

Appendix 5.5a Predicted Water Quality at Key Water Sensitive Receivers (Annual)

Indicator Point ID (Ref: Appendix 5.1)	Scenario	Depth Averaged									
		10%ile / min. DO (mg/L)	mean	Change	Mean						
			Salinity (ppt)	%	BOD ₅ (mg/L)	TIN (mg/L)	UIA (mg/L)	TN (mg/L)	TP (mg/L)	SS (mg/L)	E.coli (no./100mL)
Ecological/Fisheries Resources											
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		≥ 4 (10%ile)	±10% ambit		N/A	≤ 0.7	≤ 0.021	N/A	N/A	≤ 30% ambit	N/A
Mai Po Marshes SSSI (E1)	Scenario 1: Base Case	2.1	10.3	-	12.5	12.95	0.337	15.7	1.50	44.5	250
	Scenario 2: without Project	3.4	10.5	1.9%	9.1	8.53	0.146	10.1	1.25	35.0	17
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.3	9.3	-9.7%	9.3	8.43	0.134	10.0	1.25	34.4	14
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.3	9.3	-9.7%	9.4	8.49	0.138	10.1	1.26	34.9	22
Mai Po Inner Deep bay Ramsar Site / Inner Deep Bay SSSI (E2)	Scenario 1: Base Case	3.9	11.7	-	11.1	10.19	0.241	12.6	1.03	39.8	18
	Scenario 2: without Project	4.5	11.6	-0.9%	9.9	7.77	0.150	9.6	0.91	35.1	11
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.5	10.9	-6.8%	10.3	7.55	0.140	9.4	0.93	35.9	10
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	4.5	10.9	-6.8%	10.3	7.58	0.141	9.5	0.93	36.0	11
Assessment Criteria (for Deep Bay WCZ, Mariculture Subzone)		≥ 5 (10%ile)	±10% ambit		N/A	≤ 0.7	≤ 0.021	N/A	N/A	≤ 30% ambit	≤ 610
Oyster Culture Area (E3)	Scenario 1: Base Case	5.7	14.8	-	2.8	3.25	0.052	3.9	0.31	19.3	13
	Scenario 2: without Project	5.9	14.7	-0.7%	2.7	2.89	0.041	3.5	0.30	18.8	13
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	5.9	14.5	-2.0%	2.9	2.89	0.041	3.5	0.30	19.0	13
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	5.9	14.5	-2.0%	2.9	2.90	0.041	3.5	0.30	19.0	13
Mangroves											
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		≥ 4 (10%ile)	N/A		N/A	≤ 0.7	≤ 0.021	N/A	N/A	N/A	N/A
Mangroves (Inner Deep Bay) (E4)	Scenario 1: Base Case	2.9	11.4	-	10.3	10.86	0.262	13.1	1.15	39.1	53
	Scenario 2: without Project	4.0	11.4	-	8.5	7.70	0.137	9.2	0.98	32.9	8
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.9	10.4	-	8.8	7.58	0.128	9.1	0.99	33.0	8
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.9	10.4	-	8.9	7.62	0.130	9.2	1.00	33.3	11
Assessment Criteria (for Deep Bay WCZ, Yuen Long & Kam Tin (Lower) Subzone)		≥ 4 (min.)	N/A		≤ 5.0	N/A	≤ 0.021	N/A	N/A	≤ 20 (median)	≤ 1,000
Mangrove along Shan Pui River (E5)	Scenario 1: Base Case	1.5	7.8	-	15.2	16.04	0.454	19.1	1.82	47.0	9,718
	Scenario 2: without Project	2.6	9.3	-	8.6	8.85	0.132	10.1	1.34	29.0	121
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.8	8.1	-	8.6	8.76	0.121	10.0	1.32	27.9	106
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.5	8.1	-	8.7	8.82	0.125	10.0	1.34	28.4	132
Mangrove along Kam Tin River (near Ngau Tam Mei Channel) (E6)	Scenario 1: Base Case	< 0.1	7.2	-	29.5	20.24	0.606	26.2	3.71	76.9	9,282
	Scenario 2: without Project	1.0	7.3	-	14.1	11.56	0.211	13.2	2.76	48.2	627
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	0.9	4.9	-	13.0	11.06	0.166	12.3	2.21	35.6	315
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	0.7	4.9	-	13.6	11.14	0.173	12.4	2.24	37.4	452
Mangrove along Kam Tin River (near Shan Pui River) (E7)	Scenario 1: Base Case	< 0.1	8.6	-	16.9	16.01	0.449	19.5	2.15	51.9	1,809
	Scenario 2: without Project	2.5	9.1	-	9.7	9.48	0.155	10.9	1.68	36.3	69
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.6	7.4	-	9.7	9.30	0.137	10.6	1.62	33.7	54
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.3	7.4	-	10.0	9.38	0.142	10.7	1.64	34.7	79
Mai Po Marshes SSSI (south of Lut Chau) (E8)	Scenario 1: Base Case	< 0.1	8.8	-	16.5	15.80	0.443	19.3	2.06	49.7	1,194
	Scenario 2: without Project	2.6	9.3	-	9.6	9.44	0.156	10.9	1.63	35.9	52
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.5	7.5	-	9.7	9.29	0.138	10.6	1.58	33.5	40
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.3	7.5	-	10.0	9.37	0.143	10.7	1.60	34.4	61
EPD Routine Monitoring Station											
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		≥ 4 (10%ile)	±10% ambit		N/A	≤ 0.7	≤ 0.021	N/A	N/A	≤ 30% ambit	N/A
DM1 (DM1)	Scenario 1: Base Case	3.4	12.3	-	8.7	9.09	0.209	10.9	0.89	34.5	37
	Scenario 2: without Project	4.1	12.2	-0.8%	7.8	7.10	0.135	8.6	0.79	30.9	15
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.1	11.6	-5.7%	8.2	6.98	0.129	8.5	0.81	31.4	15
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	4.1	11.6	-5.7%	8.2	7.00	0.130	8.5	0.81	31.5	17
DM2 (DM2)	Scenario 1: Base Case	3.3	13.4	-	7.0	6.70	0.153	8.1	0.61	27.8	181
	Scenario 2: without Project	3.6	13.3	-0.7%	6.7	5.90	0.124	7.1	0.58	26.5	175
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.7	13.0	-3.0%	6.9	5.85	0.121	7.1	0.59	26.9	176
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.7	13.0	-3.0%	6.9	5.86	0.122	7.1	0.59	27.0	176
DM3 (DM3)	Scenario 1: Base Case	4.7	15.0	-	2.2	2.43	0.041	2.9	0.22	16.2	14
	Scenario 2: without Project	4.8	15.0	0.0%	2.2	2.23	0.034	2.7	0.22	15.9	14
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.8	14.9	-0.7%	2.3	2.24	0.034	2.7	0.22	16.0	15
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	4.8	14.9	-0.7%	2.3	2.24	0.034	2.7	0.22	16.0	15

Appendix 5.5b Predicted Water Quality at Key Water Sensitive Receivers (Dry Season)

Indicator Point ID (Ref: Appendix 5.1)	Scenario	Depth Averaged									
		10%ile / min. DO (mg/L)	min. - max.		Mean						
			Salinity (ppt)		BOD ₅ (mg/L)	TIN (mg/L)	UIA (mg/L)	TN (mg/L)	TP (mg/L)	SS (mg/L)	E.coli (no./100mL)
Ecological/Fisheries Resources											
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		10%ile									
Mai Po Marshes SSSI (E1)	Scenario 1: Base Case	2.1	13.7	- 18.7	6.5	16.20	0.278	18.9	1.62	41.3	1,025
	Scenario 2: without Project	3.2	12.9	- 18.1	3.6	11.70	0.160	13.2	1.33	31.7	72
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.2	11.0	- 17.1	4.0	11.28	0.150	12.7	1.30	30.2	62
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.1	11.0	- 17.1	4.1	11.33	0.152	12.7	1.31	30.7	105
Mai Po Inner Deep bay Ramsar Site / Inner Deep Bay SSSI (E2)	Scenario 1: Base Case	3.6	17.0	- 19.9	5.0	14.45	0.248	16.7	1.29	36.9	155
	Scenario 2: without Project	4.1	16.2	- 19.5	3.9	11.76	0.179	13.4	1.13	31.8	72
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.2	14.6	- 18.8	3.9	11.40	0.171	13.0	1.12	30.8	66
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	4.2	14.6	- 18.8	3.9	11.43	0.172	13.0	1.13	31.0	76
Assessment Criteria (for Deep Bay WCZ, Mariculture Subzone)		10%ile									
Oyster Culture Area (E3)	Scenario 1: Base Case	5.7	20.4	- 22.8	0.7	4.91	0.064	5.5	0.45	22.8	22
	Scenario 2: without Project	6.0	20.1	- 22.8	0.7	4.42	0.052	5.0	0.42	21.9	22
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	6.0	19.8	- 22.6	0.7	4.41	0.052	5.0	0.43	21.9	22
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	6.0	19.8	- 22.6	0.7	4.42	0.052	5.0	0.43	21.9	22
Mangroves											
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		10%ile									
Mangroves (Inner Deep Bay) (E4)	Scenario 1: Base Case	2.7	14.4	- 19.8	4.3	14.44	0.241	16.6	1.34	36.5	260
	Scenario 2: without Project	3.7	13.7	- 19.3	2.7	10.99	0.152	12.3	1.14	29.7	38
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.6	11.6	- 18.6	2.9	10.69	0.144	12.0	1.13	28.4	36
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.6	11.6	- 18.6	3.0	10.73	0.146	12.0	1.13	28.8	56
Assessment Criteria (for Deep Bay WCZ, Yuen Long & Kam Tin (Lower) Subzone)		min.									
Mangrove along Shan Pui River (E5)	Scenario 1: Base Case	1.7	8.5	- 18.0	10.0	18.30	0.334	21.3	1.77	42.3	12,810
	Scenario 2: without Project	2.6	9.8	- 17.4	4.8	11.06	0.132	12.2	1.32	25.0	205
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.8	8.2	- 16.1	5.0	10.67	0.122	11.7	1.27	23.0	170
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.5	8.2	- 16.1	5.2	10.72	0.124	11.8	1.28	23.5	228
Mangrove along Kam Tin River (near Ngau Tam Mei Channel) (E6)	Scenario 1: Base Case	< 0.1	10.9	- 15.1	22.5	21.26	0.384	27.6	3.03	63.6	26,031
	Scenario 2: without Project	1.0	9.2	- 14.3	10.1	13.33	0.174	15.2	2.28	40.3	1,342
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	0.9	5.1	- 11.7	10.1	11.98	0.141	13.4	1.96	32.9	687
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	0.7	5.1	- 11.7	10.6	12.05	0.145	13.5	1.98	34.0	971
Mangrove along Kam Tin River (near Shan Pui River) (E7)	Scenario 1: Base Case	< 0.1	10.8	- 17.8	11.0	18.70	0.331	22.2	2.00	44.0	5,125
	Scenario 2: without Project	2.6	10.3	- 17.1	5.1	12.19	0.156	13.5	1.55	29.7	212
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.6	7.7	- 15.8	5.5	11.47	0.139	12.7	1.45	26.8	156
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.3	7.7	- 15.8	5.8	11.53	0.141	12.8	1.47	27.6	245
Mai Po Marshes SSSI (south of Lut Chau) (E8)	Scenario 1: Base Case	< 0.1	11.2	- 17.8	10.5	18.42	0.324	21.9	1.98	44.1	3,948
	Scenario 2: without Project	2.6	10.6	- 17.2	4.9	12.11	0.156	13.5	1.54	30.4	164
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.5	7.9	- 15.9	5.4	11.44	0.140	12.7	1.45	27.5	123
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.3	7.9	- 15.9	5.7	11.50	0.142	12.8	1.47	28.3	197
EPD Routine Monitoring Station											
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		10%ile									
DM1 (DM1)	Scenario 1: Base Case	3.3	16.3	- 21.3	3.3	12.36	0.201	14.1	1.10	33.6	190
	Scenario 2: without Project	4.0	15.6	- 21.0	2.5	10.10	0.142	11.4	0.97	29.2	78
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.0	13.9	- 20.7	2.6	9.88	0.137	11.1	0.97	28.4	76
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.9	13.9	- 20.7	2.6	9.91	0.138	11.2	0.98	28.7	92
DM2 (DM2)	Scenario 1: Base Case	3.2	18.8	- 22.7	2.5	8.53	0.129	9.7	0.75	28.4	539
	Scenario 2: without Project	3.5	18.2	- 22.6	2.3	7.67	0.106	8.7	0.70	26.7	522
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.6	17.3	- 22.5	2.3	7.59	0.105	8.6	0.70	26.4	521
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.6	17.3	- 22.5	2.3	7.60	0.105	8.6	0.70	26.4	522
DM3 (DM3)	Scenario 1: Base Case	5.4	20.4	- 23.8	0.6	3.11	0.036	3.5	0.28	19.4	37
	Scenario 2: without Project	5.6	20.4	- 23.8	0.5	2.90	0.031	3.3	0.27	18.9	38
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	5.6	20.3	- 23.7	0.6	2.91	0.031	3.3	0.27	18.9	39
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	5.6	20.3	- 23.7	0.6	2.91	0.031	3.3	0.27	18.9	39

Appendix 5.5c Predicted Water Quality at Key Water Sensitive Receivers (Wet Season)

Indicator Point ID (Ref: Appendix 5.1)	Scenario	Depth Averaged								
		10%ile / min. DO (mg/L)	min. - max. Salinity (ppt)	Mean						
				BOD ₅ (mg/L)	TIN (mg/L)	UIA (mg/L)	TN (mg/L)	TP (mg/L)	SS (mg/L)	E.coli (no./100mL)
Ecological/Fisheries Resources										
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		10%ile								
Mai Po Marshes SSSI (E1)	Scenario 1: Base Case	2.2	2.2 - 5.2	18.6	9.71	0.396	12.5	1.38	47.8	61
	Scenario 2: without Project	4.1	4.2 - 5.8	14.5	5.36	0.132	7.1	1.16	38.4	4
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.5	3.2 - 5.3	14.6	5.58	0.118	7.3	1.19	38.6	3
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	4.3	3.2 - 5.3	14.7	5.66	0.123	7.4	1.21	39.0	5
Mai Po Inner Deep bay Ramsar Site / Inner Deep Bay SSSI (E2)	Scenario 1: Base Case	5.0	4.2 - 6.1	17.3	5.93	0.234	8.4	0.78	42.8	2
	Scenario 2: without Project	5.8	4.8 - 6.3	15.8	3.78	0.120	5.8	0.69	38.4	2
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	6.2	4.4 - 6.0	16.7	3.69	0.109	5.8	0.73	41.0	2
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	6.2	4.4 - 6.0	16.7	3.73	0.110	5.9	0.73	41.0	2
Assessment Criteria (for Deep Bay WCZ, Mariculture Subzone)		10%ile								
Oyster Culture Area (E3)	Scenario 1: Base Case	5.7	7.2 - 10.1	4.9	1.58	0.039	2.2	0.18	15.9	8
	Scenario 2: without Project	5.8	7.2 - 10.1	4.8	1.37	0.030	2.0	0.17	15.6	8
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	5.8	7.1 - 10.1	5.0	1.37	0.030	2.0	0.18	16.1	8
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	5.8	7.1 - 10.1	5.0	1.37	0.030	2.0	0.18	16.1	8
Mangroves										
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		10%ile								
Mangroves (Inner Deep Bay) (E4)	Scenario 1: Base Case	3.5	3.4 - 6.0	16.2	7.27	0.283	9.6	0.95	41.8	11
	Scenario 2: without Project	5.3	4.9 - 6.3	14.2	4.40	0.122	6.1	0.82	36.1	2
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	5.8	4.0 - 6.0	14.7	4.47	0.111	6.3	0.86	37.7	2
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	5.8	4.0 - 6.0	14.7	4.51	0.114	6.3	0.87	37.9	2
Assessment Criteria (for Deep Bay WCZ, Yuen Long & Kam Tin (Lower) Subzone)		min.								
Mangrove along Shan Pui River (E5)	Scenario 1: Base Case	1.5	1.5 - 5.1	20.3	13.79	0.574	16.9	1.86	51.8	7,372
	Scenario 2: without Project	3.3	4.8 - 6.9	12.3	6.65	0.132	8.0	1.36	33.1	72
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.4	3.8 - 6.3	12.1	6.85	0.121	8.2	1.38	32.7	66
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.2	3.8 - 6.3	12.3	6.93	0.126	8.3	1.39	33.2	76
Mangrove along Kam Tin River (near Ngau Tam Mei Channel) (E6)	Scenario 1: Base Case	< 0.1	0.9 - 3.3	36.5	19.21	0.828	24.8	4.38	90.2	3,310
	Scenario 2: without Project	1.7	1.5 - 4.9	18.1	9.80	0.247	11.2	3.24	56.1	293
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	1.5	0.4 - 3.7	15.9	10.14	0.191	11.1	2.47	38.2	145
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	1.4	0.4 - 3.7	16.6	10.24	0.201	11.3	2.51	40.8	210
Mangrove along Kam Tin River (near Shan Pui River) (E7)	Scenario 1: Base Case	0.4	1.5 - 4.8	22.7	13.32	0.568	16.8	2.29	59.8	639
	Scenario 2: without Project	2.5	3.8 - 5.7	14.3	6.78	0.154	8.3	1.81	42.8	23
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.7	2.5 - 5.0	13.9	7.14	0.135	8.6	1.79	40.7	18
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.4	2.5 - 5.0	14.2	7.23	0.142	8.7	1.82	41.9	26
Mai Po Marshes SSSI (south of Lut Chau) (E8)	Scenario 1: Base Case	0.6	1.5 - 4.8	22.5	13.19	0.562	16.7	2.15	55.4	361
	Scenario 2: without Project	2.6	3.3 - 5.6	14.4	6.77	0.156	8.3	1.73	41.4	16
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	2.7	2.0 - 5.0	13.9	7.14	0.136	8.6	1.71	39.4	13
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	2.4	2.0 - 5.0	14.3	7.24	0.144	8.7	1.74	40.5	19
EPD Routine Monitoring Station										
Assessment Criteria (for Deep Bay WCZ, Inner Marine Subzone)		10%ile								
DM1 (DM1)	Scenario 1: Base Case	4.0	4.4 - 7.6	14.1	5.81	0.217	7.7	0.68	35.4	7
	Scenario 2: without Project	4.6	5.3 - 7.7	13.1	4.10	0.128	5.7	0.62	32.5	3
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.8	4.7 - 7.5	13.8	4.08	0.121	5.8	0.64	34.3	3
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	4.8	4.7 - 7.5	13.8	4.10	0.122	5.8	0.65	34.3	3
DM2 (DM2)	Scenario 1: Base Case	3.3	4.7 - 9.1	11.5	4.87	0.178	6.4	0.48	27.3	61
	Scenario 2: without Project	3.7	4.9 - 9.1	11.0	4.13	0.141	5.5	0.46	26.3	59
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	3.8	4.6 - 9.1	11.5	4.11	0.138	5.6	0.47	27.5	59
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	3.8	4.6 - 9.1	11.5	4.12	0.138	5.6	0.47	27.5	59
DM3 (DM3)	Scenario 1: Base Case	4.5	6.8 - 10.6	3.9	1.76	0.045	2.3	0.17	13.0	5
	Scenario 2: without Project	4.7	6.8 - 10.7	3.8	1.57	0.037	2.1	0.16	12.8	5
	Scenario 3: with STLMC EPP (125,000 m ³ /day)	4.7	6.7 - 10.6	4.0	1.57	0.037	2.1	0.17	13.1	6
	Scenario 4: 2-hr Emergency Discharge from STLMC EPP	4.7	6.7 - 10.6	4.0	1.57	0.037	2.1	0.17	13.1	6