Island
Altitude (m)	417	401	401
Latitude	N 32.03914	N 31.98848	N 31.98848
Longitude	E 076.03770	E 076.00202	E 075.00202
Air Temp.	25.7	27.8	28.2
Water Temp.	20.3	23.6	23.2
pH	7.2	7.87	8.2
Dissolved Oxygen(mg/l)	6.4	5.4	5.6
Alkalinity (mg/l)	121.4	156.3	165.4
Free CO ₂ (mg/l)	5.6	4.4	3.5
Chloride (mg/l)	10.8	11.2	12.7
TDS	121.5	123.7	126.4
Conductivity	177.6	179.1	187.4

WATER ANALYSIS REPORT OF PONG DAM

During the Survey of Pong Dam wetland, 11 localities have been covered which are Pong Dam at Swamp Area Terrace, Swamp Area Terrace (Khan Khud), Saha Nehar Barrage (Sathana Site), Saha Nehar Gate, Pong Dam Near Water Sport, Karu Island Near Kutada Village, Karu Island, Pong dam Near Dhameta Village, Jagatpur (Nagrota Surian), Ransar Island near FRH, Centre of Dam while going to Ransar Island. The altitude, latitude and longitude of each site have been recorded and given in Table 1, 2, 3. The air temperature and water temperature of the different sites varies from the 19° to 29.7°C and 18°C to 24.2°C respectively. The pH varies from 6.9 to 7.8 and is alkaline from all the sites. pH is an important parameter in evaluating the water quality. Acidic conditions will prevail as pH value decreases and alkaline conditions will prevail as the pH value increases. The studies show that all the water samples were within permissible limits. The dissolved oxygen ranges from 3.5 to 7.3 mg/l at different site of the Dam. However, minimum dissolved oxygen (3.5mg/l) has been recorded at the Swamp Area Terrace (Khan Khud). The dissolved oxygen of some of the sites conducted in Pong Dam at Sansarpur Terrace, Chatta near Dhameta, Ransar Island, Bathu near Jawali, Nagrota Surian conducted by Sharma (2009) depict that the value of dissolved oxygen has comparatively reduced over the years. Dissolved oxygen concentration more than 5.00 mg/l favours good growth of flora and fauna (Das, 2000). The dissolved oxygen ranged from 3.41 to 6.21 mg/l. The Conductivity is an important tool to assess the purity of water. The permissible limit for electrical conductivity (EC) is 300 μ S cm. The conducted of the collected samples ranged from 49.4 to 203.4 μ S cm. The range of TDS of water sample of the Dam varied between 33.1 to 136.3mg/l. The highest TDS value was recorded at Saha Nehar Barrage (Sathana Site). All the water samples analyzed are non saline as per the salinity classification (Robinove *et al.*, 1958). The Chloride value ranges from 5.6 to 12.7 mg/l and it is in the optimum range.

Conclusion:

Data reveals that the pH and Dissolved oxygen value are optimum at all the sites of the Dam. However, the value of the dissolved oxygen is in the decreasing trend. Further, in the Swamp Area Terrace (Khan Khud), Pong Dam at Swamp Area, Terrace Karu and Island near Kutada Village the value of dissolved oxygen, are comparatively less. **But still it does not affect the aquatic life in the Dam.** The conductivity is in the optimum range and good for the health of the

water body. The value of TDS and alkalinity is favorable for the aquatic life. The fecal matter of birds observed at various sites in the Dam is helpful to enhance the productivity of water. To know the quality of water of the dam there should be continuous monitoring of water parameters to identify the pollution level.

References:

1. Robinove, C.J., Langford, R.H., Brookhart, J.W., (1958), "Saline water resource of North Dakota", In US Geological Survey Water Supply, Paper No. 1428, pp 72.
2. Das AK (2000). Limno-Chemistry of Some Andhra Pradesh Reservoirs. *J. Inland Fish. Soc. India* 32: 37-44.
3. Sharma, Indu and Mehta, H.S. (2009) Limnological status of the Pong Dam Wetland, A Ramsar Site. *Bionotes*, 11(2): 45-46.