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Appendix

Table A.1 *Physiochemical characteristics of mangrove sediment at Station 1: (March 1990 and October 1990)*

	May 1990			October 1990		
Depth (cm)	pH	Eh mV	WT %	pH	Eh mV	WT %
0-5	6.5	221	43	6.6	201	50
5-10	6.6	184	48	6.4	186	54
10-15	6.6	32	46	6.5	145	56
15-20	6.5	104	48	6.3	100	49
20-25	6.6	-19	48	6.6	12	42
25-30	6.5	-45	45	6.8	16	43
30-35	6.5	-19	43	6.6	-123	45
35-40	6.4	-56	46	6.5	-100	48
40-45	6.7	-77	51	6.3	-106	47
45-50	6.5	-68	45	6.6	-124	48
50-55	6.4	-74	48	6.7	-160	50
55-60	6.5	-66	45	6.6	-140	46
60-65	-	-	-	6.6	-189	48
65-70	-	-	-	6.5	-161	45
Range	6.4-6.7	(-77)-221	43-51	6.3-6.7	(-189)-201	42-56
AVG.	6.5	-	46.33	6.55	-	55.91

Table A.2 *Physiochemical characteristics of mangrove sediment at Station 2: (March 1990 and October 1990)*

	May 1990			October 1990		
Depth (cm)	pH	Eh mV	WT %	pH	Eh mV	WT %
0-5	6.6	137	48	6.5	123	50
5-10	6.5	99	49	6.6	125	53
10-15	6.6	33	46	6.6	89	54
15-20	6.5	-16	43	6.5	56	56
20-25	6.4	27	45	6.6	-15	49
25-30	6.5	-36	47	6.5	-28	45
30-35	6.4	-59	42	6.5	-46	46
35-40	6.6	-62	48	6.4	-50	43
40-45	6.4	-177	49	6.7	-45	48
45-50	6.4	-176	48	6.5	-89	50
50-55	6.5	-154	43	6.4	-123	50
55-60	6.3	-140	45	6.5	-156	51
60-65	-	-	-	6.6	-159	52
65-70	-	-	-	6.8	-120	46
Range	6.3-6.6	(-177)-137	42-49	6.4-6.8	(159)-125	43-52
AVG.	6.4	-	46.08	6.55	-	49.5

Table A.3 *Physiochemical characteristics of mangrove sediment at Station 3: (March 1990 and October 1990)*

	May 1990			October 1990		
Depth (cm)	pH	Eh mV	WT %	pH	Eh mV	WT %
0-5	6.7	92	46	6.5	96	49
5-10	6.5	21	48	6.4	81	50
10-15	6.6	-18	45	6.7	45	56
15-20	6.8	-71	42	6.6	26	54
20-25	6.6	-90	43	6.5	-45	58
25-30	6.4	-63	47	6.9	-98	46
30-35	6.7	-69	49	6.8	-102	45
35-40	6.5	-55	45	6.7	-45	48
40-45	6.4	-43	42	6.8	-156	43
45-50	6.6	-104	43	6.6	-120	48
50-55	6.6	-166	45	6.9	-146	44
55-60	6.4	-108	44	6.5	-190	42
60-65	6.3	-175	45	6.8	-123	46
65-70	6.4	-149	48	6.3	-136	48
Range	6.3-6.7	(-175)-92	42-48	6.3-6.9	(-190)-96	42-58
AVG.	6.52	-	45.14	6.67	-	48.35

Table A.4 *Physiochemical characteristics of mangrove sediment at Station 4: (March 1990 and October 1990)*

	May 1990			October 1990		
Depth (cm)	pH	Eh mV	WT %	pH	Eh mV	WT %
0-5	6.6	69	52	6.6	152	50
5-10	6.4	43	50	6.5	185	49
10-15	6.5	-28	49	6.9	123	46
15-20	6.5	-62	48	6.5	106	42
20-25	6.6	-73	47	6.3	99	43
25-30	6.5	-74	42	6.8	12	48
30-35	6.4	-67	46	6.4	19	45
35-40	6.4	-147	45	6.6	46	49
40-45	6.5	-123	48	6.5	20	50
45-50	6.4	-127	42	6.6	-15	51
50-55	6.3	-139	41	6.7	-56	52
55-60	6.6	-102	45	6.7	-92	51
60-65	-	-	-	6.6	-56	44
65-70	-	-	-	6.8	-49	42
Range	6.3-6.6	(-147)-69	41-52	6.3-6.8	(-56)-185	42-52
AVG.	6.47	-	46.25	6.61	-	47.28

Table A.5 *Analysis of nutrients in interstitial water; Station 1 (March 1990)*

Depth (cm)	NO2+NO3 μM	NH4-N μM	DON μM	TN μM	PO4-P μM	DOP μM	TP μM
0-5	28.63	371.69	289.34	689.66	3.16	6.76	9.92
5-10	49.53	399.87	71.25	520.65	4.26	7.6	11.86
10-15	59.58	209.14	728.56	997.28	3.90	20.56	24.46
15-20	68.54	281.50	104.40	454.44	2.79	14.64	17.43
20-25	53.94	184.39	496.30	734.63	1.54	11.67	13.21
25-30	46.95	192.65	179.32	418.92	1.93	18.72	20.65
30-35	77.25	239.80	131.00	448.05	2.47	7.42	9.89
35-40	38.33	268.87	465.27	772.47	1.68	7.69	9.37
40-45	118.11	242.87	592.45	953.43	1.58	8.41	9.99
45-50	57.79	185.22	799.24	1042.25	1.79	8.51	10.30
50-55	43.02	203.92	996.65	1243.59	2.68	8.87	11.55
55-60	32.68	216.19	684.87	933.74	2.68	7.61	10.29
Range	28.63-118.11	185.22-399.87	71-25-996.65	418.92-1243.59	1.54-4.26	6.76-20.56	9.37-24.46
AVG.	56.19	249.67	461.55	759.09	2.53	10.71	13.24

Table A.6 *Analysis of nutrients in interstitial water; Station 2 (March1990)*

Depth (cm)	NO2+NO3 μM	NH4-N μM	DON μM	TN μM	PO4-P μM	DOP μM	TP μM
0-5	26.93	460.76	448.821	936.51	6.02	28.59	34.61
5-10	35.83	333.18	194.009	563.02	2.31	42.45	44.76
10-15	23.85	318.20	715.58	739.43	3.61	37	40.61
15-20	57.02	253.85	929.59	986.61	3.01	20.86	23.87
20-25	124.45	178.20	315.05	439.50	3.41	15.52	18.93
25-30	49.30	63.88	482.33	531.63	3.70	25.21	28.91
30-35	23.28	170.35	611.34	634.62	4.17	26.06	30.23
35-40	62.94	303.41	899.39	962.33	4.01	12.4	16.41
40-45	52.33	259.18	771.2	823.53	9.18	34.74	43.92
45-50	36.92	347.44	894.92	931.84	1.85	38.79	40.64
50-55	38.39	349.65	807.92	846.31	1.84	42.67	44.51
55-60	28.03	392.84	584.36	612.39	2.31	37.5	39.81
Range	23.28-124.45	63.88-460.75	194.0-929.5	439.5-986.61	1.84-6.02	12.4-42.67	16.41-44.76
AVG.	45.77	285.91	637.88	750.64	3.78	30.15	33.93

Table A.7 *Analysis of nutrients in interstitial water; Station 3 (March1990)*

Depth (cm)	NO2+NO3 μM	NH4-N μM	DON μM	TN μM	PO4-P μM	DOP μM	TP μM
0-5	50.49	223.85	315.13	589.47	4.17	40.96	45.13
5-10	24.50	248.26	159.60	432.36	2.32	18.63	20.95
10-15	22.72	303.68	660.25	986.65	6.72	32.69	39.41
15-20	67.32	240.02	321.86	629.20	3.08	33.99	37.07
20-25	37.37	196.01	324.27	557.65	3.52	17.43	20.95
25-30	27.82	150.41	409.42	587.65	3.89	14.38	18.27
30-35	43.06	272.80	231.91	547.77	2.32	46.03	48.35
35-40	14.58	132.60	252.54	399.72	6.26	84.00	90.26
40-45	20.04	195.22	262.39	477.65	1.85	69.07	70.92
45-50	25.15	255.29	166.15	446.59	2.88	52.78	55.66
50-55	21.78	177.33	210.48	409.59	3.17	19.39	22.56
55-60	21.58	195.54	363.97	581.09	4.08	12.04	16.12
60-65	36.88	303.99	384.56	725.43	6.02	32.66	38.68
65-70	20.30	385.53	304.79	710.62	4.64	30.81	35.45
Range	14.58-67.32	132.60-385.53	159.6-660.2	399.72-986.65	1.85-6.72	12.04-84.00	16.12-90.26
AVG.	29.88	242.38	311.95	579.97	4.03	36.06	41.14

Table A.8 *Analysis of nutrients in interstitial water; Station 4 (March 1990)*

Depth (cm)	NO2+NO3 μM	NH4-N μM	DON μM	TN μM	PO4-P μM	DOP μM	TP μM
0-5	14.69	449.11	705.85	1169.65	5.97	7.85	13.82
5-10	18.64	629.31	281.36	929.31	6.21	9.05	15.26
10-15	21.27	634.36	507.42	1163.05	5.72	10.71	16.43
15-20	28.62	556.99	210.65	796.26	5.68	14.26	19.94
20-25	18.73	485.58	95.6	599.91	5.68	14.35	20.03
25-30	22.43	408.80	530.13	961.36	6.93	10.46	17.39
30-35	27.59	391.15	336.55	755.29	11.19	3.79	14.98
35-40	38.80	530.40	237.58	806.78	9.95	8.92	18.87
40-45	51.92	498.47	117.53	667.92	8.70	2.75	11.45
45-50	36.04	484.51	221.58	742.13	7.40	6.19	13.59
50-55	24.93	563.18	346.52	934.63	4.93	8.71	13.64
55-60	16.41	523.28	663.96	1203.65	6.34	13.47	19.81
Range	14.69-51.92	391.15-634.36	95.6-705.8	599.9-1203.6	4.93-11.19	2.75-14.35	11.45-20.03
AVG.	26.67	513.01	354.56	894.16	7.05	9.21	16.26

Table A.9 *Analysis of nutrients in interstitial water; Station 1 (October 1990)*

Depth (cm)	NO2+NO3 μM	NH4 -N μM	DON μM	TN μM	PO4 -P μM	DOP μM	TP μM	SiO_4 μM
0-5	115.34	201.75	517.03	834.12	4.46	2.01	6.47	59.39
5-10	27.03	234.55	507.96	769.54	4.87	0.21	5.08	94.03
10-15	69.86	197.51	328.89	596.26	4.46	2.01	6.47	39.60
15-20	67.4	160.87	627.98	856.25	3.21	1.04	4.25	55.55
20-25	73.6	161.24	327.44	562.28	3.21	2.13	5.34	12.66
25-30	58.13	190.56	320.89	569.58	9.86	0.21	10.07	103.93
30-35	65.89	175.21	618.53	859.63	6.54	0.95	7.49	64.34
35-40	80.05	207.93	677.38	965.36	10.28	0.16	10.44	58.22
40-45	42.32	219.5	194.43	456.25	6.12	0.21	6.33	28.60
45-50	54.36	200.6	597.40	852.36	7.56	1.88	9.44	58.84
50-55	78.62	172.04	338.70	589.36	6.12	3.45	9.57	72.59
55-60	81.75	170.11	206.77	458.63	9.44	4.78	14.22	47.85
60-65	53.86	194.04	608.42	856.32	14.01	0.71	14.72	80.84
65-70	51.77	221.82	678.67	952.26	9.03	0.38	9.41	28.7
Range	42.32-115.34	160.8-234.5	194.4-678.6	458.6-965.3	3.21-14.02	0.21-4.78	4.25-14.72	12.66-94.03
AVG.	65.71	189.28	467.89	715.29	7.48	1.44	11.47	54.31

Table A.10 *Analysis of nutrients in interstitial water; Station 2 (October 1990)*

Depth (cm)	NO2+NO3 μM	NH4-N μM	DON μM	TN μM	PO4-P μM	DOP μM	TP μM	SiO_4 μM
0-5	75.81	178.91	387.82	642.54	3.52	19.47	22.99	29.18
5-10	82.52	194.67	636.39	913.58	3.26	16.57	19.83	24.63
10-15	91.85	189.9	410.6	692.35	3.52	17.89	21.41	29.45
15-20	92.41	222.69	563.98	879.08	4.57	17.89	22.46	25.58
20-25	68.41	248.74	297.26	614.41	4.05	15.26	19.31	32.56
25-30	69.84	260.79	454.94	785.57	5.63	15.78	21.41	33.33
30-35	79.49	225.49	347.98	652.96	9.31	18.94	28.25	34.34
35-40	81.38	201.11	506.67	789.16	9.83	16.31	26.14	48.92
40-45	60.61	240.34	270.87	571.82	4.05	20.52	24.57	48.60
45-50	64.52	260.79	260.62	585.93	4.05	21.04	25.09	48.84
50-55	50.98	308.15	482.81	841.94	1.26	26.46	27.72	52.59
55-60	72.68	272.84	509.4	854.92	6.15	20.52	26.67	47.85
60-65	43.86	248.74	366.65	659.25	2.46	17.36	19.82	40.84
65-70	50.82	271.61	575.83	898.26	4.63	10.02	14.65	29.70
Range	43.86-92.41	78.91-308.1	270.6-639.3	17.82-913.5	1.26-9.31	10.02-26.46	14.65-28.25	24.63-52.59
AVG.	70.37	246.68	433.70	733.97	4.95	18.15	23.08	39.38

Table A. 11 *Analysis of nutrients in interstitial water; Station 3 (October 1990)*

Depth (cm)	NO2+NO3 µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM	SiO4 µM
0-5	67.00	208.91	536.63	812.54	1.64	21.48	23.12	16.45
5-10	131.10	299.68	283.00	713.78	3.26	13.33	16.59	20.56
10-15	95.40	289.90	405.35	790.65	2.56	22.07	24.63	18.26
15-20	113.43	282.69	393.96	790.08	4.26	14.86	19.12	24.39
20-25	103.43	218.74	259.94	582.11	8.56	9.79	18.35	40.96
25-30	49.53	254.71	395.83	700.07	6.59	15.67	22.26	36.42
30-35	82.00	265.79	443.17	790.96	8.26	18.00	26.26	49.56
35-40	50.42	291.91	377.83	720.16	8.59	20.86	29.45	59.26
40-45	29.87	340.14	206.61	576.62	7.69	20.87	28.56	58.56
45-50	85.41	290.59	175.93	551.93	7.56	17.07	24.63	62.39
50-55	131.85	348.45	129.24	609.54	6.59	18.64	25.23	36.49
55-60	36.42	282.44	416.87	735.73	6.23	22.36	28.59	33.56
60-65	29.92	348.14	412.59	790.65	6.59	19.04	25.63	29.59
65-70	68.45	251.91	494.93	815.29	4.63	23.58	28.21	49.63
Range	29.87-131.8	208.91-348.45	129.2-536.6	551.93-815.29	1.64-8.59	9.79-23.58	16.59-29.45	16.45-62.39
AVG.	76.73	288.78	352.28	704.48	6.5	18.40	25.07	41.67

Table A. 12 *Analysis of nutrients in interstitial water; Station 4 (October 1990)*

Depth (cm)	NO2+NO3 µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM	SiO4 µM
0-5	35.48	188.91	788.50	1012.89	6.68	9.46	16.14	38.56
5-10	70.05	209.18	684.19	963.42	4.57	12.10	16.67	45.69
10-15	61.56	279.96	550.61	892.13	4.05	11.04	15.09	45.56
15-20	37.13	382.45	439.60	859.18	7.73	7.89	15.62	56.89
20-25	59.82	451.36	199.86	711.04	9.83	9.99	19.82	62.39
25-30	57.5	295.45	498.57	851.52	6.15	14.73	20.88	84.59
30-35	44.37	285.14	535.15	864.66	7.2	8.94	16.14	69.56
35-40	44.55	281.81	648.10	974.46	7.73	9.99	17.72	72.16
40-45	40.12	340.54	670.55	1051.21	8.78	12.62	21.4	69.23
45-50	41.07	269.75	422.17	732.99	12.99	11.57	24.56	62.39
50-55	34.28	358.55	471.83	864.66	11.14	13.42	24.56	63.26
55-60	31.46	292.44	612.09	935.99	12.46	7.89	20.35	53.69
60-65	46.44	208.49	661.86	916.79	10.88	9.47	20.35	75.26
65-70	39.56	258.45	470.64	768.65	7.73	11.62	19.35	69.85
Range	34.2-70.05	188.91-451.36	199-8-788.5	711.04-1012.89	4.05-12.99	7.89-14.7	15.09-24.56	38.56-84.59
AVG.	45.96	308.69	546.69	868.6	8.88	10.77	19.65	65.4

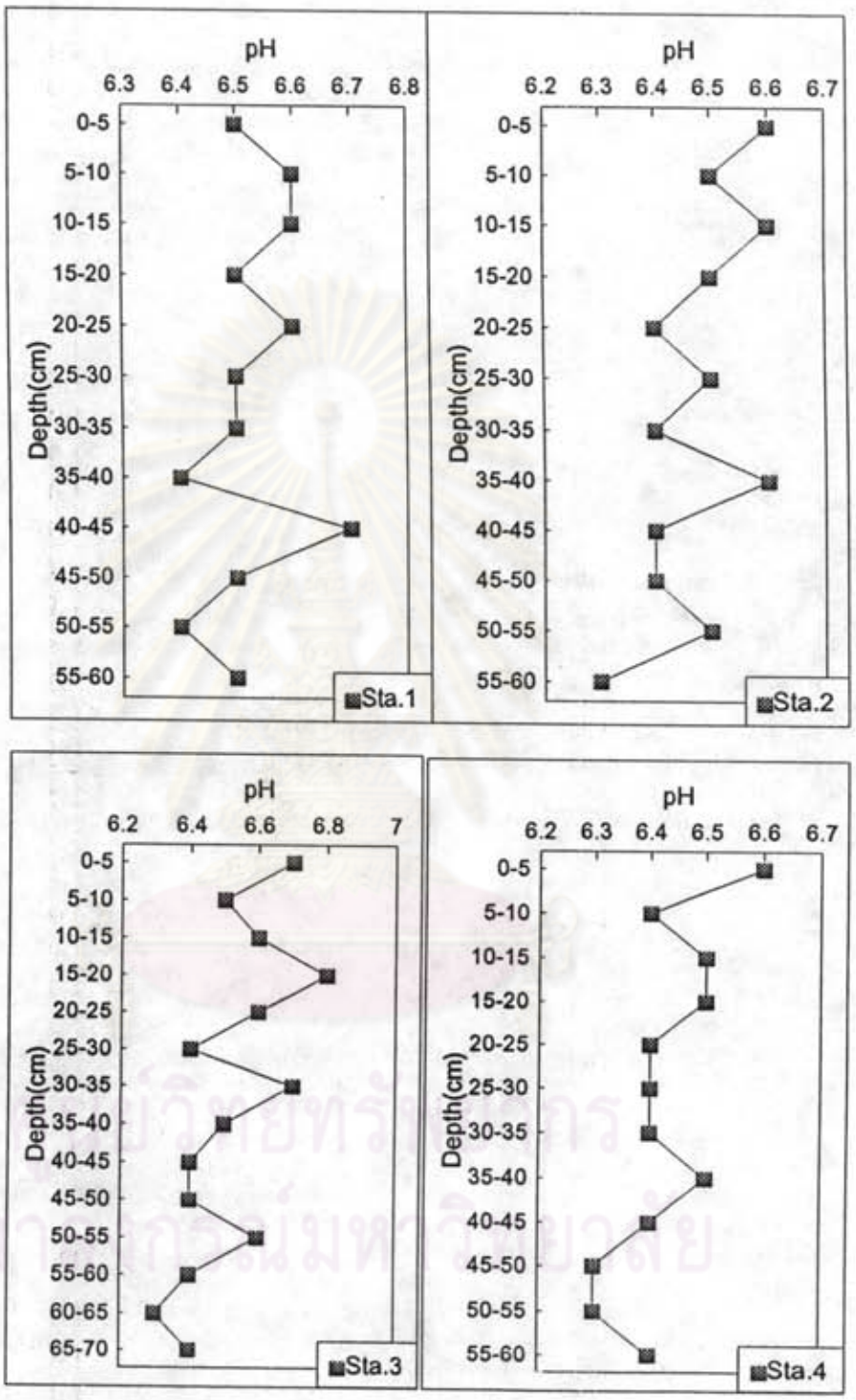

Figure A.1 *pH in sediment at different depths at Klong Lad Khao Kao in March 1990*

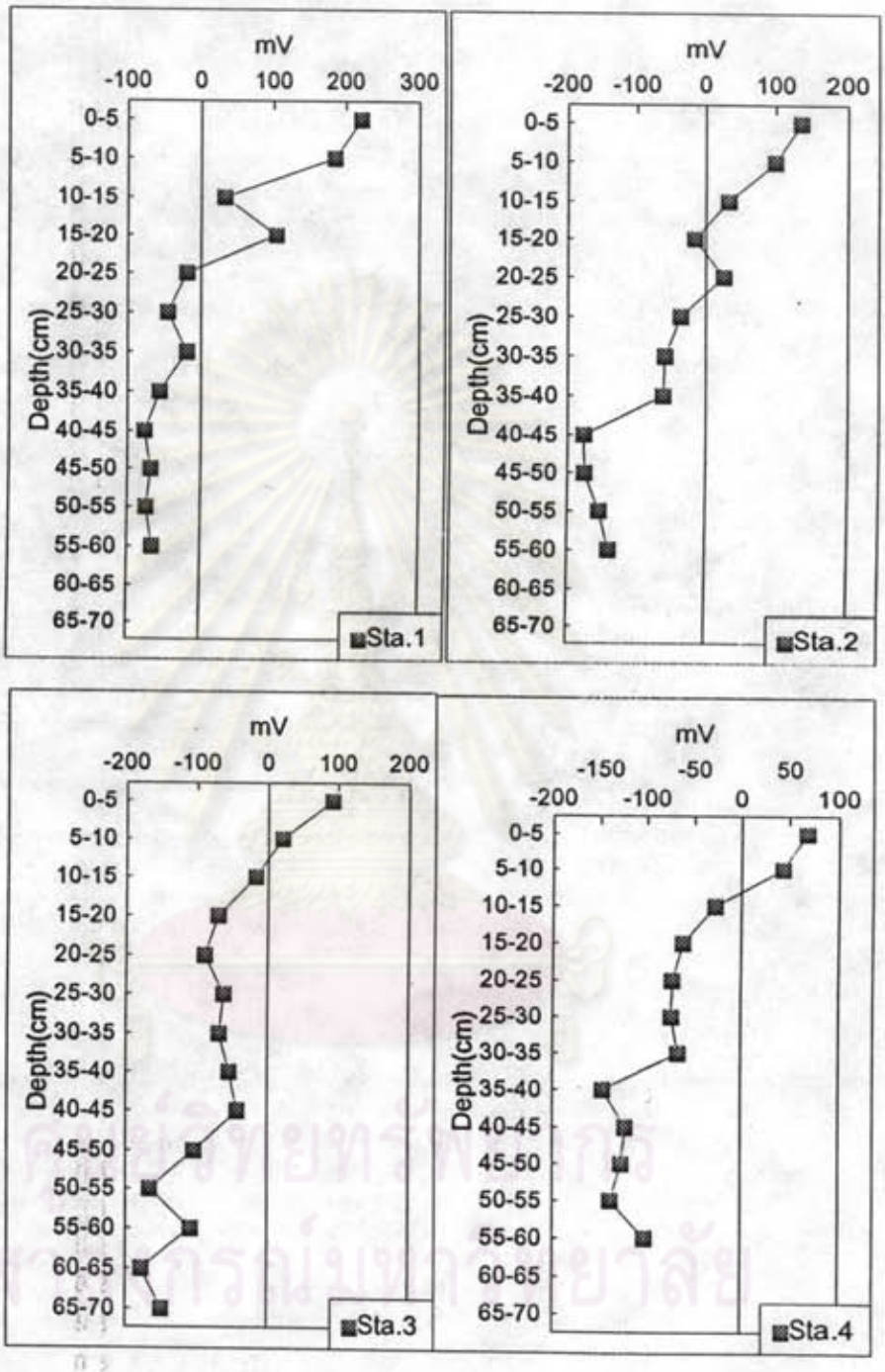

Figure A.2 *Redox potential in sediment at different adepths at Klong Lad Khao Kao in March 1990*

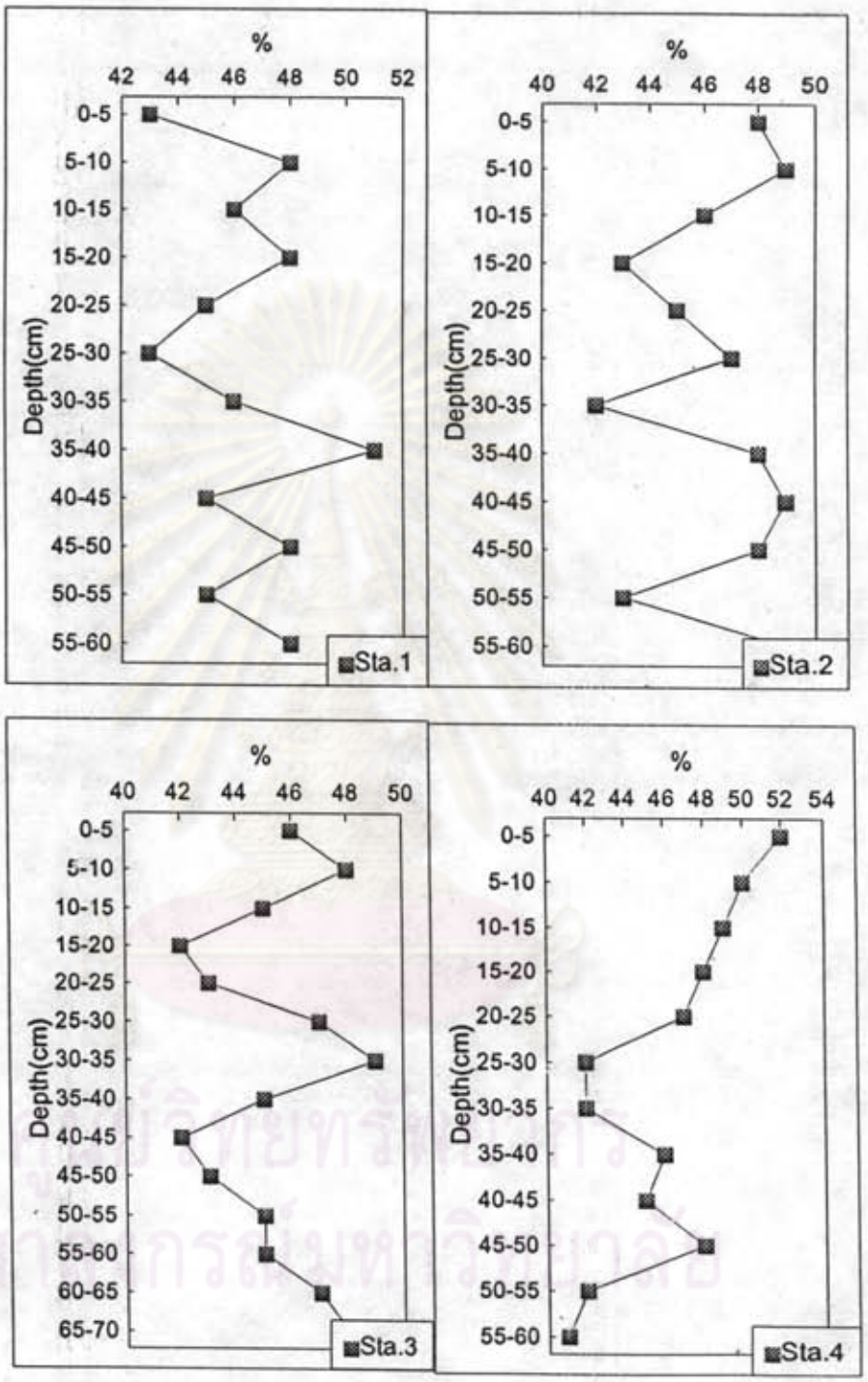

Figure A.3 *Water conten in sediment at different depths at Klon Lad Khao Kao in March 1990*

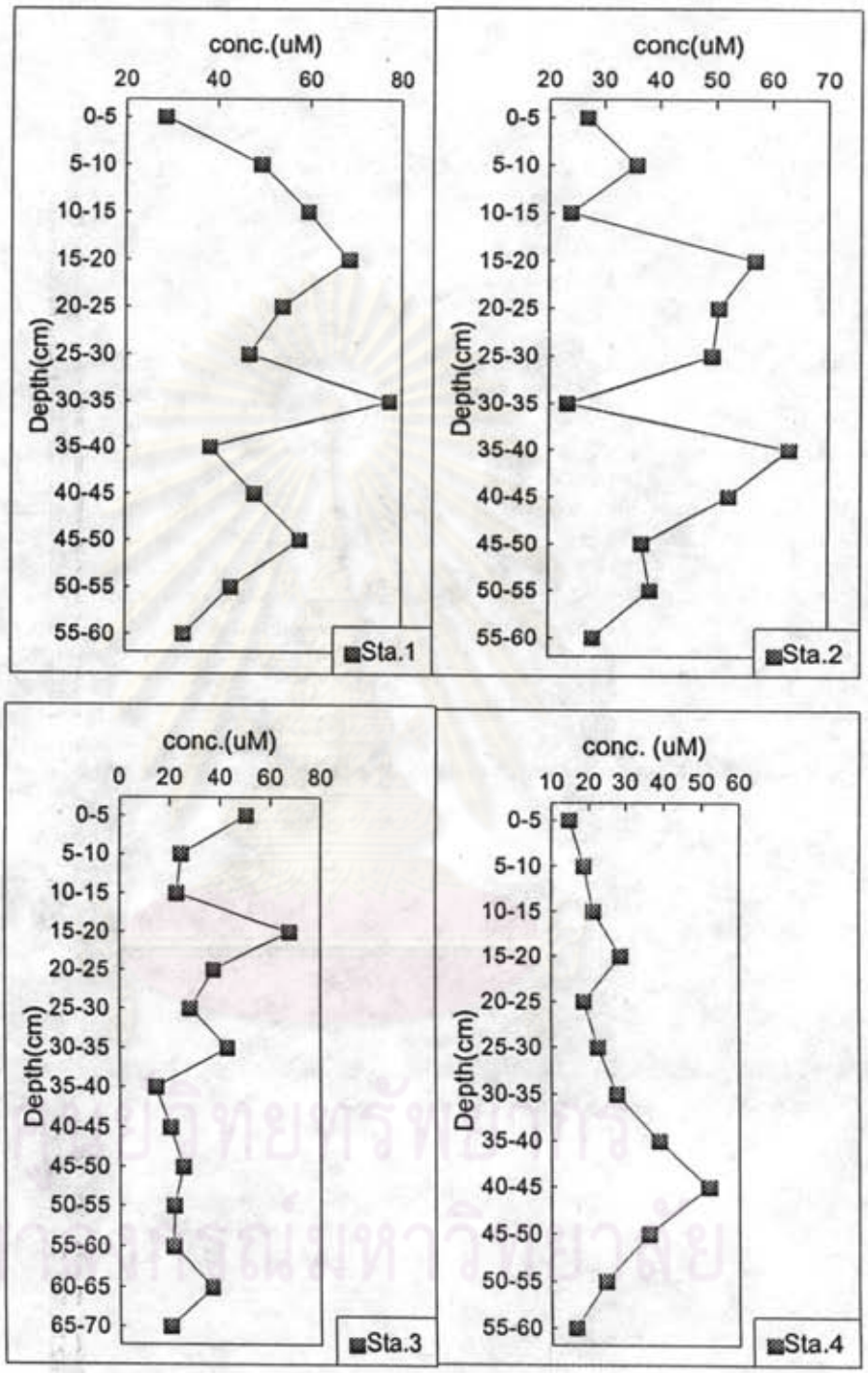

Figure A.4 *Concentrations of dissolved nitrite plus nitrate at different depths at Klong Lad Khao Kao in March 1*

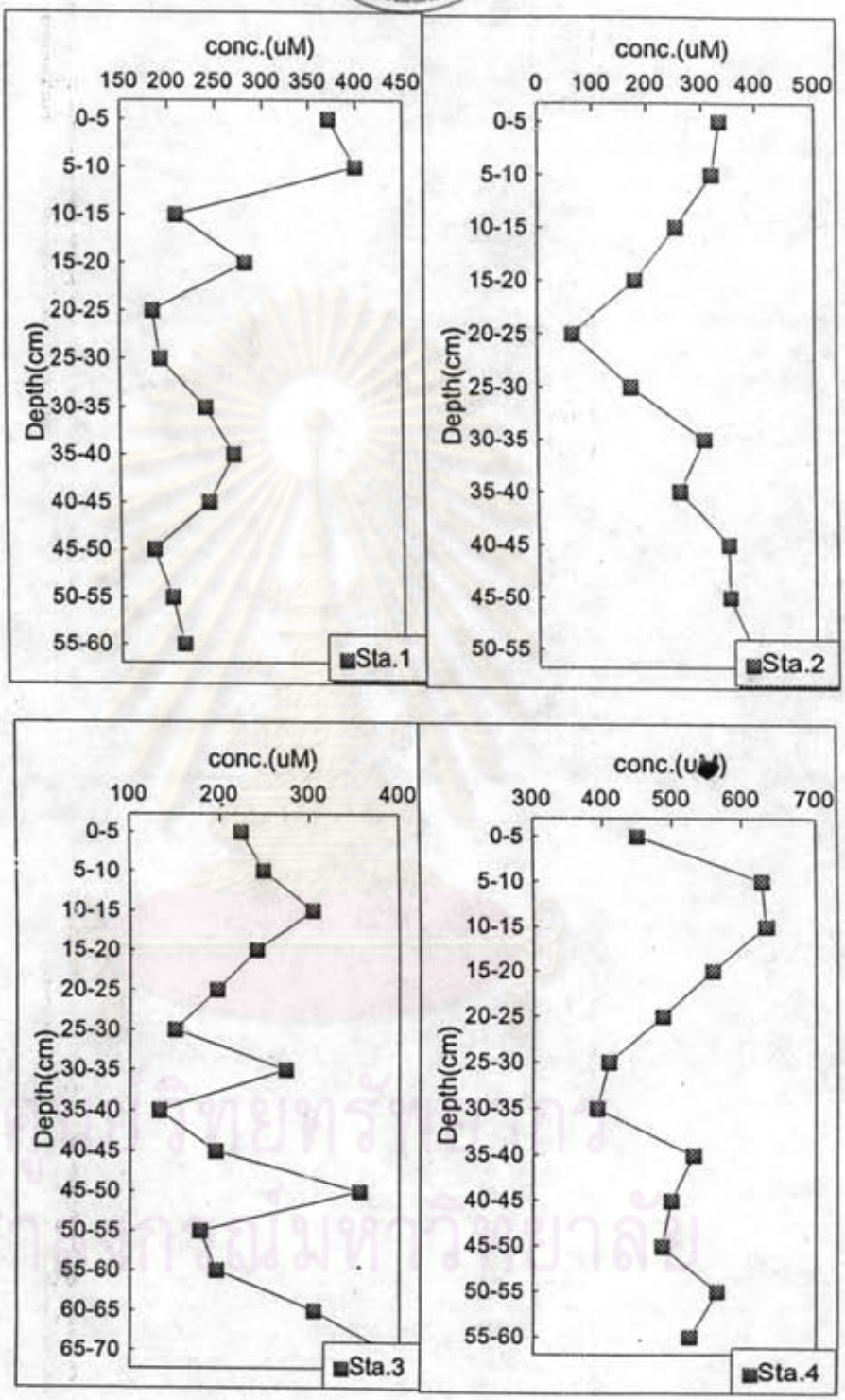

Figure A.5 *Concentrations of dissolved ammonia at different depths at Klong Lad Khao Kao in March 1990*

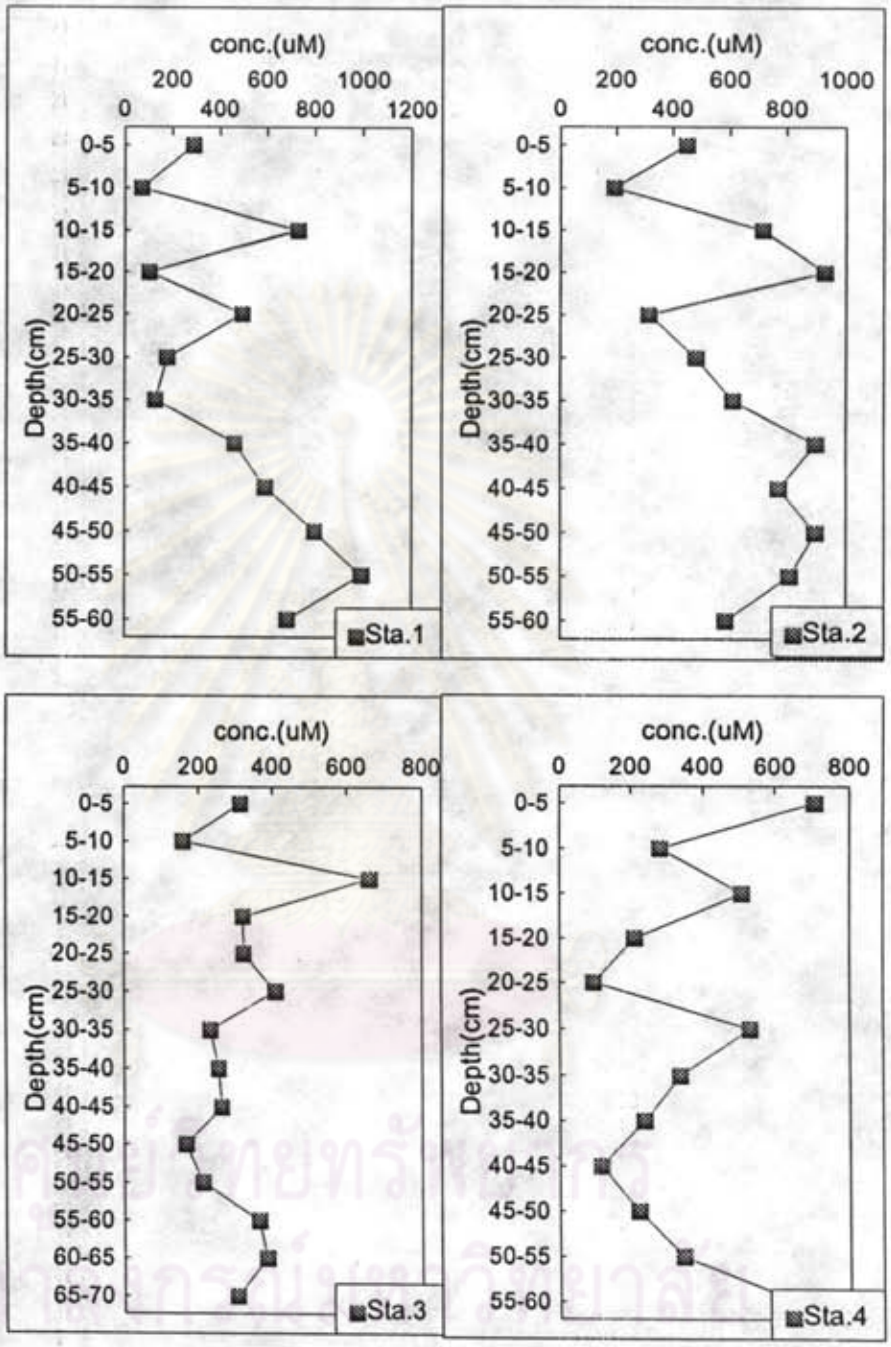

Figure A.6 *Concentrations of dissolved organic nitrogen at different depths at Klong Lad Khao Kao in March 1*

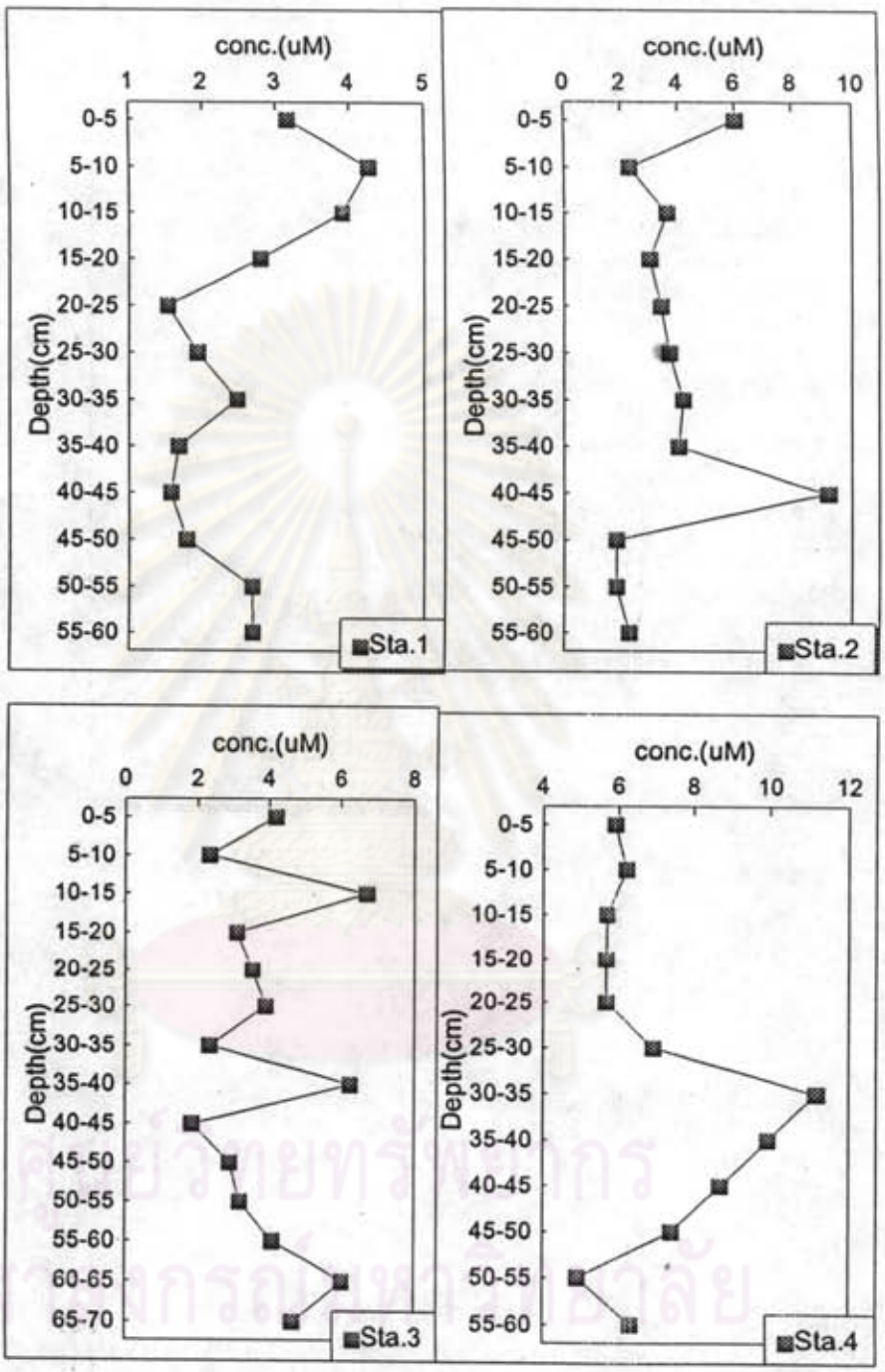

Figure A.7 *Concentrations of dissolved phosphate at different depths at Klong Lad Khao Kao in March 1*

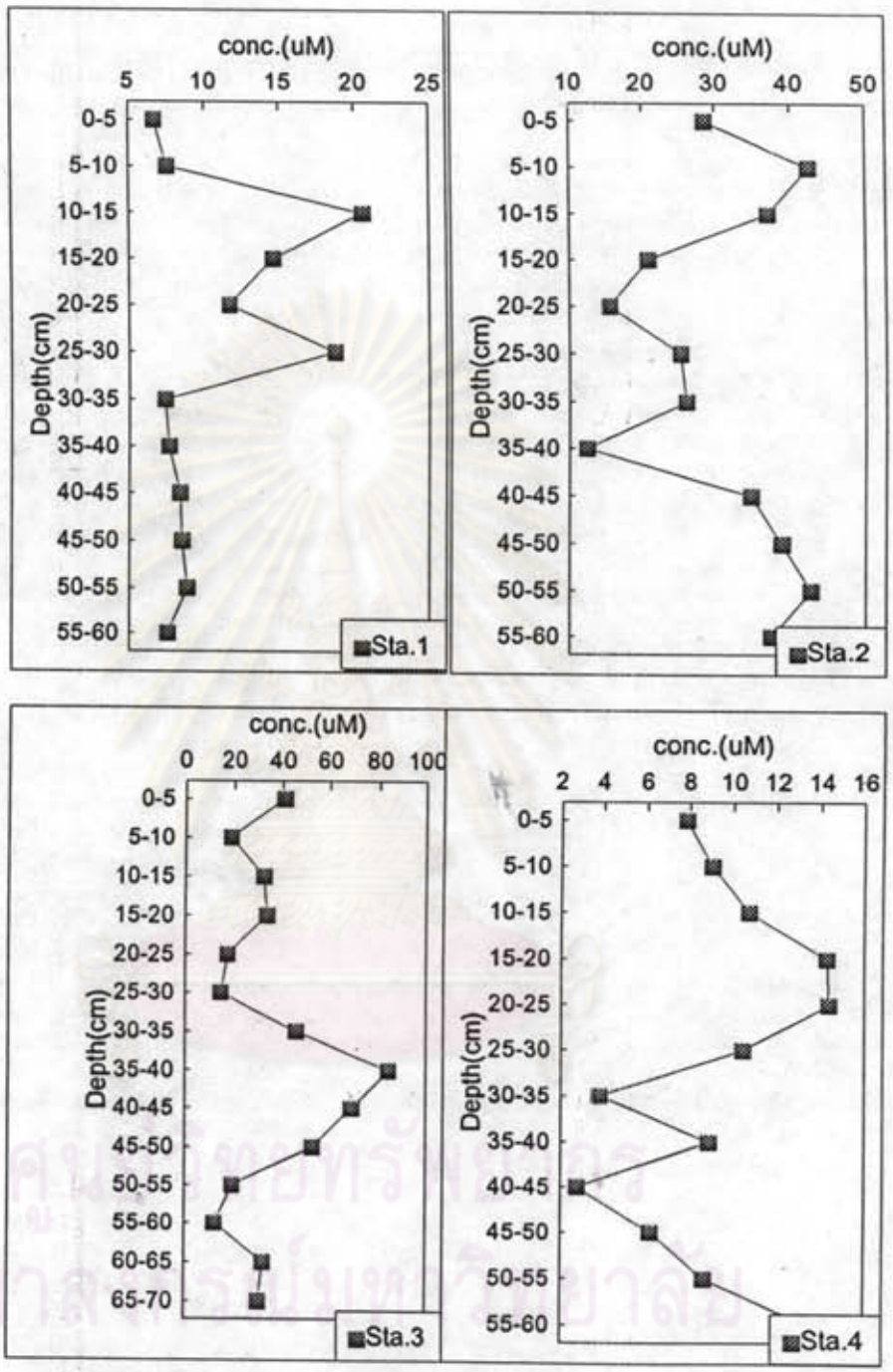

Figure A.8 *Concentrations of dissolved organic phosphorus at different depths at Klong Lad Khao Kao in March 1*

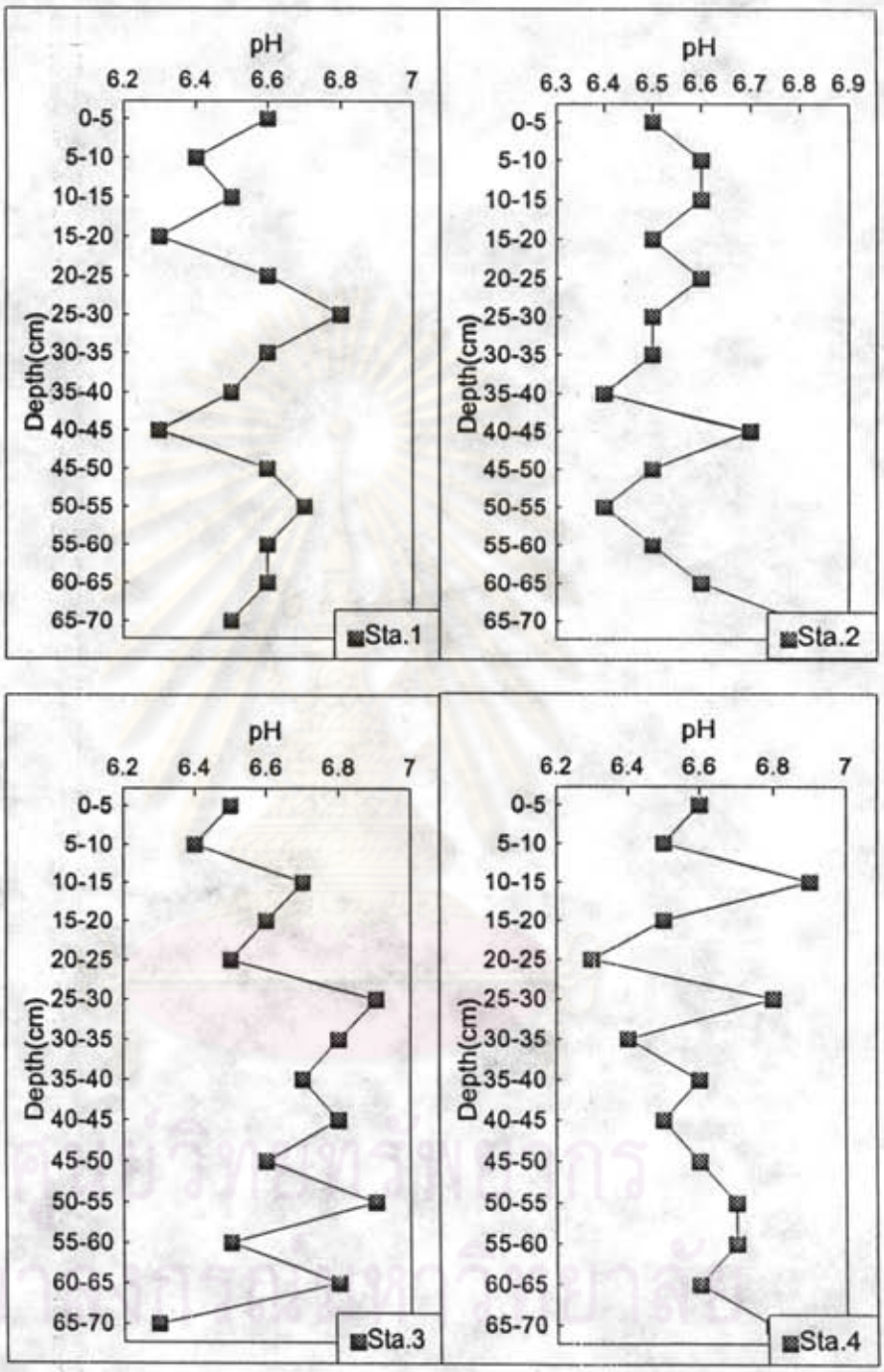

Figure A.9 *pH at different depths at Station 1, 2, 3, 4 in October 1990*

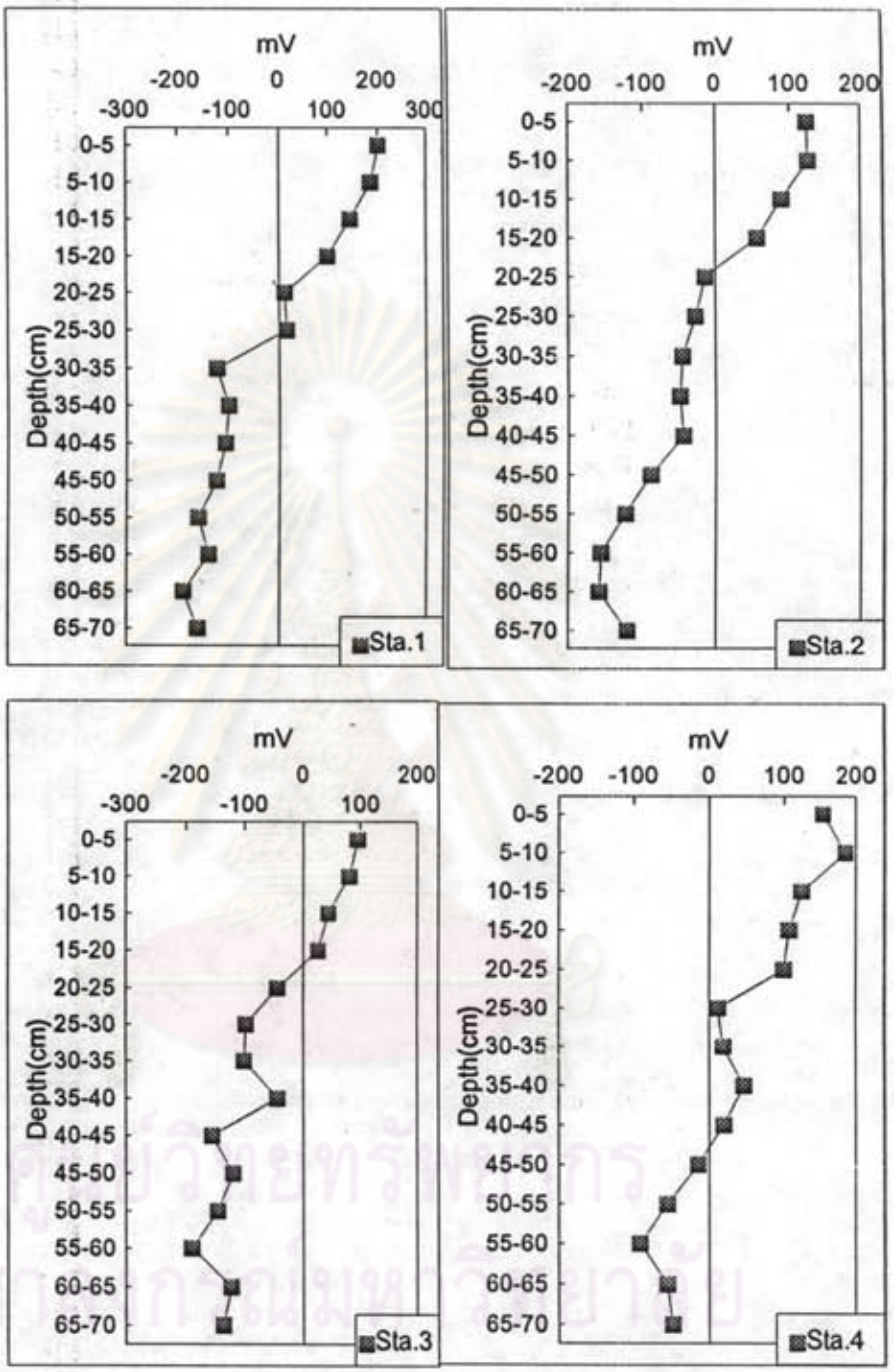

Figure A.10 *Redox potential in the sedeiment at different depths at Station 1, 2, 3, 4 in October 1990*

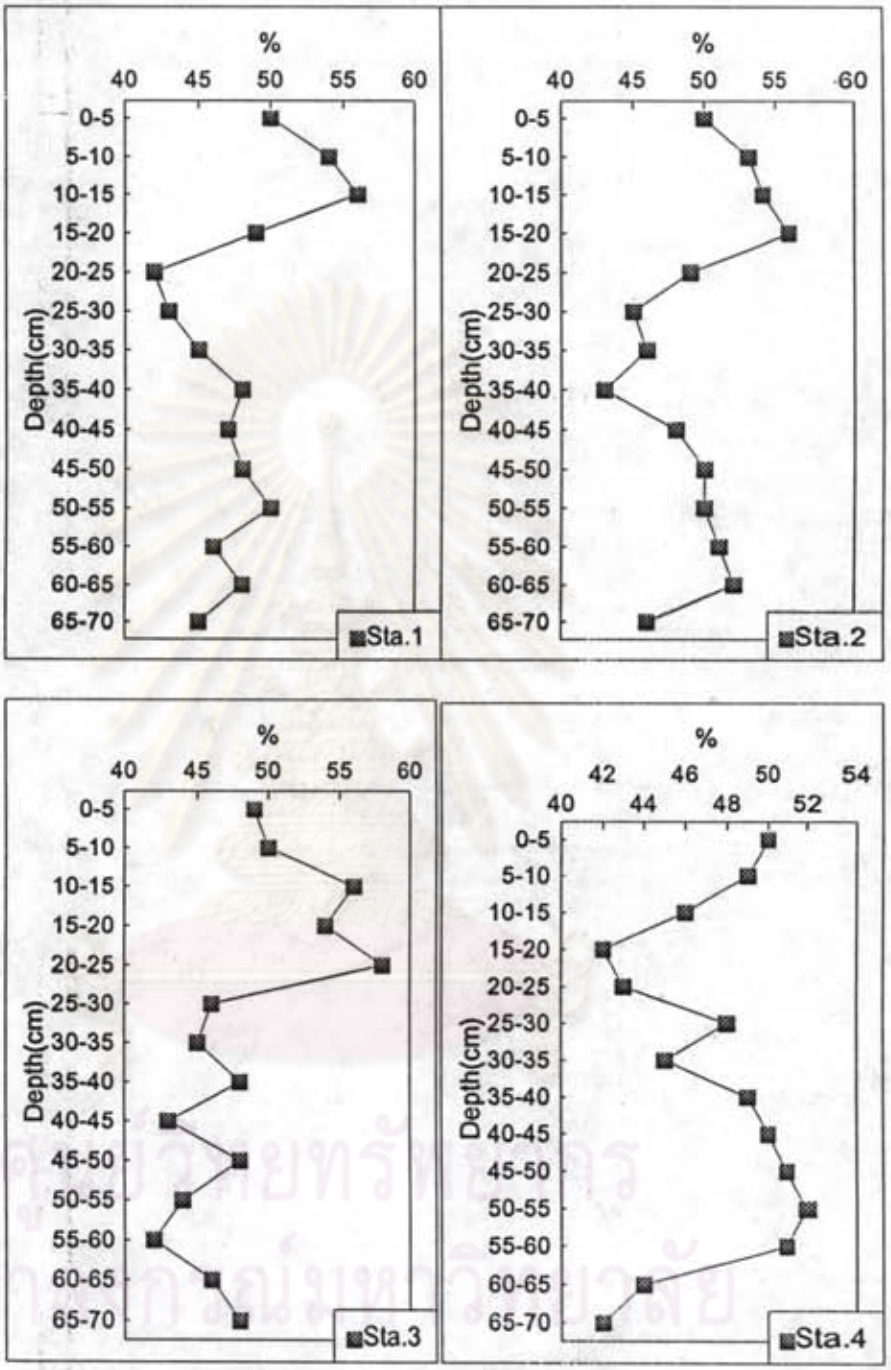

Figure A.11 *Water content at different depths at Station 1, 2, 3, 4 in October 1990*

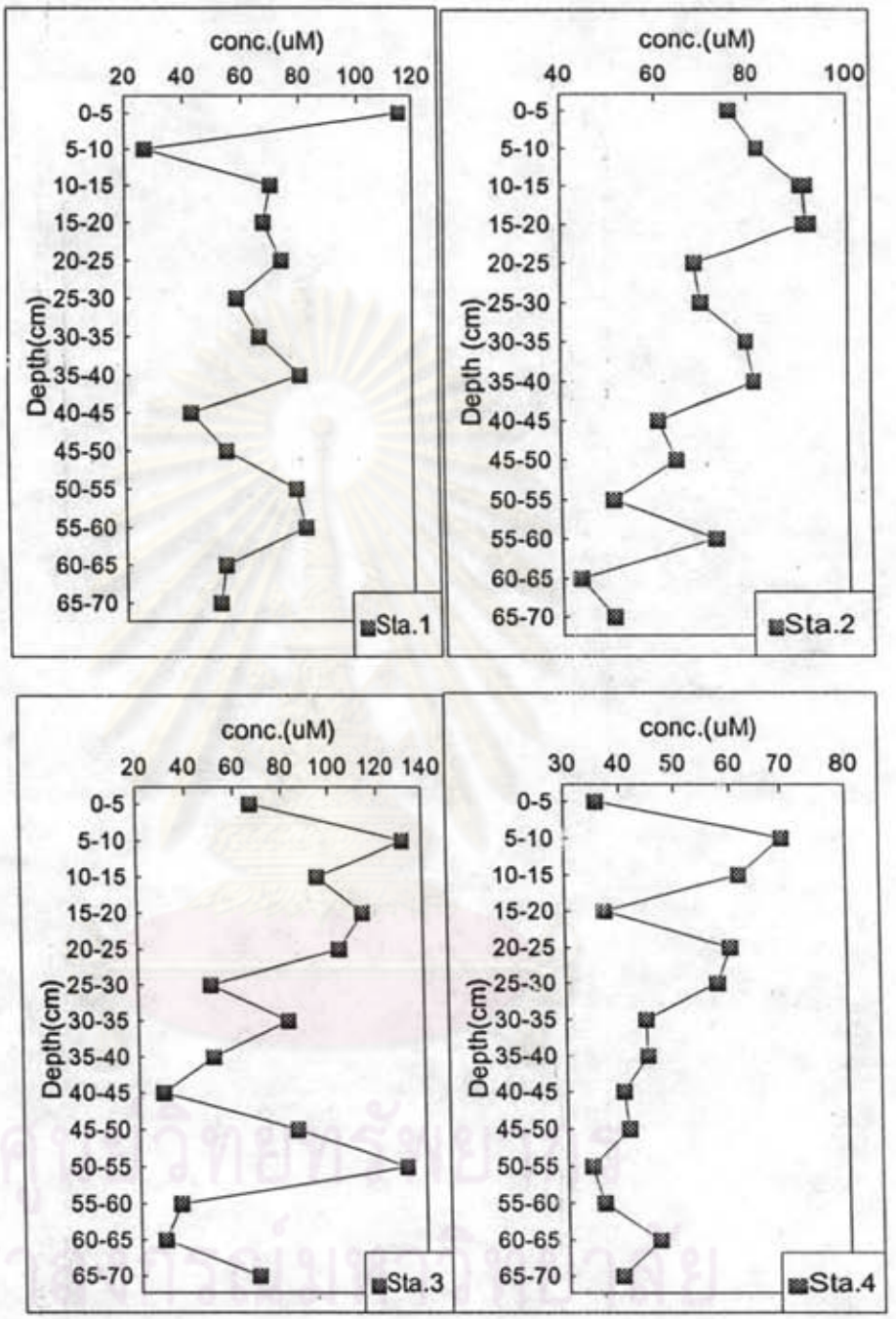

Figure A.12 *Concentration of dissolved nitrite plus nitrate at different depths in Station 1, 2, 3, 4 in October 1990*

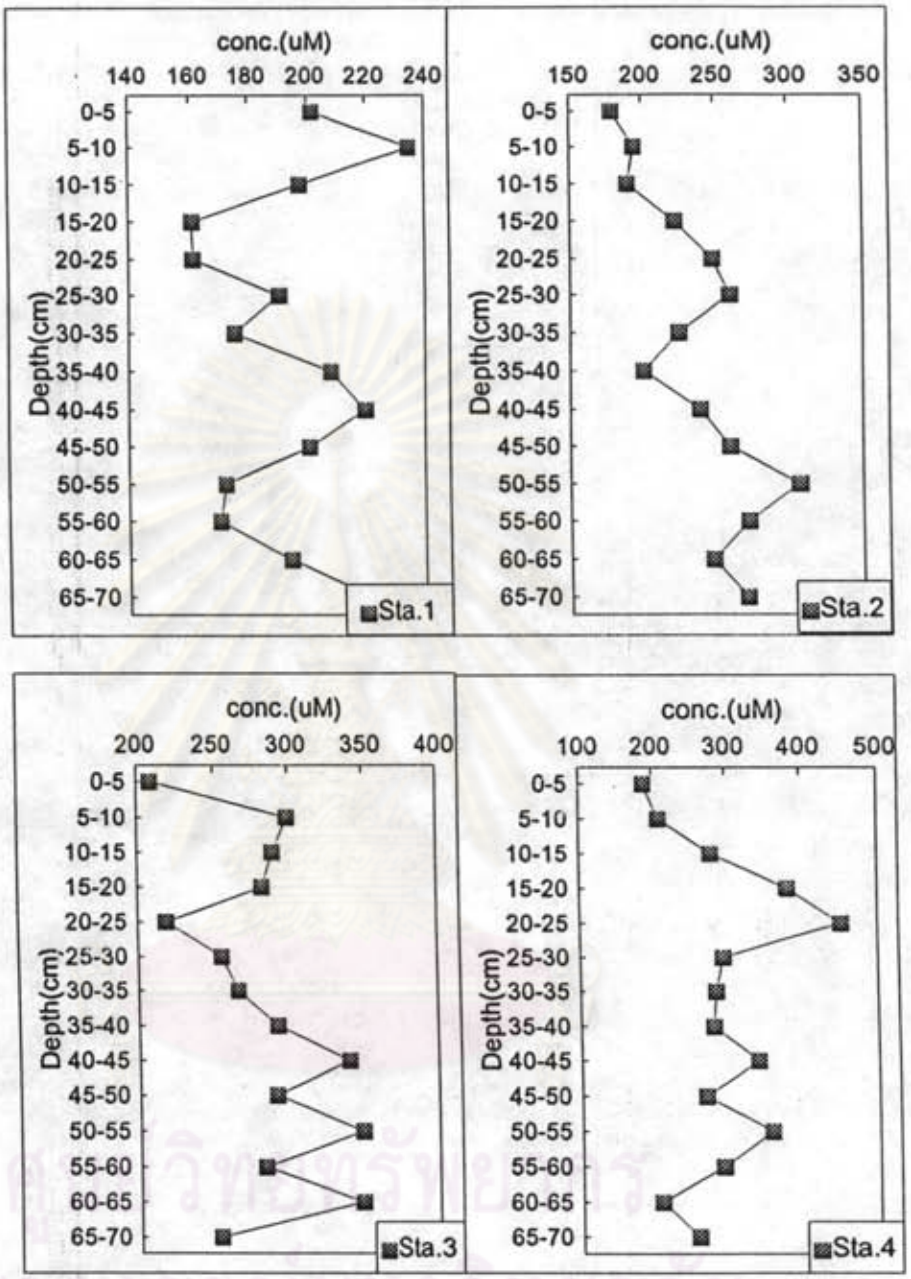

Figure A.13 *Concentrations of dissolved ammonia at different depths at Station 1, 2, 3, 4 in October 1990*

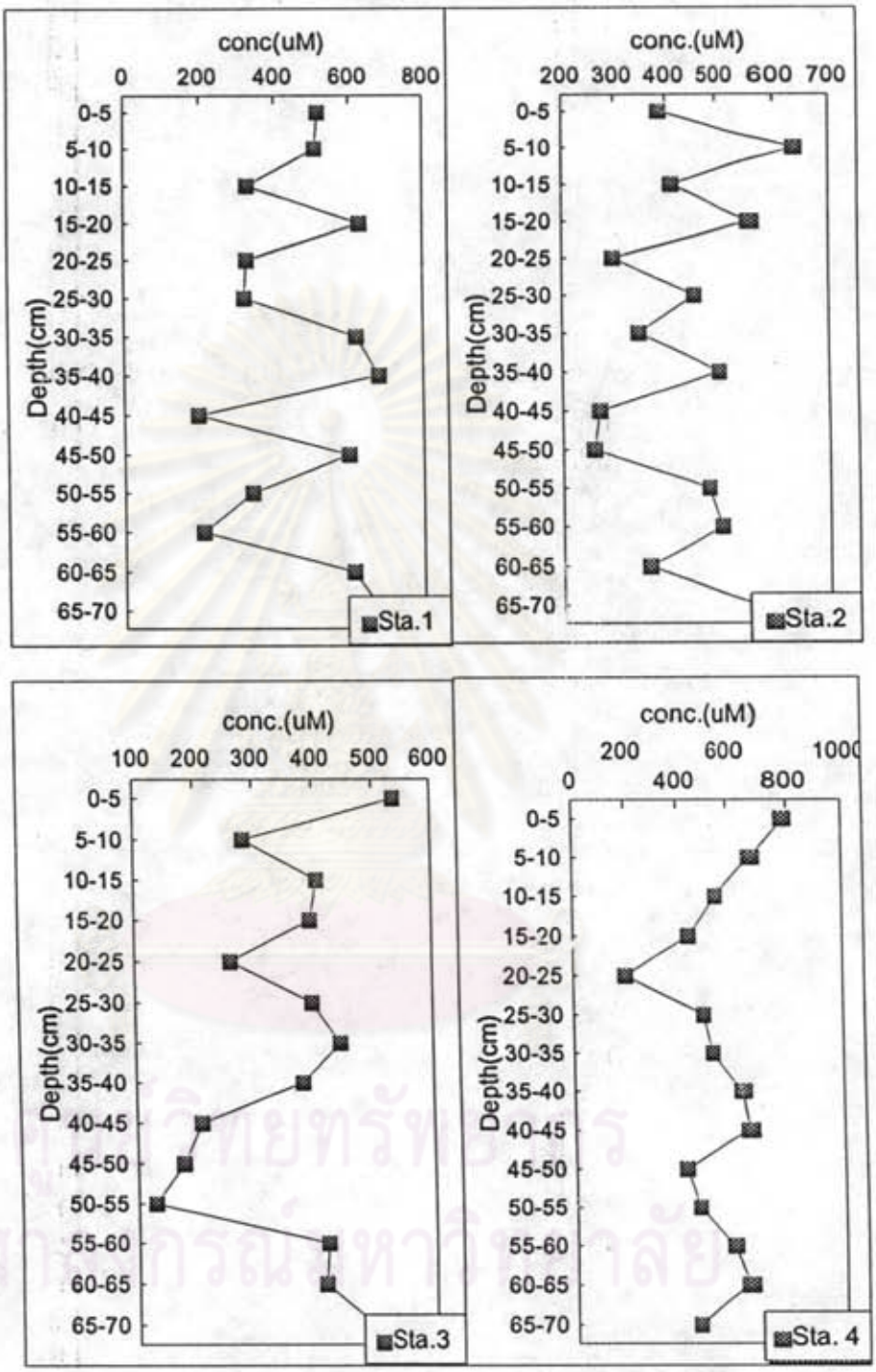

Figure A.14 *Concentrations of dissolved organic nitrogen at different depths at Station 1, 2, 3, 4 in October 1990*

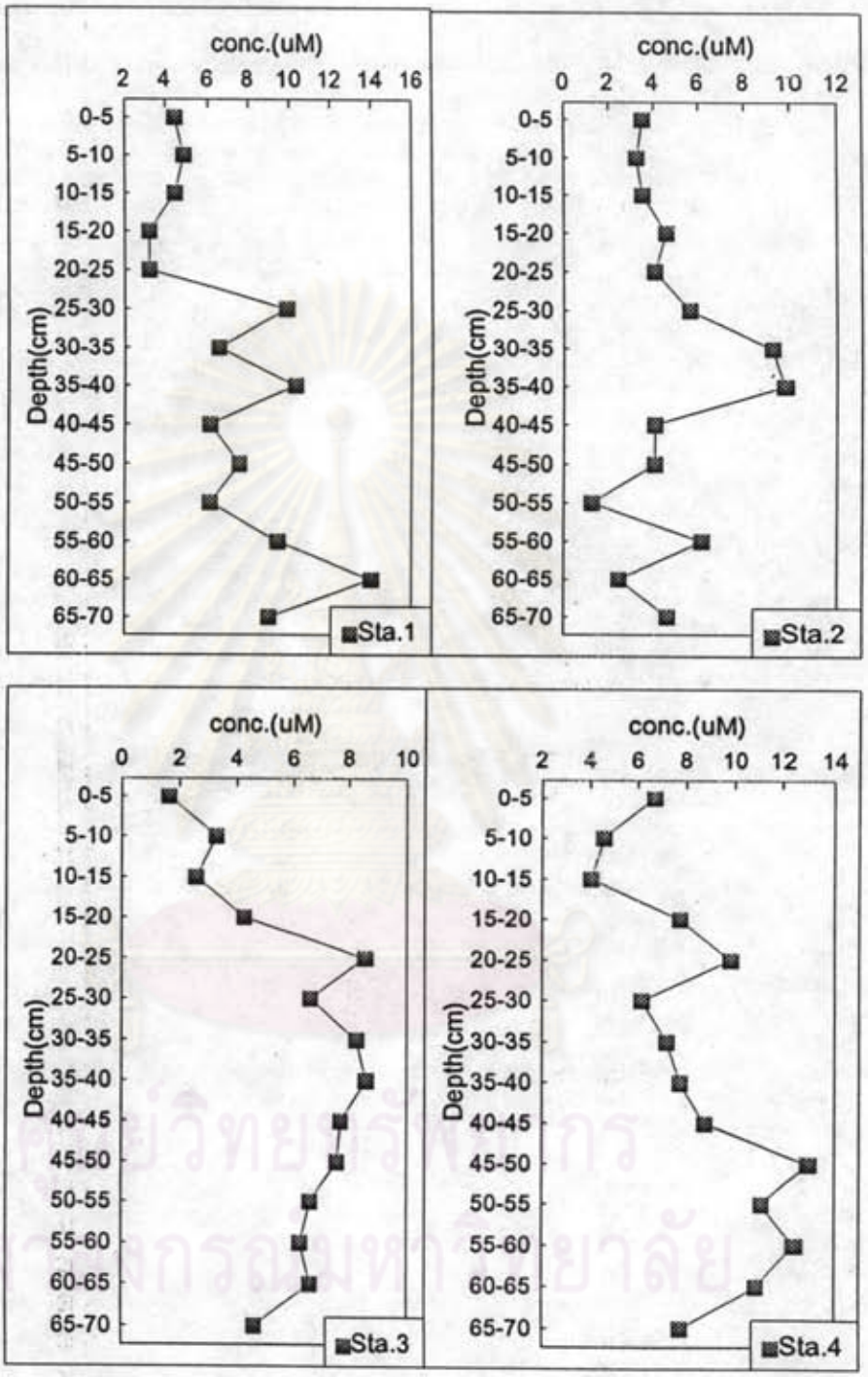

Figure A.15 *Concentrations of dissolved phosphate at different depths at Station 1, 2, 3, 4 in October 1990*

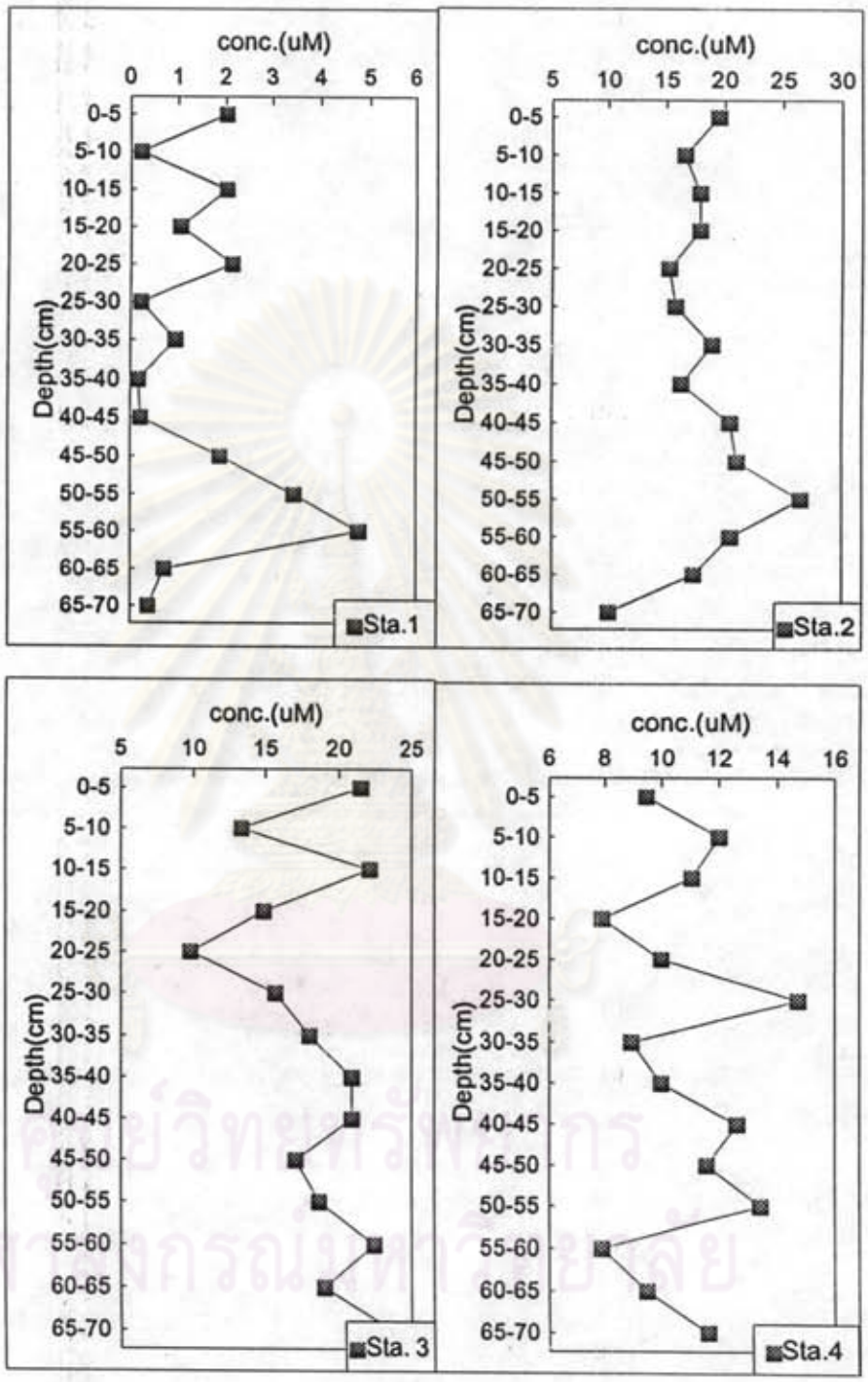

Figure A.16 *Concentrations of dissolved orgainic phosphorus at different depths at Station 1, 2, 3, 4 in October 1*

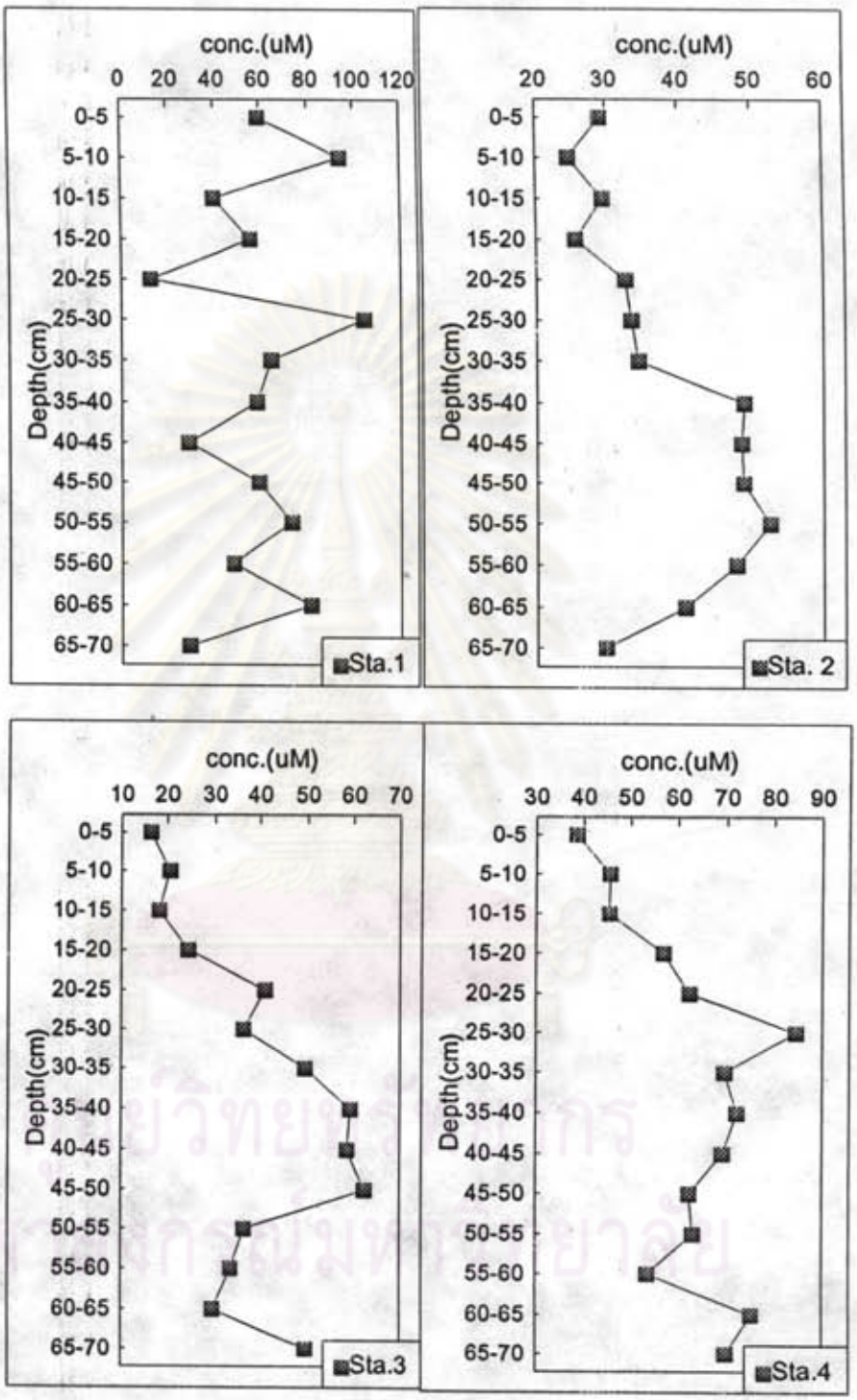

Figure A.17 *Concentrations of dissolved silicate at different depths at Station 1, 2, 3, 4 in October 1*

Table A.13 *Physicochemical characteristics of water in Tube 1: October 1990*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	28	5.3	28.	7.2
2	29	5.6	28	7.5
3	29	5.9	28	7.5
4	29	5.7	28	7.5
5	30	5.8	28	7.6
6	29	5.7	28	7.6
7	29	5.9	28	7.5
8	28	6.8	28	7.8
9	27	5.4	28	7.6
Range	27-30	5.3-6.8	28	7.2-7.8
Average	28.66	5.78	28	7.53

Table A.14 *Physicochemical characteristics of water in Tube 2: October 1990*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	28	5.2	28.	7.1
2	29	5.2	28	7.3
3	29	5.8	28	7.4
4	29	5.8	28	7.4
5	30	5.2	28	7.5
6	29	5.8	28	7.5
7	29	5.6	28	7.8
8	28	5.7	28	7.5
9	27	5.6	28	7.5
Range	27-30	5.2-5.8	28	7.1-7.8
Average	28.66	5.54	28	7.44

Table A.15 *Physicochemical characteristics of water in Tube 3: October 1990*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	28	5.4	28.	7.4
2	29	5.8	28	7.6
3	29	5.6	28	7.6
4	29	5.6	28	7.5
5	30	5.6	28	7.8
6	29	5.4	28	7.7
7	29	5.8	28	7.5
8	28	5.8	28	7.4
9	27	5.8	28	7.4
Range	27–30	5.4-5.8	28	7.4-7.8
Average	28.66	5.64	28	7.54

Table A.16 *Physicochemical characteristics of water in Tube 4: October 1990*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	28	5.3	28.	7.3
2	29	5.3	28	7.1
3	29	5.4	28	7.4
4	29	5.6	28	7.6
5	30	5.4	28	7.4
6	29	5.6	28	7.5
7	29	5.8	28	7.4
8	28	5.6	28	7.3
9	27	5.5	28	7.5
Range	27-30	5.3-5.8	28	7.1-7.6
Average	28.66	5.5	28	7.38

Note : 1-3= Experiment

4= Control

Table A.17 *Analysis of nutrient concentration in water; Tube 1 (October 1990)*

Times hrs.	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM	SiO4 µM
1	0.205	0.598	1.59	269.777	272.17	0.248	0.452	0.7	64.39
2	0.205	0.281	0.91	121.694	123.09	0.106	0.28	0.386	44.36
3	0.185	0.229	1.22	211.006	212.64	0.106	0.332	0.438	55.43
4	0.263	0.264	1.47	169.133	171.13	0.154	0.441	0.595	54.63
5	0.224	0.351	1.44	157.615	159.63	0.20	0.083	0.284	40.14
6	0.267	0.386	0.73	96.927	98.31	0.159	0.295	0.454	50.44
7	0.38	0.351	1.65	92.349	94.73	0.154	0.187	0.341	44.33
8	0.282	0.246	1.71	50.322	52.56	0.154	0.074	0.228	39.1
9	0.36	0.368	1.82	121.932	124.48	0.201	0.027	0.228	44.33
Range	0.185-0.380	0.229-0.598	0.730-1.820	50.3-269.7	52.56-272.17	0.106-0.248	0.027-0.452	0.228-0.700	39.10-64.39
Average	0.263	0.341	1.393	143.42	145.41	0.164	0.241	0.406	48.57

Table A.18 *Analysis of nutrient concentration in water ; Tube 2 (October 1990)*

Times hrs.	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM	SiO4 µM
1	0.205	0.781	1.71	140.91	143.61	0.248	0.504	0.752	73.14
2	0.185	0.316	0.91	148.80	150.21	0.154	0.337	0.491	52.95
3	0.127	0.316	1.41	125.26	127.11	0.159	0.541	0.700	48.63
4	0.210	0.210	1.59	110.09	112.1	0.154	0.441	0.595	57.14
5	0.321	0.437	1.50	131.43	133.69	0.201	0.366	0.567	50.12
6	0.185	0.403	0.85	124.70	126.14	0.120	0.334	0.454	44.32
7	0.244	0.316	1.07	49.99	51.62	0.201	0.31	0.511	46.14
8	0.224	0.194	1.16	64.66	66.24	0.106	0.122	0.228	33.12
9	0.391	0.438	1.04	25.69	27.56	0.295	-0.011	0.284	40.39
Range	0.127-0.391	0.194-0.781	0.91-1.71	25.69-148.79	27.56-150.21	0.106-0.295	0-.541	0.228-0.752	33.12-73.14
Average	0.232	0.379	1.248	102.39	104.25	0.182	0.327	0.509	49.55

Table A.19 *Analysis of nutrient concentration in water; Tube 3 (October 1990)*

Times hrs.	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM	SiO4 µM
1	0.224	0.333	1.25	137.30	139.11	0.201	0.446	0.647	46.15
2	0.127	0.438	1.28	146.775	148.62	0.106	0.385	0.491	48.36
3	0.102	0.386	1.71	136.412	138.61	0.201	0.473	0.674	68.95
4	0.205	0.248	1.37	149.317	151.14	0.201	0.551	0.752	43.95
5	0.185	0.388	1.25	189.417	191.24	0.106	0.348	0.454	46.59
6	0.302	0.298	0.98	69.38	70.96	0.201	0.253	0.454	49.5
7	0.224	0.386	1.16	116.83	118.6	0.106	0.178	0.284	46.35
8	0.282	0.211	1.25	118.737	120.48	0.154	0.244	0.398	51.62
9	0.263	0.351	1.97	83.466	86.05	0.201	0.083	0.284	53.62
Range	0.102-0.302	0.211-0.438	0.98-01.97	69.3-189.4	70.96-191.24	0.106-0.201	.083-.551	0.284-0.752	43.95-68.95
AVG.	0.212	0.337	1.357	127.52	129.42	0.164	0.329	0.493	50.56

Table A.20 *Analysis of nutrient concentration in water; Tube 4 (October 1990)*

Times hrs.	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM	SiO4 µM
1	0.224	0.229	1.47	116.68	118.6	0.201	0.290	0.491	59.03
2	0.185	0.561	0.77	125.09	126.61	0.159	0.175	0.334	61.48
3	0.107	0.281	1.28	145.95	147.62	0.201	0.185	0.386	40.36
4	0.205	0.226	1.62	138.56	140.61	0.106	0.437	0.543	63.12
5	0.205	0.405	1.41	192.05	194.07	0.106	0.405	0.511	49.87
6	0.107	0.438	0.82	146.95	148.31	0.201	0.366	0.567	40.12
7	0.224	0.264	1.13	86.32	87.94	0.106	0.405	0.511	36.14
8	0.263	0.298	1.13	99.45	101.14	0.201	0.027	0.228	49.12
9	0.244	0.211	1.31	42.50	44.26	0.106	0.348	0.454	46.14
Range	0.107-0.263	0.211-0.561	0.77-1.62	42.5-192.0	44.256-194.07	0.106-0.201	.027-.437	0.228-0.567	36.14-63.12
AVG.	0.196	0.323	1.215	121.50	123.24	0.154	0.293	0.447	49.48

Table A. 21 *Physicochemical characteristics of water in Tube 1 :March 1991*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	27	5.5	28	7.4
2	29	5.6	28	7.4
3	29	5.4	29	7.3
4	30	6.2	29	7.6
5	30	6.5	29	7.3
6	30	6.3	29	7.8
7	28	6.5	29	7.8
8	28	6.3	29	7.8
9	27	6.5	29	7.8
Range	27-30	5.4-6.5	28	7.3-7.8
Average	28.66	5.95	28.77	7.66

Table A. 22 *Physicochemical characteristics of water in Tube 2 :March 1991*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	27	5.3	28	7.6
2	29	5.3	28	7.7
3	29	5.5	29	7.3
4	30	6.4	29	7.3
5	30	6.3	29	7.8
6	30	6.5	29	7.8
7	28	6.4	29	7.8
8	28	6.1	29	7.8
9	27	5.8	29	7.9
Range	27-30	53.-65	28-29	7.3-7.9
Average	28.66	5.95	28.77	7.66

Table A. 23 *Physicochemical characteristics of water in Tube 3: March 1991*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	27	5.8	28.	7.3
2	29	5.9	28	7.1
3	29	5.3	28	8
4	30	5.8	28	7.9
5	30	5.9	28	7.8
6	30	6	28	7.6
7	28	5.8	28	7.8
8	28	6.5	28	7.7
9	27	6.3	28	7.6
Range	27-30	5.4-5.8	28	7.1-8
Average	28.66	5.92	28	7.64

Table A. 24 *Physicochemical characteristics of water in Tube 4: March 1991*

Times hrs.	Salinity %	DO mg/L	Temperature C	pH
1	27	5.5	28.	7.5
2	29	5.6	28	7.8
3	29	5.9	28	7.8
4	30	6.6	28	7.6
5	30	5.9	28	7.8
6	30	6.4	28	7.9
7	28	6.6	28	7.7
8	28	6.3	28	7.8
9	27	5.8	28	7.8
Range	27-30	5.5-6.3	28	7.5-7.9
Average	28.66	6.06	28	7.74

Note : 1-3= Experiment

4= Control

Table A.25 *Analysis of nutrient concentration in water; Tube 1 (March 1991)*

Times	NO2-N		NO3-N		NH4-N		DON		TN		PO4-P		DOP		TP		SiO4	
hrs.	uM		uM		uM		uM		uM		uM		uM		uM		uM	
Level	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom
1	-	0.309	-	0.787	-	1.580	-	186.86	-	189.54	-	0.245	-	1.57	-	1.820	-	72.62
2	0.309	0.265	0.737	0.925	1.810	1.540	125.87	226.22	128.73	228.95	0.440	0.144	1.07	1.67	1.510	1.820	51.81	44.87
3	0.243	0.287	0.531	0.820	1.500	1.500	196.61	125.42	198.44	128.03	0.195	0.245	0.915	.965	1.110	1.210	50.47	49.14
4	0.199	0.265	0.310	0.406	1.110	1.350	228.63	256.96	230.25	258.99	0.195	0.245	1.59	1.17	1.790	1.420	38.20	39.80
5	0.265	0.199	0.215	0.263	1.150	1.500	234.0	304.58	235.63	306.55	0.398	0.499	1.32	1.02	1.720	1.520	33.93	35.54
6	0.168	0.124	0.287	0 .249	1.270	1.190	153.18	138.78	154.91	140.35	0.245	0.245	1.37	1.37	1.620	1.620	35.80	33.93
7	0.046	0.099	0.347	0.531	0.920	1.380	139.03	181.45	140.35	183.46	0.245	0.296	1.27	0.754	1.520	1.050	46.74	40.34
8	0.146	0.134	0.741	0.373	2.040	2.390	133.85	97.89	136.78	100.79	0.347	0.347	1.55	1.07	1.900	1.420	48.88	48.88
9	-	0.290	-	0.557	-	3.570	-	302.13	-	306.55	-	0.569	-	1.41	-	1.980	-	55.28
Range Surface	0.046-0.309		0.215-0.741		0.920-2.040		125.87-234		128.73-235.63		0.195-0.440		0.915-1.59		1.110-1.900		33.93-51.81	
Range Bottom	0.124-0.309		0.263-0.925		1.190-3.570		97.89-304.58		100.79-306.55		0.144-0.569		0.754-1.67		1.050-1.980		33.93-72.62	
AVG. Surface	0.144		0.352		1.088		173.02		136.12		0.229		1.29		1.241		34.09	
AVG. Bottom	0.219		0.544		1.777		202.25		204.8		0.315		1.22		1.873		46.71	

Table A. 26 *Analysis of nutrient concentration in water; Tube 2 (March 1991)*

Times	NO2-N		NO3-N		NH4-N		DON		TN		PO4-P		DOP		TP		SiO4	
hrs.	uM		uM		uM		uM		uM		uM		uM		uM		uM	
Level	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom
1	-	0.309	-	0.763	-	1.850	-	368.7	-	371.63	-	0.296	-	2.4	-	2.70	-	63.28
2	0.309	0.309	0.872	0.872	1.660	1.160	314.82	192.26	317.67	194.61	0.195	0.195	1.73	1.01	1.93	1.21	74.49	77.24
3	0.287	0.309	0.644	0.691	1.810	1.270	126.32	108.98	129.07	111.25	0.144	0.245	1.57	1.29	1.72	1.54	50.21	47.27
4	0.178	0.287	0.596	0.430	1.080	1.080	207.81	319.77	209.67	321.57	0.245	0.144	.865	1.57	1.11	1.72	39.80	41.41
5	0.168	0.240	0.287	0.382	1.190	1.150	188.99	344.89	190.64	346.60	0.602	0.753	.708	1.17	1.31	1.93	33.62	35.80
6	0.243	0.190	0.358	0.196	0.730	1.310	140.00	163.04	141.34	164.74	0.245	0.195	1.17	1.01	1.42	1.21	34.73	37.40
7	0.068	0.046	0.531	0.294	1.080	0.840	387.47	225.19	389.15	226.37	0.245	0.269	1.17	1.15	1.42	1.42	44.34	35.27
8	0.046	0.112	0.662	0.557	1.420	1.150	213.02	89.57	251.15	91.39	0.396	0.541	1.21	0.919	1.61	1.46	44.61	45.14
9	-	0.310	-	0.715	-	3.690	-	407.64	-	412.36	-	0.389	-	2.06	-	2.45	-	75.56

Range	Suface	0.046-0.309	0.287-0.872	0.730-1.810	126.32-387.47	141.34-389.15	0.144-0.602	0.708-1.73	1.11-1.93	33.62-74.49
Range	Bottom	0.046-0.309	0.196-0.872	0.840-3.690	89.57-407.64	91.39-412.36	0.144-0.753	0.191-2.40	1.46-2.70	35.80-77.24
AVG.	Surface	0.19	0.438	0.815	225.49	180.96	0.23	1.2	1.168	35.8
AVG.	Bottom	0.234	0.544	1.5	246.66	248.94	0.335	1.16	2.737	50.91

Table A. 27 *Analysis of nutrient concentration in water; Tube 4 (March 1991)*

Times	NO2-N		NO3-N		NH4-N		DON		TN		PO4-P		DOP		TP		SiO4	
hrs.	uM		uM		uM		uM		uM		uM		uM		uM		uM	
Level	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom
1	-	0.265	-	0.708	-	1.19	-	200.46	-	202.63	-	0.195		2.40	-	2.60	-	63.54
2	0.221	0.221	0.872	0.715	1.35	1.73	181.57	246.30	184.02	248.97	0.195	0.347	1.32	.963	1.52	1.31	57.68	53.41
3	0.243	0.265	0.620	0.620	1.54	1.65	152.58	185.45	154.99	187.99	0.245	0.347	0.965	0.963	1.21	1.31	49.98	48.08
4	0.134	0.199	0.287	0.334	1.04	1.15	235.22	224.83	236.69	226.45	0.144	0.195	1.57	1.32	1.72	1.52	40.34	36.07
5	0.112	0.243	0.315	0.332	1.27	0.96	269.09	116.16	270.79	117.70	0.500	0.245	0.600	1.15	1.10	1.40	33.72	33.67
6	0.331	0.331	0.287	0.120	1.04	1.42	123.55	170.35	125.21	172.23	0.195	0.245	1.10	0.855	1.30	1.10	3794	35.80
7	0.068	0.112	0.352	0.368	1.15	1.85	417.62	226.62	419.19	228.95	0.347	0.296	0.863	0.804	1.21	1.10	44.34	45.67
8	0.112	0.143	0.504	0.399	3.06	2.20	224.70	137.66	228.38	140.41	0.296	0.347	1.120	1.37	1.42	1.72	55.16	46.74
9	-	0.189	-	0.797	-	2.98	-	232.28	-	236.26	-	0.390	-	1.17	-	1.56	-	48.61

Range	Surface	0.112-0.331	0.287-0.872	1.04-3.06	123.55-417.62	125.21-270.79	0.144-0.347	0.600-1.320	1.10-1.72	33.72-57.68
Range	Bottom	0.112-0.331	0.120-0.797	1.15-2.98	116.16-246.30	117.70-248.97	0.195-0.390	0.804-2.40	1.10-2.60	33.67-63.54
AVG.	Surface	0.113	0.359	1.176	229.19	179.91	0.213	1.076	1.053	29.33
AVG.	Bottom	0.217	0.486	1.681	193.34	195.73	0.289	1.221	1.513	45.69

Table A. 28 *Analysis of nutrient concentration in water; Tube 3 (March 1991)*

Times	NO2-N		NO3-N		NH4-N		DON		TN		PO4-P		DOP		TP		SiO4	
hrs.	uM		uM		uM		uM		uM		uM		uM		uM		uM	
Level	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom	surface	bottom
1	-	0.265	-	0.240	-	1.81	-	269.11	-	271.43	-	0.296	-	1.63	-	1.93	-	58.21
2	0.243	0.265	0.500	0.918	1.20	1.27	250.92	108.78	252.87	111.24	0.245	0.296	1.27	1.42	1.52	1.72	61.95	60.88
3	0.309	0.353	0.596	0.763	1.69	1.85	232.37	251.01	234.97	253.98	0.245	0.195	0.96	0.94	1.21	1.14	51.28	68.35
4	0.265	0.178	0.453	0.526	1.42	1.69	256.85	172.69	258.99	175.09	0.398	0.144	0.81	1.47	1.21	1.62	39.54	40.17
5	0.240	0.134	0.396	0.334	1.00	1.08	241.74	209.88	243.36	211.43	0.347	0.398	0.86	1.12	1.21	1.52	34.47	33.40
6	0.134	0.134	0.287	0.287	0.73	1.23	133.45	128.01	134.61	129.76	0.195	0.245	1.46	1.37	1.66	1.62	34.47	33.13
7	0.120	0.090	0.187	0.268	0.96	1.08	144.37	310.11	145.64	311.55	0.296	0.245	1.01	1.06	1.31	1.31	34.02	33.40
8	0.156	0.112	0.741	0.452	2.28	1.40	139.10	140.31	142.28	142.28	0.347	0.298	0.76	0.81	1.11	1.52	41.41	31.00
9	-	0.189	-	0.609	-	1.52	-	126.54	-	129.56	-	0.312	-	1.04	-	1.36	-	43.54
Range Surface	0.120-0.309		0.187-0.741		1.00-2.28		133.45-256.85		134.61-258.99		0.195-0.398		0.76-1.46		1.11-1.66		34.02-61.95	
Range Bottom	0.090-0.353		0.240-0.918		1.08-1.81		108.78-310.11		111.24-311.55		0.195-0.312		0.94-1.63		1.14-1.93		33.13-68.35	
AVG. Surface	0.151		0.351		1.031		199.82		156.96		0.23		1.018		0.905		33.01	
AVG. Bottom	0.189		0.487		1.436		190.71		185.48		0.28		1.206		1.526		44.67	

Table A.29 *Average rates of nutrients released from sediment: October 1990 (wet season) and March 1991 (dry season)*

				(ΔN/ΔT)					
				October			March		
Time \ Tube (Hrs)		1	2	3	AVG.	1	2	3	AVG.
NO2	1								
	*5	0.007	0.037	-0.006	0.013	-0.041	-0.041	-0.041	-0.041
	9	0.005	-0.023	0.011	-0.002	0.046	0.046	0.046	0.046
NO3	1								
	*5	-0.040	-0.024	-0.012	-0.025	-0.138	-0.138	-0.138	-0.138
	9	0.027	0.004	0.014	0.015	0.115	0.115	0.115	0.115
NH4	1								
	*5	0.001	0.013	-0.036	-0.007	-0.212	-0.212	-0.212	-0.212
	9	0.360	0.360	0.360	0.360	0.231	0.231	0.231	0.231
DON	1								
	*5	2.150	-18.450	2.120	-4.727	-53.960	-53.980	-53.990	-53.977
	9	54.250	54.270	54.250	54.257	62.905	62.911	62.921	62.913
PO4	1								
	*5	0.027	0.027	0.000	0.018	-0.098	-0.098	-0.098	-0.098
	9	0.026	0.026	0.026	0.026	0.097	0.097	0.097	0.097
DOP	1								
	*5	-0.081	-0.081	-0.081	-0.081	-0.124	-0.124	-0.124	-0.124
	9	0.104	0.104	0.104	0.104	0.202	0.202	0.202	0.202

Note: *5 = High tide

mmol m^{-2} h^{-1}

Table A.30 *Physicochemical characteristics of water ; Container A1 (Unstirred)*

Times Hrs	DO mg/l	pH	Temp. C
0	4.3	7.34	28
1	4.6	7.03	28
2	4.8	7.21	28
3	4.4	7.15	28
4	4.5	7.39	28
5	4	7.56	28
6	5	7.23	28
7	5.1	7.26	28
8	4.3	7.14	28
9	4.6	7.23	28
10	4.5	7.39	28
11	5.2	7.45	28
12	4.2	7.36	28
13	5	7.45	28
14	5.2	7.13	28
15	5.5	7.39	28
16	5.4	7.63	28
17	5.4	7.64	28
18	5.3	7.36	28
19	5.2	7.36	28
20	5.4	7.26	28
21	5.4	7.23	28
22	4.5	7.6	28
23	5	7.25	28
24	5.3	7.56	28
Range	4-5.5	7.03-7.63	28
AVG.	4.88	7.22	28

Table A.31 *Physicochemical characteristics of water; Container A2 (Stirred)*

Times Hrs	DO mg/l	pH	Temp. C
0	4.6	7.56	28
1	4.5	7.12	28
2	4.5	7.03	28
3	4.3	7.36	28
4	4.5	7.15	28
5	4.5	7.49	28
6	4.6	7.56	28
7	4.3	7.23	28
8	4.8	7.46	28
9	4.4	7.58	28
10	4.4	7.46	28
11	4.2	7.23	28
12	4.5	7.39	28
13	4.5	7.37	28
14	4.4	7.75	28
15	4.6	7.69	28
16	4.3	7.86	28
17	4.5	7.25	28
18	4.5	7.49	28
19	4.5	7.53	28
20	4.8	7.85	28
21	4.5	7.45	28
22	4.6	7.36	28
23	4.4	7.25	28
24	4.5	7.23	28
Range	4.2-4.8	7.03-7.85	28
AVG.	4.88	7.42	28

Table A.32 *Physicochemical characteristics of water; Container A3 (Stirred)*

Times Hrs	DO mg/l	pH	Temp. C
0	4.6	7.23	28
1	4.2	7.56	28
2	5	7.89	28
3	5.1	7.91	28
4	5.2	7.45	28
5	4.3	7.56	28
6	5.3	7.45	28
7	5.6	7.28	28
8	5.4	7.23	28
9	4.2	7.56	28
10	4.6	7.41	28
11	5.3	7.62	28
12	5.4	7.58	28
13	5.2	7.23	28
14	5.3	7.25	28
15	5.4	7.46	28
16	5.2	7.26	28
17	5.6	7.45	28
18	5.9	7.36	28
19	5.4	7.25	28
20	5.6	7.58	28
21	5.2	7.45	28
22	5.4	7.25	28
23	5.4	7.53	28
24	5.2	7.46	28
Range	4.2-5.9	7.23-7.58	28
AVG.	5.16	7.45	28

Table A.33 *Analysis of nutrient concentration in water; Container A1 (Unstirred)*

Times Hrs	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM
0	0.031	0.198	0.212	40.25	40.69	0.017	0.212	0.229
1	0.023	0.184	0.285	50.87	51.36	0.011	0.114	0.125
2	0.021	0.116	0.225	41.79	42.15	0.008	0.242	0.25
3	0.022	0.102	0.211	49.81	50.14	0.006	0.228	0.234
4	0.036	0.08	0.299	53.27	53.69	0.013	0.290	0.303
5	0.021	0.134	0.294	41.90	42.35	0.019	0.131	0.15
6	0.019	0.122	0.298	47.70	48.14	0.012	0.160	0.172
7	0.025	0.111	0.304	53.48	53.92	0.006	0.140	0.146
8	0.016	0.127	0.303	57.98	58.43	0.008	0.243	0.251
9	0.036	0.115	0.284	46.38	46.81	0.013	0.158	0.171
10	0.029	0.096	0.206	41.77	42.1	0.01	0.153	0.163
11	0.015	0.149	0.209	53.34	53.71	0.008	0.160	0.168
12	0.022	0.148	0.298	46.47	46.94	0.016	0.119	0.135
13	0.022	0.146	0.223	51.42	51.81	0.006	0.089	0.095
14	0.023	0.128	0.235	39.73	40.12	0.011	0.161	0.172
15	0.013	0.11	0.225	45.70	46.05	0.013	0.115	0.128
16	0.019	0.136	0.21	42.74	43.1	0.019	0.257	0.276
17	0.014	0.11	0.226	44.26	44.61	0.015	0.119	0.134
18	0.028	0.096	0.225	40.30	40.65	0.013	0.075	0.088
19	0.014	0.14	0.226	49.25	49.63	0.013	0.137	0.15
20	0.031	0.146	0.206	59.76	60.14	0.012	0.161	0.173
21	0.012	0.138	0.239	44.97	45.36	0.024	0.145	0.169
22	0.015	0.128	0.213	48.57	48.93	0.013	0.130	0.143
23	0.016	0.139	0.256	43.64	44.05	0.004	0.241	0.245
24	0.023	0.116	0.206	55.77	56.12	0.01	0.130	0.14
Range	0.012-0.036	0.08-0.198	0.206-0.304	39.7-59.6	40.12-60.14	.006-.024	.075-.290	0.095-0.259
AVG.	0.021	0.128	0.244	47.64	48.03	0.012	0.164	0.176

Table A. 34 *Analysis of nutrient concentration in water; Container A2 (Stirred)*

Times Hrs	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM
0	0.026	0.129	0.445	59.53	60.13	0.011	0.198	0.209
1	0.028	0.109	0.449	48.67	49.26	0.006	0.362	0.368
2	0.034	0.231	0.335	55.54	56.14	0.009	0.306	0.315
3	0.028	0.315	0.368	68.20	68.91	0.016	0.203	0.219
4	0.025	0.297	0.326	57.38	58.03	0.01	0.296	0.306
5	0.021	0.316	0.377	64.25	64.96	0.008	0.285	0.293
6	0.014	0.218	0.414	57.47	58.12	0.019	0.351	0.37
7	0.029	0.293	0.368	33.45	34.14	0.014	0.345	0.359
8	0.031	0.212	0.374	68.73	69.35	0.003	0.358	0.361
9	0.026	0.32	0.274	51.41	52.03	0.008	0.395	0.403
10	0.025	0.301	0.262	58.17	58.76	0.013	0.506	0.519
11	0.031	0.214	0.283	61.57	62.1	0.018	0.280	0.298
12	0.036	0.217	0.296	60.16	60.71	0.005	0.256	0.261
13	0.029	0.216	0.346	46.31	46.9	0.005	0.356	0.361
14	0.016	0.312	0.243	39.58	40.15	0.013	0.281	0.294
15	0.042	0.313	0.294	51.61	52.26	0.009	0.394	0.403
16	0.026	0.29	0.265	47.57	48.15	0.009	0.301	0.31
17	0.017	0.169	0.253	43.53	43.97	0.012	0.342	0.354
18	0.02	0.246	0.282	39.56	40.11	0.01	0.285	0.295
19	0.026	0.319	0.295	55.00	55.64	0.016	0.245	0.261
20	0.024	0.122	0.256	46.72	47.12	0.014	0.276	0.29
21	0.031	0.311	0.236	39.54	40.12	0.01	0.302	0.312
22	0.03	0.216	0.293	50.76	51.3	0.011	0.339	0.35
23	0.024	0.218	0.284	43.39	43.92	0.009	0.335	0.344
24	0.029	0.31	0.263	40.95	41.55	0.009	0.267	0.276
Range	0.014-0.042	0.109-0.319	0.236-0.449	33.4-68.7	34.14-69.35	0.005-0.016	.198-.395	0.219-0.519
AVG.	0.026	0.248	0.315	51.56	53.31	0.01	0.315	0.325

Table A.35 *Analysis of nutrient concentration in water :Container A.3 (Stirred)*

Times Hrs	NO2-N uM	NO3-N uM	NH4-N uM	DON uM	TN uM	PO4-P uM	DOP uM	TP uM
0	0.027	0.28	0.467	50.86	51.63	0.009	0.521	0.53
1	0.022	0.315	0.452	49.05	49.84	0.012	0.448	0.46
2	0.036	0.319	0.459	64.31	65.12	0.019	0.091	0.11
3	0.048	0.268	0.578	56.80	57.69	0.012	0.628	0.64
4	0.026	0.257	0.583	68.05	68.92	0.019	0.361	0.38
5	0.031	0.263	0.607	55.84	56.74	0.013	0.107	0.12
6	0.042	0.316	0.303	49.63	50.29	0.093	0.797	0.89
7	0.022	0.298	0.348	41.47	42.14	0.014	0.136	0.15
8	0.019	0.235	0.561	51.04	51.85	0.096	0.024	0.12
9	0.01	0.216	0.444	60.36	61.03	0.063	0.257	0.32
10	0.025	0.249	0.426	59.71	60.41	0.029	0.461	0.49
11	0.036	0.286	0.369	57.37	58.06	0.006	0.794	0.8
12	0.022	0.256	0.285	58.52	59.08	0.001	0.299	0.3
13	0.018	0.238	0.412	60.83	61.5	0.002	0.148	0.15
14	0.034	0.294	0.495	49.83	50.65	0.015	0.175	0.19
15	0.022	0.217	0.456	41.62	42.31	0.005	0.125	0.13
16	0.029	0.209	0.329	46.39	46.96	0.008	0.222	0.23
17	0.016	0.246	0.364	40.47	41.1	0.001	0.659	0.66
18	0.031	0.232	0.356	51.81	52.43	0.046	0.144	0.19
19	0.036	0.219	0.402	47.44	48.1	0.011	0.429	0.44
20	0.014	0.283	0.563	43.54	44.4	0.049	0.451	0.5
21	0.026	0.246	0.4	39.59	40.26	0.006	0.114	0.12
22	0.03	0.278	0.458	42.69	43.46	0.046	0.444	0.49
23	0.024	0.26	0.396	46.26	46.94	0.04	0.061	0.101
24	0.021	0.251	0.403	53.61	54.28	0.076	0.044	0.12
Range	0.010-0.048	0.216-0.319	0.285-0.607	39.5-68.0	41.10-68.92	0.001-0.096	.024-.797	0.101-0.89
AVG.	0.026	0.261	0.436	51.48	52.2	0.027	0.318	0.345

Table A.36 *Physicochemical characteristics of water; Container B1 (Unstirred)*

Times Hrs	DO mg/l	pH	Temp. C
0	5.3	7.26	28
1	5.2	7.45	28
2	4.2	7.56	28
3	4.1	7.26	28
4	4.6	7.82	28
5	4.2	7.23	28
6	4.1	7.56	28
7	4.3	7.85	28
8	4.5	7.52	28
9	4.9	7.46	28
10	4.8	7.95	28
11	5.2	7.26	28
12	5.1	7.31	28
13	5	7.15	28
14	4.6	7.46	28
15	5.1	7.52	28
16	4.7	7.46	28
17	4.6	7.36	28
18	4.2	7.46	28
19	4.5	7.45	28
20	4.6	7.58	28
21	4.6	7.82	28
22	4.3	7.92	28
23	4.5	7.36	28
24	5.2	7.56	28
Range	4.1-5.3	7.15-7.92	28
AVG.	4.65	7.5	28

Table A.37 *Physicochemical characteristics of water; Container B2 (Stirred)*

Times Hrs	DO mg/l	pH	Temp. C
0	5	7.39	28
1	4.9	7.12	28
2	4.8	7.26	28
3	4.6	7.56	28
4	4.5	7.46	28
5	5.2	7.13	28
6	5	7.69	28
7	5.1	7.56	28
8	5.3	7.45	28
9	4.9	7.56	28
10	4.8	7.48	28
11	5.3	7.58	28
12	5.6	7.46	28
13	5.8	7.56	28
14	5.2	7.23	28
15	5.4	7.28	28
16	5.3	7.36	28
17	5.4	7.58	28
18	5.2	7.39	28
19	4.8	7.12	28
20	4.9	7.45	28
21	5	7.56	28
22	5.2	7.25	28
23	5.3	7.46	28
24	4.9	7.23	28
Range	4.5-5.8	7.12-7.58	28
AVG.	5.09	7.4	28

Table A.38 *Physicochemical characteristic of water; Container B3 (Stirred)*

Times Hrs	DO mg/l	pH	Temp. C
0	4.9	7.3	28
1	4.8	7.36	28
2	4.6	7.56	28
3	4.8	7.69	28
4	5	7.36	28
5	5.2	7.15	28
6	5	7.45	28
7	4.9	7.23	28
8	4.8	7.45	28
9	5.3	7.56	28
10	5.4	7.32	28
11	5.1	7.39	28
12	4.8	7.46	28
13	4.8	7.45	28
14	4.6	7.25	28
15	4.6	7.25	28
16	4.8	7.36	28
17	5.2	7.46	28
18	5.3	7.25	28
19	5.4	7.38	28
20	5.6	7.36	28
21	5.1	7.39	28
22	5.2	7.41	28
23	5.3	7.56	28
24	5.4	7.82	28
Range	4.6-5.6	7.15-7.82	28
AVG.	5.03	7.4	28

Table A.39 *Analysis of nutrient concentration in water : Container B1 (Unstirred)*

Times Hrs	NO2-N uM	NO3-N uM	NH4-N uM	DON uM	TN uM	PO4-P uM	DOP uM	TP uM
0	0.046	0.319	0.58	43.447	44.392	0.025	0.320	0.345
1	0.037	0.316	0.559	49.90	50.81	0.017	0.239	0.256
2	0.027	0.302	0.531	51.57	52.43	0.011	0.309	0.32
3	0.04	0.246	0.634	58.89	59.81	0.005	0.236	0.241
4	0.043	0.285	0.612	54.70	55.64	0.011	0.551	0.562
5	0.035	0.346	0.462	51.39	52.23	0.021	0.328	0.349
6	0.042	0.412	0.446	57.86	58.76	0.013	0.443	0.456
7	0.053	0.389	0.477	52.93	53.85	0.009	0.296	0.305
8	0.039	0.312	0.459	39.80	40.61	0.005	0.241	0.246
9	0.024	0.329	0.45	49.59	50.39	0.005	0.416	0.421
10	0.042	0.376	0.438	51.23	52.09	0.003	0.356	0.359
11	0.048	0.429	0.469	40.69	41.64	0.015	0.474	0.489
12	0.051	0.452	0.498	29.14	30.14	0.007	0.505	0.512
13	0.046	0.329	0.512	58.94	59.83	0.013	0.365	0.378
14	0.037	0.316	0.503	53.25	54.11	0.011	0.208	0.219
15	0.028	0.303	0.546	39.44	40.32	0.016	0.330	0.346
16	0.019	0.352	0.312	49.06	49.74	0.01	0.298	0.308
17	0.026	0.34	0.469	47.34	48.18	0.008	0.371	0.379
18	0.039	0.321	0.356	54.64	55.36	0.005	0.401	0.406
19	0.043	0.346	0.345	45.62	46.35	0.014	0.234	0.248
20	0.045	0.309	0.589	40.49	41.43	0.009	0.280	0.289
21	0.04	0.346	0.546	50.00	50.93	0.011	0.205	0.216
22	0.031	0.312	0.512	44.78	45.63	0.01	0.296	0.306
23	0.038	0.371	0.461	41.16	42.03	0.017	0.499	0.516
24	0.049	0.402	0.502	47.19	48.14	0.011	0.335	0.346
Range	0.019-0.053	0.246-0.452	0.312-0.589	29.1-58.8	40.61-59.83	0.005-0.025	.205-.551	0.236-0.551
AVG.	0.038	0.342	0.49	48.12	48.97	0.011	0.341	0.352

Table A.40 *Analysis of nutrient concentration in water; Container B2 (Stirred)*

Times Hrs	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM
0	0.032	0.41	0.562	46.15	47.15	0.017	1.643	1.66
1	0.025	0.309	0.521	51.43	52.29	0.019	1.411	1.43
2	0.023	0.214	0.516	52.41	53.16	0.011	0.949	0.96
3	0.038	0.297	0.622	61.97	62.93	0.013	1.107	1.12
4	0.041	0.264	0.618	58.42	59.34	0.02	1.010	1.03
5	0.029	0.201	0.616	56.78	57.63	0.016	1.734	1.75
6	0.014	0.299	0.5	67.34	68.15	0.011	0.549	0.56
7	0.026	0.213	0.049	55.45	55.74	0.017	0.413	0.43
8	0.033	0.256	0.508	58.55	59.35	0.007	0.543	0.55
9	0.025	0.243	0.502	59.64	60.41	0.007	0.883	0.89
10	0.021	0.286	0.474	46.38	47.16	0.016	0.744	0.76
11	0.03	0.206	0.606	45.79	46.63	0.011	0.849	0.86
12	0.016	0.219	0.623	51.07	51.93	0.014	0.946	0.96
13	0.021	0.309	0.64	56.13	57.1	0.016	0.344	0.36
14	0.023	0.241	0.529	48.88	49.67	0.008	0.282	0.29
15	0.024	0.268	0.438	42.46	43.19	0.009	0.451	0.46
16	0.016	0.249	0.527	40.37	41.16	0.013	0.807	0.82
17	0.03	0.264	0.619	39.32	40.23	0.011	0.749	0.76
18	0.019	0.293	0.4	42.81	43.52	0.019	0.311	0.33
19	0.038	0.271	0.479	46.56	47.35	0.021	0.369	0.39
20	0.019	0.264	0.524	40.84	41.65	0.017	0.443	0.46
21	0.022	0.232	0.563	48.50	49.32	0.012	0.838	0.85
22	0.021	0.205	0.582	39.35	40.16	0.007	0.453	0.46
23	0.026	0.246	0.542	46.80	47.61	0.009	0.851	0.86
24	0.024	0.22	0.612	39.27	40.13	0.017	0.573	0.59
Range	0.014-0.041	0.201-0.410	0.400-0.623	39.3-67.3	40.16-68.15	0.020-0.021	.282-1.734	0.029-1.75
AVG.	0.025	0.259	0.544	49.71	50.51	0.013	0.770	0.783

Table A.41 *Analysis of nutrient concentration in water; Container B3 (Stirred)*

Times Hrs	NO2-N µM	NO3-N µM	NH4-N µM	DON µM	TN µM	PO4-P µM	DOP µM	TP µM
0	0.04	0.312	0.458	57.6	58.41	0.023	0.537	0.56
1	0.029	0.398	0.536	61.427	62.39	0.006	0.624	0.63
2	0.032	0.206	0.486	46.306	47.03	0.048	0.902	0.95
3	0.045	0.214	0.611	47.27	48.14	0.029	0.091	0.12
4	0.033	0.232	0.628	43.027	43.92	0.006	0.154	0.16
5	0.024	0.264	0.605	57.257	58.15	0.043	0.087	0.13
6	0.042	0.298	0.503	59.167	60.01	0.011	0.449	0.46
7	0.046	0.231	0.492	44.831	45.6	0.014	0.616	0.63
8	0.022	0.21	0.505	47.453	48.19	0.013	0.09	0.103
9	0.01	0.276	0.51	50.364	51.16	0.011	0.203	0.214
10	0.036	0.252	0.508	46.524	47.32	0.016	0.614	0.63
11	0.025	0.22	0.631	35.534	36.41	0.013	0.447	0.46
12	0.024	0.213	0.529	40.884	41.65	0.019	0.111	0.13
13	0.023	0.291	0.586	48.91	49.81	0.011	0.949	0.96
14	0.029	0.21	0.512	41.679	42.43	0.016	0.544	0.56
15	0.016	0.205	0.493	39.406	40.12	0.023	0.537	0.56
16	0.032	0.263	0.312	52.653	53.26	0.019	0.621	0.64
17	0.016	0.305	0.641	40.148	41.11	0.035	0.905	0.94
18	0.04	0.286	0.561	47.473	48.36	0.002	0.308	0.31
19	0.041	0.243	0.623	39.283	40.19	0.019	0.141	0.16
20	0.029	0.201	0.615	48.345	49.19	0.018	0.142	0.16
21	0.029	0.206	0.543	52.242	53.02	0.026	0.504	0.53
22	0.011	0.214	0.52	49.435	50.18	0.019	0.891	0.91
23	0.024	0.239	0.623	48.134	49.02	0.031	0.449	0.48
24	0.033	0.221	0.412	47.484	48.15	0.012	0.848	0.86
Range	0.010-0.046	0.206-0.398	0.312-0.631	35.5-61.4	36.41-60.01	0.006-0.043	.087-.945	0.012-0.96
AVG.	0.029	0.2484	0.537	47.71	48.54	0.018	0.471	0.489

Table A.42 *Nutrient release/untake in stirred and unstirred sediment*

		(ΔN/ΔT) Stirred					Unstirred		
Time \ Tube (Hrs)		1	2	3	4	AVG.	1	2	AVG.
NO2	0								
	6	0.005	0.652	-0.464	0.150	0.085	-0.319	-0.142	-0.231
	12	0.442	-0.552	0.024	-0.621	-0.179	0.050	0.165	0.108
	18	-0.498	0.066	0.506	0.643	0.179	0.110	-0.315	-0.103
	24	0.302	-0.018	-0.242	-0.358	-0.101	-0.133	0.171	0.019
NO3	0								
	6	2.00	2.60	-3.07	-2.56	-0.26	-2.02	1.91	-0.05
	12	-0.83	-2.17	-1.49	-2.76	-1.81	0.48	0.51	0.49
	18	2.11	0.51	3.66	4.72	3.89	-1.29	-3.33	-2.31
	24	1.88	-0.16	-3.21	-3.01	-1.14	0.32	1.38	0.85
NH4	0								
	6	-1.18	-6.25	-2.05	4.41	-1.26	1.85	-3.80	-0.97
	12	1.27	-4.19	1.70	-0.65	-0.46	-0.30	0.75	0.23
	18	0.11	3.18	5.62	3.79	3.17	-1.90	-3.62	-2.76
	24	-1.95	1.25	3.87	-6.40	-3.23	-0.62	2.71	1.04
DON	0								
	6	-108.8	-220.3	462.4	-322.5	-47.3	138.6	302.5	220.6
	12	86.0	231.0	-421.4	238.7	33.5	-76.0	-718.4	-397.2
	18	-668.4	-22.6	246.7	-427.8	-217.8	182.2	532.0	357.1
	24	194.4	-299.8	-221.0	163.9	-40.8	284.7	-211.2	36.7
PO4	0								
	6	0.181	0.464	-0.161	0.002	0.125	-0.137	-0.313	-0.225
	12	-0.668	-0.609	0.369	0.324	-0.146	0.080	-0.151	-0.036
	18	0.634	1.070	-0.077	-0.386	0.310	-0.082	-0.007	-0.045
	24	-0.120	0.660	0.332	0.131	0.250	-0.076	0.077	0.000
DOP	0								
	6	3.5	9.2	-27.8	-5.3	-5.1	-1.5	2.6	0.6
	12	-10.3	-12.8	11.2	-9.2	-5.3	-1.1	1.0	-0.1
	18	14.3	-2.6	-6.7	7.0	3.0	-1.1	-2.8	-1.9
	24	3.0	-3.3	1.0	12.8	3.4	1.1	-1.8	-0.4

Note: $\mu mol\ m^{-2}\ h^{-1}$

Biographical note

Mr. Khomson Cherdsungnoen was born in October 31, 1962 at Sungnoen District, Nakhon Ratchasima Province. He received a Bachelor of Education degree (General Science) from Nakhon Ratchasima Teacher's College in 1987. He enrolled for a Master's degree in Environmental Science at Chulalongkhorn University in 1990.