Appendix B. Water Quality Monitoring Results

Table B1: Action and Limit Levels of Water Quality for Dredging, Disposal and Capping Activities at ESC CMP V

Parameters	Action	Limit
Dissolved Oxygen (DO) in mg L^{-1} (Surface, Middle & Bottom)[1]	**Surface and Middle Depth**[2]	**Surface and Middle Depth**[2]
	5%-ile of baseline data for surface and middle layer = **3.76**	1%-ile of baseline data for surface and middle layer = **3.11** [3]
	and	and
	Significantly less than the reference station's mean DO (at the same tide of the same day)	Significantly less than the reference station's mean DO (at the same tide of the same day)
	Bottom	**Bottom**
	5%-ile of baseline data for surface and middle layer = **2.96**	The average of the impact station readings are **< 2**
	and	and
	Significantly less than the reference station's mean DO (at the same tide of the same day)	Significantly less than the reference station's mean DO (at the same tide of the same day)
Suspended Solids (SS) in mg L^{-1} (depth-averaged)[5]	95%-ile of baseline data for depth-averaged = **37.88**	99%-ile of baseline data for depth-averaged = **61.92**
	and	and
	120% of control station's SS at the same tide of the same day	130% of control station's SS at the same tide of the same day
Turbidity in NTU (depth-averaged)[4][5]	95%-ile of baseline data = **28.14**	99%-ile of baseline data = **38.32**
	and	and
	120% of control station's Turbidity at the same tide of the same day	130% of control station's Turbidity at the same tide of the same day

Notes:

1. For DO, non-compliance of the water quality limits occurs when monitoring result is lower than the limits.
2. Action and Limit Levels for DO for Surface and Middle layers were calculated from the combined pool of baseline surface layer data and baseline middle layer data.
3. Given the Action Level for DO for Surface and Middle layers has already been lower than 4 mg L^{-1}, it is proposed to set the Limit Level at 3.11 mg L^{-1} which is the first percentile of the baseline data.
4. "Depth-averaged" is calculated by taking the arithmetic means of reading of all three depths.
5. For turbidity and SS, non-compliance of the water quality limits occurs when monitoring result is higher than the limits.

Table B2: Water Column Profiling Results for ESC CMP Vb in August 2022

Station	Temp. (°C)	Salinity (ppt)	Turbidity (NTU)	Dissolved Oxygen (%)	Dissolved Oxygen (mg L^{-1})	pH	Suspended Solids (mg L^{-1})
WCP 1 (Downstream)	28.89	23.73	1.62	88.97	6.01	8.03	3.0
WCP 2 (Upstream)	29.04	23.27	2.00	90.38	6.11	7.98	6.5
WQO (Wet Season)	N/A	20.94-25.60#	N/A	N/A	>4	6.5-8.5	12.0

Notes:
1. # Not exceeding 10% of natural ambient level which is the result obtained from the Reference Station.
2. Cell shaded yellow / red indicates value exceeding the Action/Limit levels.
3. Cell shaded grey indicates value exceeding the WQO.

Table B3: In-situ Monitoring Results for Routine Water Quality Monitoring of ESC CMPs in August 2022

Station	Temp. (°C)	Salinity (ppt)	Turbidity (NTU)	Dissolved Oxygen (%)	Dissolved Oxygen (mg L^{-1})	pH
RFF (Reference)	29.00	21.42	1.95	117.34	8.06	8.37
IPF (Impact)	29.14	21.20	2.78	114.64	7.86	8.32
INF (Intermediate)	29.02	22.13	3.13	113.46	7.75	8.29
Ma Wan	28.97	23.48	1.18	123.47	8.35	8.34
WQO (Wet Season)	N/A	19.28-23.56	N/A	N/A	>4	6.5-8.5

Notes:
1. # Not exceeding 10% of natural ambient level which is the result obtained from the Reference Station.
2. Cell shaded yellow / red indicates value exceeding the Action/Limit levels.
3. Cell shaded grey indicates value exceeding the WQO.

Table B4: Laboratory Results for Dissolved Metals and Metalloid in Routine Water Quality Monitoring of ESC CMPs in July 2022

Station	As (µg/L)	Cd (µg/L)	Cr (µg/L)	Cu (µg/L)	Pb (µg/L)	Hg (µg/L)	Ni (µg/L)	Ag (µg/L)	Zn (µg/L)
RFF	2.08	0.04	0.12	0.50	ND	0.001	0.56	ND	0.72
IPF	1.95	0.04	0.11	0.56	ND	0.001	0.60	ND	0.23
INF	2.04	0.04	0.14	0.61	ND	0.001	0.66	ND	0.11
Ma Wan	1.86	0.06	0.14	0.56	ND	0.001	0.48	ND	1.24

Note:
1. "ND" indicates the concentrations of metals and metalloids are not detected.

Table B5: Laboratory Results for Nutrients and Suspended Solid in Routine Water Quality Monitoring of ESC CMPs in July 2022

Station	NH_3 (mg/L)	TIN (mg/L)	BOD_5 (mg/L)	SS (mg/L)
RFF	<LOR	0.68	1.25	7.0
IPF	<LOR	0.79	1.40	4.7
INF	<LOR	0.84	1.45	2.5
Ma Wan	<LOR	0.56	1.50	3.5

WQO of TIN: 0.5 mg/L
Wet Season WQO of SS: 12.0 mg/L

Notes:
1. "<LOR" indicates the concentrations of contaminants are below the limit of reporting.
2. Cell shaded yellow / red indicates value exceeding the Action/Limit levels.
3. Cell shaded grey indicates value exceeding the WQO.

Table B6: Laboratory Results for Dissolved Metals and Metalloid in Routine Water Quality Monitoring of ESC CMPs in August 2022

Station	As (µg/L)	Cd (µg/L)	Cr (µg/L)	Cu (µg/L)	Pb (µg/L)	Hg (µg/L)	Ni (µg/L)	Ag (µg/L)	Zn (µg/L)
RFE	*	*	*	*	*	*	*	*	*
IPE	*	*	*	*	*	*	*	*	*
INE	*	*	*	*	*	*	*	*	*
Ma Wan	*	*	*	*	*	*	*	*	*

Note:
1. "* Laboratory analysis data of metals and metalloid are still under consolidation, which will be presented in the Monthly EM&A Report of the next reporting period.

Table B7: Laboratory Results for Nutrients and Suspended Solid in Routine Water Quality Monitoring of ESC CMPs in August 2022

Station	NH_3 (mg/L)	TIN (mg/L)	BOD_5 (mg/L)	SS (mg/L)
RFE	0.03	0.55	2.12	6.6
IPE	0.07	0.52	1.48	5.9
INE	0.05	0.56	2.12	6.7
Ma Wan	0.03	0.40	1.40	4.0

WQO of TIN: 0.5 mg/L
Wet Season WQO of SS: 12.0 mg/L

Notes:
4. "<LOR" indicates the concentrations of contaminants are below the limit of reporting.
5. Cell shaded yellow / red indicates value exceeding the Action/Limit levels.
6. Cell shaded grey indicates value exceeding the WQO.