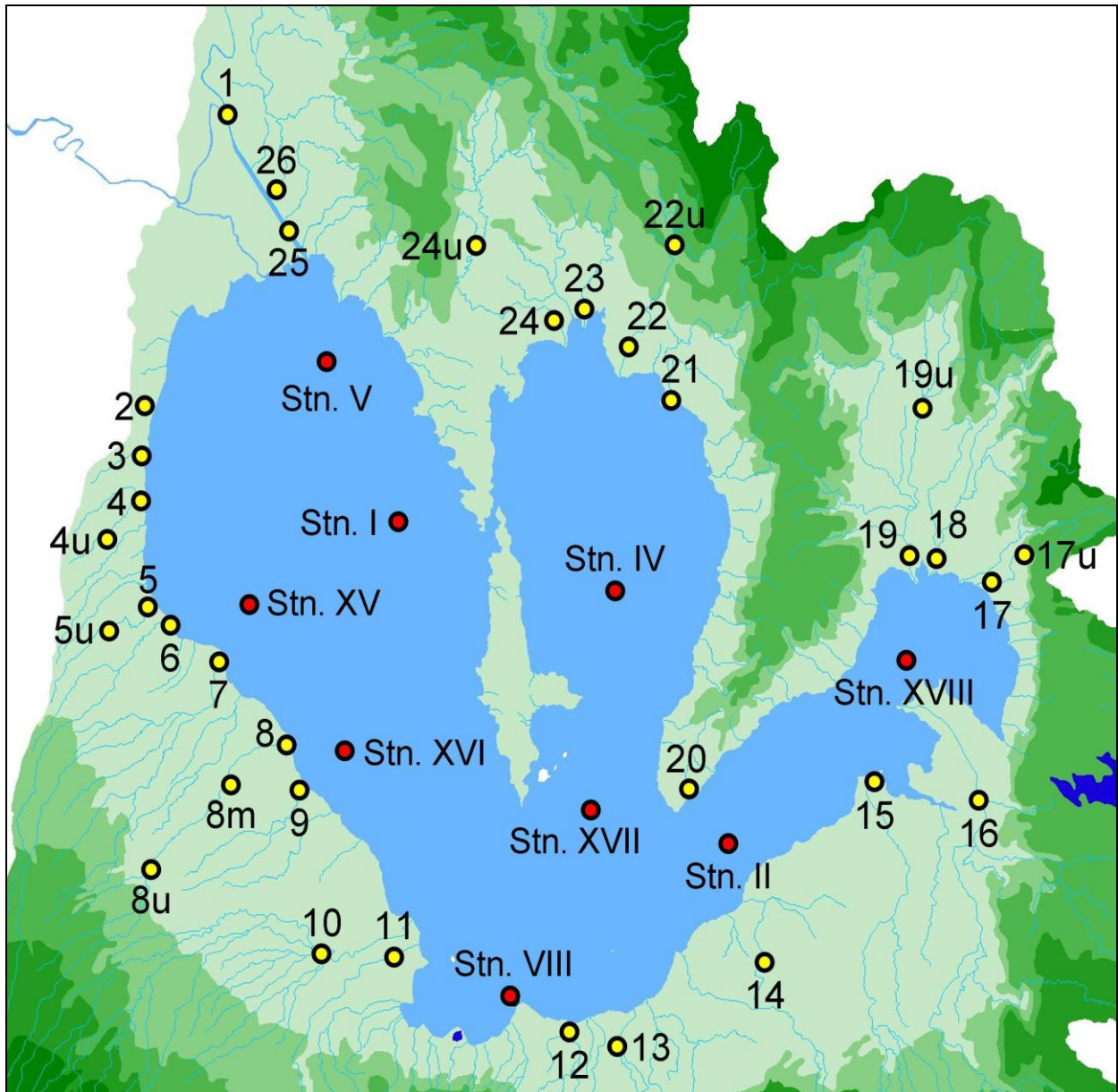




# QUARTERLY WATER QUALITY MONITORING REPORT

Laguna Lake and Tributary Rivers  
April to June 2014



Sampling Stations and Locations

## II. Water Quality Data:

### A. Laguna Lake

Location	Water Quality Parameters*								
	BOD (mg/l)			Dissolved Oxygen (mg/l)			Total coliforms (MPN/100ml)**		
	Apr.	May	Jun.	Apr.	May	Jun.	Apr.	May	Jun.
Stn. I (Central West Bay)	2	3	4	7.7	7.6	9.8	337	233	314
Stn. II (East Bay)	2	2	4	8.5	8.4	8.4	134	58	59
Stn. IV (Central Bay)	2	2	3	9.7	7.9	7.9	101	57	64
Stn. V (Northern West Bay)	2	6	8	8.3	10.1	12.7	63	172	107
Stn. VIII (South Bay)	2	2	2	8.7	8.5	8.9	323	125	44
Stn.XV (San Pedro)	2	3	3	8.9	8.9	8.9	344	243	107
Stn.XVI (Sta. Rosa)	2	3	3	9.1	9.7	9.3	112	84	33
Stn.XVII (Sanctuary)	2	4	1	9.0	8.8	9.5	128	96	36
Stn.XVIII (Pagsanjan)	2	2	4	8.0	8.4	8.1	31	24	22

### B. Tributary Rivers

Station	Location	Water Quality Parameters*								
		BOD (mg/L)			Dissolved Oxygen (mg/L)			Total coliforms (MPN/100ml)**		
		Apr.	May	Jun.	Apr.	May	Jun.	Apr.	May	Jun.
1	Marikina	31	18	20	0.05	0.05	0.05	1,100,000	-	-
2	Bagumbayan (Taguig)	192	126	142	0.05	0.05	0.05	>16,000,000	-	-
3	Buli Creek (Taguig)	130	1400	150	0.05	0.05	0.05	3,500,000	-	-
4	Mangagate (Muntinlupa)- Downstream	32	30	22	0.05	0.05	0.05	4,900,000	-	-
4U	Mangagate (Muntinlupa)- Upstream	8	8	4	4	4.1	3.9	790,000	-	-
5	Tunasan (Muntinlupa)- Downstream	-	-	475	-	-	0.05	-	-	-
5U	Tunasan (Muntinlupa)- Upstream	4	6	4	5.5	4.5	1.8	790,000	-	-
6	San Pedro River (T2)	-	17	23	-	0.8	0.2	-	-	-
7	Biñan	23	39	68	0.05	0.7	0.05	2,400,000	-	-
8	Sta. Rosa- Downstream	11	26	12	0.05	1.5	2	5,400,000	-	-
8M	Sta. Rosa- Midstream	16	7	40	0.9	4.7	0.4	1,700,000	-	-
8U	Sta. Rosa- Upstream	3	3	4	5.9	5.8	6.6	330,000	-	-
9	Cabuyao	11	-	40	1	-	0.05	2,400,000	-	-
10	San Cristobal River (T3)	51	48	36	0.8	0.6	0.9	14,000,000	-	-
11	San Juan River (T5)	6	3	2	6.6	5.2	5.6	1,300,00	-	-
12	Los Baños	1	2	2	2.2	1.9	1.5	110,000	-	-
13	Bay River (T9)	1	3	2	7.3	5.1	5.2	1,100,000	-	-
14	Pila	3	4	3	4	2.7	1.9	350,000	-	-
15	Sta. Cruz River (T6)	1	1	6	6.6	5.3	8.8	94,000	-	-
16	Pagsanjan River (T8)	2	1	2	6.2	5.2	4.9	920,000	-	-
17	Pangil- Downstream	2	1	3	8.5	6.6	5.8	79,000	-	-
17U	Pangil- Upstream	2	1	2	7.6	3.8	7.3	4,900	-	-
18	Siniloan	3	5	1	4.1	2.8	1.3	170,000	-	-
19	Sta. Maria- Downstream	4	4	3	3.6	5.9	5.2	540,000	-	-
19U	Sta. Maria- Upstream	2	1	1	9.2	9.2	8.8	1,300	-	-
20	Jala-jala	-	-	-	-	-	-	-	-	-
21	Piilla	3	5	7	1.5	1.2	0.6	350,000	-	-
22	Tanay- Downstream	3	2	17	3.2	6.9	13.5	7,800	-	-
22U	Tanay- Upstream	1	1	1	8.9	8.1	8.7	23,000	-	-
23	Baras	14	7	36	9.9	13.7	2.1	78,000	-	-
24	Morong- Downstream	18	12	28	5	6	1.2	490,000	-	-
24U	Morong- Upstream	17	37	6	13.3	9	2.2	33,000	-	-
25	Manggahan Floodway (Taytay )	18	14	14	0.05	0.05	0.05	490,000	-	-
26	Sapang Baho (Cainta)	25	33	19	0.05	0.05	0.05	3,500,000	-	-
27	Angono	41	7	-	0.05	1.5	-	3,500,000	-	-

Notes: \* DENR Class C Water Quality Criteria:  
 Biochemical Oxygen Demand (BOD) - 10 mg/l  
 Dissolved Oxygen (DO) - 5 mg/l  
 Total Coliforms - 5000 MPN/100 ml

\*\* Based on computed geometric mean

## **FINDINGS:**

### **A. On Biochemical Oxygen Demand (BOD)**

#### **Laguna Lake**

- For the 2nd quarter of 2014, all of the nine (9) lake stations passed the 10 mg/L BOD criterion set for Class C waters by the DENR.
- The computed BOD concentrations during this quarter ranged from 1 to 8 mg/L.

#### **Tributary Rivers**

- The results of the BOD analysis showed that out of the 34 tributary river stations monitored, only 16 stations consistently conformed to the Class C criterion for BOD and these were Stns. 4U, 5U, 8U, 11 to 19U, 21 and 22U.
- For this quarter, 13 stations failed the 10 mg/L Class C criterion for BOD and these were Stns. 1 to 4, 5, 6, 7, 8, 9, 10, 24, 25, and 26.
- The stations with monthly BOD concentrations that sometimes either complying or exceeding the Class C criterion were Stns. 8M, 22, 23, 24U and 27.
- The BOD concentrations during the 2nd quarter of 2014 ranged from 1.0 to 1,400 mg/L wherein the highest was noted in Stn. 3 in May.

### **B. On Dissolved Oxygen (D.O.)**

#### **Laguna Lake**

- All of the nine (9) lake stations conformed to the DENR Class C criterion set at a minimum concentration of 5 mg/L.
- The lowest D.O. concentration measured at 7.6 mg/L was noted in Stn. 1 in May while the highest concentration of 12.7 mg/L was noted in Stn. V in June.

#### **Tributary Rivers**

- Out of the 35 tributary river stations monitored, only 8 stations consistently passed the Class C criterion for DO and these were Stns. 8U, 11, 13, 15, 17, 19u, 22U, and 24.
- For 2nd quarter, the monthly DO concentrations in 19 tributary river stations always failed the Class C criterion, namely; Stns. 1 to 5, 6 to 8m, 9, 10, 12, 14, 18, 21 and 25 to 27.
- The computed DO concentrations ranged from 0.05 to 13.7 mg/L wherein the highest reading was noted in Stn. 23 in May.

### **C. On Total Coliform (T. Coli)**

#### **Laguna Lake**

- During this quarter, all of the total coliform concentrations in the 9 lake stations conformed to the DENR Class C criterion of 5000 MPN/100ml based on computed monthly geomeans.
- The computed monthly geomeans for T.coli in the lake ranged from 22 to 344 MPN/100ml.

#### **Tributary Rivers**

- For April, all of the T. coli concentrations in tributary stations failed the DENR Class C criterion of 5000MPN/100ml except in Stns. 17U and 19U.
- The total coliform concentrations in the tributary river stations ranged from 1,300 to 16,000,000 MPN/100ml.

### **D. On pH**

#### **Laguna Lake**

- During the 2nd quarter, the pH levels in all 9 lake stations were higher than the maximum criterion of 8.5 in June.
- In April, it was only in lake Stn. I that the pH levels met the Class C criterion.
- The pH levels in lake Stns. V, XVI and XVII also exceeded the Class C criterion in May.
- The recorded pH concentrations in the lake ranged from 8.1 to 10.0.

## **Tributary Rivers**

- For the 2nd quarter of 2014, all 35 tributary river stations monitored passed the Class C range for pH which is set at 6.5 – 8.5 except Stns. 8M and 19U which both exceeded the maximum level in June and Stn. 3 which was below the minimum level of 6.5 in May.
- The pH of tributary rivers ranged from 5.8 to 9.4.

## **E. On Ammonia**

### **Laguna Lake**

- For the 2nd quarter of 2014, analysis for ammonia was conducted only in April. The measured ammonia concentrations ranged from 0.032 to 0.099 mg/L.

### **Tributary Rivers**

- As of April, the highest computed ammonia concentration of 9.760 mg/L was noted in Stn. 2 while the lowest ammonia concentration of 0.040 mg/L was noted in Stn. 17U.

## **F. On Nitrate**

### **Laguna Lake**

- For the measured monthly nitrate concentrations, all of the nine (9) lake stations conformed to the DENR Class C criterion of 10 mg/L .
- The nitrate levels in the lake ranged from 0.001 to 0.392 mg/L.

### **Tributary Rivers**

- All of the measured monthly concentrations in the 34 tributary stations conformed to the Class C criterion.
- For the 2nd quarter Stn. 11 consistently had the highest nitrate concentrations.
- The lowest nitrate concentration measured at 0.001 mg/L was noted in Stn. 1 in May while the highest nitrate concentration measured at 4.552 mg/L was registered in Stn.11 in May.

## **G. On Inorganic Phosphate**

### **Laguna Lake**

- For the 2nd quarter of 2014, four (4) of the nine (9) lake stations consistently conformed to the DENR Class C criterion set at a maximum of 0.1 mg/L and these were Stns. XV, XVI, XVII and XVIII.
- The lowest inorganic concentration measured at 0.012 mg/L was noted in Stn. XVIII in April while the highest concentration of 0.399 mg/L was noted in Stn. V in May.

### **Tributary Rivers**

- For tributary rivers the DENR Class C criterion is set at 0.4 mg/L. Out of 35 monitored stations, only 12 stations namely; Stns.13 to 19U and 21, 22 and 22U consistently conformed to the criterion.
- The river stations whose inorganic phosphate concentrations sometimes either complying or exceeding the Class C criterion were Stns. 23 and 24U.
- The tributary stations that constantly failed the criterion are Stns. 1 to 12, 24, 25, 26 and 27.
- The inorganic phosphate levels in the tributary rivers ranged from 0.024 mg/L to 3.085 mg/L.
- Stn. 22U consistently registered the lowest inorganic phosphate levels in April to June.