

Annex 6D

Predicted Concentration of
Nutrients
and
Elutriate Test Results

Table D.1 Predicted TIN Concentrations (mg L⁻¹) as a Result of SS Release due to the Works

Sensitive Receiver	Name	ID	Relevant Depth ¹	Max TIN Conc. In Sediment (mg kg ⁻¹)	Scenario 1a		Scenario 1b	
					Dry	Wet	Dry	Wet
					Max	Max	Max	Max
Intertidal Mudflats	Pak Nai	SR01	s	142	0.000107	0.000071	0.000000	0.000082
Horseshoe Crab Nursery Grounds	Pak Nai	SR01	a	142	0.000483	0.000642	0.000000	0.000706
Seagrass Beds/Mangroves/Oyster Farm	Pak Nai	SR02	s	142	0.000000	0.000004	0.000000	0.000004
Seawater Intakes	Black Point Power Station	SR04	b	142	0.028196	0.026669	0.028572	0.026601
Non-gazetted Beaches	Lung Kwu Sheung Tan	SR05a	a	100	0.001204	0.000236	0.001291	0.000240
Non-gazetted Beaches	Lung Kwu Tan	SR05b	a	100	0.000679	0.000308	0.000737	0.000307
Gazetted Beaches	Butterfly Beach	SR05c	a	100	0.000006	0.000000	0.000007	0.000000
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06a	a	100	0.000052	0.000031	0.000054	0.000032
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06b	a	100	0.000028	0.000035	0.000029	0.000035
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06c	a	100	0.000129	0.000143	0.000106	0.000118
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06d	a	100	0.000079	0.000075	0.000084	0.000074
Artificial Reef Deployment Area	Sha Chau and Lung Kwu Chau	SR06e	a	100	0.000027	0.000025	0.000028	0.000026
Seawater Intakes	Castle Peak Power Station	SR07a	b	100	0.001477	0.001294	0.001551	0.001478
Seawater Intakes	Tuen Mun Area	SR07b	b	100	0.000443	0.000377	0.000470	0.000397

Sensitive Receiver	Name	ID	Relevant Depth ¹	Max TIN Conc. In Sediment (mg kg ⁻¹)	Scenario 1a		Scenario 1b	
					Dry	Wet	Dry	Wet
					Max	Max	Max	Max
Seawater Intakes	Airport	SR07c	b	100	0.000035	0.000016	0.000035	0.000016
Seawater Intakes	Airport	SR07d	b	100	0.000004	0.000013	0.000004	0.000013
Artificial Reef Deployment Area	Northeast Airport	SR07d	a	100	0.000003	0.000011	0.000003	0.000011
Seawater Intakes	Airport	SR07e	b	100	0.000000	0.000006	0.000000	0.000006
Seawater Intakes	Airport	SR07f	b	100	0.000000	0.000000	0.000000	0.000000
Spawning/Nursery Grounds	Fisheries Spawning Ground in North Lantau	SR08	a	100	0.000151	0.000158	0.000147	0.000158
Horseshoe Crab Nursery Grounds	Sham Wat Wan	SR10	a	100	0.000033	0.000020	0.000033	0.000020

Table D.2 Predicted Unionised Ammonia Concentrations (mg L⁻¹) as a Result of SS Release due to the Works

Sensitive Receiver	Name	ID	Relevant Depth ¹	Max TKN Conc. In Sediment (mg kg ⁻¹)	Scenario 1a		Scenario 1b	
					Dry	Wet	Dry	Wet
					Max	Max	Max	Max
Intertidal Mudflats	Pak Nai	SR01	s	2600	0.000098	0.000065	0.000000	0.000075
Horseshoe Crab Nursery Grounds	Pak Nai	SR01	a	2600	0.000442	0.000588	0.000000	0.000646
Seagrass Beds/Mangroves/Oyster Farm	Pak Nai	SR02	s	2600	0.000000	0.000004	0.000000	0.000004
Seawater Intakes	Black Point Power Station	SR04	b	2600	0.025813	0.024415	0.026157	0.024353
Non-gazetted Beaches	Lung Kwu Sheung Tan	SR05a	a	2100	0.001264	0.000248	0.001356	0.000252
Non-gazetted Beaches	Lung Kwu Tan	SR05b	a	2100	0.000713	0.000323	0.000774	0.000322
Gazetted Beaches	Butterfly Beach	SR05c	a	2100	0.000006	0.000000	0.000007	0.000000
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06a	a	2100	0.000055	0.000033	0.000057	0.000034
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06b	a	2100	0.000029	0.000037	0.000030	0.000037
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06c	a	2100	0.000135	0.000150	0.000111	0.000124
Marine Park	Designated Sha Chau and Lung Kwu Chau	SR06d	a	2100	0.000083	0.000079	0.000088	0.000078
Artificial Reef Deployment Area	Sha Chau and Lung Kwu Chau	SR06e	a	2100	0.000028	0.000026	0.000029	0.000027
Seawater Intakes	Castle Peak Power Station	SR07a	b	2100	0.001551	0.001359	0.001629	0.001552
Seawater Intakes	Tuen Mun Area 38	SR07b	b	2100	0.000465	0.000396	0.000494	0.000417
Seawater Intakes	Airport	SR07c	b	2100	0.000037	0.000017	0.000037	0.000017

Sensitive Receiver	Name	ID	Relevant Depth ¹	Max TKN Conc. In Sediment (mg kg ⁻¹)	Scenario 1a		Scenario 1b	
					Dry	Wet	Dry	Wet
					Max	Max	Max	Max
Seawater Intakes	Airport	SR07d	b	2100	0.000004	0.000014	0.000004	0.000014
Artificial Reef Deployment Area	Northeast Airport	SR07d	a	2100	0.000003	0.000012	0.000003	0.000012
Seawater Intakes	Airport	SR07e	b	2100	0.000000	0.000006	0.000000	0.000006
Seawater Intakes	Airport	SR07f	b	2100	0.000000	0.000000	0.000000	0.000000
Spawning/Nursery Grounds	Fisheries Spawning Ground in North Lantau	SR08	a	2100	0.000159	0.000166	0.000154	0.000166
Horseshoe Crab Nursery Grounds	Sham Wat Wan	SR10	a	2100	0.000035	0.000021	0.000035	0.000021

Table D.3 Elutriate Results at Black Point

Parameters	Unit	Reporting Limit	Black Point					
			GV1	GV2	GV3	GV4	GV5	
Heavy Metals	Cadmium (Cd)	ug/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Chromium (Cr)	ug/L	5	<5	<5	<5	<5	<5
	Copper (Cu)	ug/L	1	2.2	2.4	2.6	2.7	2.8
	Nickel (Ni)	ug/L	2	<2	<2	<2	<2	<2
	Lead (Pb)	ug/L	2	<2	<2	<2	<2	<2
	Zinc (Zn)	ug/L	10	<10	<10	<10	<10	<10
	Mercury (Hg)	ug/L	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
	Arsenic (As)	ug/L	1	1.2	<1	<1	<1	<1
	Silver (Ag)	ug/L	1	<1	<1	<1	<1	<1
Ammonia (Un-ionized)		mg-N/L	0.01	0.03	0.03	0.14	<0.01	<0.01
TKN		mg-N/L	0.1	0.9	2.1	9.3	0.8	<0.1
Nitrate		mg-N/L	0.05	0.22	0.18	0.1	0.5	0.85
Nitrite		mg-N/L	0.05	0.09	0.05	0.06	0.273	0.2
Ammoniacal Nitrogen		mg-N/L	0.1	0.62	0.88	3.9	0.54	<0.1
Ortho-Phosphate		mg-P/L	0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Total Phosphorous		mg-P/L	0.1	0.22	<0.1	<0.1	<0.1	<0.1
PAHs (Low Molecular Weight)	Naphthalene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Acenaphtylene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Acenaphtene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Fluorene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Phenanthrene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Anthracene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
PAHs (High Molecular Weight)	Benzo(a)anthracene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(a)pyrene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Chrysene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Dibenz(ah)anthracene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Fluoranthene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Pyrene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(b)fluoranthene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(k)fluoranthene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Indeno(1,2,3-cd)pyrene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	Benzo(ghi)perylene	ug/L	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	PCB	PCB 8	ug/L	0.01	<0.01	<0.01	<0.01	<0.01
PCB 18		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 28		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 44		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 52		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 66		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 77		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 101		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 105		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 118		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 126		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 128		ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

Parameters	Unit	Reporting Limit	Black Point				
			GV1	GV2	GV3	GV4	GV5
PCB 138	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 153	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 169	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 170	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 180	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
PCB 187	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Total PCB	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Tributyltin (TBT)	ug/L	0.015	<0.015	<0.015	<0.015	<0.015	<0.015
Chlorinated Pesticides							
Alpha-BHC	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Beta BHC	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Gamma BHC	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Delta-BHC	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Aldrin	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Heptachlor epoxide	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Alpha-Endosulfan	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p, p'-DDT	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p, p'-DDD	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
p, p'-DDE	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Endosulfan sulfate	ug/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01